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THE

ZOOLOGICAL RECORD,

VOLUME THE THIRTIETH.

BEING

RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

1893.

BY J. A. THOMSON, R. LYDEKKER, R. BOWDLER SHARPE, G. A. BOUL-
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Explorate solum : sic fit via certior ultra.

LONDON :

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Communications, Papers, and Memoirs intended for this work should be addressed to "THE EDITOR of the Zoological Record, Zoological Society, 3, Hanover Square, London, W." It is earnestly requested that in the case of separately-printed copies of papers so forwarded, the *original pagination* be indicated.

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.

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PREFACE.

THE thirtieth volume of the ZOOLOGICAL RECORD has been prepared by the same Recorders as the last one. The Editor has great pleasure in thanking them for their valuable assistance.

A new list of periodicals and abbreviations appears in this volume. The system after which it has been prepared is explained at the head of the list. Had the arrangement been reversed, and the names of the periodicals preceded the abbreviations, the list would perhaps have been more widely appreciated. This course, however, would have detracted from its usefulness for the special purpose for which it is intended, viz., as a key to the abbreviations made use of in the volume.

The list has been prepared by the Editor with the sanction of the Record Committee of the Zoological Society. Some of the libraries at which the different works may be consulted are pointed out in it. The Editor desires to thank the Librarians of the Royal, Zoological, and Linnean Societies for the assistance they gave him in the preparation of this part of the new list. He has also received most valuable help from Mr. B. B. Woodward, of the British Museum of Natural History; and Mr. F. A. Bather has given important aid in regard to the titles of the numerous palæontological works the list now includes.

The Editor regrets that the volume appears later in the year than its immediate predecessors. This is due to delay in the printing, owing to circumstances which the printers assure him will not recur.

D. SHARP.

CAMBRIDGE, Oct. 17, 1894.

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E R R A T A .

MOLLUSCA.

Page 47, line 2 from top, for "*Torellalla*" read "*Torelrella*."

INSECTA.

Page 106, line 2 from bottom, for "n. g." read "n. subg.", and for "p. 10" read "pl. 10."

Page 137, line 14 from top, for "RHIPIDOPHORIDÆ" read "RHIPIDOCERIDÆ," and transfer "*Evaniocera minuta*, n. sp." to p. 156.

Page 156. Transfer the entries "*Homæorhipis*" and "*Simianus*" to "RHIPIDOCERIDÆ" on p. 137.

Page 158, line 18 from top, for "n. sp." read "n. g."

Page 248, line 22 from bottom, for "*Synobium*" read "*Synobrium*."

Page 258, line 19 from bottom, for "*Orthogonioptiluna*" read "*Orthogonioptilum*."

Page 302, line 17 from bottom, for "BLACKBURN" read "MEYRICK."

VERMES.

Page 53, line 21 from bottom, for "*Cryptocelis*" read "*Cryptocelides*."

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.

Unfortunately some of the abbreviations commonly used are badly constructed, e.g., "N. Acta Ac. L.-C. Nat. cur." This should give place to the simpler and more descriptive "Acta Ac. German."

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 "
 R. = Royal Society Library.
 Z. = Zoological Society Library
 L. = Linnean " "
 C. = Cambridge University Library.
 (C) p= " Philosophical Society Library.
 (C) b, or g, or y = Cambridge Balfour, or Woodwardian Museum, or
 Physiological Libraries respectively.

- 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. R. Z. L. C, p.
Abh. Bayer. Ak.—Abhandlungen der mathematisch-physikalischen Classe der königlichen Bayerischen Akademie der Wissenschaften. (München, 4to.) N. R. Z. L. C, p.
Abh. Bohm. Ges.—Abhandlungen der mathematisch-naturwissenschaftlichen Classe der k. Böhmisches Gesellschaft. [Called also] Rozprawy tridy mathematicko-přirodověcke královské Česke společnosti Nauk. (Prag, 4to.) N. R. L. C, p.
Abh. geol. Karte Elsass—Abhandlungen zur geologischen Spezial-Karte von Elsass-Lothringen. (Strassburg, 8vo.) Ng.
Abh. geol. Landesanst. Darmstadt—Abhandlungen der grossherzoglich Hessischen geologischen Landesanstalt zu Darmstadt. (Darmstadt, 8vo.) Ng.
Abh. geol. Reichsanst.—Abhandlungen der Kaiserlich-Königlichen geologischen Reichsanstalt. (Vienna, 4to.) Ng. R. L. C, p.
Abh. Ges. Görlitz—Abhandlungen der naturforschenden Gesellschaft zu Görlitz. (Görlitz, 8vo.) N. R.

- Abh. Ges. Gotting.*—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. R. Z. L. C.
- Abh. Ges. Isis*—Sitzungsberichte und Abhandlungen der naturwissenschaftlichen Gesellschaft 'Isis' in Dresden. (Dresden, 8vo.) N. Z. C.
- Abh. Ges. Königsb.*—[Part of *Schr. Ges. Königsb.*, q.v.]
- Abh. Ges. Nürnberg*—Abhandlungen der naturhistorischen Gesellschaft zu Nürnberg. (Nürnberg, 8vo.) N. 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. C.
- Abh. Sachs. Ges.*—Abhandlungen der k. Sächsischen Gesellschaft der Wissenschaften. (Leipzig, 4to.) N. 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. R. Z. L. C.
- Abh. Ver. Bremen*—Abhandlungen herausgegeben vom naturwissenschaftlichen Vereine zu Bremen. (Bremen, 8vo.) N. R. Z. L. C.
- Abh. Ver. Hamburg*—Abhandlungen aus dem Gebiete der Naturwissenschaften herausgegeben vom naturwissenschaftlichen Verein in Hamburg. (Hamburg, 4to.) N. 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. 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. R. Z. (C) p.

- Acta Soc. Upsal.*—Nova Acta regiæ Societatis Scientiarum Upsaliensis. (Upsala, 4to.) N. R. Z. L. C, p.
- Acta Univ. Lund.*—Acta Universitatis Lundensis. [Called also] Lunds Universitets Årsskrift, [and includes] Acta regiæ Societatis physiographicæ Lundensis, [also called] Kongl. fysiografiska Sällskapets i Lund Handlingar. (Lund, 4to.) N. 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. R. L.
- Afh. Mus. Lund.*—E museo Lundii. En Samling af Afhandlinger. (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.
- Amer. J. Sci.*—The American Journal of Science. (New Haven, 8vo.) N. R. Z. C, p.
- Amer. Micr. J.*—The American Monthly Microscopical Journal. (Washington, 8vo.) N.
- Amer. Natural.*—The American Naturalist. (Philadelphia, 8vo.) N. Z. L. C, b.
- Anat. Anz.*—Anatomischer Anzeiger. Centralblatt für die gesamte wissenschaftliche Anatomie. Amtliches Organ der anatomischen Gesellschaft. (Jena, 8vo.) Nz. Z. (C) b.
- Anat. Hefte*—Anatomische Hefte. Referate und Beiträge zur Anatomie und Entwicklungsgeschichte. (Wiesbaden, 8vo.) (C) b.
- An. Inst. Costa Rica*—Anales del Instituto físico-geográfico y del Museo Nacional de Costa Rica. (San José de Costa Rica, folio.) N. Z.
- An. Mus. Buenos Aires*—Anales del Museo público de Buenos Aires. (Buenos Aires, 4to.) Nz. R. Z. L.
- An. Mus. Costa Rica*—[Now merged in *An. Inst. Costa Rica*, q.v.]
- An. Mus. La Plata*—Anales del Museo de La Plata. (Buenos Aires, &c., 4to.) N. R. Z.
- An. Mus. Mexico*—Anales del Museo nacional de México. (México, folio.) N.
- Ann. Brit. Geol.*—Annals of British Geology. (London, 8vo.) Ng.
- Ann. Fac. Marseille*—Annales de la Faculté des Sciences de Marseille, publiées sous les auspices de la municipalité. (Marseille & Paris, 4to.) N. R. (C) p.
- Ann. geol. Balkan.*—Annales géologiques de la péninsule Balkanique. (Belgrade, 8vo.) Ng.

- Ann. Geol. Pal.*—Annales de Géologie et de Paléontologie, publiées sous la direction du Marquis Antoine de Gregorio. (Palermo, 4to.) Ng. (C) g.
- Ann. Hébert*—Annales Hébert. Annales de stratigraphie et de paléontologie du laboratoire de géologie de la faculté des Sciences de Paris. (Paris, 8vo.) Ng.
- Ann. Hofmus. Wien*—Annalen des k. k. naturhistorischen Hofmuseums. (Wien, 8vo.) N. R. Z. L. (C) p.
- Ann. Microgr.*—Annales de Micrographie, spécialement consacrées à la Bactériologie aux Protophytes et aux Protozoaires. (Paris, 8vo.) N.
- Ann. Mus. Belgique*—Annales du Musée royal d'histoire naturelle de Belgique. (Bruxelles, 4to.) R. C.
- Ann. Mus. Genova*—Annali del Museo civico di Storia Naturale di Genova. (Genova, 8vo.) Nz. Z. L. C.
- Ann. Mus. Marseille*—Annales du Musée d'histoire naturelle de Marseille. Zoologie. (Marseille, 4to.) Nz. R. Z. L. C, p.
- Ann. Nat. Hist.*—Annals and Magazine of Natural History, including Zoology, Botany, and Geology. (London, 8vo.) Nz. Ng. R. Z. L. C, b, p.
- Ann. N. York Ac.*—Annals of the New York Academy of Sciences. Late Lyceum of Natural History. (New York, 8vo.) N. R. Z. L. C, p.
- Ann. Queensland Mus.*—Annals of the Queensland Museum. (Brisbane, 8vo.) N. L.
- Ann. Sci. nat.*—Annales des Sciences naturelles. Zoologie et Paléontologie. Septième série. (Paris, 8vo.) Nz. R. Z. L. C, p.
- Ann. Sci. nat. Porto*—Annaes de Sciencias naturales publicados por Augusto Nobre. (Porto, 8vo.) N. R.
- Ann. Scott. Nat. Hist.*—The Annals of Scottish Natural History: a quarterly magazine, with which is incorporated "The Scottish Naturalist." (Edinburgh & London, 8vo.) N. Z. L. C.
- Ann. Soc. Agric. Lyon*—Annales de la Société d'Agriculture, Histoire naturelle et Arts utiles de Lyon. Sixième série. (Lyons & Paris, 8vo.) N. R. L.
- Ann. Soc. Belge Micr.*—Annales de la Société Belge de Microscopie. (Bruxelles, 8vo.) N.
- Ann. Soc. Bruxelles*—Annales de la Société Scientifique de Bruxelles. (Bruxelles, 8vo.) N.
- Ann. Soc. Charente*—Académie de la Rochelle. Annales de la Société des Sciences naturelles de la Charente inférieure. (La Rochelle, 8vo.) N.
- Ann. Soc. ent. Belgique*—Annales de la Société entomologique de Belgique. [Called also Comptes rendus.] (Bruxelles, 8vo.) Nz. Z. L. C.
- Ann. Soc. ent. France*—Annales de la Société entomologique de France. [Includes Bulletin.] (Paris, 8vo.) Nz. R. Z. L. C.

- Ann. Soc. geol. Belgique*—Annales de la Société géologique de Belgique. [Consists of Bulletin and Memoires.] (Liège, 8vo.) Ng. R. (C) p.
- Ann. Soc. geol. Nord*—Annales de la Société géologique du Nord. (Lille, 8vo.) Ng.
- Ann. Soc. Linn. Lyon*—Annales de la Société Linnéenne de Lyon. Nouvelle série. (Lyon, 8vo.) N. R. Z. L. C.
- Ann. Soc. malac. Belgique*—Annales de la Société royale malacologique de Belgique. [Consists of Mémoires and Bulletin, qq.v.] (Bruxelles, 8vo.) Nz. R. Z. L.
- Annuaire geol.*—Annuaire géologique universel, revue de Géologie et Paléontologie. (Paris, 8vo.) Ng. (C) g.
- Ann. Univ. Lyon*—Annales de l'Université de Lyon. (Paris, 8vo.) N. R. C.
- Ann. Univ. Toscane*—Annali delle Università Toscane. (Pisa, 4to.) N.
- An. Soc. Argent.*—Anales de la Sociedad científica Argentina. (Buenos Aires, 8vo.) N.
- An. Soc. Espan.*—Anales de la Sociedad Española de historia natural. [Includes *Act. Soc. Espan.*] (Madrid, 8vo.) N. R. C.
- Antanan. Ann.*—Antananarivo Annual and Madagascar Magazine. (Antananarivo, 8vo.) N.
- An. Univ. Chile*—Anales de la Universidad de Chile. (Santiago, 8vo.)
- Anz. Ak. Wiss.*—Anzeiger der k. Akademie der Wissenschaften. Mathematisch-naturwissenschaftliche Classe. (Wien, 8vo.) N. R. L. Z. C.
- Appalachia*—Appalachia: the Journal of the Appalachian Mountain Club. (Boston, 8vo.) N.
- Arb. Inst. Wien*—Arbeiten aus dem zoologischen Institute der Universität Wien und der Zoologischen Station in Triest. (Wien, 8vo.) Nz. R. Z. L. C, b.
- Arb. Inst. Würzburg*—Arbeiten aus dem zoologisch-zootomischen Institut in Würzburg. (Wiesbaden, 8vo.) Nz. R. Z. L. C, b.
- Arb. Ver. Riga*—Arbeiten des Naturforscher-Vereins zu Riga. Neue Folge. (Riga, 8vo.) N.
- Arch. Anat.*—Archiv für Anatomie und Entwicklungsgeschichte. Anatomische Abtheilung des Archives für Anatomie und Physiologie [His.]. (Leipzig, 8vo.) R. Z. C, b, p, y.
- Arch. Anthropol.*—Archiv für Anthropologie. Zeitschrift für Naturgeschichte und Urgeschichte des Menschen. [Includes *CB. Ges. Anthropol.*] (Brunswick, 4to.) R.
- Arch. Biol.*—Archives de Biologie. (Gand & Paris, 8vo.) Nz. R. Z. L. C, b.
- Arch. Dorpat. Ges.*—Archiv für die Naturkunde Liv-, Ehst- und Kurlands. Herausgegeben von der Dorpater Naturforscher-Gesellschaft. Zweite Serie. Biologische Naturkunde. (Dorpat, 8vo.) N. Z.
- Arch. ges. Physiol.*—Archiv für die gesammte Physiologie des Menschen und der Thiere. [Pflüger.] (Bonu, 8vo.) R. C, p, y.

- Arch. ital. Biol.*—Archives italiennes de Biologie. Revues, résumés, reproductions des travaux scientifiques italiens. (Turin, 8vo.) N. C, y.
- Arch. Landesdf. Bohmen*—Archiv für naturwissenschaftliche Landesdurchforschung von Böhmen. (Prag, 8vo.) N. Z. C.
- Arch. mikr. Anat.*—Archiv für mikroskopische Anatomie. (Bonn, 8vo.) R. Z. L. C, b, p, y.
- Arch. miss. Sci.*—Nouvelles archives des missions scientifiques et littéraires choix de rapports et instructions, &c. (Paris, 8vo.) N.
- Arch. Mus. Lyon*—Archives du Muséum d'histoire naturelle de Lyon. (Lyon, 4to.) N. R. Z.
- Arch. Mus. Paris*—Nouvelles Archives du Muséum d'histoire naturelle. Troisième série. (Paris, 4to.) N. R. Z. L. C, p.
- Arch. Mus. Rio Jan.*—Archivos do Museu nacional do Rio de Janeiro. (Rio de Janeiro, 4to.) N. R. L. (C) p.
- Arch. Mus. Teyler*—Archives du Musée Teyler. (Harlem, 4to.) N. R. Z. C, p, g.
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- Arch. Naturv. Christian.*—Archiv for Mathematik og Naturvidenskab. (Christiania, 8vo.) N. R. Z.
- Arch. Neerland.*—Archives Néerlandaises des Sciences exactes et naturelles, publiées par la Société Hollandaise des Sciences à Harlem. (Harlem, 8vo.) N. R. Z. L. C.
- Arch. Physiol.*—Archiv für Physiologie. Physiologische Abtheilung des Archives für Anatomie und Physiologie. (Leipzig, 8vo.) R. Z. (C) p, y.
- Arch. Physiol. norm. path.*—Archives de Physiologie normale et pathologique. [Brown-Séquad.] (Paris, 8vo.) R. C, y.
- Arch. Sci. Nat.*—Bibliothèque universelle. Archives des Sciences physiques et naturelles. [Vide also *C.R. Soc. Helvet.*] (Genève, 8vo.) N. R. (C) p, y.
- Arch. Ver. Mecklenb.*—Archiv des Vereins der Freunde der Naturgeschichte in Mecklenburg. (Güstrow, 8vo.) N. L.
- Arch. Zeeuwsch Genoots.*—Archief. Vroegere en latere Mededeelingen voornamelijk in betrekking tot Zeeland, uitgeven door het Zeeuwsch Genootschap der Wetenschappen. (Middelburg, 8vo.) N.
- Arch. Zool. exp.*—Archives de Zoologie expérimentale et générale. [Includes Notes and Revue.] (Paris, 8vo.) Nz. R. Z. L. C, b.
- Atti Acc. Gioen.*—Atti dell' Accademia Gioenia di Scienze naturali in Catania. Serie quarta. (Catania, 4to.) N. R.
- Atti Acc. Lincei*—Atti della R. Accademia dei Lincei. [Consists of Memorie and Rendiconti, qq.v.] N. R. Z. L. (C) p.
- Atti Acc. Napoli*—Società Reale di Napoli. Atti della R. Accademia delle Scienze fisiche e matematiche. Serie seconda. (Napoli, 4to.) N. R. L. C, p.

- Atti Acc. Palermo*—Atti della Reale Accademia di Scienze, Lettere e Belle Arti di Palermo. (Palermo, 4to.) N.
- Atti Acc. Pontan.*—Atti della Accademia Pontaniana. (Napoli, 4to.) N. R.
- Atti Acc. Pont. Lincei*—Atti dell' Accademia Pontificia de' nuovi Lincei. (Roma, 4to.) N. R.
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- Atti Ist. Napoli*—Atti del Reale Istituto d'incoraggiamento alle Scienze naturali economiche e tecnologiche di Napoli. Quarta serie. (Napoli, 4to.) N.
- Atti Ist. Veneto*—Atti del Reale Istituto Veneto di Scienze Lettere ed Arti. Serie vii. (Venezia, 8vo.) N. R. L.
- Atti Mus. Trieste*—Atti del Museo civico di Storia naturale di Trieste. (Trieste, 8vo.) N. R.
- Atti Soc. Ital.*—Atti della Società Italiana di Scienze naturali. (Milano, 8vo.) N. R. Z. C.
- Atti Soc. Ligustica*—Atti della Società Ligustica di Scienze naturali e geografiche. (Genova, 8vo.) N. R.
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THE ZOOLOGICAL RECORD

FOR 1893.

I. GENERAL SUBJECTS.*

BY

J. ARTHUR THOMSON, M.A.

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

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II.—SUBJECT-INDEX.

1. TEXT-BOOKS AND GENERAL ESSAYS.

Text-books of Zoology:—DUVAL & CONSTANTIN (140), FLEISCHER (160), GÉRARDIN (182), HAYEK (221), HERTWIG, R. (243), KENNEL (280), PERRIER, R. (392), SHIPLEY (476), WIEDERSHEIM (547), VOGT & YUNG (516), MIVART (354).

Of Biology:—BIDGOOD (39), CAMPBELL (90), PARKER (389), WELLS (539).

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Works of Reference :—BRONN (68), BREHM (65), CARUS (92), MERKEL & BONNET (343), Naples Monographs (487, 510).

Popular Books :—ANON "Son of the Marshes" (565), BOMMELI (45), BONNEY (46), BREHM (65), BRONGNIART (67), BUXTON (83), FOLIN (164), FURNEAUX (173), HUDSON (259), LACKOWITZ (305), PRIEM (406), TROUESSART (507).

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Terrestrial Invertebrates, distribution of ; STOLL (492).

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Marine animals, some problems in the distribution of ; MAAS (331).—
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Pelagic and abyssal faunas ; PETERSEN (393).

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Physiology of Decapod Crustaceans:—Branchial glands excretory as well as the green glands, they form carcinuric acid, and seem also to share in phagocytosis. The two parts of the green-gland labyrinth have different functions. The mid-gut gland absorbs peptones and sugars, the short mid-gut fats. The mid-gut gland also regulates amount of water in the blood; CUÉNOT (113).

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Sense of equilibrium in Fishes: Dynamical functions, sensations of rotational movement, localised in semicircular canals, stimulation during body movement; statical functions, sensations of position of body in space, localised in otolithic parts, stimulation continual; LEE (310).

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Cell structure :—The indifferent cells of Hydroids represent a primitive condition, with a "Linen" framework, the mobile part, a granula, and the secretions, &c., of the granula. The granula consists of Zoa (simplest vital elements) and the "Linen" are Zoa united in rows. Interpretation of muscle-cells, nerve-cells, &c., in terms of the "Linen" and granula ; SCHNEIDER (461).

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Import of nucleus : Microscopic vivisection of the cell. A portion of the necklace-like nucleus is essential if a fragment is to regenerate the whole ; it is the nucleus which gives the cell its physiognomy ; but the behaviour of a fragment shows that each particle of protoplasm has "its own independent Psyche," and that the nucleus is not the psychological centre of the cell ; GRUBER (191).

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Centrosomata ; EISMOND (144).—In the absence of centrosomes in incipiently parthenogenetic ova of Mammals, the chromosomes become centres of attraction and orientation for the achromatin filaments ; HENNEGUY (227).

Homology of the Centrosome : Microsome, centrosome, zwischenkörper, cell-plate, and polar microsomes, all belong to the same category of cytoplasmic material. The centrosome is not a unique organ, but it is identical

with the microsomes. The cell-plate consists of equatorial microsomes. When equatorial microsomes fuse the result is the *zwischenkörper*; WATASÉ (529).

Origin of the Centrosomata: The contrast between centrosome and nucleus has been exaggerated. In spermatocyte of *Ascaris megalocephala*, var. *univalens*, it is clear that the centrosome belongs to the nucleus. The chromatin elements are the bearers of hereditary qualities, the centrosome is an organ of division. The whole of the spindle seems to be nuclear; BRAUER (59).

Centrosome and Yolk-nucleus: Yolk-nucleus (studied in spiders) is homologous with the centrosome, or *Nebenkern*, of seminal cells, and the centrosome of somatic cells. It has a nuclear origin, and an influence on the cytoplasm like that of the centrosome. It may occasionally be double. In spiders this "female centrosome" is degenerate, and without physiological significance; it is a "phylogenetic reminiscence"; BALBIANI (15).

Centrosomata: attraction spheres, achromatin figures, *zwischenkörperchen*, in pathological states; LUSTIG & GALEOTTI (325).—Behaviour of chromatin, centrosomata, &c., in carcinoma; GALEOTTI (176).

Nucleoli: The accessory nucleoli, as seen in germinal vesicles of many Vertebrates, are said to contain the products of metabolism in the chromatin. The single chief nucleolus, as seen, *e.g.*, in Echinoderm ova, is a "rhythmically pulsating organ of excretory and probably also of secretory or secretion-storing import"; HÆCKER (210, 211).

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tells against exaggerating the importance of the chromatin. It is at first diffuse, but is gradually aggregated; BATAILLON & KOEHLER (28).

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Amitotic division in mid-gut gland of crayfish; FRENZEL (172).

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a. *The Ovum.*

Summary as to first stages in development; BORN (50, 51).—Some general considerations *re* chromosomes, &c.; HERMANN (237).

Vitelline body of Balbiani: This is a central body surrounded by a zone of protoplasm; it arises from the germinal vesicle and occurs in the ova of animals of every class. In Vertebrates it generally disappears before the ovum is ripe; in some Invertebrates it persists even in the embryo. Perhaps it and the nucleolar elements of the germinal vesicle correspond to the macronucleus of Infusorians; HENNEGUY (238); JULIN (276).

Oogenesis in *Ophryotrocha*: Ovarian cells become either nutritive or reproductive. There seems to be a sort of competition among the ova for association with the nutritive cells, which are in the minority; BRAEM (57).—Nutritive cells and ova in *Ophryotrocha*; KORSCHOLT (297).—Oogenesis in *Styelopsis grossularia*; JULIN (275).—Oogenesis in *Cyclas*; STAUFFACHER (489).

The nucleoli of ova either contain the products of chromatic metabolism or are pulsating organs; HÆCKER (210, 211), see Cell, p. 43.

Germinal vesicle; HÆCKER (209).

Development of germ-cells in *Branchipus*, &c.: (1) Similarity of male and female cells; the specific peculiarities are rather physiological adaptations than of morphological importance. (2) Derivates of the primary germ-cells become (*a*) by karyokinesis reproductive elements, (*b*) by akinesis the surrounding egg-case or sperm-fluid. (3) The division of the cells is intimately associated with the foam structure. An initial step of importance is the fusion of intra-nuclear globules; MOORE (358).

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Parthenogenetic ova of *Artemia salina*.—Directive spindle consists not of 24–26 bipartite chromosomes, but of 84 tetrapartite elements in a round plate. Only one polar body may be formed, or a second division may occur, but without extrusion, the retained half behaving like a sperm-nucleus ; BRAUER (60).

History of the ova which produce the different forms of *Phyllozera* ; LEMOINE (312).

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Spermatolisis of Vertebrates ; D'ANNA (8).

Remarkable processes observed in spermatozoa of *Dytiscus marginalis*. Strange union of spermatozoa in pairs, a temporary conjugation or "dejugation," which may result in molecular exchange of substance, perhaps affecting variability ; AUERBACH (10).

Reduction-divisions in the spermatogenesis of *Salamandra maculosa* ; VOM RATH (411).

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Elimination of nuclear elements in ovarian ovum of *Scorpena scrofa* ; VAN BAMBEKE (20).

Maturation of parthenogenetic ova of *Artemia* ; BRAUER (60).

In Axolotl : The first polar body is expelled as the egg passes from ovary to oviduct, or in the uppermost part of the latter ; the second, after fertilisation. The spindles show neither polar rays nor centrosome ; FICK (157).

In Lamprey : True germinal vesicle and polar bodies now discovered ; HERFORT (235).

Maturation (Newt) ; JORDAN (274).

Maturation in *Ophryotrocha* : The equatorial plate of the first polar spindle has only a single tetrapartite chromosome, a condition only known elsewhere in *Ascaris megalocephala*, var. *univalens* ; KORSCHULT (297).

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In Mouse : The completion of the division which leads to the extrusion of the polar body occurs after the spermatozoon has entered ; SOBOTTA (479).

In Axolotl : There is physiological polyspermy. The whole spermatozoon enters the ovum, at a point where there is a funnel-like or conical aggregation of protoplasm. The head forms the spermatid nucleus, with amoeboid movements ; the connective piece forms an attractive sphere ; the tail disappears completely ; FICK (157).

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Blood and vascular endothelial are wholly hypoblastic ; HOFFMANN (248, 250).

The Urmund theory ; DAVIDOFF (123).

Ectodermic origin of skeleton : Ectodermic proliferations give rise to skeletal rudiments of a connective-tissue nature, which are subsequently in part differentiated into cartilage ; GORONOWITSCH (196).

Nervous system, development of ; summary and criticism ; STRASSER (494).

Chondrocranium and arches, development of ; GAUPP (178).

Head, development of the ; KUPFFER (304).

Ectodermic origin of some cartilaginous structures in the head ; PLATT (401).

Hairs and skin sense-organs ; LEYDIG (314).

Vertebrate embryology ; MARSHALL (340).

Bibliography of vertebrate embryology ; MINOT (349).

Gastrulation in *Vertebrata* and homology of germinal layers ; REPIACHOFF (417).

Germinal layers in Vertebrates : A palingenetic invagination (in *Amphioxus*) forms the archenteron ; a cœnogenetic dorsal invagination of ectoderm forms, according to the author, the rudiment of notochord and associated musculature, along with which the rudiment of the nervous system is also associated ; LWOFF (327).

Import of intracellular bridges between smooth muscle and epithelial cells in outer germinal epithelium ; HEIDENHAIN (225).

Wolffian body, development of, in chick and rabbit. The duct and segmental tubules are at first solid. No evidence that the tubules form first and then join the duct ; HAYCRAFT (220).

Ganglion-ridges (Ganglienleisten) in head of birds, &c. The medullary plate is a composite rudiment (Anlage) ; the primary ridges form mesenchyme ; in the formation of the secondary ridges the ectoderm and the medullary plate have an equal share ; but the most general conclusion seems to be the impossibility of drawing any strict line between ectodermic and mesodermic origins ; GORONOWITSCH (195).

Development of reptiles ; WILL (549).

Parablast and the circulatory system in Axolotl, development and morphology of the ; HOUSSAY (254).

Pineal eye, epiphysis, and parietal nerve, development of ; KLINCKOWSTRÖM (282).—Origin of hypophysis ; GAUPP (179).

Origin of nerves, organs of lateral line, &c., in *Selachii* ; MITROPHANOW (351).

The epiphysis in *Squalus* is double, being formed from a united pair of accessory optic vesicles ; LOCY (317).

A complete vascular system formed without circulation or blood-

pressure in embryo *Fundulus*. Tiger-like pigmented marking of yolk-sac depends on the distribution of blood-vessels ; LOEB (321).

Experimental embryology : Summary and criticism ; ROUX (434, 435) : summary of researches ; THOMSON (503).—Summary of facts as to post-generation, &c. ; BARFURTH (23).

Halves or half-sized wholes ? Denial of Chabry's conclusion that after the destruction of one of the two first blastomeres of the Ascidian ovum, the result is a complete embryo of half size. A typical half-morula, half-gastrula, half-larva, is formed. Note of a half-embryo of *Siredon pisciformis* ; BARFURTH (26).—Experiments on Amphibian ova ; BARFURTH (24, 25).

Cleavage, effect of pressure, &c. ; BORN (52).—Experiments with electric currents, &c. ; ROUX (439).

Warmth affects the blastulæ of *Sphaerechinus granularis*, so that exogastrula and anenteria result. Dilution of the sea-water induces variations in the formation of micromeres, and yet normal Plutei may result. Removal of the micromeres of the "vegetative" half, of the "animal" half, &c., does not prevent the development of a normal Pluteus. Therefore the blastomeres are equivalent, and organogenesis is induced by differences of position and by external stimuli acting on the self-differentiating plasma ; DRIESCH (135).

Effect of pressure : Effect of pressure of a cover-glass on ova of Sea-Urchins from which the membranes are shaken off. The eight-cell stage consists of an annular zone of "animal" cells, and two separate zones, one at each pole, of "vegetative" cells. Yet normal Plutei result : thus, a blastomere may give rise to something quite different from that to which it would have given rise in normal development ; some cells, which would normally form endoderm do in reality form ectoderm ; DRIESCH (136).

Criticism of Driesch : It is an unproved assumption that the eight Echinoid blastomeres formed, under pressure, in Driesch's experiment are the equivalents of the cells in the normal 8-cell stage. Driesch's experiment shows only that segmentation may be greatly altered without affecting ultimate development, and if one of the first two blastomeres form a complete gastrula, this is simply a striking instance of regeneration ; BRAEM (56).

Driesch's argument that because a normal Pluteus larva is formed after disarrangement of blastomeres, or removal of some of them, therefore the blastomeres are mutually equivalent, is fallacious. Roux explains the normal result as due to the residual powers of regeneration and post-generation. Roux recognizes two modes of development : the normal or direct, in which there is a typical system of definitely-determined processes ; and the indirect or atypical, in which the post-generative processes are at work—when, for instance, the half-embryo of a frog forms a whole embryo. He distinguishes the idioplasms of direct and indirect development ; ROUX (434, 435, 436).

Effects of lithium salts on the development of Echinoid embryos : The

two chief results are (1) exogastrulation, and (2) an increase in the archenteric or endoderm-forming zone, which leads to a two-vesicled type of larva. Against the doctrine of specific areas, Herbst notes that the *Pluteus* outgrowths may arise from groups of cells which do not normally form them. So is it with the ciliated bands when the calcareous needles are displaced. Therefore the author maintains the idioplasmatic equivalence of the cells in early stages ; HERBST (233).

Artificial stimulus (clove-oil, xylol, &c.), evoking production of vitelline membrane around unfertilized Echinoderm ova ; HERBST (234).

The position of the median plane of the embryo is *not* determined by the position of the first or second cleavage plane. In various modifications of cleavage, produced by compression, &c., the nuclei are disposed in disorderly fashion, yet normal embryos result. Therefore there are no predetermined organ-forming areas or specialised substances definitely arranged. If one of the first two blastomeres be completely destroyed, the surviving half forms a fairly normal embryo. No semi-gastrula *lateralis* nor *hemi-embryo lateralis* were seen. The Mosaic theory of development is erroneous. So is the theory of germ-plasm. The ovum is a specifically organised "elementarorganismus," which develops epigenetically, *i.e.*, with gradual differentiation according to the mutual relations of the embryonic cells ; HERTWIG (241, 242).

Modification of segmentation of frog ova by gentle compression between two slides, or by confinement in glass tubes. The two poles of the nuclear spindle, defining the direction of the segmentation-plane, come to be in the direction of the largest protoplasmic parts. General conclusion:—that it is not cleavage which separates the ovum into qualitatively specialised parts, the predisposition is in the unfertilised ovum ; HERTWIG (242).

Criticism of Hertwig. The first cleavages are qualitative partitions of the material which serves for the direct development of the four quarters of the embryo ; ROUX (438).

Influence of mercurial vapours on the embryo ; DARESTE (121).

Action of light and currents on development of Amphibians ; CAMERANO (87, 88).

Effect of movement on the development of the eggs of the fowl ; MARCACCI (337) : of light and various other influences ; FÉRÉ (156).

Experiments on eggs of *Ctenolabrus*, *Serranus*, *Fundulus* : Removal of blastomeres seems to show that the size of the embryo is determined by the amount of protoplasm present, and not by the quantity of nuclear material. The embryo cut off from all connection with the germ-ring on one side, elongates backwards, producing an embryo having both right and left sides alike and equal. The conclusion follows : In the elongation of the embryonic knob backwards the head remains a fixed point, and the elongation is due to an extension backwards of the mass ; the germ-ring takes no important part in the formation of the body of the fish embryo ; MORGAN (363).

Experiments on maturation and fertilisation in *Ascaris megalocéphala* :

The living worms (in a glass) were placed for 30 mins.—two hours in a freezing mixture at $+3$ — to -5° C, and thereafter gradually warmed. Among the results were—frequent polyspermy, the chromosomes were altered in number and disposition, not unfrequently only one polar body was formed, in one case six centrosomata were seen in an ovum, and so on; SALA (447).

Spina bifida, &c. ; KOLLMANN (296).

8. REPRODUCTION, SEX, AND HEREDITY.

a. *Reproduction and Sex.*

NUSSBAUM (380), WEISMANN (536).

First differentiation of reproductive and somatic cells in sponges ; MAAS (330).

Dissogony ; CHUN (99).

Polymorphism, neotania, &c., in Termite societies. The reserve sexual forms are fed, both as larvæ and after, from salivary secretion only, a nutritive diet which probably hastens the rapid development of the reproductive system ; GRASSI & SANDIAS (188).

Reproduction of Wasps: In *Vespa germanica*, the workers lay parthenogenetic ova, which develop into males. Abundant nutrition favours the (parthenogenetic) fertility of workers ; MARCHAL (336).

Regeneration : Summary and bibliography ; BARFURTH (22, 23) : of germinal layers ; BARFURTH (24).—As to regeneration in general, see ROUX (434–436), WEISMANN (536). See Experimental Embryology.

Some details as to regeneration in *Ophryotrocha* : thus the further forward the cells, the less their regenerative power. After injury, regeneration begins at the part nearest the tail end, and progresses centripetally ; BRAEM (57).

Telegony : citation of facts ; FINN (159).

Breeding in and in ; BAILLET (14).

Consanguinity : It is the more avoided the higher the type. Vertebrates and insects practice "topographical exogamy." The result of self-fertilisation may be higher than those of cross-fertilisation. Cross-fertilisation is related to the necessity for wide distributional range ; REGNAULT (414).

Rôle of males and females in evolution of Mammals. Suggestion that brood-pouch and mammary glands were first acquired by the males ; HAACKE (204).

Origin of sex ; MANN (335).

Sexes of larvæ of *Smerinthus populi*. Out of 193, 68 female and 59 male pupæ were hatched. No support given to the opinion that the sex can be determined by external conditions during larval life. The larger female larvæ require more food, and with a minimum of food tend to starve first. Favouring conditions must be distinguished from determining conditions ; POULTON (405).

Hermaphroditism: Describes in *Ophryotrocha* the formation of both ova and spermatozoa in the same organ at the same time. Besides hermaphrodite and unisexual forms, he found apparent females with male cells as well as ovaries, and apparent males with ova as well as sperms; KORSCHULT (297).—In insects; VOSSELER (518).

Parthenogenesis, &c.; VONHOF (517).

Hybridism: Cyprinoids; HEINCKE (226), MORGAN (363).—Believes he has fertilised the ova of *Asterias* with the sperm of *Arbacia*; LATASTE (308), SUCHETET (499).—Two fertile Cyprinoid hybrids; KNAUTH (287).—Study of a hybrid between a fertile mule and horse; CORNEVIN & LESBRE (109).—Hybridism among insects: Pairing or attempted pairing between different species is common. Hybrid offspring, however, are only known among *Lepidoptera*. Most are sterile. The hybrid has usually some characteristics of both species, but the external features of the hybrid are usually much more like those of the paternal species than those of the maternal species; STANDFUSS (488).

b. Heredity.

CALDERWOOD (85), HAACKE (202), KOEHLER (293), LATASTE (307), MANN (335), NUSSBAUM (380), ORR (382), WALDEYER (521), WEISMANN (536):

A theory of development and heredity: Germ-cells not isolated, *e.g.*, from nervous influences. No essential difference between development and reproduction of *Protozoa* and those of *Metazoa*. Inheritance of acquired characters in both. Epigenetic theory of development; the forces of the environment mould the growing organism. Great importance attached to direct mechanical effect of the environment; ORR (382).

Historical notes on the idea of the continuity of the germ plasm; BAUR (32), NUSSBAUM (380), WEISMANN (537).

General work on normal and pathological inheritance; SANSON (450).

The theories of Weismann; DELAGE (126), HAACKE (202), HARTOG (215), MORGAN (361), ROMANES (429, 430), SPENCER (483, 484).

Some laws of heredity; BUCKMAN (77).

Recapitulation theory in biology; BUCKMAN (78).

Hymenoptera, heredity in the social colonies of: Embryological and palæontological evidence negative the idea that the various types in the colony are produced by the treatment accorded to the young by the workers, each generation for itself. "It is more probable that the basis of the entire community, the original fertile soldier, acquired his characters in the usual way, by use, and that all other forms have been derived from him by inheritance, modified by disuse and degeneracy, under the influence of variations in the food supply; COPE (106).

Telegony, citation of facts; FINN (159).

Heredity *versus* Evolution; GILMAN (183).

Theory of Gemmaria; HAACKE (202, 205).

Atavism, &c.; MANN (335).

Transmission of acquired characters: Modified activity of certain organs (*e.g.*, in Brown-Séguard's experiments on epilepsy) may perhaps result in the formation of certain products, probably ferments, which are taken up along with the germ-plasm and handed on. This accessory part of the germ-cell is called Zymoplasm; EMERY (147).—Coloration of Flat-fishes: "The disappearance of the pigment from the lower side in the normal flat-fish is an hereditary character, not due to the withdrawal of the action of light in the individual. . . . On the other hand, the fact that the pigment, after prolonged action of the light, actually reappears, is strong evidence that originally, in the beginning of the evolution, the pigment disappeared, in consequence of the withdrawal of the lower sides from the action of light. If so, an acquired character has become hereditary; CUNNINGHAM (116).

Cases supposed to illustrate transmission of acquired characters: A cow twisted its horn, a female calf showed same deformation. A peculiar way of holding the tail was traced from a mare through two generations. A pair of bulldogs were taught to carry; one of the offspring, sent away when quite young, exhibited carrying habit without any training; KNAUTHE (285, 286).

Inheritance of Mopsköpfigkeit in Cyprinoids; KNAUTHE (284).

Gold-carp: Evidence showing that the double-tailed races have arisen, in the first place, as a consequence of injuries inflicted during the early development of the eggs and embryos, and that the effects of these embryonic traumatism have become transmissible; RYDER (441).

Persistent loss of spore-forming function in *Bacillus anthracis*, as result of heat; PHISALIX (397).

Hereditary transmission of immunity; CHARRIN & GLEY (98).—Facts suggesting the transmission of immunity; CHARRIN & GLEY (187).

Inheritance of tuberculosis; GÄRTNER (175).

Malformation from pre-natal influence; WALLACE (525).

Adverse criticism of apparent cases of inherited results of mutilation; VOM RATH (412).

Supposed inheritance of acquired characters in domesticated animals. All experience against transmission of results of mutilation. Climatic variations in cattle are transmitted. Improbability that germ-plasm can remain uninfluenced by nutrition and metabolism of the body. But the author's argument lacks sufficiently precise appreciation of Weismannism; WILCKENS (548).

Removal of the maternal nucleus from an ovum removes the maternal heredity tendencies; BOVERI (55).

Non-inheritance of acquired characters; WALLACE (524).

Acquired character, phylogeny of; HYATT (269).

Congenital and adaptational characters; PACKARD (383).

Therapeutic effects of testicular extract, &c.; BROWN-SÉQUARD & D'ARSONVAL (71-74).

Report on teratology; WINDLE (552).

Double monstrosity: believed to be due to superfluity of germ-plasm

(determinants) existing in the germ, leading to a fission which is prior to that by which normal development is commenced. Superfluity of germ-plasm supposed to be due to faulty segmentation of the polar bodies, to faulty segmentation in spermatogenesis, or to polyspermy. Excess of growth without superfluity of parts depends upon different causes from those which produce double monstrosity; WINDLE (551).

9. EVOLUTION.

a. *General Subject.*

Herbert Spencer and Evolution-Philosophy; BAGER-SJÖGREN (13).

Darwin and Hegel; RITCHIE (424).

Useful summary of recent ætiological theories; KEELER (277).

The law of periodicity in evolution; HECKEL (222).

Delbœuf's law; BARON (27).

Factors in evolution; EMERY (147).—Restatement of position; EIMER (143).

Gestaltung und Vererbung: support of a position, on the whole Lamarckian; HAACKE (202).

Theory of gemmaria: the plasma of ovum, &c., consists of the smallest organised particles or gemmaria, built up of rhombic prisms (gemmae), formed of albuminoid molecules. The system of gemmaria is in internal equilibrium, but may be modified by external influences. As the gemmae change in arrangement, the gemmaria change in shape, and the animal varies. Fertilisation strengthens the system of gemmaria, and enables the offspring to ward off injurious influences more readily; HAACKE (202).

Theory of the modification of species; PFEFFER (395).

Energy as a factor. The energy factor or ergogeny (expressed in modes of growth) illustrated; RYDER (440).

The germ-plasm: elaboration of a general theory of evolution; WEISMANN (536).

Huxley on Nature and Man; SETH (472).

Man's place in nature, &c.; BALKWILL (16).

Man's place in Nature: Evidence for evolution; life in its lower and higher forms. The characteristics of human life. The relations of environment to life. Heredity and evolution. Sensory and rational discrimination. Animal and rational intelligence. Rational life; CALDERWOOD (85).

b. *Variation.*

[This subject is also largely referred to in various special Records.]

Classification of variations:—Primary variations, the result of intimate changes in the germ-plasm, from formation of new kinds of ids, or from alteration of the existing kinds; these are inherited and progressive, and may lead to new species. Secondary variations, arising from different

combinations of ids in amphimixis; these are inherited and lead to individual variations, or through isolation to new species. Tertiary variations, the result of environment, are not usually inherited; EMERY (147).

Problem of variation: "In the present state of knowledge it is a more irresistible conclusion that the changes produced in the soma ultimately affect the germ-cells, than that variations in the latter are due to variations of nutrition in some manner which no one has attempted to describe"; CUNNINGHAM (117).

General discussion of variation, reversion, &c.; KING (281).—Variability; MANN (335).—Anomalies in man and mammals; BLANC (40).

Material for study of variation, finger-prints. Apparent definiteness or determinateness of variation; GALTON (177).

Study of variation in colours of birds; KEELER (277).

An attempt to distinguish between "congenital characters" of caterpillars and "later adaptational characters"; PACKARD (383-386).

Teratological variations; WINDLE (553).

Laws of variation, in relation to harvest spider; WEED (534).

Variability and hybridism in Cyprinoids; HEINCKE (226).

c. Influence of Function and Environment.

General discussion; CALDERWOOD (85).

Crustaceans adapted to colour of surroundings; MALARD (333).

Influence of environment on development; SCHIMKEWITSCH (458).

"Mechanical genesis of the scales of fishes"; RYDER (443).

Influence of environment on colour of birds; KEELER (277).

Experiments on influence of light on coloration of flat-fishes; CUNNINGHAM (116).

Influence of running water and light on development of *Anura*; CAMERANO (86, 87).

Action of oxygen and compressed air on warm-blooded animals; PHILIPPON (396).

Relation of strength of stream to form of fishes; SCHIRSCHOFF (459).

Influence of nutrition in producing polymorphism of Termites; GRASSI & SANDIAS (188).

Effect of nutrition on fertility of worker wasps; MARCHAL (336). [See Sex and Reproduction.]

Effects of diminished nutrition on *Lepidoptera*, on individual, pupation, number of offspring, &c.; SEITZ (469).

Effect of food (modified plant pigments) on colour of Lepidopterous larvæ; POULTON (404).

Effect of warmth (of mills, &c.) on the multiplication of *Ephestia kuehniella*; DANYSZ (120).

Effects of temperature in pupal stage: Some, but not all of the characteristic colouring (in *Pieris napi*), depends not on whether the insect enters the pupal stage in spring or summer, but on the temperature to

which the individual pupa is exposed. In *Ohrysophanus phlœas* the principal effects on colour are produced not by long exposure to severe cold, but by exposure, during the active pupal changes, to great heat (producing duskiness) or moderate cold (producing vividness of colour, smallness of spots, enlargement of copper band on hindwings); MERRIFIELD (345).

Temperature of water, and number of vertebræ in fishes; JORDAN (272, 273).

Effects of cold on organisms: Freshwater fishes survived being frozen at -8° to -15° C. Frogs survived, -28° ; centipedes, -50° ; a snail, -120° ; frog ova, -60° ; Rotifers and Infusorians, -60° . Exposure to about -200° in liquefied air did not kill either germs or seeds. At -100° chemical processes cease; much more so in seeds, germs, and spores subjected to -200° . Yet many revived. Life is one of the constant forces of nature. It does not die as long as the structure in which it manifests itself is intact; PICTET (398).

Effect of cold on ova of *Ascaris*; SALA (447).

Transpiration and respiration in relation to the environment; DISSART (130).

Concentration of sea-water, its influence on activity of the heart. Increased concentration and consequent reduction in the amount of water in the cells lessens number of heart-beats, and *vice versa*; SCHIVELY (460).

Toxicity of water, according to Nägeli; VARIGNY (512).

Rudimentary eyes; KOHL (294).

Influence of function: morphological changes associated with the squatting posture; CHARLES (97).

Geotropism; JENSEN (271).—Heliotropism; LOEB (319).

Refer also to many researches under heading Experimental Embryology; e.g., DRIESCH (135), HERBST (233).

d. *Elimination, Selection, and Isolation.*

Inadequacy of natural selection; SPENCER (482).

Sufficiency of natural selection; WEISMANN (538).

Discussion of natural selection, isolation, &c. Definiteness of variation. Elimination the fact rather than selection; EMERY (147).

Emphasis on "constitutional selection," i.e., in the process of natural elimination those forms with less suitable *constitutions* go to the wall. Speculative suggestions as to origin of Mammalian characteristics; HAACKE (204).

Natural selection and Lamarckism; BALL (17).

Nutritive relations of *Lepidoptera*, interesting in connection with struggle for existence; SEITZ (469).

Secondary sexual characters: possibility of sexual characters granted in case of certain birds. But in polygamous birds, the females belong to the victor among rival males, and some of these birds are brightly adorned. Colour may be an index of male vigour, but this does not

account for patterns, &c. The importance of the blood in bringing all parts of the body into connection. Secondary sexual characters believed to be due to the varying reactions of the organs of the body to the chemical stimuli which pass out from the sexual organs by the blood; EMERY (147).

Sexual selection; KEELER (277).

Natural selection among men; AMMON (6), MUNRO (366).

Skin-parasites as factors in natural selection; SCHEWYRIEW (457).

Isolation: the Lizard genus *Tropidurus* in Galapagos Islands; BAUR (31).

e. *Particular Problems.*

Kinetogenesis of the limbs of Vertebrates; COPE (108).

Physical explanation of organic skeletal structures; DREYER (134).

Mechanical genesis of form of fowl's egg. Inquiry into the immediate conditions influencing shape of egg . . . or even type of placenta. In case of egg-shell, the author distinguishes (*a*) the development of a statical equilibrium (statogenetic), and (*b*) the kinetic results of movement in oviduct (kinetogenetic); RYDER (442).

"Mechanical" genesis of joints in Crustaceans, &c.; SHARP (473).

"Mechanical" evolution of metapodial keels of *Diplarthra*; WORTMAN (556).

Coloration: Albinism and melanism in Reptiles and Amphibians; WERNER (542).—Markings of fish; SAVILLE-KENT (454).—Coloration of flat-fishes: "These investigations afford support to the view that the incidence of light is the reason why the upper and dorsal surface of animals is more strongly pigmented than the lower or ventral throughout the animal kingdom, and that the absence of light is the cause of the disappearance of pigment in many cave-inhabiting and subterranean animals;" CUNNINGHAM & MACMUNN (118).—Colours of birds: Pigments, probably waste-products, vary in different groups; natural and sexual selection combine and re-arrange the limited assortment. Law of assortment of pigments: the primitive colour is a composite, which, when more or less completely resolved into its component elements, gives the specialized tints of the species or genus; KEELER (277).

Evolution of pigments in *Lepidoptera*, &c.: The simplest pigments are greenish-yellow to yellow; with increasing molecular weight in the pigments, orange, red, violet, blue, and green may successively arise. Sometimes in the ontogenetic succession of colour there is a recapitulation of the phylogenetic process [*Cf.* p. 40, Physiological]; URECH (508).

Luring colours in animals; STRUBELL (496).

Protective adaptations; HORNELL (253).—Protective colouring in birds; FABANI (155).—Protective colour in Lepidopterous larvæ; GOULD (197).—Colour-change in animals which turn white in winter; SCHWALBE (466).—Variations in colours of cocoons in reference to theories of protective colouration; BATESON (29).

Mimicry : NEWTON (376).—Mimicry in general, and in *Papilionidæ* in particular ; HAASE (206).—Aggressive mimicry in *Volucella* ; LATTE (309).—Mimicry in the struggle for existence ; SEITZ (470).

Questions as to special liability of the female to become mimetic, as to the divergent conditions under which mimicry appears in closely-related species, as to relation between selection and variation in the production of mimicry. [Abstract, with special reference to *Hypolimnas*.] ; SWINHOE (501).

Particular cases : Evolution of Termite societies ; EMERY (148).

Illustrations of convergence, or the occurrence of similar (homoplastic) adaptations in unrelated forms ; WERNER (541).

Speculations on the origin of mammals ; HAACKE (204).

Origin of hair ; WEBER (530).

Origin of *Crustacea*, *Hydromedusæ*, &c. ; BROOKS (69).

Blind fish ; RITTER (425).

Evolutionary discussion of the larvæ of moths ; PACKARD (383–386).

Power of swimming in animals ; ROBINSON (426).

Suggests that as his abnormal Echinoid larvæ form a graded series, so a gradual series of adults does not, in itself, prove continuous descent ; the series may have arisen because different forms have reacted in varying degrees to the same influences ; HERBST (233).

Origin of Chordata and other phylogenetic problems ; BROOKS (69).

Phylogeny of *Vertebrata* ; COPE (107).

Hairs and scales ; EMERY (150).—Origin of hairs and scales ; WEBER (530).—Scales of mammals ; WEBER (532) and RÖMER (427).

II. MAMMALIA.

BY

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

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THE most important event of the year the Recorder has to notice is undoubtedly the completion of Zittel's "Palæontologie," which will, for many years, remain the standard compendium of the palæontological history of Mammals.

In systematic work, the year has been noteworthy for the large number of species (whether in all cases valid, it is not for the Recorder to say) of recent Mammals that have been described. Among the most interesting of these is a new genus of Rodents—the fish-eating Murine (*Ichthyomys*); and next to this may be mentioned a new *Sminthus* from Kashmir, and a second species of the African Viverrine genus *Nandinia*. All these forms have been brought to notice by THOMAS; and it may be added that the bulk of the new species of the year have been described by the latter, ALLEN, and MATSCHIE. Mention must, however, also be made of the new Stag from the neighbourhood of Lhasá, described by BLANFORD. A prominent place in the year's systematic work is likewise occupied by FORSYTH MAJOR, who has not only made a complete revision of the classification of the Squirrel family, but has likewise described the curious, and apparently but recently exterminated, Malagasy

lemuroid *Megaladapis*. From a distributional point of view the recorded occurrence of *Mellivora* in Transcaspia is of considerable interest; and our knowledge of the Mammalian fauna of Africa has received considerable additions from the labours of MATSCHIE, SCLATER, and THOMAS. Among anatomical work, the investigations of BEDDARD on the brain of the *Proboscidea*, and of DEBIERRE and BOLE on that of the *Carnivora* deserve special mention.

The subject of the development and homology of teeth continues to attract a large number of workers. OSBORN'S paper on this subject and the general evolution of Mammals will be found of more than ordinary interest, as are his researches on the dentition of the Cretaceous Mammals of the Laramie beds. From the circumstance that the permanent teeth of the Marsupials are believed to belong to the first series, this author states that Placentals cannot have had a Marsupial origin. On the other hand, KLAATSCH'S interesting investigations regarding the existence of vestiges of a marsupium in Placentals, lead him to draw precisely the opposite conclusion.

As regards fossil forms, DAMES'S memoir on the Zeuglodonts is one of prime importance, not less from a classificatory point of view than from the evidence he adduces as to the presence of a dermal armour in these Cetaceans. Dermal armour of another kind has led FILIOL to believe in the presence of loricated Edentates among the Quercy Phosphorite fauna; and even if his conclusions on this point be not upheld, it would seem that he has proved that pangolins and aard-varks inhabited France at the epoch in question. Not less noteworthy is TOULA'S discovery of remains of Titanotheres, hitherto regarded as an exclusively North American group, in the Tertiary of the Balkans.

I.—TITLES.*

- ALESSANDRINI, G. Prime Notizie Anatomiche di un *Tragulus* morto in Roma. Boll. Soc. Rom. Zool. ii, pp. 141-149.
- . Notizie Anatomiche sulle Glandole annesse all' Apparato Digerente del *Tragulus meminna*, Erxl. *T. c.* pp. 269-271.
- ALLEN, H. Introduction to a Monograph of the North American Bats. P. U. S. Mus. xvi, pp. 1-28.
- . Notes on the Genera of *Vespertilionidæ*. *T. c.* pp. 29-31.
- ALLEN, J. A. Descriptions of Four New Species of *Thomomys*, with remarks on other Species of the Genus. Bull. Amer. Mus. v, pp. 47-68. [See p. 32, *Geomyidæ*.]

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

[ALLEN, J. A.] List of Mammals and Birds collected in North-eastern Sonora and North-western Chihuahua, Mexico, on the Lumholtz Archæological Expedition. *T. c.* pp. 27-42.

Notices 16 species of Mammals, among which a *Sciurus* is described as new. [See p. 30, *Sciuridæ*.]

— List of Mammals collected by Mr. Charles P. Rowley in the San Juan Region of Colorado, New Mexico, and Utah, with Descriptions of New Species. *T. c.* pp. 69-84.

Chronicles 34 species, among which 5 Rodents are new. [See p. 31, *Muridæ*, and p. 33, *Dipodidæ*.]

— On a Collection of Mammals from the San Pedro Martir Region of Lower California, with Notes on other Species, particularly of the Genus *Sitomys*. *T. c.* pp. 181-202.

Of the 20 forms recorded, 3 *Sitomys*, a *Tamias*, and a *Scapanus* are new. [See p. 27, *Talpida*, p. 30, *Sciuridæ*, and p. 31, *Muridæ*.]

— Further Notes on Costa Rica Mammals, with Description of a New Species of *Oryzomys*. *T. c.* pp. 237-240. [See p. 31, *Muridæ*.]

— Description of a New Species of Opossum from the Isthmus of Tehuantepec, Mexico. *T. c.* pp. 235 & 236. [See p. 42, *Didelphyidæ*.]

— Description of a new Mouse from Lake County, California. *T. c.* pp. 335 & 336. [See p. 31, *Muridæ*.]

— Description of a New *Geomys* from Costa Rica. *T. c.* pp. 337 & 338. [See p. 32, *Geomyidæ*.]

— & CHAPMAN, F. M. On a Collection of Mammals from the Island of Trinidad, with Descriptions of New Species. *T. c.* pp. 203-234.

34 species, of which 9 are new, are noticed, and a complete list of the Mammalian fauna of the island is given. [See p. 27, *Phyllostomatidæ*, p. 31, *Muridæ*, and p. 33, *Octodontidæ*.]

AMEGHINO, F. Apuntes Preliminares sobre el Genero *Theosodon*. *Rev. Jard. Zool. B. Ayres*, i, pp. 20-29, fig. [See p. 34, *Macraucheniidæ*.]

— Les Premiers Mammifères (Relations entre les Mammifères Diprotodontes Éocènes de l'Amérique du Nord et ceux de la République Argentine). *Rev. Gen. Sci.* iv, pp. 77-81, figg. [See p. 42, *Multituberculata*.]

— Les Mammifères Fossiles de la Patagonie Australe. *Rev. Scient.* li, pp. 13-17 & 731. Translated *Amer. Natural.* xxvii, pp. 439-449.

Extracts from a letter to Trouessart, in which, after discussing the age of the Santa Cruz deposits, the author gives notes on the Ungulates, and some other Patagonian Mammals. *Theosodon* (an ancestral form of *Macrauchenia*) is stated to be pentedactylate; and the same is asserted to

be the case with *Homalodontotherium*, in which, however, the terminal phalanges are said to be like those of *Chalicotherium*, of which the genus is regarded as an ancestor. Among the *Proterotheriida*, *Theosodon* is declared to be monodactyle; while *Ribodon*, originally described as a Tapiroid, is referred to the *Sirenia*. Notes on the Marsupials and Rodents of the Santa Cruz beds are likewise given; and a remarkable humerus is stated to possess characters connecting the Monotremes with the lower Vertebrates. Certain new generic and specific names are proposed, but as these are neither defined nor refer to particular specimens which can be identified in Museums, they have no status, and accordingly are not quoted here.

[AMEGHINO, F.] Sobre la Presencia de Vertebrados de Aspecto Mesozóico en la Formacion Santacruzéna de la Patagonia Austral. Rev. Jard. Zool. B. Ayres, i, pp. 76-84.

In the course of this paper the author describes two humeri from the Santa Cruz beds of Patagonia, which he regards as indicating as many genera of *Monotremata* [q. v. p. 42].

ANONYMOUS. The Nearctic Region and its Mammals. Nat. Sci. iii, pp. 288-292.

A critical paper, dealing with the views recently propounded by Hart Merriam & J. A. Allen.

BAILEY, V. The Prairie Ground-Squirrels, or Spermophiles of the Mississippi Valley. Bull. Dep. Agric. Ornith., No. 4, 70 pp., 3 pls., 4 maps.

BALL, V. Lion-Tiger and Tiger-Lion Hybrids. Nature, xlvii, pp. 390-392, 607, & 608.

BALLET, —. Note sur les Caractères qui distinguent les Races dans les Animaux Domestiques. Mem. Ac. Sci. Toulouse (2) iv (1892), pp. 102-121.

BEAUREGARD, H. Note sur une *Balaenoptera sibbaldii* échouée à Ouessant. C.R. Soc. Biol. (2) v, p. 274.

This specimen—a male—measuring 30 metres in length, was stranded on February 23rd.

— . Note sur deux Lois qui fait ressortir l'Étude Morphologique du Système Dentaire des Carnivores. T. c. pp. 784 & 785.

The author states (1) "C'est toujours à la mâchoire inférieure que se manifeste le plus nettement le caractère propre à la dentition d'un genre déterminé." And (2) "Chez tous les carnivores à régime purement carnassier, il existe sur la voûte palatine, de chaque côté, entre la carnassière et la molaire suivante une fosse profonde qui reçoit le tubercle principal de la carnassière inférieure. Cette fosse disparaît chez les espèces à régime plus ou moins complètement frugivore."

[BEAUREGARD, H.] Recherches sur l'Appareil auditif chez les Mammifères. J. Anat. Physiol. xxix, pp. 180-222, pls. iv-vi.

The first portion of a detailed anatomical survey of the auditory region in a large number of Mammals.

BEDDARD, F. E. Contributions to the Anatomy of the Anthropoid Apes. Tr. Zool. Soc. Lond. xiii, pp. 177-218, pls. xx-xxviii. [See p. 24, *Primates*.]

— On the Brain of the African Elephant. P. Zool. Soc. London, 1893, pp. 311-315, pls. xxii & xxiii.

*BLANC, L. Les Anomalies chez l'Homme et chez les Mammifères. Paris: 1893, 8vo.

— Sur la Valeur Morphologique des Cornes chez le Cheval. C.R. Soc. Biol. (2) v, pp. 725 & 726.

The minute horns, or bony prominences, occasionally found on the frontals of the horse, are considered to be the vestiges of horns homologous with those of the Ruminants.

BLANFORD, W. T. On a Stag, *Cervus thoroldi*, from Tibet, and on the Mammals of the Tibetan Plateau. P. Zool. Soc. London, 1893, pp. 444-449, pl. xxxiv. [See p. 37, *Cervidæ*.]

BOLE, E. [See DEBIERRE.]

BOULE, M. Description de l'*Hyæna brevirostris* du Pliocène de Sainzelles, près Le Puy (Haute Loire). Ann. Sci. Nat. (7) xv, pp. 85-97, pl. i.

BRYDEN, H. A. Gun and Camera in Southern Africa: a year of wanderings in Bechuanaland, the Kalahari Desert, and the Lake River country, Ngamiland, with notes on colonization, natives, natural history, and sport. London: 1893, 8vo, 544 pp., illustrations.

Contains notices of several South African Mammals, and a special chapter on the present habitat of the Giraffe, and the prospect of its extermination.

BÜCHNER, E. Ueber eine neue Katzen-Arten (*Felis pallida*) aus China. Bull. Ac. St. Petersb. (2) iii, pp. 433-435. [See p. 28, *Felidæ*; the other two papers by this author in the same volume are noticed in Zool. Rec. xxix.]

— Ueber das Vorkommen der *Mellivora indica* in Transcaspi-Gebiet. Notes Leyden Mus. xv, pp. 99-102.

CAPELLINI, G. Nuovi Resti di Zifoidi in Calabria e in Toscana. Rend. Acc. Lincei, ii, pp. 283-288. [See p. 39, *Physeteridæ*.]

CARLIER, E. W. Histology of the Hedgehog (*Erinaceus europæus*). J. Anat. Physiol. norm. path. xxvii, pp. 169-178, 354-360, & 508-519, pls. xi, xxi, xxvi, & xxvii.

CATTANEO, G. Sull' Anatomia dello Stomaco del *Pteropus medius*. Atti Soc. Ligustica, iv, pp. 142-149.

— [See also PARONA & CATTANEO.]

CHAPMAN, A., & BUCK, W. J. Wild Spain : España Agreste : Records of Sport with Rifle, Rod, and Gun, Natural History, and Exploration. London : 1893, 8vo, xx, 472 pp., illustrations.

Contains an illustrated account of *Capra pyrenaica*, together with notices of several other Mammals.

CHAPMAN, F. M. Description of a New Subspecies of *Oryzomys* from the Gulf States. Bull. Amer. Mus. v, pp. 43-46. [See p. 31, *Muridae*.]

— Description of Two New Races of Mammals from Florida, with Remarks on *Sitomys niveiventris*, Chapman. T. c. pp. 339-341. [See p. 27, *Talpidae*, and p. 27, *Muridae*.]

— [See also ALLEN & CHAPMAN.]

CHAPMAN, F. R. Notes on the Depletion of the Fur-Seal in the Southern Seas. Canad. Rec. v, pp. 446-459.

CHAPMAN, H. C. Notes on *Chæropsis liberiensis* (Morton). P. Ac. Philad. 1893, pp. 185-187, pl. iv. [See p. 38, *Hippopotamidae*.]

CHRISTIANI, H. Nouvelles Recherches sur les Organes Thyroïdiens des Rongeurs. C.R. Soc. Biol. (2) v, pp. 4 & 5.

CHYZER, C. Reliquiæ Petenyianæ. Termes Fuzetek, v (1881), p. 91, 1882.

This paper, although there is nothing in the title to show it, consists of an account, based on the manuscripts left after his death by Dr. Petenyi, of the *Muridae* found in Hungary, and contains the descriptions of four new species. With the exception of some short Latin "notæ specificæ," it is written throughout in Hungarian, and hitherto omitted from Zool. Rec. [See p. 31, *Muridae*.]

COKE, J. H., & WOODWARD, A. S. The Har Dalam Cavern, Malta, and its Fossil Contents. P. R. Soc. London, liv, pp. 274-283.

The remains include *Ursus*, *Canis*, *Hippopotamus*, and *Cervus*.

COLENZO, W. Observations on Mr. T. White's paper, "On the Native Dog of New Zealand." Tr. N. Zealand Inst. xxvi, pp. 495-503.

COPE, E. D. Preliminary Report of the Vertebrate Palæontology of the Llano Estacado. Rep. Geol. Surv. Texas for 1892, pp. 1-87, pls. i-xxiii.

Contains descriptions of remains of a large number of extinct Mammals, the majority of which have been previously named. Among the most interesting is the hyæna-like *Borophagus*. [See p. 28, *Felidae*, *Hyanidae*, and *Canidae*, p. 29, *Mustelidae*, p. 38, *Camelidae* and *Dicotylidae*, p. 36, *Equidae*, p. 34, *Elephantidae*.]

- [COPE, E. D.] The Genealogy of Man. Amer. Natural, xxvii, pp. 316-335, pl. ix.
- On a New Pleistocene Sabre-Tooth. *T. c.* pp. 896 & 897. [See p. 29, *Felidæ*.]
- CORDIER, J. Sur l'Estomac du Cerf de David. C.R. Soc. Philom. 1893, No. 3, pp. 4 & 5.
- Sur l'Anatomie comparée et du Réseau chez les Ruminants. *T. c.* No. 10, pp. 6-8.
- Observations anatomiques sur la Gouttière dite œsophagienne de l'Estomac de quelques Mammifères. Bull. Soc. Philom. (8) v, pp. 59-61.
- Recherches sur l'Anatomie comparée de l'Estomac des Ruminants. Ann. Sci. Nat. (7) xvi, pp. 1-128, pls. i-vi.
- DAMES, W. Ueber Zeuglodonten aus Ägypten und die Beziehungen der Archæoceten zu den übrigen Cetacoen. Pal. Abh. (2) i, pp. 189-222, pls. xxx-xxxvi. [See p. 40, *Zeuglodontidæ*.]
- DANYSZ, J. Les Campagnols. Rev. Scient. lii, pp. 338-340.
Chiefly relates to periodical invasions of field-voles.
- DAVATZ, F. *Mus poschiavinus*, Fatio. (Puschlaver—oder auch Tabakmaus genannt). Jahresber. Ges. Graubund. (2) xxxvi, pp. 95-103.
Shown to be a variety of *M. musculus*.
- DEBIERRE, C., & BOLE, E. Essai sur la Morphologie comparée des Circonvolutions cérébrales de quelques Carnassiers. J. Anat. Physiol. xxix, pp. 637-662.
In this important memoir the authors take cognizance of fossil as well as recent forms, and are led to conclude that foxes have an origin apart from wolves and dogs; the one group having probably been derived from *Cynodictis*, and the other from *Amphicyon*. They also uphold the view that the *Felidæ* are intimately allied to the *Mustelidæ*, probably through the intervention of the *Viverridæ*.
- DEPÉRET, C. Sur l'Age absolu des Faunes de Mammifères Pliocènes du Plateau central et des Éruptions Volcaniques contemporaines. C.R. Soc. Geol. France, 1893, pp. xciv-xcvi.
Distinguishes in Europe two Pliocene faunas, the one characterized by *Hipparion*, *Hycænarctos*, &c., and the other by *Equus*, *Bos*, and *Elephas*.
- DE VIS, C. W. Note on the Upper Incisor of *Phascolonus*. P. Linn. Soc. N. S. Wales (2) viii, pp. 11 & 12, pl. i. [See p. 41, *Phascologyidæ*.]
- DONNEZAN, A. Découverte du *Mastodon borsoni* en Roussillon. C.R. Ac. Sci. cxvi, pp. 538 & 539.

- DUVAL, M. Le Placenta des Carnassiers. *J. Anat. Physiol.* xxix, pp. 249-340, 425-465, & 663-729, pls. vii-xi & xiii.
- EARLE, C. The Evolution of the American Tapir. *Geol. Mag.* (3) x, pp. 391-396.
- . Some Points in the Comparative Osteology of the Tapir. *Science*, xxi, p. 118.
- . On the Systematic Position of the Genus *Protogonodon*. *Amer. Natural*, xxvii, pp. 377-379. [See p. 38, *Pantolestidae*.]
- . [See also WORTMAN & EARLE.]
- *ELLENBERGER, W., & BAUM, H. Topographische Anatomie des Pferdes ; mit besonderer Berücksichtigung der tierärztlichen Praxis. Part I, Die Gliedmassen, 290 pp., 82 figg. Berlin : 1893, 8vo.
- EVERETT, A. H. A Nominal List of the Mammals inhabiting the Bornean Group of Islands. *P. Zool. Soc. London*, 1893, pp. 492-496.
- EWART, J. C. The Development of the Skeleton of the Limbs of the Horse, with Observations on Polydactyly. *J. Anat. Physiol. norm. path.* xxviii, pp. 236-256.
- FILHOL, H. Observations concernant quelques Mammifères fossiles nouveaux du Quercy. *Ann. Sci. Nat.* (7) xvi, pp. 129-150, figg.
- Describes remains from the Quercy Phosphorites referred to extinct genera of *Dasypodidae*, *Manidae*, and *Orycteropodidae*. The various genera and species are not defined, nor even named in the text, their names being given under the figures of the types. Neither is it shown how the skull described as *Leptomantis* differs from the humerus on which *Necromantis* is founded. *Schizotherium* is shown to be a chalicotheriid. [See p. 35, *Chalicotheriidae*, p. 41, *Dasypodidae*, *Manidae*, and *Orycteropodidae*.]
- . [See also GRANDIDIER & FILHOL.]
- FISHER, W. H. Investigations of the Burrows of the American Marmot (*Arctomys monax*). *J. Cincinnati Soc.* xvi, pp. 105-123, pls. vi-x.
- FORBES, H. O. Observations on the Development of the Rostrum in the Cetacean Genus *Mesoplodon*, with Remarks on some of the Species. *P. Zool. Soc. London*, 1893, pp. 216-236, pls. xii-xv.
- FRAAS, E. Die Irfelhöhle in Brenzthale (Württemberg). *Zeitschr. deutsch. geol. Ges.* xlv, pp. 1-14.
- Describes remains of numerous Mammals found in association with those of Man from the cavern in question. It is shown that the Reindeer was undoubtedly a contemporary in this district of the Mammoth, Woolly Rhinoceros, and Cave-Hyæna.
- FRANCAVIGLIA, M. C. Notizie anatomiche sul *Bradypus tridactylus*, L., var. *ustus*, Lesson. *Boll. Soc. Rom. Zool.* ii, pp. 126-137.

- FREUND, P. Contributions to the Development of the Tooth-Rudiments in Rodents. *Ann. Nat. Hist.* (6) xi, pp. 301-326.
A translation of the paper quoted in *Zool. Rec.* xxix, *Mamm.* p. 33.
- GADOW, H. Notes on the Fauna of North-Western Spain. *Zool. Jahrb. Syst.* vii, pp. 329-340, pl. xii.
Notes on the Mammals, with a figure of *Capra pyrenaica*.
- GAUDRY, A. L'Éléphant de Durfort. Volume Centenaire de la Fondation du Muséum d'Histoire Naturelle. 25 pp., 1 pl.
Describes a skeleton of *Elephas meridionalis* in the Paris Museum, believed to be the largest on record.
- GRANDIDIER, A., & FILHOL, H. Observations relatives aux Ossements d'Hippopotames trouvés dans le Marais d'Ambolisatra à Madagascar. *Ann. Sci. Nat.* (7) xvi, pp. 150-176. Uncompleted.
- GULDBERG, G. Zur Kenntniss des Nordkapers (*Eubalena biscayensis*). *Zool. Jahrb. Syst.* vii, pp. 1-22, pls. i & ii.
- GURICH, —. Ueber die Quartäre Säugethier-fauna von Venezuela, und ueber Nordamericanische Mastodonten. *Jahresber. Schlesisch. Ges.* 1892, pp. 8-10.
Records the occurrence of genera of Mammals similar to those of the Argentine pampas in Venezuela.
- HAACKE, W. Ueber die Entstehung des Säugethieres. *Biol. Centralbl.* xiii, pp. 719-732.
The continuation and conclusion of an earlier dissertation on the relationship of the Mammals to the lower Vertebrates.
- HARTING, J. E. Report of the Departmental Committee appointed by the Board of Agriculture to enquire into a Plague of Field Voles in Scotland. London: 1893, 98 pp., illustrated ("Blue-Book"), and *Zoologist* (3), xvii, pp. 121-138.
— Observations on the common Field Vole of Thessaly (*Arvicola guentheri*). *T. c.* pp. 139-145.
— The British Marten (*Martes sylvatica*, Nilsson). *T. c.* pp. 161-163.
- HATCHER, J. B. The Titanotherium Beds. *Amer. Natural*, xxvii, pp. 204-221.
In describing these beds, the author enters into a discussion as to the horizons in which the species of these Mammals occur, and considers the relations of the species to one another.
- HENNICKE, C. R. Ein Beitrag zur Anpassungs-theorie. *Zool. Garten*, xxxiv, pp. 97-107, figg.
Contains figures and descriptions of the auditory ossicles of several Mammals.
- HEPBURN, D. The Mammary Gland in a Gravid Porpoise. *J. Anat. Physiol. norm.-path.* xxviii, pp. 19-24.

HERRICK, C. L. The Mammals of Minnesota. Bull. Geol. Surv. Minnesota, No. 7 (1892), 301 pp., 8 pls.

A scientific and popular account of their features and habits.

HOFMANN, A. Die Fauna von Görriach. Abh. geol. Reichsanst. xv, pt. 4, 87 pp., 17 pls.

An important detailed and fully illustrated memoir on the Miocene fauna of Görriach, Styria. 35 species of Mammals are recognized, 6 of which are described as new. [See p. 26, *Rhinolophidae*, p. 30, *Sciuridae*, p. 31, *Myozidae*, p. 38, *Cervidae*, and p. 36, *Tapiridae*.]

HOSE, C. A Descriptive Account of the Mammals of Borneo. Diss. Norfolk : 1893, 8vo, 78 pp., map, and 3 plates.

Contains a description of all the Bornean Mammals, with notes on their range and habits.

— Description of a new Deer from Mount Dulit, Eastern Sarawak. Ann. Mag. Nat. Hist. (6) xii, p. 206. [See p. 37, *Cervidae*.]

HOWES, G. B. On the Coracoid of the terrestrial Vertebrates. P. Zool. Soc. London, 1873, pp. 585-592.

It is proposed to apply the term coracoid to the whole of the ventral cartilaginous bar of the shoulder-girdle, and to call the anterior element in the bicoracoidal forms the epicoracoid, and the posterior portion the metacoracoid.

— On the Mammalian Pelvis, with especial reference to the Young of *Ornithorhynchus anatinus*. J. Anat. Physiol. norm.-path. xxvii, pp. 544-556, pl. xxviii.

The author records the presence of a *sacral arcade*, or passage bounded above and below by processes of the first sacral vertebra and externally by the ilium, in the pelvis of *Ornithorhynchus*, as well as in a few other Mammals. The second portion of the paper is devoted to some general considerations connected with the structure of the pelvis.

HOWORTH, [SIR] H. H. The True Horizon of the Mammoth. Geol. Mag. (3) x, pp. 161-163 & 353-355.

A rejoinder to the paper by Stirrup, quoted below, in which the author maintains his views as to the pre-glacial age of the Mammoth.

IHERING, H. Os Mammíferos do Rio Grande do Sul. Rio Grande do Sul, 1893, pp. 96-123.

This is recorded from a separate copy, but we do not know from what periodical it is extracted. Possibly it may be "Anuario do Dr. Graciano de Azambuga para 1893." A new species of Opossum is described. [See p. 42, *Didelphyidae*.]

JENTINK, F. A. On some Mammals from Cahama. Notes Leyden Mus. xv, pp. 262-265, pls. iv-vi.

Records *Cercopithecus cynosurus*, *Ratelus leuconotus*, *Vulpes mesomelas*, and several other Mammals from this part of Africa; skulls of some being figured.

[JENTINK, F. A.] On a Collection of Bats from the West Indies. *T. c.* pp. 278-282. [See p. 27, *Phyllostomatidae*.]

JOHNSON, G. L. Observations on the Refraction and Vision of the Seal's Eye. *P. Zool. Soc. London*, 1893, pp. 719-723.

JOLYET, —. Recherches sur la Respiration des Cétacés. *C.R. Soc. Biol.* (2) v, pp. 655 & 656.

A captive specimen of *Turiops tursio* enabled observations to be made as to the volume of expiration, the rate of oxygenation, and the general mechanism of Cetacean respiration.

KERMODE, P. M. C. Contributions to a Vertebrate Fauna of the Isle of Man. *Zoologist* (3) xvii, pp. 61-70.

KEITH, A. The Ligaments of the Catarhine Monkeys, with references to corresponding Structures in Man. *J. Anat. Physiol. norm.-path.* xxviii, pp. 149-168.

KLAATSCH, H. Ueber Marsupialrudimente bei Placentaliern. *Morphol. Jahrb.* xx, pp. 276-288.

The rudimentary structures alluded to seem clearly to indicate that during their evolution Placentals have passed through a Marsupial stage.

— —. Neues ueber Mammartaschen. *Morphol. Jahrb.* xx, p. 112.

A supplemental note to an earlier paper.

KOKEN, E. Beiträge zur Kenntniss der Gattung *Nothosaurus*. *Zeitschr. deutsch. geol. Ges.* xlv, pp. 337-377, pls. vii-xi.

The author makes certain critical observations as to the homology of the elements in the shoulder-girdle of the *Monotremata* (see p. 42).

KÜRENTHAL, W. Entwicklungsgeschichtliche Untersuchungen am Pinnipiedergerisse. *Jena. Zeitschr.* (2) xxviii, pp. 76-118, pls. iii & iv.

A long technical discussion, with original observations on the development and homology of the teeth of the group in question, in which Bateson's theory of cleavage, as exemplified in *Ommatophoca rossi*, is taken into account.

LANGKAVEL, B. Das Alpenmurmeltier. *Zool. Garten*, xxxiv, pp. 1-4.

— —. *Bubalis*, Lichtenstein. *T. c.* pp. 200-206.

— —. Die Gemse. *T. c.* pp. 267-277.

— —. *Bison americanus*. Verbreitung und Ausrottung. *T. c.* pp. 353-363.

LATASTE, F. Le Système dentaire du genre *Daman*, à propos du Mémoire de M. F. Woodward, intitulé "On the Milk-Dentition of *Procapra (Hyrae) capensis*, and of the Rabbit, with Remarks on the Relation of the Milk- and Permanent-Dentitions of the *Mammalia*." *Act. Soc. Chili*, ii, pp. clxx-clxxii.

Criticises some of the statements in the paper by Woodward, quoted in *Zool. Rec.* xxix, *Mamm.* p. 38.

LAVOCAT, A. Système dentaire des Animaux Vertèbres. Mem. Ac. Sci. Toulouse (2) v, pp. 1-21.

— . Discussion sur quelques Muscles des Mammifères. *T. c.* pp. 542-559.

LECHE, W. Nachtrage zu "Studien über die Entwicklung des Zahn-systems bei den Säugethieren." *Morphol. Jahrb.* xx, pp. 113-142.

Supplemental observations on the author's views of tooth-development, relating to *Myrmecobius*, the *Chiroptera*, *Pinnipedia*, and *Edentata*. The vestiges of a tooth-succession are indicated in the latter group.

LEE, R. B. A History and Description of the Modern Dogs (Sporting Division) of Great Britain and Ireland. London: 1893, 8vo, 584 pp., pls.

LENHOSSEK, — v. Die Geschmacksknospen in den blattformigen Papillen der Kaninchenzunge. *Verh. Ges. Würzburg*, xxvii, No. 5, 76 pp., 1 pl.

LITTLEDALE, H. Notes on Wild Dogs, &c. *J. Bombay Soc.* vii, pp. 494-511.

Mainly a compiled and sporting account.

LYDEKKER, R. The Royal Natural History. London: 8vo, illustrated, vol. i, pts. 1 & 2, Mammals.

A popular history of animals, illustrated with coloured plates and engravings, of which a large proportion are from the third edition of Brehm's "Tierleben." The second part brings the work down to the *Hapalide*.

— . Horns and Hoofs; being Chapters on Hoofed Mammals. London: 1893, 8vo, 411 pp., illustrated.

Contains chapters on wild Oxen, wild Sheep, wild Goats, African Antelopes, the Antelopes of Asia, the Deer of Asia, South American Deer, wild Pigs, and Rhinoceroses, reprinted (with additions) from the *Field* and *Land and Water*.

— . On a Mammalian Incisor from the Wealden of Hastings. *Quart. J. Geol. Soc.* xlix, pp. 281-283.

The tooth described and figured is provisionally assigned to the Multi-tuberculate Purbeckian genus *Bolodon*.

— . Note on the Coracoidal Element in Adult Sloths, with remarks on its Homology. *P. Zool. Soc. London*, 1893, pp. 172-174.

After describing and figuring the shoulder-girdle of an adult *Bradypus*, in which there is a distinct coracoid, the author shows that the bone in the Monotremes, commonly denominated the pre-, or epicoracoid, is really the coracoid, while the one termed coracoid should be designated metacoracoid.

MAGGI, L. Intorno al Foro Pituitario Etnocranio nei Mammiferi. *Rend. Ist. Lombardo* (2) xxvi, pp. 703-722.

MAJOR, C. J. FORSYTH. On some Miocene Squirrels, with Remarks on the Dentition and Classification of the *Sciurinae*. P. Zool. Soc. London, 1893, pp. 179-215, pls. viii-xi.

After an elaborate review of the dentition of recent Squirrels, and the classification of the group, together with a description of certain fossil forms, the author proceeds to give his reasons for rejecting the view that trituberculism is the primitive type of Eutherian molar dentition. On the contrary, he regards the primitive condition as that of polybunism. The single tubercles of cusps in the primitive type are considered to have been arranged in longitudinal series (tinotaxis), divided by longitudinal grooves, or valleys, there being generally three rows, with two grooves in the upper, and two rows, with one groove, in the lower molars. *Microlestes* may prove to have been a remote ancestor of the *Eutheria*. From the polybunic molar it is considered that the other types of Placental cheek-teeth have originated by a gradual transformation of the longitudinal arrangement of the cusps into a transverse one (chiasotaxis), and the dominant development of a limited number, as well as by the fusion and suppression of others, although certain of these persist in a secondary condition with great constancy. In the upper molars two cusps on the outer side, and either one or two on the inner side are the most developed. The typical tritubercular molar is a specialized stage, frequently preceded by the trigonodont type of Rüttimeyer. The supposition that the talon or heel of the lower molars is a superadded element, is disputed; but it cannot yet be determined which of all the cusps of the primitive polybunic molar represents the simple conical Reptilian tooth. [See p. 29, *Sciuridæ*.]

— On *Megaladapis madagascariensis*, an Extinct Gigantic Lemuroid from Madagascar. P. R. Soc. London, liv, pp. 176-179. [See p. 26, *Megaladapidæ*.]

— On a Subfossil Lemuroid Skull from Madagascar. P. Zool. Soc. London, 1893, pp. 532-535. [See p. 26, *Lemuridæ*.]

MARSH, O. C. Description of Miocene *Mammalia*. Amer. J. Sci. (3) xlv, pp. 407-412, pls. vii-x.

Describes and figures remains of *Protoceras*, *Elotherium*, *Ammodon*, *Percherus*, *Colodon*, and *Rhinoceros*. [See p. 38, *Charopotamidæ*.]

— Restoration of *Coryphodon*. T. c. pp. 321-326, pls. v & vi, and Geol. Mag. (3) x, pp. 481-487, pl. xviii.

— Restoration of *Mastodon americanus*, Cuvier. Geol. Mag. (3) x, p. 164, pl. viii.

Reprint of a paper quoted in Zool. Rec. xxix.

MATSCHIE, — Ueber die weissnasigen Meerkatzen. SB. Ges. naturf. Berlin, 1893, pp. 94-101.

Gives a descriptive list of the various white-nosed species of *Cercopithecus*.

[MATSCHIE, —.] Ueber die Verbreitung der zur Gattung *Oryx*, Blainville, gehörigen Antilopen. SB. Ges. naturf. Berlin, 1893, pp. 101–104.

— Ueber einige von Herrn O. Neumann bei Aden gesammelte u. beobachtete Säugethiere. *T. c.* pp. 24–31.

Mentions *Papio hamadryas*, *Cynonycteris straminea*, and *Hystrix africa-australis*.

— Ueber Zwei von Schreber beschriebene Affen, und ueber einige auscheinend neue Säugethiere von Afrika. *T. c.* pp. 60–68.

4 new species are described. [See p. 24, *Simiidae*, p. 25, *Cercopithecidae*, p. 27, *Macroselididae*, p. 37, *Bovidae*.]

— Ueber auscheinend neue Afrikanische Säugethiere. *T. c.* pp. 107–114.

Describes a genus and 4 species as new. [See p. 25, *Lemuridae*, p. 28, *Felidae*, p. 31, *Muridae*, and p. 34, *Procaviidae*.]

— Ueber einige Westafrikanische Säugethiere des Senckenbergischen Museums. *T. c.* pp. 252–257.

Refers to *Cercopithecus campbelli*, *Cephalophus maxwelli*, and *Epomophorus macrocephalus*.

— Säugethiere des Togogebietes. MT. deutsch. Schutz. vi, art. 3, 19 pp., figg.

A list of the known Mammals from this region, which are 116 in number, some of them being figured.

— Bemerkungen über Asiatische Wildesel. SB. Ges. naturf. Berlin, 1893, pp. 206–208.

— Die unterscheidenden Merkmale der *Hylobates*-Arten. *T. c.* pp. 209–212.

— Zwei Neue Affen. *T. c.* pp. 225–228. [See p. 25, *Cercopithecidae* and *Hapalidae*.]

— Beitrag zur Kenntniss der Lebensweise von *Procavia*. *T. c.* pp. 228–231.

— Ueber einige Afrikanische Säugethiere. *T. c.* pp. 175–178.

Observations on *Colobus*, and description of a species of *Myosorex*. [See p. 25, *Cercopithecidae*, and p. 27, *Soricidae*.]

MARTIN, C. J. [See WILSON & MARTIN.]

MAURER, F. Sur Phylogenie der Säugethierhaare. *Morphol. Jahrb.* xx, pp. 260–275.

— Zur Frage von den Beziehungen der Haare der Säugethiere zu den Hautsinnesorganen niederer Wirbelthiere. *T. c.* pp. 429–448.

Hairs are regarded as modified scales, and therefore connected with the dermal sense-organs of lower Vertebrates.

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- Rediscovery of the Mexican Kangaroo-Rat (*Dipodomys phillipsi*, Gray), with Field Notes by E. W. Nelson. P. Biol. Soc. Washington, viii, pp. 83-96.
- Two New Wood-Rats from the Plateau-Region of Arizona (*Neotoma pinetorum* and *N. arizonæ*), with Remarks on the validity of the Genus *Teonoma* of Gray. T. c. pp. 109-112. [See p. 32, *Muridae*.]
- Descriptions of Eight new Ground-Squirrels of the Genera *Spermophilus* and *Tamias*, from California, Texas, and Mexico. T. c. pp. 129-138. [See p. 30, *Sciuridae*.]
- Preliminary Descriptions of Four New Mammals from Southern Mexico. T. c. pp. 143-146. [See p. 30, *Sciuridae*, p. 32, *Geomyidae*, and p. 33, *Leporidae*.]
- The Yellow Bear of Louisiana, *Ursus luteolus*, Griffith. T. c. pp. 147-152. [See p. 28, *Ursidae*.]
- The Geographic Distribution of Life in North America. Rep. Smithson. Inst. for 1891, pp. 365-415. Reprinted from P. Biol. Soc. Washington, vii, pp. 1-64.
- MILLER, G. S. Description of a new White-Footed Mouse from the Eastern United States. P. Biol. Soc. Washington, viii, pp. 55-69.
- Description of a new Mouse from Southern California. Amer. Natural. xxvi, pp. 261-263 (1892). [See p. 31, *Muridae*.]
- A Jumping Mouse (*Zapus insignis*, Miller) new to the United States. P. Biol. Soc. Washington, viii, pp. 1-8. [See p. 33, *Dipodidae*.]
- MILNE-EDWARDS, A. Une nouvelle Espèce de *Microgale* de Madagascar. Ann. Sci. Nat. (7) xv, p. 97. [See p. 27, *Centetidae*.]
- MIVART, ST. GEORGE. Types of Animal Life. London: 1893, 8vo, 374 pp., illustrated.
- A popular account of the leading types of Mammals and a few other Vertebrates.
- MÖBIUS, K. Ueber den Fang und die Verwerthung der Walfische in Japan. SB. Ak. Berlin, 1893, pp. 1053-1072, and MT. Ak. Berlin, 1893, pp. 649-668.
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- MOORE, J. The Recently Found *Castoroides* in Randolph County, Indiana. Amer. Geol. xii, pp. 67-74, pl. iii.
- Describes and figures a nearly complete skeleton of *C. ohioensis*.

NEHRING, A. Die Trächtigkeitsdauer des Dachses. Zool. Garten, xxxiv, pp. 107-109. [See p. 29, *Mustelidæ*.]

—. Ueber Kreuzungen von *Cavia aperea* und *Cavia cobaya*. SB. Ges. naturf. Berlin, 1893, pp. 249-252. [See p. 33, *Caviidæ*.]

—. Ueber Pleistocäne Hamster-Reste aus Mittel- und Westeuropa. Jahrb. geol. Reichsanst. xliii, pp. 179-198. [See p. 31, *Muridæ*.]

NELSON, E. W. Description of a New Species of *Lagomys* from Alaska. P. Biol. Soc. Washington, viii, pp. 117-120. [See p. 33, *Lagomyidæ*.]

NOACK, T. Das Quagga. Zool. Garten, xxxiv, pp. 289-297, 1 pl.

—. Ein neues Gnu. Zool. Anz. 1893, pp. 153-156. [See p. 37, *Bovidæ*.]

OSBORN, H. F. The *Ancylopoda*, *Chalicotherium*, and *Artionyx*. Amer. Natural. xxvii, pp. 118-133, figg. [See p. 35, *Ancylopoda*.]

—. *Protoceras*: the New Artiodactyle. Nature, xlvii, pp. 321 & 322.

—. *Aceratherium tridactylum* from the Lower Miocene of Dakota. Bull. Amer. Mus. v, pp. 85 & 86.

—. Recent Researches upon the Succession of the Teeth in Mammals. Amer. Natural. xxvii, pp. 493-504.

A general review of recent investigations on the development and relations of Mammalian teeth, especial attention being directed to the views of Kükenthal, Röse, and Taeker. While adopting many of these views, especially that of the equivalence of the true molars with the "first series, the author is indisposed to admit fission as an agent in dental development, and insists strongly upon the prime importance of trituberculism.

—. Sur la découverte du *Palaenictis* en Amérique. Bull. Soc. Geol. France (3) xx, pp. 434-436, fig.

Figures an incomplete skull of a species named in 1892.

—. The Rise of the *Mammalia* in North America. Stud. Biol. Lab. Columbia Coll., Zool. i, No. 2, 45 pp., and Amer. J. Sci. (3) xlvi, pp. 379-406 & 448-466, pl. xi.

An important and suggestive memoir, dealing with the dental characters, foot-structure, and evolution of Mammals in general, and containing disquisitions on particular groups. Adopting recent views on the evolution and relations of teeth, the author gives a table showing the manner in which the first and second series are developed or aborted in the chief groups; and he adds that the abortion of the second series in the Marsupials is a fatal bar to the view that this group is in any way ancestral to the Placentals. Trituberculism and the evolution of Ungulate molars are discussed in detail. In the course of the memoir, the author takes the opportunity of recording his dissent from the view that the Mammals of the Santa Cruz beds of Patagonia are of Eocene age,

considering that they are more probably Oligocene or Miocene, adding that he cannot accept Ameghino's derivation of *Chalicotherium* from *Homalodontotherium*.

[OSBORN, H. F.] Fossil Mammals of the Upper Cretaceous Beds. Bull. Amer. Mus. v, pp. 311-330.

It is shown that the *Multituberculata* described by Marsh from the Laramie under a variety of new generic names are referable to Cope's genera *Ptilodus* and *Meniscoëssus*, the former of which is typically from the Puerco Eocene. The Trituberculate types named from the Laramie are also partly reduced, although from the nature of the material this cannot be done so completely as in the Multituberculates. It is urged that the Laramie fauna is closely related to that of the Puerco beds, and widely different from that of the Upper Jurassic. As they pass from the Jurassic to the Tertiary, the *Plagiaulacidae* exhibit a reduction in the number of the premolars, accompanied by an increase in the number of grooves on the last tooth of that series.

— & WORTMAN, J. L. *Artionyx*: a New Genus of *Ancylopoda*. Bull. Amer. Mus. v, pp. 1-18, figg. Also Nature, xlvii, pp. 610 & 611. [See p. 35, *Ancylopoda*.]

PARONA, C., & CATTANEO, G. Note Anatomiche e Zoologiche sull' *Heterocephalus*, Rüppell. Ann. Mus. Genova (2) xiii, pp. 419-447, pl. xiii.

PAVLOW, [MADAME] M. Note sur un nouveau Crane d'*Amynodon*. Bull. Soc. Moscou, 1893, pp. 37-42, pl. iii.

The American fossil, on which this note is based, is provisionally named *Amynodon*, aff. *intermedius*.

PETENYI, —. [See CHYZER, C.]

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POHLIG, H. Eine Elefantenhöhle Siciliens, und die erste nachweis des Cranialdomes von *Elephas antiquus*. Abh. Bayer. Ak. xviii, pp. 73-109, pls. i-v.

— . Le Premier Crane Complet du *Rhinoceros (Cænopus) occidentalis*, Leidy. Bull. Soc. belge Geol. vii, pp. 41-44, pl. iii.

POLLARD, E. C. [MISS]. The Succession of Teeth in Mammals. Natural Sci. ii, pp. 360-363.

A summary of recent views on this subject.

*POMEL, A. Monographie Iconographique du *Bubalus antiquus*, Duvernoy. See C.R. Ac. Sci. cxvii, pp. 1346-1349.

POUCHET, G. Anciens Échouages de Cétacés du ix^e au xvii^e Siècle. Mem. Soc. Biol. 1893, pp. 97-104.

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- . Détails Anatomiques sur l'Appareil Génital Male du Cobaye. Ann. Sci. Nat. (7) xv, pp. 342-352, pl. ix.
- PURPUS, C. A. Die Bergziege, *Aplocerus montanus*. Zool. Garten, xxxiv, pp. 79-82.
- . Silvertip- und Cinnamon-Bär. T. c. pp. 113-117.
- . Beiträge zur Naturgeschichte von *Mephitis occidentalis*. T. c. pp. 134-137.
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- RADDE, G. On the present range of the European Bison in the Caucasus. P. Zool. Soc. London, 1893, pp. 175-177. [See p. 37, *Bovidae*.]
- RHOADS, S. N. Descriptions of Four New Rodents from California. Amer. Natural. xxvii, pp. 831-836. [See p. 31, *Muridae*.]
- RIGGIO, G. Arenamento di Sette Capidogli (*Physeter macrocephalus*, Linn.), nel Mare di Marsala, in Sicilia. Boll. Nat. xiii, pp. 2-5.
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- Both *Manidae* and *Dasyppodidae* are regarded as the descendants of hair-covered Mammals, which acquired their exoskeletons independently when they took to a fossorial life.

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A reply to Howorth's papers published in 1892; it is contended that the pre-glacial age of the Mammoth is not proved.

STRUTHERS, J. The Development of the Bones of the Foot of the Horse, and of digital Bones generally; and on a case of Polydactyly in the Horse. *J. Anat. Physiol. norm.-path.* xxviii, pp. 51-62, pl. i.

— Rudimentary Hind-Limb of a great Fin-Whale (*Balenoptera musculus*) in comparison with those of the Hump-back Whale and the Greenland Right Whale. *T. c.* pp. 291-335, pls. xvii-xx.

THOMAS, O. A Fish-eating Rodent. *Nat. Sci.* ii, p. 286. [See p. 32, *Muridae*.]

— Description of a New Baboon from East Africa. *Ann. Nat. Hist.* (6) xi, pp. 46 & 47. [See p. 25, *Cercopithecidae*.]

— On a New *Cephalophus* from Mount Kilima-Njaro. *T. c.* pp. 48 & 49. [See p. 37, *Bovidae*.]

— On the Mexican Representative of *Sciurus aberti*. *T. c.* pp. 49 & 50. [See p. 30, *Sciuridae*.]

— Description of a New Species of *Sminthus* from Kashmir. *T. c.* pp. 184-186. [See p. 33, *Dipodidae*.]

— Further Notes on the Genus *Chiroderma*. *T. c.* pp. 186 & 187. [See p. 27, *Phyllostomatidae*.]

— Description of a New Porcupine from East Africa. *T. c.* pp. 229-231. [See p. 33, *Hystriidae*.]

— Description of Two New Pocket-Mice of the Genus *Heteromys*. *T. c.* pp. 329-332. [See p. 32, *Geomyidae*.]

— Description of a New *Sciuropterus* from the Philippines. *Op. cit.* xii, pp. 30 & 31. [See p. 30, *Sciuridae*.]

— Description of a New Bornean *Tupaia*. *T. c.* pp. 53 & 54. [See p. 27, *Tupaidae*.]

— Description of a Second Species of the Carnivorous Genus *Nandinia* from Southern Nyasaland. *T. c.* p. 205. [See p. 28, *Viverridae*.]

— Description of Two New North Bornean Mammals. *T. c.* pp. 230-232. [See p. 25, *Cercopithecidae*, and p. 32, *Muridae*.]

— On Two New Members of the Genus *Heteromys* and Two of *Neotoma*. *T. c.* pp. 233-235. [See p. 32, *Muridae* and *Geomyidae*.]

— Descriptions of Two New Rodents from the Victoria Nyanza. *T. c.* pp. 267-269. [See p. 31, *Myozidae*, and p. 33, *Leporidae*.]

[THOMAS, O.] On some of the Larger Species of *Geomys*. *T. c.* pp. 269-273. [See p. 32, *Geomyidae*.]

— On some Mammals from Central Peru. *P. Zool. Soc. London*, pp. 333-341, pls. xxvii & xxix.

Twenty species are referred to, including two new Bats and a new genus of Rodents. [See p. 27, *Emballonuridae* and *Phyllostomatidae*, and p. 31, *Muridae*.]

— On a Second Collection of Mammals sent by Mr. H. H. Johnston, C.B., from Nyasaland. *T. c.* pp. 500-504.

The list includes 30 species.

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A total of 52 species are recorded.

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Describes an incisor of an *Aceratherium* and two molars of a member of the *Titanotheriidae* from Miocene strata in the Balkans; the latter being the first definite record of the existence of that American family in Europe. [See p. 36, *Rhinocerotidae* and *Titanotheriidae*.]

TRUE, F. W. Description of a New Species of Fruit-Bat, *Pteropus aldabrensis*, from Aldabra Island. *P. U. S. Mus.* xvi, pp. 533 & 534.

— Notes on a Small Collection of Mammals from the Tana River, East Africa, with Descriptions of New Species. *T. c.* pp. 601-603. [See p. 30, *Myozidae*, and p. 32, *Muridae*.]

TUCKERMAN, F. Further Observations on the Gustatory Organs of the *Mammalia*. *J. Morphol.* vii, pp. 69-94 (1892).

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WEBER, M. Bemerkungen über den Ursprung der Haare und über Schuppen bei Säugethieren. *Anat. Anz.* viii, pp. 413-423. Translated in *Ann. Nat. Hist.* (6) xii, pp. 1-11.

Disputing the opinion of Römer, that while all Mammals are descended from scaled Reptiles, the scales of *Manis* are a new formation, the author concludes that the latter are directly inherited from Reptilian ancestors.

— Notizen über Säugethiere des Indischen Archipels. In Weber's "Zool. Ergebnisse einer Reise in Niederlandish Ost-Indien," iii, pp. 260-268. Leyden: 1893.

Specially notices *Tarsius*, *Acanthion javanicum*, and *Sus vittatus*. [See p. 26, *Tarsiidae*.]

WHITAKER, J. A Descriptive List of the Deer-Parks and Paddocks of England. London: 1892, 8vo, xviii & 204 pp., illustrated. [Omitted from Zool. Rec. xxix.]

WILSON, J. T., & MARTIN, C. J. Observations upon the Anatomy of the Muzzle of the *Ornithorhynchus*. Macleay Memorial Volume (Linn. Soc. N. South Wales), pp. 179-189, pls. xxii & xxiii.

———. On the Peculiar Rod-like Tactile Organs in the Integument and Mucous Membrane of the Muzzle of *Ornithorhynchus*. *T. c.* pp. 190-200, pls. xxiv-xxvi.

WINGE, H. Jordfundne og nulevende Pungdyr (*Marsupialia*) fra Lagoa Santa, Minas Geraes, Brasilien. Med udsigt over Pungdyrenes Slægtskab. *E. Mus. Lund*, ii, art. 2, pp. 1-149, pls. i-iv.

WOODWARD, M. F. Contributions to the Study of Mammalian Dentition. Part I. On the Development of the *Macropodidae*. *P. Zool. Soc. London*, 1893, pp. 450-473, pls. xxxv-xxxvii.

The presence of 5 or even 6 vestigial incisors in the *Macropodidae* is indicated; while the tooth generally regarded as the successor to the fourth milk-molar is declared to have no connection with the latter, and is regarded as a retarded premolar, which may be the fourth of the series, the tooth which it appears to succeed being the fifth of the series. The opinion that the molars belong to the second dentition is not supported.

WORTMAN, J. L. A New Theory of the Mechanical Evolution of the Metapodial Keels of *Diplarhtra*. *Amer. Natural*, xxvii, pp. 421-434.

From the fact that the keel on the distal end of the metapodials is frequently not congenitally correlated with the groove on the proximal surface of the first phalangeal, it is urged that the production of the whole structure is due to mechanical impact, and is not owing to favourable variations preserved by natural selection.

———. On the Divisions of the White River or Lower Miocene of Dakota. *Bull. Amer. Mus.* v, pp. 95-106.

The formation in question is divided into the *Titanotherium*, *Oreodon*, and *Protoceras* beds, the Mammalian fauna of each of which is indicated. It is incidentally mentioned that an *Aceratherium* from the *Oreodon* beds had a more or less persistent upper canine.

———. [See also OSBORN & WORTMAN.]

——— & EARLE, C. Ancestors of the Tapir from the Lower Miocene of Dakota. *T. c.* pp. 159-180.

It is shown that *Protapirus* (distinguished from *Tapirus* by its simpler premolars) occurs in the White River Miocene; while the earliest type of the family is considered to be the Eocene *Systemodon*. The phylogeny of the allied genus *Colodon* is also discussed; its ancestral type being *Heleletes*. [See p. 35, *Tapiridae*.]

ZITTEL, K. A. v. Die geologische Entwicklung, Herkunft, und Verbreitung der Säugethiere. SB. Ak. Munchen, xxiii, pp. 137-196. Translated in Geol. Mag. (3) x, Nos. 9, 10, & 11.

A survey of the various Mammalian faunas of the different regions of the globe according to their geological ages. It is considered that during the Secondary period the *Multituberculata* (*Allotheria*), together with Polyprotodont Marsupials, had a world-wide distribution; while subsequently to this, in the Tertiary epoch, there were three great centres of Mammalian development and dispersion, namely, (1) Australia, (2) South America, and (3) Europe, Asia, Africa, and North America. The alleged connection between South America, South Africa, and Australia by means of an Antarctic continent is disputed, as it is urged that if such connection existed during the Tertiary period, we ought to meet with Edentates in Australia. Especial attention is directed to the recently described faunas of Argentina and Patagonia; and it is shown that if the earliest be rightly assigned to the Eocene, its Mammals were much more specialized than those of Europe belonging to that epoch; the Ungulates and Rodents having hypsodont molars, and *Homalodontotherium* being the only one among the former which can be regarded as a generalised type. The list of this earliest, or Santa Cruz, fauna of this region includes only Marsupials, Edentates, Toxodonts, Typotherioids, peculiar Perissodactyles, Histri-comorphous Rodents, and Primates; and the same holds good for the so-called Patagonian fauna, which has been correlated with the Miocene. Hence all the genera found in these formations may be regarded as indigenous to South America. On the other hand, when we reach the (? Pliocene) Monte Hermoso and Pampean stages, we are confronted for the first time with Tapirs, Horses, Llamas, Stags, Mastodons, Murine Rodents, and true Carnivores, all of which are evidently immigrants from the north. Confirmation of the connection between South and North America having not taken place till this period, is afforded by the contemporaneous incursion of South American Edentates into the northern half of the continent.

— Handbuch der Palæontologie. 1. Abth. iv Band. 2 Lief., pp. 305-592; 3 Lief., pp. 593-799.

The 2nd part concludes the Ungulates, and contains the Insectivores, Bats, and a portion of the Creodont Carnivores; while the 3rd part completes the work.

ZOLLIKOFER, E. Farben-Aberrationen an Säugethieren und Vögeln im St. Galler Museum. Ber. St. Gall. Ges. 1891-92, pp. 295-312.

II.—FAUNAS.

PALÆARCTIC REGION.—See CHAPMAN & BUCK (Spain), COKE (Malta), DÉPÉRET (France), GADOW (Spain), HOFMANN (Styria), KERMODE (I. of Man), and SCHULZE (Saxony).

ETHIOPIAN REGION.—See JENTINK (Cahama), LYDEKKER, MATSCHIE, SCLATER, TRUE, and TULLBERG.

ORIENTAL REGION.—See EVERETT (Borneo), HOSE (Borneo), and WEBER (Malayana).

NEARCTIC REGION.—See ALLEN, COPE, HATCHER, MARSH, MERRIAM, OSBORN, SCOTT, and WORTMAN.

NEOTROPICAL REGION.—See AMEGHINO (Patagonia), ANONYMOUS, GURICH, IHERING, and THOMAS (Trinidad).

For the Tertiary Fauna of the whole world, see ZITTEL.

III.—BIOLOGICAL INDEX.

ANATOMY AND HISTOLOGY.—See ALESSANDRINI, BEAUREGÁRD, BEDDARD, CATTANEO, CHRISTICENI, CORDIER, DUVAL, ELLENBERGER & BAUM, FRANCAVIGLIA, HEPBURN, JOHNSON, KEITH, KLAATSCH, LAVOCAT, LENHOSSEK, MAURER, PIANA, PARONA & CATTANEO, POU-SARGUES, ROCHÉ, RUGE, TUCKERMAN, and WILSON & MARTIN.

OSTEOLOGY.—See AMEGHINO, BLANC, CHAPMAN, DAMES, EARLE, FILHOL, GRANDIDIER, HENNICHE, HOWES, KOKEN, LYDEKKER, MAGGI, MAJOR, ROMER, ST. LOUP, STEHLIN, STIEDA, STRUTHERS, and WORTMAN.

DENTITION.—See BEAUREGARD, DE VIS, FREUND, KÜKENTHAL, LATASTE, LAVOCAT, LECHE, MAJOR, OSBORN, POLLARD, RÖSE, and WOODWARD.

DEVELOPMENT.—See EWART, DUVAL, FREUND, KÜKENTHAL, LECHE, MAURER, NEHRING, ROCHÉ, ROMER, and WOODWARD.

CLASSIFICATION.—See MAJOR.

IV.—SYSTEMATIC WORK.

(*Extinct groups and species are indicated by a †.*)

1. PRIMATES.

Ligaments of the Old World forms described by KEITH, *vide supra*, p. 11, and nerves of lumbar plexus by RUGE, p. 19.

a. SIMIIDÆ.

BEDDARD, Tr. Zool. Soc. London, xiii, pp. 177-218, pls. xx-xxviii, publishes the full text of the important memoir of which the abstract is quoted in Zool. Rec. xxix, *Mamm.* p. 22. Following an introductory notice relating to the history of the specimens on which the memoir is based, the author gives a detailed description of the external characters and anatomy of the bald Chimpanzee, after which he does the same for an Ape reputed to be *Simia morio*. Figures are given of the heads, hands, and feet of both the Apes referred to, as well as illustrations of their soft parts.

Hylobates javanicus, n. sp., MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 62, N. W. Borneo. Distinctive features of all the species tabulated by the same writer, *t. c.* p. 209.

b. CERCOPITHECIDÆ.

- Semnopithecus cruciger*: in a notice of three specimens by THOMAS, P. Zool. Soc. London, 1893, p. 3, it is suggested that this form may prove to be merely an erythrism of *S. chrysomelas*.
- Semnopithecus sabanus*, n. sp., THOMAS, Ann. Nat. Hist. (6) xii, p. 230, N. Borneo.
- Cercopithecus moloneyi*, n. sp., SCLATER, P. Zool. Soc. London, p. 252, pl. xvii, British Central Africa. In the same paper the author figures *C. schmidti* (pl. xvi), and gives a synopsis of the genus. Excluding *Myopithecus*, the author recognizes from personal observation 31 species, divided into several groups, in addition to which there are 15 which have not come under his notice. In a supplemental paper (*op. cit.* p. 441), descriptions and figures are given of *C. boutourlinii* and *C. brazzæ* (pl. xxxiii). MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 212, comments on this list, and gives a diagnosis of several of the species.
- Cercopithecus fantiensis*, p. 64, W. Africa, and *C. stuhlmanni*, p. 225, near Albert Nyanza, n. spp., MATSCHIE, SB. Ges. naturf. Berlin, 1893. *C. cambelli* noticed, *t. c.* p. 253, by the same author, who, on pp. 97-101, gives a list of the nine white-nosed species of the genus, with their distinctive characters, and further notes on p. 253 of the same volume.
- Cercopithecus lalandei*: habits of young; SCLATER, P. Zool. Soc. London, 1893, p. 615, fig.
- Cercopithecus opisthostictus*, n. sp., SCLATER, *t. c.* p. 725, British E. Africa.
- Macacus nemestrinus* and *inuus*: notes on these species by SCLATER, P. Zool. Soc. London, 1893, p. 325.
- Colobus vellerosus*, its distinctive features; MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 175.
- Papio thohi*, n. var. *ibeanus*; THOMAS, Ann. Nat. Hist. (6) xi, p. 47, Lamu, E. Africa. This name has the priority over *Cynocephalus langheldi*, Matschie (Zool. Rec. xxix, *Mamm.* p. 24), if the two prove to be identical.

c. HAPALIDÆ.

- Hapale jacchus*: abnormal sternum described and figured by HOWES, P. Zool. Soc. London, 1893, pp. 168-170.
- Hapale santaremensis*, n. sp., MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 227, Santarem.

d. LEMURIDÆ.

- Lemur nigerrimus*, Sclater, shown by MILNE-EDWARDS, P. Zool. Soc. London, 1893, pp. 177 & 178, to be the male of *L. rufipes*, Gray.
- Galago zanzibaricus*, n. sp., MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 111, Zanzibar.

MAJOR, P. Zool. Soc. London, 1893, p. 532, describes, without name, a Lemuroid skull of large size from the superficial deposits of Madagascar, apparently allied to *Hapalemur*.

e. TARSIIDÆ.

Tarsius fuscomanus. WEBER (*vide supra*, p. 21) considers this form distinct from *T. spectrum*. In the latter the hands are rufous, the pelage rufous, and the ears slightly shorter than the head; whereas in the latter the hands are brown, the pelage clear brown above and greyish-white below, and the ears only two-thirds the length of the head.

f. †MEGALADAPIDÆ.

†*Megaladapis madagascariensis*, n. g. & sp., MAJOR, P. R. Soc. London, liv, p. 176, Pleistocene, Madagascar.

The skull on which this new genus and species are founded indicates an animal some three times the size of any existing Lemuroid. In addition to having tritubercular molars, it is characterized by an enormous lateral development of the anterior interorbital region of the frontals; a narrow and elongated postorbital frontal region, separated by a slight constriction from the equally narrow parietal area; and a thick and flattened sagittal, and a strong occipital crest. The zygoma is high, and projects moderately outwards. The relatively small size of the brain-case is regarded as a degenerate feature; and it is surmised that younger specimens would show a relatively larger cerebral chamber and a shorter facial region. In the course of his paper the author proposes a classification of the families of the Lemuroids.

2. CHIROPTERA.

H. ALLEN, P. U. S. Mus. xvi, pp. 1-28, publishes an introduction to a monograph of the N. American forms, in which he discusses the structure and morphology of the order, and gives the characters of the Nearctic genera.

a. PTEROPODIDÆ.

Pteropus aldabrensis, n. sp., TRUE, P. U. S. Mus. xvi, p. 533, Aldabra I.

Pteropus medius: for structure of stomach, see CATANEO, *supra*, p. 6.

Epomophorus macrocephalus: see MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 256.

b. RHINOLOPHIDÆ.

†*Rhinolophus schlosseri*, n. sp., HOFMANN, Abh. geol. Reichsanst. xv, pt. 4, p. 18, Miocene, Styria.

c. VESPERTILIONIDÆ.

The relations and serial position of the genera *Antrozous*, *Coryzorhinus*, *Synotus*, *Noctulinia*, and *K[*C*]erivoula* discussed by H. ALLEN, P. U. S. Mus. xvi, pp. 29-31; the fourth of these being employed for the Noctule Bat.

d. EMBALLONURIDÆ.

Nyctinomus kalinowskii, n. sp., THOMAS, P. Zool. Soc. London, 1893, p. 334, pl. xxix, Central Peru.

e. PHYLLOSTOMATIDÆ.

Chiroderma dorie and *C. villosum* are contrasted by THOMAS, Ann. Nat. Hist. (6) xi, pp. 186 & 187, with some general remarks on the genus. *Artibeus glaucus*, n. sp., THOMAS, P. Zool. Soc. London, 1893, p. 336, pl. xxix, Central Peru. *Cheronycteris intermedia*, n. sp., ALLEN & CHAPMAN, Bull. Amer. Mus. v, p. 207, Trinidad. *Desmodus youngii*, n. sp., JENTINK, Notes Leyden Mus. xv, p. 282, W. Indies.

3. INSECTIVORA.

a. TUPAIDÆ.

Tupaia gracilis, n. sp., THOMAS, Ann. Nat. Hist. (6) xii, p. 53, Borneo.

b. MACROSCOLIDIDÆ.

Rhynchocyon stuhlmanni, n. sp., MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 66, Semliki river.

c. TALPIDÆ.

Scapanus anthonyi, n. sp., J. A. ALLEN, Bull. Amer. Mus. v, p. 200, Lower California. *Scalops aquaticus*, n. var. *australis*, F. M. CHAPMAN, t. c. p. 339, Florida.

d. SORICIDÆ.

Myosorex preussi, n. sp., MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 177, Cameruns.

e. ERINACEIDÆ.

Erinaceus europæus: its histology; see CARLIER, *suprà*, p. 5.

f. CENTETIDÆ.

Microgale crassipes, n. sp., MILNE-EDWARDS, Ann. Sci. nat. (7) xv, p. 97, Madagascar.

4. *CARNIVORA.*A.—*CARNIVORA VERA.*

For dentition, see BEAUREGARD, *suprà*, p. 4 ; brain, DEBIERRE & BOLE, p. 7 ; and placenta, DUVAL, p. 8.

a. *FELIDÆ.*

Felis (Serval) togoensis, n. sp., MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 109, Togo, W. Africa.

Felis leo : for hybrids between this species and *F. tigris*, see BALL, *suprà*, p. 4.

Felis pallida, n. sp., BÜCHNER, Bull. Ac. St. Petersb. (2) iii, p. 433, Kansu.

† *Felis hillanus*, n. sp., COPE, Rep. Geol. Surv. Texas, 1892, p. 55, Tertiary, Texas.

† *Dinobastis serus*, COPE, Amer. Natural. xxvii, pp. 896 & 897, Pleistocene, Oklahoma, U.S.A.

b. *VIVERRIDÆ.*

Nandinia gerrardi, n. sp., THOMAS, Ann. Nat. Hist. (6) xii, p. 205, Nyasaland.

c. *HYÆNIDÆ.*

† *Hyæna brevirostris* : complete skull described and figured by BOULE, Ann. Sci. nat. (7) xv, p. 85, pl. i.

† *Borophagus diversidens*, Tertiary, Texas, described and figured by COPE, Rep. Geol. Surv. Texas, 1892, pp. 52-55, pl. xiii, fig. 4, and regarded as an ally of *Hyænictis*.

d. *CANIDÆ.*

For British Sporting Dogs, see LEE, *suprà*, p. 12 ; and New Zealand Native Dog, COLENSO, *suprà*, p. 6.

† *Canis anceps*, n. sp., SCOTT, Amer. Natural. xxvii, p. 660, Tertiary, Montana.

† *Cynodesmus thyoides*, n. sp., SCOTT, *l. c.*, *ibid.*

† *Canimartes cummingsi*, n. sp., COPE, Rep. Geol. Surv. Texas, 1892, p. 52, Tertiary, Texas.

e. *URSIDÆ.*

Ursus luteolus, Griffith, regarded by MERRIAM, P. Biol. Soc. Washington, viii, p. 147, as a valid species ; not the same as *U. cinnamomeus* of Audubon. See also PURPUS, Zool. Garten, xxxiv, p. 113.

f. MUSTELIDÆ.

Mustela martes (*Martes sylvatica*), its distribution in Britain; HARTING, Zoologist (3) xvii, p. 161.

Mephitis occidentalis, its distribution and habits; PURPUS, Zool. Garten, xxxiv, p. 134.

Mellivora indica, recorded by BÜCHNER, *suprà*, p. 5, from Transcaspia.

Meles taxus: the minimum period of gestation considered by NEHRING, Zool. Garten, xxxiv, p. 107, to be six months.

† *Parietis princeous* [? *Parictis princeps*], n. g. & sp., SCOTT, Amer. Natural. xxvii, p. 658, John Day Miocene, Oregon.

B.—PINNIPEDIA.

In Jena. Zeitschr. xxviii, pp. 76–118, KÜKENTHAL gives the results of his observations on the morphology and development of the teeth of this group, the forms specially described being *Trichechus* and *Phoca*. He considers that the presence of three pairs of lower incisors in the former lends no support to the view that it is more nearly allied to certain land Carnivores than to the *Phocidæ*.

Otaria: for structure of fœtus, see ROCHÉ, *suprà*, p. 18; for approaching extermination of Fur-Seals in the South Seas, see CHAPMAN, p. 6. The structure and power of the Seal's eye has been investigated by JOHNSON, *suprà*, p. 11.

C.—†CREODONTA.

g. †PALÆONICTIDÆ.

† *Palæonictis occidentalis* (Zool. Rec. xxix, *Mamm.* p. 32) described by OSBORN, Bull. Soc. geol. France (3) xx, p. 435.

5. RODENTIA.

For structure of thyroid, see CHRISTIANI, *suprà*, p. 6.

a. SCIURIDÆ.

Following an exhaustive survey of their dentition, FORSYTH-MAJOR, P. Zool. Soc. London, 1893, pp. 179–215, proposes the following classification of the family, viz. :—

1. SCIURINÆ. — *Rhithrosciurus*, *Xerus*, *Sciurus*, *Spermophilus*, *Arctomys*, and *Cynomys*; *Sciurus* being subdivided into *Eosciurus*, *Sciurus* proper, and *Tamias*.
2. PTEROMYINÆ.—*Sciuropterus*, *Pteromys*, and *Eupetaurus*.
3. NANNOSCIURINÆ.—*Nannosciurus*.

While *Rhithrosciurus* and the *Sciurus vulgaris* group show the most primi-

tive basin-shaped molars, *Xerus*, and certain African species hitherto included in *Sciurus*, have molars approximating to the Hystricomorphous type, and those of *Nannosciurus* are decidedly dormouse-like. *Sciuropterus*, with which *Eluravus* may be identical, is shown to be common in a fossil condition; *Sciuroides* and *Pseudosciurus* being probably allied types. From these and other considerations, it is urged that the *Pteromyiinae* are not derived from the *Sciurinae*, even if they belong to the same family.

Sciurus aberti, n. var. *durangi*, THOMAS, Ann. Nat. Hist. (6) xi, p. 50, Durango, Central Mexico.

Sciurus apache, n. sp., J. A. ALLEN, Bull. Am. Mus. v, p. 29, Mexico. The author, *t. c.* p. 30, has also a note on *S. arizonensis*.

Sciurus nelsoni, n. sp., MERRIAM, P. Biol. Soc. Washington, viii, p. 144, S. Mexico.

Sciurus vulgaris, for structure of male genital organs, see POUSARGUES, *suprà*, p. 18.

†*Sciurus gariacheus* and *gibberosus*, n. spp., HOFMANN, Abh. geol. Reichsanst. xv, pt. 4, pp. 41 & 42, Miocene, Styria.

Tamias leucurus peninsulae, n. var., J. A. ALLEN, Bull. Amer. Mus. v, p. 197, Lower California.

Tamias panamintinus, p. 134, *T. callipeplus*, p. 136, *T. alpinus*, p. 137, n. spp., MERRIAM, P. Biol. Soc. Washington, viii, California.

†*Xerus grivensis*, n. sp., MAJOR, P. Zool. Soc. London, 1893, p. 191, Miocene, La-Grive-St.-Alban.

†*Sciuropterus albanensis*, n. sp., MAJOR, *l. c.*, *ibid.*

Sciuropterus nigripes, n. sp., THOMAS, Ann. Nat. Hist. (6) xii, p. 30, Philippines.

Spermophilus: for life-history and distribution of the 5 Mississippi species, see BAILEY, *suprà*, p. 4, by whom 3 are figured.

Spermophilus nelsoni, p. 129, California, *S. perotensis*, p. 131, Mexico, n. spp., MERRIAM, P. Biol. Soc. Washington, viii.

Spermophilus pilosoma annectans, p. 132, Texas, *S. beecheyi fisheri*, p. 133, California, *S. chrysodeirus brevicaudus*, p. 134, California, n. varr., MERRIAM, *l. c.*

Arctomys monax: for structure of burrow, see FISHER, *suprà*, p. 8.

Arctomys marmotta, its distribution and habits; LANGKAVEL, Zool. Garten, xxxiv, p. 1.

b. CASTORIDÆ.

†*Steneofiber montanus*, SCOTT, Amer. Natural. xxvii, p. 660, Tertiary, Montana.

c. MYOXIDÆ.

Eliomys parvus, n. sp., TRUE, P. U. S. Mus. xvi, p. 601, Tana river, W. Africa.

- Myoxus (Eliomys) smithi*, n. sp., THOMAS, Ann. Nat. Hist. (6) xii, p. 267, Victoria Nyanza.
 † *Myoxus zitteli*, n. sp., HOFMANN, Abh. geol. Reichsanst. xv, pt. 4, p. 43, Miocene, Styria.

d. MURIDÆ.

- For report on the vole-plague in Scotland, see HARTING, *suprà*, p. 9.
Dasymys longicaudatus, n. sp., TULLBERG, Acta Soc. Upsal. iii, p. 36, Cameruns.
Leinacomys [*Limacomys*, R. L.] *buttneri*, n. g. & sp., SB. Ges. naturf. Berlin, 1893, pp. 107-109, Togo, W. Africa. A fourth genus of *Dendromyinae*, allied to *Lophuromys*, but distinguished by its shorter tail, grooved upper incisors, and shorter fore claws.
Cricetus: after reviewing the geographical distribution of the various species of the genus, NEHRING, Jahrb. geol. Reichsanst. xliii, pp. 179-198, records the occurrence of remains of *C. vulgaris* and *C. phæus* in the European Pleistocene.
Oryzomys palustris natator, n. var., CHAPMAN, Bull. Amer. Mus. v, p. 44, Florida.
Oryzomys costaricensis, n. sp., J. A. ALLEN, t. c. p. 239, Costa Rica.
Oryzomys speciosus, trinitatis, velutinus, and brevicauda, n. spp., ALLEN & CHAPMAN, t. c. pp. 212-215, Trinidad.
Vesperinus fraterculus, n. sp., MILLER, Amer. Natural. xxvi, p. 261 (1892), S. California.
Sitomys americanus canadensis, n. var., MILLER, P. Biol. Soc. Washington, viii, p. 55, East U.S.
Sitomys major and herronii, n. spp., RHOADS, Amer. Natural. xxvii, pp. 831 & 832, California.
Sitomys auropectus and rowleyi, n. spp., J. A. ALLEN, Bull. Amer. Mus. v, pp. 75 & 76, Utah.
Sitomys americanus thurberi, n. var., *S. martirensis* and *gilberti*, n. spp., ALLEN, t. c. pp. 185-188, Lower California.
Sitomys niveiventris, n. var. *subgriseus*, F. M. CHAPMAN, t. c. p. 340, Florida.
Sitomys robustus, n. sp., ALLEN, t. c. p. 335, California.
Rhithrodontomys pallidus, n. sp., RHOADS, Amer. Natural. xxvii, p. 835, California.
Rhithrodontomys aztecus, n. sp., J. A. ALLEN, Bull. Amer. Mus. v, p. 79, N. Mexico.
Onychomys ramona, n. sp., RHOADS, Amer. Natural. xxvii, p. 833, California.
Nectomys palmipes, n. sp., ALLEN & CHAPMAN, Bull. Amer. Mus. v, p. 209, Trinidad.
Tylomys couesi, n. sp., ALLEN & CHAPMAN, t. c. p. 211, Trinidad.
Neotoma pinetorum and *arizonæ*, n. spp., MERRIAM, P. Biol. Soc. Washington, viii, pp. 109-112, Arizona. The former is a round-tailed form

allied to *N. fuscipes*; while the latter presents the external characters of the bushy-tailed forms (*Teonoma*), with the cranial characters of the round-tailed species (*Neotoma* proper).

Neotoma macrotis, p. 234, California, *N. lepida*, p. 235, n. spp., THOMAS, Ann. Nat. Hist. (6) xii.

Ichthyomys stolzmanni, n. g. & sp., THOMAS, Nat. Sci. ii, p. 286, P. Zool. Soc. London, 1893, p. 337, pls. xxviii & xxix, Central Peru. An apparently fish-eating, rat-like Murine, with webbed and fringed hind feet.

Arvicola (Mynomes) aztecus, n. sp., J. A. ALLEN, Bull. Amer. Mus. v, p. 73, New Mexico.

Arvicola guentheri, HARTING (*suprà*, p. 9) records that this is the common Vole in Thessaly.

Synaptomys stonei, n. sp., RHOADS, Amer. Natural. xxvii, p. 53, New Jersey.

Evotomys gapperi rhoadsi, n. var., STONE, *t. c.* pp. 54-56, New Jersey.

Mus gilvus (p. 100), *trizonus* (p. 103), *spicilegus* (p. 114), *arundinaceus* (p. 142), n. spp., PETENYI, in work by CHYZER, cited on p. 6.

Mus (Isomys) rufocanus, n. sp., TULLBERG, Acta Soc. Upsal. iii, p. 23, Cameruns.

Mus tana, n. sp., TRUE, P. U. S. Mus. xvi, p. 602, Tana river, W. Africa.

Mus margarettæ, n. var. *pusillus*, THOMAS, Ann. Nat. Hist. (6) xii, p. 232, N. Borneo.

Mus poschiavinus, a variety of *M. musculus*, see DAVATZ, *suprà*, p. 7.

e. SPALACIDÆ.

Heterocephalus: its anatomy, see PARONA & CATTANEO, *suprà*, p. 17.

f. GEOMYIDÆ.

Geomys cherriei, n. sp., J. A. ALLEN, Bull. Amer. Mus. v, p. 337, Costa Rica.

Geomys grandis, p. 270, Guatemala, *G. merriami*, p. 271, Mexico, n. spp., THOMAS, Ann. Nat. Hist. (6) xii.

Thomomys monticolus, p. 48, California, *T. aureus*, p. 49, Utah, *T. fossor*, p. 51, Colorado, *T. toltecus*, p. 52, Mexico, n. spp., J. A. ALLEN, Bull. Amer. Mus. v.

Thomomys orizabæ, p. 145, *T. peregrinus*, p. 146, n. spp., MERRIAM, P. Biol. Soc. Washington, viii, Mexico.

Heteromys bulleri, xi, p. 330, Julisco, Mexico, *H. salvini*, p. 331, Guatemala, *H. pictus*, xii, p. 233, Julisco, n. spp., THOMAS, Ann. Nat. Hist. (6).

Heteromys salvini, n. var. *nigrescens*, THOMAS, Ann. Nat. Hist. (6) xii, p. 234, Costa Rica.

Dipodomys merriami, n. var. *melanurus*, MERRIAM, P. Calif. Ac. (2) iii, pp. 345 & 346, Lower California.

Dipodomys phillipsi, its re-discovery; MERRIAM, P. Biol. Soc. Washington, viii, pp. 83-96. The genus and species defined, and *Macrocolus halticus* identified therewith.

g. DIPODIDÆ.

Zapus insignis, recorded by MILLER, P. Biol. Soc. Washington, viii, p. 1, from United States.

Zapus princeps, n. sp., J. A. ALLEN, Bull. Amer. Mus. v, p. 71, Colorado.

Sminthus leathamii, n. sp., THOMAS, Ann. Nat. Hist. (6) xi, p. 184, Maru-Wardwan, Kashmir.

h. OCTODONTIDÆ.

Loncheres castaneus, n. sp., J. A. ALLEN, Bull. Amer. Mus. v, p. 222, Trinidad.

Echimys trinitatis, n. sp., ALLEN, *t. c.* p. 223, Trinidad.

i. HYSTRICIDÆ.

Hystrix galeata, n. sp., THOMAS, Ann. Nat. Hist. (6) xi, p. 230, Lamu, E. Africa.

j. †CASTOROIDIDÆ.

See MOORE, *suprà*, p. 15.

k. CAVIIDÆ.

Cavia aperea: the fertile crossing of this species with *C. cobaya* recorded by NEHRING, SB. Ges. naturf. Berlin, 1893, p. 249. For structure of male genital organ, see POUSARGUES, *suprà*, p. 18.

l. LEFORIDÆ.

Lepus orizabæ, n. sp., MERRIAM, P. Biol. Soc. Washington, viii, p. 143, S. Mexico.

Lepus victoriae, n. sp., THOMAS, Ann. Nat. Hist. (6) xii, p. 268, Victoria Nyanza.

Lepus europæus, ST. LOUP, C.R. Ac. Sci. cxvii, p. 640, considers that there is a complete gradation from the skull of this species to that of *L. cuniculus*.

m. LAGOMYIDÆ.

Lagomys collaris, n. sp., NELSON, P. Biol. Soc. Washington, viii, p. 117, Alaska.

6. *UNGULATA.*

A.—PROBOSCIDEA.

a. *ELEPHANTIDÆ.*

In describing the structure of the brain in the African Elephant, BEDDARD, P. Zool. Soc. London, 1893, pp. 178-218, gives reasons for disagreeing with some of the conclusions of KRUEG, although he confirms others. The outline of the brain is nearer to the Carnivorous than to the typical Ungulate type; but the arrangement of the chief sulci appears to be on a plan peculiar to the family.

After describing the structure and mode of development of the incisor and cheek-teeth of the Indian species, RÖSE, Morphol. Arbeit. iii, pp. 173-194, comes to the conclusion that there is no evidence for homologising the first three of the latter with the milk-molars of the Mastodons; while he further refuses to admit the serial homology of any individual tooth with the tooth of less specialized Mammals with which it has hitherto been regarded as corresponding. He adds that there is no apparent reason why the number of cheek-teeth developed in an Elephant should not be seven or eight, instead of six.

† *Elephas primigenius*, its geological age, see HOWORTH, *suprà*, p. 10, and STIRRUP, *suprà*, p. 20.

† *Elephas meridionalis*, see GAUDRY, *suprà*, p. 9.

† *Elephas antiquus*, skull described by POHLIG, *vide suprà*, p. 17.

† *Dibelodon præcursor*, n. sp., COPE, Rep. Geol. Surv. Texas, 1892, p. 64, Tertiary, Texas.

† *Mastodon borsoni*, see DONNEZAN, *suprà*, p. 7.

B.—†*AMBLYPODA.*b. †*CORYPHODONTIDÆ.*

For restoration of the type genus, see MARSII, Amer. J. Sci. (3) xlvii, p. 321.

C.—HYRACOIDEA.

c. *PROCAVIIDÆ.*

For observations on the dentition, see LATASTE, *suprà*, p. 11.

Procavia neumanni, n. sp., MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 112, Zanzibar; on p. 228 of the same volume, a notice is given of the habits of one of the arboreal species.

D.—†*LITOPTERNA.*d. †*MARAUCHENIIDÆ.*

† *Theosodon lydekkeri* is considered by AMEGHINO (Rev. Jard. Zool. B. Ayres, i, pp. 20-29) to belong to a separate family, allied to the

Macraucheniiidæ, from which it is distinguished by the forward position of the narial aperture, and the more elongated nasals. The skull is figured.

E.—†ANCYLOPODA.

e. †ARTIONYCHIDÆ.

†*Artionyx gaudryi*, n. g. & sp., OSBORN & WORTMAN, Bull. Amer. Mus. v, p. 5, White River Miocene, Dakota. While resembling *Chalicotherium* in having the terminal phalangeals in the form of large, curved claws, this new form is distinguished by the general foot-structure being formed on the Artiodactyle rather than the Perissodactyle type. It is concluded that both *Chalicotherium* and *Artionyx* branched off from the Ungulates before they had fully acquired their distinctive hoofs; and it is suggested that while the one may have diverged from the Perissodactyle stock, the other may have been as closely related to the Artiodactyles. If, however, the *Ancylopoda* be a natural group, then these forms will present a kind of parallelism to the Perissodactyles and Artiodactyles. It is further suggested that the S. American *Homalodontotherium* may be a member of the same group. The paper concludes with an appendix on the mechanics of the Artiodactyle tarsus.

In a later paper, OSBORN, Amer. Natural. xxvii, pp. 118-133, further exemplifies the affinities of these forms, concluding that the *Ancylopoda* are directly descended from the unguiculate *Protungulata*, and that from a side branch of the same main stem there arose, at an earlier stage, the *Condylarthra*, from which, through the *Phenacodontidæ*, the *Perissodactyla* have originated.

f. †CHALICOTHEIIDÆ.

†*Schizotherium priscum*, Gervais (= *Limognitherium*, Filhol), from the Quercy Phosphorites, is shown by FILHOL, Ann. Sci. Nat. xvi, pp. 142 *et seq.*, to be a Chalicotheroid, with three posterior and five anterior digits.

F.—PERISSODACTYLA.

g. TAPIRIDÆ.

EARLE, Science, xxi, p. 118, discusses the osteological characters of the feet of the Malayan and Brazilian Tapirs; and concludes that the manus of the former is considerably more specialized than that of the latter, while in the pes there is less modification in the Brazilian than in the American species.

†*Protapirus obliquidens* and *simplex*, n. spp., WORTMANN & EARLE, Bull. Amer. Mus. v, pp. 162-168, White River Miocene, U.S.A.

- † *Tupirus telleri*, n. sp., HOFMANN, Abh. geol. Reichsanst. xv, pt. 4, p. 47, Miocene, Styria.

h. EQUIDÆ.

List of Asiatic Wild Asses, by MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 206.

Equus caballus: for rudimentary horns, see BLANC, *suprà*, p. 5; for general anatomy, ELLENBERGER & BAUM, p. 8; for development of limb-bones and polydactylism, EWART, p. 8, and STRUTHERS, p. 20; and for internal anatomy, PIANA, p. 17.

Equus quagga, its distribution and extermination; NOACK, Zool. Garten xxxiv, p. 289.

† *Equus cummingsi*, *minutus*, and *semiplicatus*, n. spp., COPE, Rep. Geol. Surv. Texas, 1892, pp. 67 & 80, Tertiary, Texas.

† *Protohippus pachyops*, *fossulatus*, and *lenticularis*, n. spp., COPE, *t. c.* pp. 26, 30, & 41, *ibid.*

† *Hippidium interpolatum*, n. sp., COPE, *t. c.* p. 42, *ibid.*

† *Onohippidium*, Moreno, incorrectly quoted in Zool. Rec. xxviii, *Mamm.* p. 40, as *Onohippus*.

i. PALÆOTHERIIDÆ.

† *Desmatippus crenidens*, n. g. & sp., SCOTT, Amer. Natural. xxvii, p. 661, Tertiary, Montana.

† *Anchitherium equinum*, SCOTT, *l. c.*, *ibid.*

j. RHINOCEROTIDÆ.

Rhinoceros simus, its occurrence in Mashonaland; MILLAIS, P. Zool. Soc. London, 1893, p. 614.

† *Aceratherium tridactylum*, described by OSBORN, Bull. Amer. Mus. v, p. 85, from Dakota.

† *Aceratherium* sp.: incisor from Miocene of Kajali, Balkans, described and figured by TOULA, SB. Ak. Wien, 1892, p. 608.

† *Amynodon*, *aff. intermedius*, skull described by PAVLOW, Bull. Soc. Moscou, 1893, p. 37, pl. iii.

† *Rhinoceros occidentalis*, skull described by POHLIG, Bull. Soc. Belg. Geol. vii, p. 41, pl. iii.

k. †TITANOTHERIIDÆ.

† *Menodus*? [*Titanotherium*] *rumelicus*, n. sp., TOULA, SB. Ak. Wien, 1892, p. 612, Miocene, Katina, near Sofia, Balkans. The author considers that *Brachydiastematherium transilvanicum*, from the Tertiary of Transylvania, is likewise referable to the same family.

G.—ARTIODACTYLA.

An important series of observations on the changes in the form of the skull of the ruminating Ungulates after birth, are published by STEHLIN, *suprà*, p. 19. The anatomy of the stomach of the same group described by CORDIER, *suprà*, p. 7.

l. BOVIDÆ.

Bos bison: its range in the Caucasus shown by RANDE, P. Zool. Soc. London, 1893, p. 175, to be confined to the districts around the sources of the Labu and Bjellaja, on the north side of the chain, extending eastwards from the former locality to the springs of the Selentschük.

Bos (Bison) americanus, its distribution and extermination; LANGKAVEL, Zool. Garten, xxxiv, p. 353.

†*Bos (Bubalus) antiquus*, see POMEL, *suprà*, p. 17.

Bubalis, synopsis of the species by LANGKAVEL, *op. cit.* p. 200.

Bubalis limata, a skull probably pertaining to a hybrid between this species and *B. caama*, figured by SELOUS, P. Zool. Soc. London, 1893, pp. 1 & 2.

Catoblepas reichei, n. sp., NOACK, Zool. Anz. 1893, p. 153, Transvaal.

Cephalophus harveyi, n. sp., THOMAS, Ann. Nat. Hist. (6) xi, p. 48, Kilima-njaro.

Cephalophus maxwelli, see MATSCHIE, SB. Ges. naturf. Berlin, 1893, p. 256.

Cobus ellipsiprymnus, note on the birth of a fawn in captivity, by SCLATER, P. Zool. Soc. London, 1893, p. 505, pl. xxxix.

Cobus crawshayi, n. sp., SCLATER, *t. c.* p. 726, British E. Africa; on p. 727, the name *C. unctuosus* is stated to have priority over *C. sing-sing*.

Nanotragus livingstonianus, skull figured by THOMAS, P. Zool. Soc. London, 1893, pp. 237 & 238.

Antilope [= Gazella] soemmerringi, n. var. *berberana*, MATSCHIE, SB. Ges. naturf. Berlin. 1893, p. 65, Somaliland. Distinguished by its large size and coloration.

Oryx: the characters and distribution of the four species given by MATSCHIE, *t. c.* pp. 101–104.

Haploceros montanus: a paper on by PURPUS, Zool. Garten, xxxiv, p. 79,

Rupicapra tragus: its distribution and habits; LANGKAVEL, *t. c.* p. 267.

m. CERVIDÆ.

For Deer of British Guiana, see QUELCH, Zoologist (3) xvii, p. 19.

Cervus thoroldi, n. sp., BLANFORD, P. Zool. Soc. London, 1893, p. 444, pl. xxiv, Tibet. The two specimens on which the species is founded were obtained by Dr. Thorold about 200 miles N. E. of Lhasa, at an elevation of over 13,000 feet, and indicate a species of the Red Deer group.

Cervus brookei, n. sp., HOSE, Ann. Nat. Hist. (6) xii, p. 206, N. Borneo.

Cervus davidianus : for structure of stomach, see CORDIER, *suprà*, p. 7.

†*Palæomeryx meyeri*, n. sp., HOFMANN, Abh. geol. Reichsanst. xv, pt. 4, p. 61, Miocene, Styria.

n. TRAGULIDÆ.

For anatomy, see ALESSANDRINI, *suprà*, p. 2.

o. CAMELIDÆ.

†*Procamelus leptognathus*, n. sp., COPE, Rep. Geol. Surv. Texas, 1892, p. 37, Tertiary, Texas.

†*Pliauchenia spatula*, n. sp., COPE, *t. c.* p. 70, *ibid.*

†*Holomeniscus sulcatus* and *macrocephalus*, n. spp., COPE, *t. c.* pp. 84 & 85, *ibid.*

p. †PROTOCERATIDÆ.

†*Protoceras celer* : skull described by MARSH, Amer. J. Sci. (3) xlvi, p. 408.

q. †COTYLOPIDÆ.

†*Mesoreodon chelonyx*, n. g. & sp., SCOTT, Amer. Natural. xxvii, p. 661, Tertiary, Montana.

†*Cyclopidius incisivus*, n. sp., SCOTT, *l. c.* *ibid.*

r. †CHÆROPOTAMIDÆ.

†*Elotherium clavum*, n. sp., MARSH, Amer. J. Sci. (3) xlvi, p. 409, Miocene, Dakota.

†*Ammodon leidyanum* and *potens*, n. g. & spp., MARSH, *op. cit.* pp. 409 & 410, Miocene, N. Jersey and Colorado.

s. DICOTYLIDÆ.

†*Platygonus bicalcaratus*, n. sp., COPE, Rep. Geol. Surv. Texas, 1892, p. 68, Tertiary, Texas.

t. HIPPOPOTAMIDÆ.

Hippopotamus liberiensis : CHAPMAN, P. Ac. Philad. 1893, pp. 185-187, considers this species entitled to rank as the representative of the distinct genus *Chæropsis*.

†*Hippopotamus lemerlei* : for this extinct Malagasy species, see GRANDIER & FILIOL, *suprà*, p. 9.

u. PANTOLESTIDÆ.

The Puerco genus *Protonodon* referred by EARLE, Amer. Natural. xxvii, p. 377, to this family.

7. CETACEA.

The respiration is described by JOLYET, *suprà*, p. 11; HEPBURN, p. 9, treats of the mammary glands; MÖBIUS, p. 15, examines and criticizes a Japanese work on Whales; Pouchet, p. 17, investigates ancient records of stranded specimens; while SOUTHWELL, p. 19, gives details of the whale-fishery of 1892.

a. BALÆNIDÆ.

Balæna (Eubalæna) biscayensis: GULDBERG, Zool. Jahrb. Syst. vii, p. 1, describes and figures an example stranded in 1889, with details of its anatomy.

Balænoptera sibbaldi: a stranded specimen; see BEAUREGARD, *suprà*, p. 4.

Balænoptera musculus: its rudimentary hind limb contrasted by STRUTHERS (*suprà*, p. 20) with that of other genera.

c. PHYSETERIDÆ.

Physeter macrocephalus: for record of specimen stranded on Sicilian coast, see RIGGIO, *suprà*, p. 18.

From an examination of a large series of specimens, FORBES (P. Zool. Soc. London, 1893, pp. 216-236) concludes that in the skull of *Mesoplodon* the mesorostral bone, instead of being derived from the cartilage of the same name, is in great part formed by a special development of the osseous tissues of the floor and sides of the vomer, and of the premaxillaries; such ultra development being probably caused by the compression of those bones, as a result of the vigorous early growth in the premaxillæ and maxillæ that surround them. It is further shown that the form of the rostrum, when seen in transverse section, varies greatly with age and sex, so that the outlines of the bones constituting such a section cannot be regarded as sufficient to characterize a species. It is concluded that the number of existing species of the genus is six, viz.: *M. bidens*, *M. europæus*, *M. hectori*, *M. layardi*, *M. densirostris*, and *M. grayi*.

Mesoplodon bidens: a female stranded on the Norfolk coast, near Cromer, on December 18th, 1892, is described by SOUTHWELL & HARMER, Ann. Nat. Hist. (6) xi, pp. 275-284, with a list of all previously recorded British examples. In the same volume, p. 439, ROTHSCHILD gives reasons for believing that while the male has the under-parts white, the female is uniformly black.

† *Dioplodon [Mesoplodon] tenuirostris* and *Placoziphius duboisi*, recorded by CAPELLINI, Rend. Ac. Lincei, ii, pp. 283-288, from the Tertiary of Italy.

d. DELPHINIDÆ

Grampus griseus, recorded by TURNER, *suprà*, p. 21, from the Shetlands.

e. †ZEUGLODONTIDÆ.

After describing certain remains from the Eocene of Egypt, DAMES (Pal. Abh. [2] i, pp. 189-222) discusses the phylogeny and relationships of this family. He not only supports the view of the Recorder as to their Cetacean nature, but in place of regarding them as representing a distinct suborder, would include them in the *Odontoceti*, according to the following arrangement:—

ODONTOCETI.

1. ARCHÆOCETI; oligodont and heterodont.
Zeuglodontidæ.
2. MESOCETI; polyodont and heterodont.
Squalodontidæ.
3. EUODONTOCETI; polyodont and homœodont.
Platanistidæ.
Delphinidæ.
Physeteridæ.

It is considered that the Zeuglodonts are separated from the Squalodonts by the resemblances presented by their skulls to those of ordinary terrestrial Mammals, and the small number of their teeth. They thus form the least specialised representatives of the *Cetacea*, and are connected with the modern toothed whales by means of the Squalodonts. He also describes certain bony plates found in association with the Zeuglodont remains, which are considered to have formed portions of a dorsal bony dermal armour in these animals. The existence of such an armour is in accordance with KÜKENTHAL'S discovery of vestiges of such a structure in the skin of *Phocæna* (*Neomeris*) *phocænoides*.

†*Zeuglodon osiris*, n. sp., DAMES, *op. cit.* p. 204, Eocene, Egypt.

8. EDENTATA.

a. BRADYPODIDÆ.

The presence of a distinct coracoid in the adult indicated by LYDEKKER, *vide suprà*, p. 12; the general anatomy described by FRANCAVIGLIA, *suprà*, p. 8.

b. †MEGATHERIIDÆ.

†*Megalonyx leptostomus*, n. sp., COPE, Rep. Geol. Surv. Texas, 1892, p. 49, Tertiary, Texas.

c. DASYPODIDÆ.

Nature and structure of the exoskeleton in this family and the *Manidae* discussed by ROMER, *vide supra*, p. 18.

† *Necrodasyppus gallicæ*, FILHOL, Ann. Sci. nat. xvi, p. 136, fig. 7, Phosphorites, Quercy.

e. MANIDÆ.

† *Necromanis quercyi*, n. g. & sp., FILHOL, Ann. Sci. nat. xvi, p. 132, fig. 1, Phosphorites, Quercy.

† *Leptomanis edwardsi*, n. g. & sp., FILHOL, *t. c.* p. 134, fig. 4, *ibid.*

f. ORYCTEROPODIDÆ.

† *Orycteropus gaudryi*, recorded by FORSYTH MAJOR from Tertiary of Maragha, Persia, P. Zool. Soc. London, 1893, p. 239.

† *Paleorycteropus quercyi*, n. g. & sp., FILHOL, Ann. Sci. nat. xvi, p. 135, fig. 6, Phosphorites, Quercy.

9. MARSUPIALIA.

WINGE, E. Mus. Lund. ii, art. 2. The author deals primarily with the living and fossil opossums of the district of Lagoa Santa; but he also makes some observations on the affinities of the family in general, and defines the subgeneric groups he would adopt. Skulls and limb-bones are described and figured; and certain emendations made on the Recorder's determinations of some of the fossil forms.

For Jacobson's organ in *Phascolomys* and *Didelphys*, see RÖSE, *supra*, p. 18; and for dentition of *Macropodidæ*, WOODWARD, *supra*, p. 22.

The presence of rudimental milk-teeth in *Phascolomys* is recorded by RÖSE, SB. Ac. Berlin, 1893, pp. 749-755. See also OSBORN, *supra*, p. 17, as to dentition both of recent forms and of those from the Laramie.

a. PHASCOLOMYIDÆ.

† *Phascolonus*: DE VIS, P. Linn. Soc. N. S. Wales (2) viii, p. 11, figures the upper incisor, and thus shows that *Sceparnodon* is generically distinct.

b. †DIPROTODONTIDÆ.

STIRLING, P. Zool. Soc. London, 1893, p. 473, has notes on a "find" of a number of complete skeletons of *Diprotodon* and *Phascolonus* near Lake Frome, S. Australia.

c. DIDELPHYIDÆ.

Didelphys (Micoureus) canescens, n. sp., J. A. ALLEN, Bull. Amer. Mus. v, p. 235, Tehuantepec, Mexico.

Didelphys koseriti, n. sp., IHERING, in paper quoted *suprà*, p. 10.

10. MONOTREMATA.

For homologies of bones of shoulder-girdle, see HOWES, *suprà*, p. 10, and LYDEKKER, p. 12, the former author also dealing with the structure of the pelvis. KOKEN, Zeitschr. deutsch. geol. Ges. xlv, pp. 343 *et seqq.*, also enters into the discussion, and considers that the coracoid process of Placentals represents the amalgamated coracoid and precoracoid of Reptiles and Amphibia. He refuses to admit an homology between the precoracoid of *Dicynodon* and the epicoracoid of the *Monotremata*, remarking that the latter is a true epicoracoid *plus* an omosternum.

In the course of their observations on the structure and histology of the muzzle of *Ornithorhynchus*, WILSON & MARTIN (*suprà*, p. 22) show that the beak is covered with soft delicate skin, like that of the nose of a dog, and that the whole structure is most highly supplied with tactile organs. The snout is supported on cartilage supposed to be a vestige of the primitive chondro-cranium.

† *Adiastaltus habilis*, n. g. & sp., AMEGHINO, Rev. Jard. Zool. B. Ayres, i, p. 77, Tertiary, Patagonia.

† *Anathitis revelator*, n. g. & sp., AMEGHINO, t. c. p. 78, *ibid.*

11. †MULTITUBERCULATA.

AMEGHINO, Rev. Gen. Sci. iv, pp. 77-81, discusses the relations of *Microbiotherium*, *Aberites*, and certain other allied South American Tertiary forms to the *Multituberculata* of the United States. Both groups are considered to be very closely allied, but as the Neotropical forms do not exhibit any marked multituberculism, they are regarded as connecting the North American types with the Diprotodont Marsupials. The author is of opinion that *Bolodon* is founded upon the upper molars of *Plagiaulax*.

For the Upper Cretaceous *Plagiaulacidae* of the Laramie beds, see OSBORN, *suprà*, p. 17.

III. AVES.

BY

R. BOWDLER SHARPE, LL.D.

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I.—TITLES.*

ALBARDA, H. Ornithologie in Nederland. Waarnemingen van i Januari 1892 tot en met 30 April 1893 gedaan. Tijdschr. Nederland. Dierk. Ver. (2) iv, 1893, pp. 20-34.

ALLEN, J. A. The Geographical Origin and Distribution of North American Birds, considered in Relation to Faunal Areas of North America. Auk, x, pp. 97-150, pls. iii & iv, maps.

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

- [ALLEN, J. A.] List of Mammals and Birds collected in North-Eastern Sonora and North-western Chihuahua, Mexico, on the Lumholtz Archæological Expedition, 1890-92. Bull. Amer. Mus. v, pp. 27-42.
- On a Collection of Birds from Chapada, Matto Grosso, Brazil, made by Mr. H. H. Smith. Part III. *Pipridæ* to *Rheide*. *T. c.* pp. 107-158. [Part II, *cf.* Zool. Rec. xxix, *Aves*, p. 2.]
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ETHIOPIAN REGION. See Barboza du Bocage, Büttikofer, Oustalet, Reichenow, Ridgway, Sharpe, Shelley, Sibree, Sjöstedt.

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AUSTRALIAN REGION. See Büttikofer, Collett, Evans, Forbes, Meyer, Perkins, Rothschild, Wilesworth, Wilson.

NEARCTIC REGION. See Allen, Fisher, Rhoads.

NEOTROPICAL REGION. See Allen, Berlepsch, Chapman, Cory, Godman, Hartert, Holland, Richmond, Ridgway, Salvin, & Sclater.

III.—ANATOMY AND MISCELLANEOUS.

ANATOMY. See Beddard, Gadow, Headley.

OSTEOLOGY. See Hurst, Shufeldt.

OOLOGY. See Campbell, Nathusius, Ryder, Ryshak, Shufeldt, Young.

PTERYLOGRAPHY. See Pycraft.

FOSSIL BIRDS. See Burckhardt, Forbes, Hamilton, Hutton, Lydekker, Marsh, Newton (E.), Parker.

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Mr. John Cordeaux (Secretary), Messrs. R. M. Barrington, John A. Harvie-Brown, W. Eagle Carke, and E. P. Knubley, appointed to make a digest of the observations on the Migration of Birds at lighthouses and light-vessels, and to report on the same. Rep. Brit. Ass. 1892, p. 366.

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- See OGILVIE GRANT, Catalogue, *ut suprâ*, pp. 94-444, pls. i-viii.
- Francolinus streptophorus* (pl. i), *F. albogularis* (pl. ii), *F. spilolaemus* (pl. iii), *F. elgonensis* (pl. v), *F. shelleyi* (pl. vi), *F. adspersus* (pl. vii), figured; W. R. OGILVIE-GRANT, *t. c.* *F. dybowskii*, n. sp., Upper Congo, E. OUSTALET, Naturaliste, xiv, p. 232.
- Pternistes leucoscepus*, figured; W. R. OGILVIE-GRANT, *t. c.* pl. viii. *P. afer*, n. var. *benguellensis*, Galanga, Angola; J. v. BARBOZA DU BOCAGE, J. Sci. Lisb. (2) xi, p. 154.
- Arboricola ardens*, n. sp., Hainan; F. W. STYAN, Ibis, 1893, pp. 56 & 57. Figured; *id. t. c.* pl. xii.
- Coturnix communis*, figured; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvii.
- Lophophorus impeyanus*, n. varr. *mantoui* and *obscura*; E. OUSTALET, Bull. Soc. zool. France, xviii, p. 17.
- Gennaus davisoni*, n. subsp., Kachin Hills, Yunnan; W. R. OGILVIE-GRANT, Cat. B. Brit. Mus. xxii, p. 304. *G. oatesi*, n. subsp., S.E. Arakan Hills; *id. t. c.* p. 306.
- Phasianus colchicus* × *Thaumalea picta*: *P. colchicus* × *Gennaus nycthemerus*; W. B. TEGETMEIER, P. Zool. Soc. London, 1893, p. 692. *P. altus*, Milne-Edwards (fossil), figured; R. LYDEKKER, *t. c.* p. 519, pl. xli, figs. 5-8.
- Ortyx atriceps*, n. sp., W. Mexico; W. R. OGILVIE-GRANT, Cat. B. Brit. Mus. xxii, p. 424.
- ¹*Dactylortyx*, n. gen.; type, *D. thoracicus* (Gambel); W. R. OGILVIE-GRANT, *t. c.* p. 429.
- Odontophorus consobrinus*, n. sp., Mirador, Southern Mexico; R. RIDGWAY, P. U. S. Mus. xvi, pp. 469 & 470.
- ¹*Rhynchortyx*, n. g.; type, *R. spodiostethus* (Salvin); W. R. OGILVIE-GRANT, *t. c.* p. 443.

Suborder HEMIPODII.

See OGILVIE-GRANT, Catalogue, *ut suprâ*, pp. 526-555.

Suborder PTEROCLETES.

See OGILVIE-GRANT, Catalogue, *ut suprâ*, pp. 1-32.

Order COLUMBIFORMES.

Catalogue of the *Columbae*, or Pigeons, in the British Museum; T. SALVADORI [Vol. xxi of the Catalogue of Birds]. London: 1892, 8vo, pp. i-xviii & 1-676, pls. i-xv.

Suborder COLUMBÆ.

Family TRERONIDÆ.

Subfamily TRERONINÆ.

- Sphenocercus formosæ*, figured; T. SALVADORI, Catalogue, pl. i.
Osmotreron griseicauda (pl. ii, fig. 1), and *O. wallacii*, n. sp., Celebes, (pl. ii, fig. 2), *O. aromatica* (pl. iii) and *O. axillaris* (pl. iv), T. SALVADORI, Catalogue.
Phabotreron occipitalis, n. sp., Basilan, T. SALVADORI, *t. c.* p. 68.

Subfamily PTILOPODINÆ.

- Leucotreron fischeri meridionalis*, n. subsp., S. Celebes; A. B. MEYER & L. WIGLESWORTH, Ornith. Monber. i, pp. 12 & 13.
Ptilopus tristrami, n. sp., Marquesas I., T. SALVADORI, Boll. Mus. Torino, vii, No. 135, p. 1. *P. smithsonianus*, n. sp., Paumotu I., *id.*, Cat. B. Brit. Mus. xxi, p. 105. *P. eugenieæ*, figured, *id. t. c.* pl. v.
Alectrænas nitidissima, figured; A. MILNE-EDWARDS & E. OUSTALET, Notice Ois. Eteintes Mus. Paris, pp. 40-51, pl. iii.
Megaloprepia poliura septentrionalis, n. subsp., N. and E. New Guinea and Jobi Is.; A. B. MEYER, Abh. Mus. Dresden, 1892-93, No. 3, p. 25.

Subfamily CARPOPHAGINÆ.

- Carpophaga ænothorax*, figured; T. SALVADORI, Catalogue, pl. vi. *C. muelleri aurantia*, n. subsp., N. New Guinea, A. B. MEYER, Abh. Mus. Dresden, 1892-93, No. 3, p. 25.
Zonophaps, n. subg.; type, *Carpophaga forsteni* (T.); A. B. MEYER, *t. c.* p. 208.
Cryptophaps, n. subg.; type, *Carpophaga pæcilorrhœa*, Brügg.; T. SALVADORI, *t. c.* p. 220.
Lopholaimus antarcticus, egg described; A. J. CAMPBELL, P. Soc. Victoria (n.s.) v, p. 126.

Family COLUMBIDÆ.

- Columba grisea*, figured; T. SALVADORI, Catalogue, pl. vii. *C. albipennis*, figured, *id. t. c.* pl. viii.
C. rupestris pallida, n. subsp., Eastern Siberia; W. ROTHSCHILD & E. HARTERT, Ornith. Monber. v, pp. 41 & 42. *C. taczanowskii*, n. sp., E. Siberia and Korea; L. STEJNEGER, P. U. S. Mus. xvi,

- p. 624. *C. crissalis*, n. sp., Costa Rica and Veragua; T. SALVADORI, *t. c.* p. 294.
- ¹ *Nesanas*, n. g.; type, *N. mayeri*; T. SALVADORI, *t. c.* p. 327.
- Turturana sharpii*, n. sp., Equatorial Africa; T. SALVADORI, Cat. B. Brit. Mus. xxi, p. 329, pl. ix, fig. 3.
- T. delegorguei*, figured; T. SALVADORI, *t. c.* pl. ix, figg. 1 & 2.
- T. incerta*, n. sp., Hab. ignot.; T. SALVADORI, *t. c.* p. 330.

Subfamily MACROPYGIINÆ.

- Macropygia goldiei*, n. sp., S. E. New Guinea; T. SALVADORI, *t. c.* p. 358.

Family PERISTIDÆ.

Subfamily ZENAIDINÆ.

- Zenaida yucatanensis*, n. sp., Yucatan; T. SALVADORI, Cat. B. Brit. Mus. p. 384.

Subfamily TURTURINÆ.

- Turtur shelleyi*, n. sp., R. Niger; T. SALVADORI, *t. c.* p. 419. *T. saturatus*, n. sp., Amirante Is.; R. RIDGWAY, P. U. S. Mus. xvi, p. 600.
- ¹ *Homopelia*, n. subg.; type, *T. picturatus*; T. SALVADORI, *t. c.* p. 409.

Subfamily PERISTERINÆ.

- Columbigallina passerina perpallida*, n. subsp., Aruba I.; E. HARTERT, Ibis, 1893, pp. 304 & 305.
- Chamapelia buckleyi*, figured; T. SALVADORI, *t. c.* pl. x, fig. 1.
- Oxytelia*, n. subg.; type, *O. cyanopsis* (Pelz.); T. SALVADORI, *t. c.* p. 491. The species figured, pl. x, fig. 2.
- ¹ *Calopelia*, n. subg.; type, *C. puella* (Schl.); T. SALVADORI, *t. c.* p. 523.
- ¹ *Histriophaps*, n. g.; type, *H. histrionica* (Gould); T. SALVADORI, *t. c.* p. 529.
- Haplopelia johnstoni*, n. sp., Nyasaland; G. E. SHELLEY, Ibis, 1893, p. 28, pl. iii.

Subfamily GEOTRYGONINÆ.

- Geotrygon venezuelensis*, n. sp., Venezuela; T. SALVADORI, Cat. B. Brit. Mus. xxi, p. 581.
- Leptoptila megalura*, figured; *id. t. c.* p. 581, pl. xiii.
- Osculatia purpurea*; *id. t. c.* pl. xiv.
- Phoenas platence*, n. sp., Mindoro; *id. t. c.* p. 588. *P. beccarii*, figured; *id. t. c.* pl. xi, fig. 1. *P. granti*, n. sp., Solomon I.; *id. t. c.* p. 594, pl. xi, fig. 2. *P. albicollis*, n. sp., Bow I.; *id. t. c.* p. 601, pl. xii, fig. 1. *P. erythroptera*, figured; *id. t. c.* pl. xii, fig. 2.
- Otidiphaps cervicalis*, figured; *id. t. c.* pl. xv.

Family GOURIDÆ.

Goura beccarii huonensis, n. subsp., Huon Gulf, N. G.; A. B. MEYER, Ornith. Monber. i, pp. 65-67.

Order OPISTHOCOMIFORMES.

Catalogue; W. R. OGILVIE-GRANT, Cat. B. Brit. Mus. xxii, pp. 523-525.

Order RALLIFORMES.

Family RALLIDÆ.

On the classification of the *Rallide*; R. B. SHARPE, Bull. B. O. C. i, pp. xxvi-xxix. The following new genera are recognized:—

¹*Tricholimnas*, n. g., p. xxviii. Type *T. lafresnayanus* (Verr.).

²*Dryolimnas*, n. g., p. xxviii. Type *D. cuvieri* (Pucher).

³*Castanolimnas*, n. g., p. xxviii. Type *C. camingii* (Blyth).

⁴*Crecopsis*, n. g., p. xxviii. Type *C. egregia* (Peters).

⁵*Enolimnas*, n. g., p. xxviii. Type *En. isabellinus* (Schl.).

⁶*Amaurolimnas*, n. g., p. xxviii. Type *A. concolor* (Gosse).

⁷*Anurolimnas*, n. g., p. xxviii. Type *A. castaneiceps* (Scl. & Salv.).

⁸*Poliolimnas*, n. g., p. xxviii. Type *P. cinereus* (V.).

⁹*Microtribonyx*, n. g., p. xxix. Type *M. ventralis* (Gould).

Notes on the Rails of the Leyden Museum; R. B. SHARPE, Notes Leyden Mus. xv, pp. 266-270.

Rallus muelleri, n. sp., Auckland Is.; W. ROTHSCHILD, Bull. B. O. C. i, pp. xl & xli.

Hypotaenidia jentinki, n. sp., I. of Sula Mangoula; R. B. SHARPE, Notes Leyden Mus. xv, p. 268.

Cubalus modestus, young and egg described; H. O. FORBES, Bull. B. O. C. i, pp. xlv & xlvi. Egg figured, *id.*, Ibis, 1892, pl. xiv, fig. 4. Note on; W. L. BULLER, Tr. N. Zealand Inst. xxv, pp. 52 & 53.

Ocydromus sylvestris is a *Cubalus*; R. B. SHARPE, Bull. B. O. C. i, p. xxx.

¹*Aramidopsis*, n. g.; type, *A. plateni* (Blasius); R. B. SHARPE, *t. c.* p. liv.

Aramides ypecaha, breeding in confinement; F. E. BLAAUW, P. Zool. Soc. London, 1893, pp. 531 & 532.

Ocydromus fuscus, Du Bus. = *O. brachypterus* (Lafr.); R. B. SHARPE, Bull. B. O. C. i, p. xxvii. *O. greyi* = *O. earli*; *id. t. c.* pp. xxix & xxx. *O. minor*, n. sp. (fossil); A. HAMILTON, Tr. N. Zealand Inst. xxv, pp. 103 & 104.

Diaphorapteryx = *Aphanapteryx*; H. O. FORBES, Ibis, 1893, p. 254.

Notes on *Aphanapteryx*; H. O. FORBES, Ann. Nat. Hist. (6) xii, pp. 65-67.

A. broeckii, bones figured; E. NEWTON & H. GADOW, Tr. Zool. Soc. London, xiii, pp. 293 & 294, pl. xxxv, figg. 12-20.

Rallus aldabranus, n. sp., Aldabra I.; R. RIDGWAY, P. U. S. Mus. xvi, pp. 598 & 599 = *Dryolimnas aldabranus* (Günther). [*Cf.* R. B. SHARPE, Cat. B. Brit. Mus. xxiii, p. 333.]

- ¹ *Stictolimnas*, n. g., for *S. sharpii*, n. sp., South America ; J. BÜTTIKOFER, Notes Leyden Mus. xv, p. 274.
- Crex crex*, in Australia ; A. J. NORTH, Rec. Austral. Mus. ii, p. 82.
- C. pusilla*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvii.
- Pennula sandwichensis*, notes on ; R. B. SHARPE, Notes Leyden Mus. xv, p. 269 : Distinct from *P. ecaudata* ; G. HARTLAUB, Bull. B. O. C. i, p. xxiv : R. B. SHARPE, t. c. p. xlii.
- Porzana palmeri* [Zool. Rec. xxix, *Aves*, p. 30], figured ; W. ROTHSCHILD, Avif. Laysan, pt. i, pl. 5. Nest and eggs figured, *id. t. c.* pl. 31, fig. 2.
- Porzana cinereiceps*, notes on ; C. W. RICHMOND, P. U. S. Mus. xvi, pp. 529 & 530.
- Crex suahelensis*, Tristram, = *Porzana marginalis*, juv. ; R. B. SHARPE, Notes Leyden Mus. xv, p. 270.
- Gallinula sandvicensis*, figured ; S. B. WILSON & A. H. EVANS, *Aves Hawaiienses*, pt. iv.
- Porphyrio chathamensis*, n. sp., Chatham Is. ; R. B. SHARPE, Ibis, 1893, p. 531.
- ¹ *Palaeolimnas*, n. g. (sub-fossil) ; type, *P. newtoni*, M.-E. ; H. O. FORBES, Ibis, 1893, pp. 544 & 545.
- Fulica prisca*, n. sp. (fossil) ; A. HAMILTON, Tr. N. Zealand Inst. xxv, pp. 98 & 99. *F. newtoni*, bones figured ; E. NEWTON & H. GADOW, Tr. Zool. Soc. London, xiii, pp. 292 & 293, pl. xxxv, figg. 1-11.

Family HELIORNITHIDÆ.

- On the Osteology, Pterylosis, and Muscular Anatomy of the American Fin-foot (*Heliornis surinamensis*) ; F. E. BEDDARD, Ibis, 1893, pp. 30-40.
- Notes on the family ; R. B. SHARPE, Bull. B. O. C. i, pp. xxxvi & xxxvii.
- ¹ *Heliopais*, n. g. ; type, *H. personata* (Gray) ; R. B. SHARPE, l. c.
- Podica camerunensis*, n. sp., Cameroons ; Y. SJÖSTEDT, Ornith. Monber. i, pp. 42 & 43.

Order PODICIPEDIDIFORMES.

- Podiceps nigricollis*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxv. *P. griseigena*, figured ; *id. op. cit.* pt. xxvi. *P. auritus*, figured ; *id. op. cit.* pt. xxvii.
- Podilymbus podiceps*, its nesting habits ; A. M. COLLETTE, Tr. Kansas Ac. xiii, p. 49.

Order HESPERORNITHIFORMES.

- ¹ *Coniornis*, n. g. Type *C. altus*, n. sp. [fossil], Montana ; O. C. MARSH, Amer. J. Sci. (3) xlv, pp. 81 & 82.

Order COLYMBIFORMES.

Colymbus glacialis, figured; LORD LILFORD, Col. Fig. Br. Birds, pt. xxv.

Order PROCELLARIIFORMES.

Family DIOMEDEIDÆ.

Diomedea: photographs of the Nesting of various species on Laysan I.; W. ROTHSCHILD, Avif. Laysan, pt. i, pls. xxv-xxix. *D. immutabilis*, n. sp.; *id.* Bull. B. O. C. No. ix, p. xlvi: figured; *id.* Avif. Laysan, pt. i, pl. xxx. *D. bulleri*, n. sp., New Zealand; *id.* Bull. B. O. C. No. ix, p. lviii. *D. chinensis*, figured; *id.* Avif. Laysan, pt. i, pls. xxiii & xxiv.
Thalassogeron salvini, n. sp., New Zealand; W. ROTHSCHILD, Bull. B. O. C. No. ix, p. lviii.

Family PROCELLARIIDÆ.

Puffinus: 5 species in Madeira; W. HARTWIG, Ornith. Monber. i, p. 45.
P. nativitatis and *P. cuneatus*, figured; S. B. WILSON & A. H. EVANS, Aves Hawaiienses, pt. iv: eggs figured; W. ROTHSCHILD, Avif. Laysan, pt. i, pl. xxxii, figs. 6-10.
Bulweria columbina, egg figured; W. ROTHSCHILD, *t. c.* pl. xxxii, fig. 5.
Ce. axillaris, n. sp., Chatham Is.; O. SALVIN, Bull. B. O. C. i, p. xxxiii. *Ce. nigripennis*, n. sp., Kermadec Is.; W. ROTHSCHILD, Bull. B. O. C. i, pp. lvii & lviii. *Ce. hypoleuca*, figured; *id.* Avif. Laysan, pt. i, pls. xxi & xxii. *Ce. longirostris*, n. sp., Province of Mutsu, Japan; L. STEJNEGER, P. U. S. Mus. xvi, pp. 618-620.
Ce. leucophrys, n. sp., Sunday I., Kermadec Is.; F. W. HUTTON, P. Zool. Soc. London, 1893, p. 752, pl. lxiii.
Nectris brevicaudus, breeding on Furneaux I.; H. H. MONTGOMERY, P. Soc. Tasmania, 1892, pp. 1-10.
Oceanodroma townsendi, n. sp., Western Mexico; R. RIDGWAY, P. U. S. Mus. xvi, pp. 687 & 688. *O. cryptoleucura*, figured; S. B. WILSON & A. H. EVANS, Aves Hawaiienses, pt. iv.
Garrodia nereis, egg figured; H. O. FORBES, Ibis, 1893, pl. xiv, fig. 3.

Order ALCIFORMES.

Alca impennis: notes on specimens in the Paris Museum; A. MILNE-EDWARDS & E. OUSTALET, Notice Ois. Éteintes Mus. Paris, pp. 56-62: notes on; R. H. READ, Rep. Ealing Soc. 1892, pp. 1-5.
Uria grylle and *Mergulus alle*, figured; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiii.

Order LARIFORMES.

On the classification of the *Longipennes*; R. W. SHUFELDT, Amer. Natural, xvii, pp. 233-237.

Family STERCORARIIDÆ.

Stercorarius catarractes in Shetland; W. E. CLARKE, Ann. Scott. Nat. Hist. ii, pp. 65-67: figured as *Lestris catarractes*; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvi. *S. maccormicki*, n. sp., Victoria Land; H. SAUNDERS, Bull. B. O. C. iii, p. xii.

Family LARIDÆ.

Subfamily LARINÆ.

Xema sabinei in Holland; F. E. BLAAUW, Ibis, 1893, p. 150: in Cumberland; H. A. MACPHERSON, Zoologist, 1893, p. 429.

Larus atricilla: breeding habits; G. H. MACKAY, Auk, x, pp. 333-336. *L. ridibundus*: process of gaining breeding plumage; R. READ, Bull. B. O. C. i, p. xxxviii.

Rhodostethia rosea, figured; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvii. *Larus fuscus*, *L. argentatus*, *L. glaucus*, figured; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiii. *L. ichthyatus*, figured; *id. op. cit.* pt. xxiv. *L. marinus*, figured; *id. op. cit.* pt. xxv. *L. leucopterus* and *L. glaucus*, figured; *id. op. cit.* pt. xxvi. *L. minutus* in Germany; E. HARTERT, Ornith. Monber, i, pp. 64 & 65.

Pagophila eburnea, figured; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvi.

Rissa tridactyla, figured; LORD LILFORD, *op. cit.* pt. xxiv.

Subfamily STERNINÆ.

See H. B. TRISTRAM, p. 17.

Anous stolidus and *A. melanogenys*, figured; W. ROTHSCHILD, Avif. Laysan, pt. i. *A. hawaiiensis*, n. sp., Hawaai; *id.* Bull. B. O. C. No. x, p. lvii: figured; *id.* Avif. Laysan, pt. i, pls. xviii & xix: egg figured; *id. t. c.* pl. xxxiv, fig. 13.

Haliplana fuliginosa: photograph of nest, &c.; W. ROTHSCHILD, Avif. Laysan, pt. i, pl. xvi. *H. lunata*, figured; *id. t. c.* pl. xv: egg figured; *id. t. c.* pl. xxxii, fig. 9.

Gygis alba: photographs of living bird; W. ROTHSCHILD, *t. c.* pls. xiii & xiv: egg figured; *id. t. c.* pl. xxxii, fig. 11.

Order CHARADRIIFORMES.

Suborder DROMADES.

Dromas ardeola: nesting habits; T. G. R. FINNY, J. Bombay Soc. viii, pp. 320-322.

Suborder CHIONIDES.

Chionididae : a review of the systematic position of the family ; R. W. SHUFELDT, *Auk*, x, pp. 158-165.

Chionis alba on the coast of Ireland, in Co. Down ; P. L. SCLATER, *P. Zool. Soc. London*, 1893, p. 178 ; H. L. JAMESON, *Irish Natural*, ii, pp. 151-155, pl. 4.

Suborder CHARADRII.

Family CHARADRIIDÆ.

Eudromius morinellus : breeding in S. Banffshire, N. B. ; W. R. OGILVIE-GRANT, *Bull. B. O. C.* i, p. lv : in East Prussia ; F. LINDNER & C. FLOERICKE, *Ornith. Monber.* i, p. 45.

Charadrius curonicus : nesting habits ; E. ZIEMER, *t. c.* pp. 176 & 177.

Ægialitis cantiana : nesting at Kharaghora ; H. BULKLEY, *J. Bombay Soc.* viii, pp. 325 & 326. *Æ. vociferu*, figured ; LORD LILFORD, *Col. Fig. Br. Birds*, pt. xxv.

Thinornis novæzealandiæ : eggs and nestling ; H. O. FORBES, *Bull. B. O. C.* i, p. xlv : figured ; *id.* *Ibis*, 1893, pl. xiv, figs. 5 & 6, xv, fig. 2.

Hoplopterus spinosus is the Crocodile-bird of the Nile ; J. M. COOK, *t. c.* pp. 275-277.

Family SCOLOPACIDÆ.

Subfamily SCOLOPACINÆ.

On a point in the mechanism of the bill of birds (ex. *Tringa alpina*) ; W. P. PYCRAFT, *Ibis*, 1893, pp. 361-364.

Numenius tenuirostris in East Prussia ; F. LINDNER & C. FLOERICKE, *Ornith. Monber.* i, p. 45 : in Holland ; H. W. DE GRAAF, *Ibis*, 1893, p. 150.

Limosa egocephala, figured ; LORD LILFORD, *Col. Fig. Br. Birds*, pt. xxvii.

Actitis bartrami, in Chili ; R. A. PHILIPPI, *Zool. Garten*, 1893, p. 29 ; *Ornith. Monber.* i, p. 67.

Totanus solitarius, *T. glareola*, and *T. ochropus*, figured ; LORD LILFORD, *Col. Fig. Br. Birds*, pt. xxvi. *T. majori*, n. sp. (fossil), Miocene of France ; R. LYDEKKER, *P. Zool. Soc. London*, 1893, p. 521, pl. xli, fig. 14.

Tringa canutus : notes on ; G. H. MACKAY, *Auk*, x, pp. 25-35 : supposed egg from Greenland ; H. SEEBOHM, *Bull. B. O. C.* i, p. xxxii. *T. acuminata*, in Norfolk ; *id.* *Ibis*, 1893, pp. 181-183, pl. v : its synonymy ; P. L. SCLATER, *t. c.* pp. 183-186. *T. alpina*, *T. striata*, and *T. maculata*, figured ; LORD LILFORD, *Col. Fig. Br. Birds*, pt. xxiv. *T. subarquata*, figured ; *d. t. c.* pt. xxv. *T. temmincki*, in

- Japan ; L. STEJNEGER, P. U. S. Mus. xv, pp. 371-373. *T. minutilla*, in N. Devon ; H. SAUNDERS, P. Zool. Soc. London, 1893, p. 178.
- Limicola platyrhyncha*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiv.
- Calidris arenaria*, in Borneo ; H. SEEBOHM, P. Linn. Soc. N. S. Wales (2) viii, pp. 49 & 50.
- Scolopax sabini*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvii.
- Gallinago pusilla* : egg and nestlings ; H. O. FORBES, Bull. B. O. C. i, p. xlv : figured ; *id.* Ibis, 1892, pls. xiv, figs 1 & 2, xv, fig. 1. *G. chathamica*, n. sp. (sub fossil) ; *id. op. cit.* 1893, p. 545. *G. tristrami*, n. sp., Antipodes I. ; W. ROTHSCHILD, Bull. B. O. C. iii, pp. xii & xiii. *G. huegeli*, n. sp., Snares Is. ; H. B. TRISTRAM, *op. cit.* i, pp. xlvi-xlviii.

Subfamily PHALAROPINÆ.

- Phalaropus fulicarius*, in Chili ; P. L. SCLATER, Bull. B. O. C. i, p. lv. *P. antarcticus* and *P. wilsoni*, in Chili ; R. A. PHILIPPI, Verh. Ver. Santiago, ii, pp. 266-271, Taf. 4 & 5.

Suborder GLAREOLÆ.

- Glareola pratincola*, in Holland ; H. W. DE GRAAF, Ibis, 1893, p. 151.

Suborder CURSORES.

- Rhinoptilus sebohmi*, Damara Land, *R. hartingi*, Somaliland, *R. albofasciatus*, S. Africa, n. spp. ; R. B. SHARPE, Bull. B. O. C. ii, pp. xiii & xiv.

Suborder OTIDES.

- On new genera of *Otides* ; R. B. SHARPE, Bull. B. O. C. i, p. 1.
- ¹*Heterotis*, n. g. ; type, *H. vigorsi* (Smith). ²*Neotis*, n. g. ; type, *N. ludwigi* (Ruppe). ³*Houbaropsis*, n. g. ; type, *H. bengalensis* (Gm.). *Id. t. c.* p. 1.
- Otis tetrax*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiv. *O. macqueeni*, in Yorkshire ; R. HOWSE, Zoologist, 1893, p. 21.

Order GRUIFORMES.

Suborder GRUES.

- On new genera of Cranes ; R. B. SHARPE, Bull. B. O. C. i, p. xxxvii.
- ¹*Limnogeranus*, n. g. ; type, *L. americanus* (L.). ²*Sarcogeranus*, n. g. ; type, *S. leucogeranus* (Poll.). ³*Pseudogeranus*, n. g. ; type, *P. leucauchen* (T.). R. B. SHARPE, *t. c.*
- Grus cinerea longirostris*, T. & S., = *G. mexicana* ; R. B. SHARPE, *t. c.* p. xliiii.

Order PELARGIFORMES.

Suborder CICONII.

Ciconia alba, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiii.

Suborder ARDEÆ.

Pelargocrex, nom. emend. pro *Pelargopsis*, M.-E. (nec Gloger) ; A. MILNE-EDWARDS, Bull. B. O. C. i, p. liii.

Ardeirallus prætermisus, n. sp., Ceram ; R. B. SHARPE, *op. cit.* ii, p. iv.

Butorides mauritianus, n. sp. (fossil) ; E. NEWTON & H. GADOW, Tr. Zool. Soc. London, xiii, pp. 289 & 290, pl. xxxiv, figg. 6-8.

Nycticorax griseus, in Ireland ; R. PATTERSON, Zoologist, 1893, p. 459.

Ardea ralloides, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiv.

Botaurus lentiginosus, its habits in confinement ; R. W. SHUFELDT, Auk, x, pp. 77 & 78. Figured, LORD LILFORD, Col. Fig. Br. Birds, pt. xxiv.

Herodias alba and *Ardea pacifica*, in Tasmania ; W. V. LEGGE, P. Soc. Tasmania, pp. 79-81.

Suborder PLATALEÆ.

Family PLATALEIDÆ.

Platalea ajaja, in confinement ; F. E. BLAAUW, Ibis, 1893, pp. 465 & 466.

Family IBIDIDÆ.

Plegadis falcinellus, in Silesia ; C. FLOERICKE, J. Ornithol. 1893, pp. 132 & 133. Figured, LORD LILFORD, Col. Fig. Br. Birds, pt. xxvii.

Ibis abbotti, n. sp., Aldabra I. ; R. RIDGWAY, P. U. S. Mus. xvi, p. 599.

Order ANSERIFORMES.

Family ANATIDÆ.

Subfamily ANSERINÆ.

Anser cinereus, *A. brachyrhynchus*, and *A. segetum*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvi.

Oen hyperboreus, figured ; LORD LILFORD, *t. c.* pt. xxvi.

Bernicla brenta, figured ; LORD LILFORD, *t. c.* pt. xxiv. *B. brenta* × *Anser albifrons* ; E. HARTERT, Bull. B. O. C. i, p. xxiii. *B. sandvicensis*, figured ; S. B. WILSON & A. H. EVANS, *Aves Hawaiienses*, pt. iv.

Subfamily CYGNINÆ.

Cygnus musicus and *S. bewicki*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxv.

Subfamily ANATINÆ.

- Tadorna cornuta*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvi.
Sarcidiornis mauritianus, n. sp. (fossil) ; E. NEWTON & H. GADOW, Tr. Zool. Soc. London, xiii, pp. 290 & 291, pl. xxxiv, figg. 9 & 10.
Anas boscas × *Chaulelasmus streperus* ; G. PAVESI, Boll. Soc. Ven. Trent. v, pp. 3-6. *A. obscura*, nesting on Plum I. ; C. S. ALLEN, Auk, x, pp. 53-59, pls. i & ii. *A. wyvilliana*, figured ; S. B. WILSON & A. H. EVANS, Aves Hawaiienses, pt. iv. *A. laysanensis*, figured ; W. ROTHSCHILD, Avif. Laysan, pt. i, pl. vi. *A. theodori*, n. sp. (fossil) ; E. NEWTON & H. GADOW, Tr. Zool. Soc. London, xiii, p. 291, pl. xxxiv, figg. 11-17.
Spatula clypeata, in South Africa ; W. B. FAIRBRIDGE, Ibis, 1893, p. 153.
Camptolasmus labradoris, figured ; A. MILNE-EDWARDS & E. OUSTALET, Notice Ois. Éteintes Mus. Paris, pp. 51-62, pl. iv.
Ædemia : notes on the genus ; G. TRUMBULL, Auk, x, pp. 165-176, pl. v.
Æ. nigra, in Sussex ; H. SAUNDERS, Bull. B. O. C. i, p. xxiv.
Mergus merganser, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiii.

Order PELECANIFORMES.

Suborder PHAETHONTES.

- Phaëton rubricauda*, egg figured ; W. ROTHSCHILD, Avif. Laysan, pt. i, pl. iii, fig. 8. *P. aethereus*, in Madeira ; W. HARTWIG, Ornith. Monber. i, p. 172.

Suborder SULÆ.

- Sula cyanops* and *S. piscatrix*, photographs of nests, &c. ; W. ROTHSCHILD, Avif. Laysan, pt. i, pls. xi & xii. *S. abbotti*, n. sp., Assumption I. ; R. RIDGWAY, P. U. S. Mus. xvi, pp. 599 & 600.

Suborder PHALACROCORACES.

Family PHALACROCORACIDÆ.

- Phalacrocorax onslowi* and *P. rothschildi*, n. spp., Chatham Is. ; H. O. FORBES, Ibis, 1893, pp. 533 & 537. *P. neglectus*, nesting on Dassen I. ; W. G. FAIRBRIDGE, Ibis, 1893, pp. 277-279.
Plotus nanus, n. sp. (fossil), Mauritius ; E. NEWTON & H. GADOW, Tr. Zool. Soc. London, xiii, pp. 288 & 289, pl. xxxiv, figg. 1-5.

Suborder FREGATI.

- Fregata aquila*, photographs of nest, &c. ; W. ROTHSCHILD, Avif. Laysan, pt. i, pls. vii-x.

Order ICHTHYORNITHIFORMES.

See SHUFELDT, R. W., p. 16.

Order ACCIPITRIFORMES.

Suborder ACCIPITRES.

The Hawks and Owls of the United States, in their relation to agriculture ; A. K. FISHER, Bull. Dep. Agric. Ornithol. 3, pp. 1-131, pls. i-xviii. The following species are figured : — *Elanoides forficatus*, *Ictinia mississippiensis*, *Circus hudsonius*, *Accipiter velox*, *A. cooperi*, *A. atricapillus*, *Buteo borealis*, *B. lineatus*, *B. swainsoni*, *B. latissimus*, *Archibuteo lagopus sawtijohannis*, *A. ferrugineus*, *Haliaetus leucocephalus*, *Falco peregrinus anatum*, *F. columbarius*, *F. sparverius*, *Pandion haliaetus carolinensis*.

On the moulting of the Birds of Prey ; J. G. GOODCHILD, P. Phys. Soc. Edinb. xi, pt. ii, pp. 243 & 244.

Les Oiseaux hybrides rencontrés a l'état sauvage : Pt. IV, *Accipitres* ; A. SUCHETET, Mem. Soc. zool. France, vi, pp. 26-45.

Family VULTURIDÆ.

Gyps fulvus and *Neophron percnopterus*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiii.

Family FALCONIDÆ.

Subfamily ACCIPITRINÆ.

Circus cineraceus, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvii: breeding in Cambridgeshire ; F. E. SWAINSON, Zoologist, 1893, p. 312. *C. spilonotus*, from Moulmein ; W. T. BLANFORD, Bull. B. O. C. ii, p. x.

Accipiter pallens, n. sp., Japan ; L. STEJNEGER, P. U. S. Mus. xvi, p. 625. *A. major*, notes on ; X. RASPAIL, Mem. Soc. zool. France, vi, pp. 226-233.

Astur alphonssi, n. sp. (fossil), Mauritius ; E. NEWTON & H. GADOW, Tr. Zool. Soc. London, xiii, pp. 285 & 286, pl. xxxiii, figg. 9 & 10.

Urospizias sumbaënsis, n. sp., Sumba I. ; A. B. MEYER, Abh. Mus. Dresden, No. 3, p. 7.

Subfamily BUTEONINÆ.

Buteo ferox, near Düsseldorf ; R. LEUSSEN, Ornith. Monber. i, p. 190.

B. menetriesi, in Russia ; H. E. DRESSER, Ibis, 1893, pp. 379 & 380.

B. zimmermannæ, n. sp., N.E. Europe ; S. EHMEKE, J. Ornithol. 1893, p. 115 ; H. SCHALOW, t. c. p. 173. *B. albicaudatus sennetti*, n. subsp., Rio Grande, Texas ; J. A. ALLEN, Bull. Amer. Mus. v, pp. 144 & 145.

Subfamily AQUILINÆ.

Aquila chrysaëtus and *A. naevia*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxv.

- Spilornis raja*, n. sp., Sarawak ; R. B. SHARPE, Bull. B. O. C. i, p. lv.
Harpagornis moorei, notes on ; A. HAMILTON, Tr. N. Zealand Inst. xxv,
 pp. 92-96, pls. vii, B, C.

Subfamily FALCONINÆ.

- Pernis apivorus*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvii.
Baza borneensis, n. sp. [ex. Brüggem. MSS.], N.E. Borneo ; R. B. SHARPE,
 Ibis, 1893, pp. 557 & 558. Notes on *B. sumatrensis* and its allies ;
id. t. c. pp. 555-558. *B. timorlaoënsis*, n. sp., Timorlaut ; A. B.
 MEYER, Abh. Mus. Dresden, 1892-93, No. 31, p. 5.
Falco cenchris, in Anhalt ; J. SOMMER, Ornith. Monber. i, p. 42. *F.*
sparverius deserticolus, in British Columbia ; W. BREWSTER, Auk, x,
 p. 236. *F. severus papuanus*, n. subsp., S.E. New Guinea ; A. B.
 MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, No. 3, 1892-93,
 p. 6.
Cerchneis vespertinus, in Austria-Hungary ; E. C. F. RHEZAK, Ornith.
 Monber. i, pp. 77-80. Figured, LORD LILFORD, Col. Fig. Br. Birds,
 pt. xxvii.

Suborder STRIGIFORMES.

- The Hawks and Owls of the United States in their relation to agricul-
 ture ; A. K. FISHER, Bull. Dep. Agric. Ornithol. 3, pp. 132-201,
 pls. xix-xxv. The species figured are :—*Strix pratincola*, *Asio wilsoni-*
anus, *A. accipitrinus*, *Syrnium nebulosum*, *Megascops asio*, *M. flam-*
meolus idahoensis, *Bubo virginianus*, *Speotyto cunicularia hypogæa*.
 Die verbreitung und Lebensweise der Nachtraubvögel in Siebenbürgen ;
 J. VON CZATO, MT. ornith. Ver. Wien, xvii, pp. 17-20.

Family BUBONIDÆ.

- Bubo maximus*: a spotted egg ; E. REY, Ornith. Monber. i, pp. 57 & 58.
Megascops: evolution and dichromatism in the genus ; E. M. HASBROUCK,
 Amer. Natural. xxvii, p. 521. The geographical distribution of the
 genus in North America ; *id.* Auk, x, pp. 250-264, pls. viA & viB,
 inaps.
Scops brookii, figured ; C. HOSE, Ibis, 1893, pl. xi. *S. sibuensis*, n. sp.,
 Sibutu I. ; R. B. SHARPE, Bull. B. O. C. ii, p. ix.
Pisorhina solokensis, n. sp., Solok, W. Sumatra ; E. HARTERT, *op. cit.* i,
 pp. xxxix & xl.
Asio otus, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiii.
Glaucidium kilimense, n. sp., Kilimanjaro ; A. REICHENOW, Ornith.
 Monber. i, p. 178. *G. borneense*, n. sp., Mt. Kalulong, Sarawak ;
 R. B. SHARPE, Bull. B. O. C. i, p. lv. *G. castaneum*, n. sp., Central
 Africa (Aundundi) ; A. REICHENOW, Ornith. Monber. i, p. 62. *G.*
sjöstedti, n. sp., Cameroons ; *id. t. c.* p. 65.
Syrnium aluco, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxv.

Family STRIGIDÆ.

Strix sancti albani, n. sp. (fossil), Miocene of France; R. LYDEKKER, P. Zool. Soc. London, 1893, p. 518, pl. xli, figs. 1-4. *S. suazieri*, n. sp. (fossil), Mauritius; E. NEWTON & H. GADOW, Tr. Zool. Soc. London, xiii, pp. 286-288, pl. xxxiii, figg. 11 & 18.

Order CORACIIFORMES.

A monograph of the *Coraciidæ*, or family of the Rollers; H. E. DRESSER. Farnborough, Kent: 1893, folio, xx & 112 pp., pls. i-xxvii. The following species are figured:—*Coracias abyssinicus*, *C. lorti*, *C. caudatus*, *C. spatulatus*, *C. weigalli*, *C. garrulus*, *C. indicus*, *C. affinis*, *C. navius*, *C. mosambicus*, *C. cyanogaster*, *C. temmincki*, *Eurystomus glaucurus*, *E. afer*, *E. gularis*, *E. orientalis*, *E. pacificus*, *E. salomonensis*, *E. azureus*, *Brachypteracias leptosomus*, *B. squamiger*, *Atelornis pittoides*, *Leptosomus discolor*, *L. gracilis*.

Suborder HALCYONES.

Halcyon fortis, n. sp., Senegal; A. REICHENOW, Ornith. Monber. i, pp. 201 & 202. *H. sordidus*, account of nesting habits; A. J. NORTH, P. Linn. Soc. N. S. Wales (2) vii, p. 395.

Suborder CAPRIMULGI.

Caprimulgus ruficollis, figured; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiv. *C. nigriscapularis*, n. sp., Central Africa (Sconga); A. REICHENOW, Ornith. Monber. i, p. 31.

Suborder CYPSELI.

See SALVIN, O., & GODMAN, F. D.; and also SHUFELDT, R. W. Swifts and Humming-birds; F. A. LUCAS, Ibis, 1893, pp. 365-371. *Belornis*, nom. emend. pro. *Tachyornis*, M.-E. (nec Gosse); A. MILNE-EDWARDS, Bull. B. O. C. i, p. lii. *Chatura lawrencei*, n. sp., Grenada, West Indies; R. RIDGWAY, P. U. S. Mus. xvi, pp. 43 & 44. *Cypseloides cherriei*, n. sp., Costa Rica; *id. t. c.* *Panyptila cayanensis* (Gm.), its nest; C. W. RICHMOND, Auk, x, pp. 84 & 85.

Order TROCHILI.

See SHUFELDT, R. W.

The genera of Humming-birds; A. BOUCARD, Humming Bird, pp. 32 & 55-106. The following new species are described:—*Metallura peruviana*, Peru, p. 6; *Lesbia æquatorialis*, Ecuador, p. 95; *Oreotrochilus*

bolivianus, p. 7; *Hylocharis brasiliensis*, p. 7; *Amazilia forreri*, p. 7; *Saucerottia wellsi*, p. 8; *Uranomitra whiteleyi*, p. 8; *Agyrtria speciosa*, p. 8; *Chrysuronia buckleyi*, p. 9; *Phaethornis garleppi*, p. 9; *Hemisteophania guianensis*, p. 10; *Patagona peruviana* and *P. boliviana*, pp. 60 & 61; *Cyanolesbia meridana* and *C. columbiana*, pp. 97 & 98; *Thalurania valenciana*, p. 102.

Swifts and Humming-birds; F. A. LUCAS, *Ibis*, 1893, pp. 365-371.

The food of Humming-birds; F. A. LUCAS, *Auk*, x, pp. 311-315.

Section B. *TROCHILI INTERMEDII*.

Metallura atrigularis, n. sp., Ecuador; O. SALVIN, *Bull. B. O. C.* i, p. xlix.

Anthocephala berlepschi, n. sp., U.S. Colombia; O. SALVIN, *Bull. B. O. C.* iii, p. viii.

Cyanomyia salvini, n. sp., Sonora, Mexico; W. BREWSTER, *Auk*, x, pp. 214 & 215.

Section C. *TROCHILI LÆVIROSTRES*.

Pygmornis chapadensis, n. sp., Matto Grosso; J. A. ALLEN, *Bull. Amer. Mus.* v, p. 122.

Suborder COLII.

Colius lacteifrons, n. sp., Damaraland; R. B. SHARPE, *Cat. B. Brit. Mus.* xvii, p. 345 [omitted from *Zool. Rec.* xxix, p. 46]. *C. capensis*, breeding in confinement; P. L. SCLATER, *P. Zool. Soc. London*, 1893, p. 528.

Order TROGONES.

Trogon chrysomelas, n. sp., Escondido river, Nicaragua; C. W. RICHMOND, *P. U. S. Mus.* xvi, p. 513.

Harpactes whiteheadi, figured; J. WHITEHEAD, *Expl. Kina Balu*, pl. xxx.

Order COCCYGES.

Suborder MUSOPHAGI.

Turacus emini, n. sp., Central Africa; A. REICHENOW, *Ornith. Monber.* ii, p. 30.

Suborder CUCULI.

Ouculus canorus, notes on breeding; A. WALTER, *J. Ornithol.* 1893, pp. 135-149. *C. saturatus* and *C. intermedius*, synonymy; W. T. BLANFORD, *P. Zool. Soc. London*, 1893, pp. 315-319. Coloration of the eggs; J. A. NORTON, *P. Bristol Soc.* vii, pt. ii, pp. 134-136.

- Scythrops novæ-hollandiæ*, egg described: A. J. CAMPBELL, P. Soc. Victoria (n.s.), v, pp. 125 & 126.
- Piaya cayana cabanisi*, n. subsp., Matto Grosso; J. A. ALLEN, Bull. Amer. Mus. v, pp. 136-138.
- Centropus flecki*, n. sp., Damaraland; A. REICHENOW, Ornith. Monber. i, p. 84. *C. kangeanensis*, n. sp., Kangean Archipelago; A. G. VORDEMAN, Natuurk. Tijdschr. Nederl. Ind. 1893, p. 190.
- Rhopodytes kangeanensis*, n. sp.; A. G. VORDEMAN, t. c. p. 188.

Order PSITTACIFORMES.

- On certain points in the anatomy of Parrots bearing on their classification; F. E. BEDDARD & F. G. PARSONS, P. Zool. Soc. London, 1892, pp. 507-514, pl. xl.
- Wilde Papageien bei Berlin; L. HECK, Ornith. Monber. i, pp. 24-26.

Family LORIIDÆ.

- Lorius erythrothorax rubiensis*, n. subsp., Rubi; A. B. MEYER, Abh. Mus. Dresden, No. 3, 1892-93, p. 10.

Family CACATUIDÆ.

- Lophopsittacus mauritianus*, bones figured; E. NEWTON & H. GADOW, Tr. Zool. Soc. London, xiii, pp. 283-285, pl. xxxiii, figg. 1-8.

Family PSITTACIDÆ.

Subfamily PIONINÆ.

- Chrysolis ochroptera* and *C. rothschildi*, figured; E. HARTERT, Ibis, 1893, pl. ix, figg. 1 & 2. *C. canifrons*, distinct from *C. ochroptera*; G. L. LAWRENCE, t. c. pp. 566 & 567.

Subfamily PSITTACINÆ.

- Coracopsis vasa*, sexual characters; P. L. SCLATER, P. Zool. Soc. London, 1893, p. 435.

Subfamily PALÆORNITHINÆ.

- Prioniturus verticalis*, n. sp., Sulu Archipelago; R. B. SHARPE, Bull. B. O. C. iii, p. x. *P. cyaniceps*, figured; J. WHITEHEAD, Expl. Kina Balu, pl. xxvi, fig. 2.
- Mascarinus duboisi*, figured; A. MILNE-EDWARDS & E. OUSTALET, Notice Ois. éteintes Mus. Paris, pp. 1-20, pl. i.
- Palæornis salvadorii*, n. sp., Szechuen; E. OUSTALET, Bull. Soc. zool. France, xviii, p. 19.

Subfamily PLATYCERCINÆ.

- Platycercus occidentalis*, n. sp., N.W. Australia; A. J. NORTH, Rec. Austral. Mus. ii, p. 83.
- Cyanorhamphus*: notes on the genus; T. SALVADORI, Ibis, 1893, pp. 466 & 467. *C. hochstetteri* = *C. erythrotis*; H. O. FORBES, t. c. pp. 280 & 281. *C. forbesi*, n. sp., Chatham Is.; W. ROTHSCHILD, P. Zool. Soc. London, 1893, pp. 529 & 530. *C. rayneri*, account of nesting habits; A. J. NORTH, P. Linn. Soc. N. S. Wales (2) vii, p. 395.

Order SCANSORES.

Suborder CAPITONES.

- On some genera of Oriental Barbets; W. T. BLANFORD, Ibis, 1893, pp. 234-240.
- Thereiceryx*, n. g.; type, *T. zeylonicus* (Gm.), *Mesobucco* [Zool. Rec. xxvi, Aves, p. 61], = *Cyanops*.
- Melanobucco zombe*, n. sp., Nyasaland; G. E. SHELLEY, Ibis, 1893, pp. 10 & 11.
- Tricholema flavibuccale*, n. sp., Central East Africa (Wembacre Steppes); A. REICHENOW, Ornith. Monber. i, p. 20.
- Smilorhis whytii*, n. sp., Nyasaland; G. E. SHELLEY, Ibis, 1893, p. 11, pl. i.
- Xantholema* and *Megalama*, notes on certain species; E. HARTERT, J. Ornithol. 1893, pp. 133 & 135.

Order PICIFORMES.

Suborder PICI.

Subfamily PICINÆ.

- Colaptes auratus*: habits; W. BREWSTER, Auk, x, pp. 231-236.
- Picooides americanus alascensis*, in British Columbia; W. BREWSTER, t. c.
- Mesopicus johnstoni*: ♀ described; Y. SJÖSTEDT, Ornith. Monber. i, p. 102.
- Dendropicus reichenowi*, n. sp., Camaroons; Y. SJÖSTEDT, t. c. p. 138.
- D. pæcilolæmus*, n. sp., Central Africa (Sconga); A. REICHENOW, t. c. p. 30. *D. lacuum*, n. sp., Karcoria, E. C. Africa; *id.* t. c. p. 178.

Subfamily PICUMNINÆ.

- Picumnus salvini*, n. sp., Hab. ign.; E. HARGITT, Bull. B. O. C. iii, p. iii.
- P. innominatus*, from Borneo; R. B. SHARPE, Ibis, 1893, p. 560.

Suborder BUCCONES.

- Malacoptila fuliginosa*, n. sp., Escondido River, Nicaragua; C. W. RICHMOND, P. U. S. Mus. xvi, pp. 512 & 513.

Order EURYLÆMI.

Calyptomena whiteheadi, figured; J. WHITEHEAD, Expl. Kina Balu, frontisp.

Order PASSERIFORMES.

Section A. OSCINES.

Family CORVIDÆ.

See DIEDERICH, F., p. 5.

Die Rabenarten Norddeutschlands; K. WENZEL, Zeitschr. Ornith. 1893, pp.

Corvus frugilegus, figured; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiii. *C. tropicus*, figured; S. B. WILSON & A. H. EVANS, *Aves Hawaiienses*, pt. iv. *C. americanus* and *C. caurinus*, notes on; S. N. RHOADS, Auk, x, pp. 18-21.

Garrulus glandarius and its allies; O. KLEINSCHMIDT, Ornith. Jahrb. iv, pp. 167-219, Taf. i.

Family PARADISEIDÆ.

Monograph of the *Paradiseidæ*, or Birds of Paradise, and *Ptilonorhynchidæ* [q.v.], or Bower Birds. Part II. By R. B. SHARPE. London: 1893, folio. The following species are figured: *Ptilorhis paradisea*, *Craspedophora intercedens*, *Astrapia nigra*, *Paradigalla carunculata*, *Paradisornis rudolphi*, *Rhipidornis gulielmi tertii*, *Manucodia chalybeata*.

Subfamily EPIMACHINÆ.

Ptilorhis victoriae: nest and egg figured; D. LE SOUEF, P. Soc. Victoria, (n.s.) v, pp. 36 & 37, pl. i.

Drepanornis bruijnii: ♂ figured; E. OUSTALET, N. Arch. Mus. (3) Mem. v, pp. 295-299, pl. vi. *P. geisleri*, n. sp., Huon Gulf, New Guinea; A. B. MEYER, Abh. Mus. Dresden, 1892-93, No. 3, p. 15.

Subfamily PARADISEINÆ.

Paradisea augustae victoriae: its egg; A. B. MEYER, Ibis, 1893, pp. 481-483, pl. xiii. *P. raggiana*: notes on; O. FINSCH, Ibis, 1893, p. 464.

Trichoparadisea, n. g.; type, *P. gulielmi tertii*; A. B. MEYER, Abh. Mus. Dresden, 1892-93, No. 3, p. 20.

Family PTILONORHYNCHIDÆ.

Monograph of the *Paradiseidæ* [q.v.], or Birds of Paradise, and *Ptilonorhynchidæ*, or Bower-Birds. Part II. R. B. SHARPE, 1893, folio.

The following species are figured: *Amblyornis inornata*, *Ælurædus stonii*.

Sericulus melinus: nest and eggs described; A. J. CAMPBELL, P. Soc. Victoria (n.s.) v, pp. 123-125.

Family STURNIDÆ.

Sturnus vulgaris, notes on; J. TALSKEY, ii Flugschr. Stadt Liebau, 1893.
[Cf. Ornith. Monber. i, p. 210.]

Family EULABETIDÆ.

⁴*Stilbopsar*, n. g.; type, *S. stuhlmanni*, n. sp., Central E. Africa (Badjua); A. REICHENOW, Ornith. Monber. i, p. 31.
Fregilupus varius, figured; A. MILNE-EDWARDS & E. OUSTALET, Notice Ois. éteintes Mus. Paris, pp. 21-46, pl. ii.

Family PARAMYTHIDÆ.

Paramythia montium [Zool. Rec. xxix, *Aves*, p. 50], figured; P. L. SCLATER, Ibis, 1893, pp. 243 & 244, pl. vii.

Family DICRURIDÆ.

Buchanga aldabrana, n. sp., Aldabra I.; R. RIDGWAY, P. U. S. Mus. xvi, p. 597.
Chibia jentinki, n. sp., Kangean Archipelago; A. G. VORDERMAN, Naturk. Tijdschr. Nederl. Ind. 1893, p. 194.

Family ORIOLIDÆ.

Oriolus galbula, in Orkney; W. HARVEY, Ann. Scott. Nat. Hist. ii, p. 181: in the Faeroes; H. W. FEILDEN, Zoologist, 1893, p. 355.
O. hosei, figured; C. HOSE, Ibis, 1893, pl. x. *O. vulneratus*, figured; J. WHITEHEAD, Expl. Kina Balu, pl. xxvi, fig. 1. *O. insularis*, n. sp., Kangean Archipelago; A. G. VORDERMAN, Naturk. Tijdschr. Nederl. Ind. 1893, p. 200.

Family ICTERIDÆ.

Icterus gularis yucatanensis, in Louisiana; C. BENDIRE, Auk, x, pp. 366 & 367.
Agelaius phoeniceus sonoriensis, in British Columbia; W. BREWSTER, t. c. p. 237.
Dolichonyx oryzivorus: changes of plumage; F. M. CHAPMAN, t. c. pp. 309-311, pl. vii. *D. oryzivorus albinucha*, = *D. oryzivorus*; id. t. c. p. 311.

Family PLOCEIDÆ.

- Symplectes castanicapillus*, n. sp., Cameroons, Y. SJÖSTEDT, Ornith. Monber. i, p. 43. *S. preussi*, ♀ described; *id. t. c.* p. 28. *S. stuhlmanni*, n. sp., Central E. Africa; A. REICHENOW, *t. c.* p. 29. *S. dorsomaculatus*, n. sp., Camaroons; *id. t. c.* p. 177.
- Hyphantornis reichenowi*, n. sp., Galanga, Angola; J. V. BARBOZA DU BOCAGE, J. Sci. Lisb. (2) xi, p. 153. *H. bertrandi*, n. sp., Nyasaland; G. E. SHELLEY, Ibis, 1893, p. 23, pl. ii.
- Ploceus interscapularis* (Buudoko), *P. rufoniger* (Kinjawanga), *P. pachyrhynchus* (Karévia), n. spp., Central E. Africa; A. REICHENOW, Ornith. Monber. i, p. 29.
- Malimbus rubricollis centralis*, n. subsp., Central Africa (Nduruma); A. REICHENOW, *t. c.* p. 30. *M. erythrogastra*, n. sp.; *id. l. c.*
- Chlorura borneensis*, figured; J. WHITEHEAD, Expl. Kina Balu, pl. xvi, fig. 1.
- Foudia aldabrana*, n. sp., Aldabra I.; R. RIDGWAY, P. U. S. Mus. xvi, p. 598.
- Lagonosticta dybowskii*, n. sp., Upper Congo; E. OUSTALET, Naturaliste, xiv, p. 23.
- Uroloncha kangeanensis*, n. sp., Kangean Archipelago; A. G. VORDERMAN, Naturk. Tijdschr. Nederl. Ind. 1893, p. 199.

Family TANAGRIDÆ.

- Chlorospingus leotaudi*, n. sp., Trinidad; F. M. CHAPMAN, Auk, x, p. 342.
- C. albitemporalis venezuelanus*, n. subsp., Venezuela; H. VON BERLEPSCH, Ornith. Monber. i, p. 11.
- Rhampocelus costaricensis*, notes on; G. K. CHERRIE, Auk, x, p. 278.
- Buthraupis caeruleigularis*, n. sp., Buena Vista, Costa Rica; R. RIDGWAY, P. U. S. Mus. xvi, p. 609.
- Pacilothraupis palpebrosa melanops*, n. subsp., Venezuela; H. VON BERLEPSCH, Ornith. Monber. i, p. 11.

Family CÆREBIDÆ.

- Note on the proper use of the generic terms *Certhiola* and *Cereba*; P. L. SCLATER, Ibis, 1893, pp. 246 & 247.
- Coinirostrum sitticolor intermedium*, n. subsp., Venezuela; H. VON BERLEPSCH, Ornith. Monber. i, p. 11.

Family DREPANIDÆ.

- Drepanis funerea*, n. sp., Molokai I., Sandwich Is.; A. NEWTON, P. Zool. Soc. London, 1893, p. 690.
- Acrulocercus bishopi*, n. sp., Molokai I., Sandwich Group; W. ROTHSCCHILD, Bull. B. O. C. i, p. xlii.

- Hemignathus affinis*, n. sp., I. of Maui, Sandwich Group; W. ROTHSCHILD, Ibis, 1893, p. 112 [vide infra]. *H. lanaiensis*, n. sp., I. of Lanai; *id.* Bull. B. O. C. i, pp. xxiv & xxv. Review of the genus, pp. 79-93, *H. procerus*, *H. lanaiensis*, *H. obscurus*, figured; *id.* Avif. Laysan, pt. ii.
- Heterorhynchus*: review of the genus (pp. 95-106), *H. wilsoni*, n. sp., Hawaii (p. 97), *H. hanapepe*, *H. affinis*, figured; W. ROTHSCHILD, *t. c.*
- Viridonia sagittirostris*, figured; W. ROTHSCHILD, *t. c.*
- Himatione maculata* (Cab.) referred to *Viridonia*; W. ROTHSCHILD, Bull. B. O. C. i, p. lvii.
- Palmeria mirabilis*, = *Himatione dolei*, Wils.; W. ROTHSCHILD, *op. cit.* ii, p. ix [vide infra, p. 43].
- Himatione newtoni*, *H. wilsoni*, n. spp., Maui I., Sandwich Group; W. ROTHSCHILD, *op. cit.* i, p. xlii.
- H. freethi* [Zool. Rec. xxix, *Aves*, p. 52]; W. ROTHSCHILD, Avif. Laysan, pt. i, pl. 2, figg. A, B, C. *H. sanguinea*, figured, *id. t. c.* pl. 2, fig. D. *H. mana*, figured; S. B. WILSON & A. H. EVANS, *Aves Hawaiienses*, pt. iv.
- Loxops wolstenholmei*, n. sp., I. of Oahu, Sandwich Group; W. ROTHSCHILD, Bull. B. O. C. i, p. lvi.
- L. ochracea*, n. sp., I. of Maui, Sandwich Group; W. ROTHSCHILD, Ibis, 1893, pp. 112, 113, 281, & 282.
- Chloridops kona*, figured; S. B. WILSON & A. H. EVANS, *Aves Hawaiienses*, pt. iv.
- Oreomyza*, review of the genus, pp. 111-126; *O. maculata*, *O. newtoni*, *O. montana*, and *O. flammea*, figured; W. ROTHSCHILD, Avif. Laysan, pt. ii.

Family FRINGILLIDÆ.

Subfamily COCCOTHAUSTINÆ.

- Coccythraustes vespertinus*, notes on; A. W. BUTLER, Auk, x, pp. 155-157.
- Ligurinus sinicus*, in Denmark; K. ANDERSEN, Vid. Medd. 1893, pp. 166-172.
- Eueltheia sharpii*, n. sp., Curaçao; E. HARTERT, Bull. B. O. C. i, p. xxxvii.
- Pseudonestor*, n. g.; type, *P. xanthophrys*, n. sp., I. of Maui, Sandwich Group; W. ROTHSCHILD, *t. c.* pp. xxxv & xxxvi.

Subfamily FRINGILINÆ.

- Fringilla spodiogenys* and its allies; W. ROTHSCHILD & E. HARTERT, Ornith. Monber. i, pp. 97 & 98. *F. spodiogenys koenigi*, n. subsp., Tunis, *id. t. c.* pp. 97 & 98.
- Carduelis elegans*, in North Uist; J. CAMPBELL-ORDE, Ibis, 1893, p. 592.
- Chrysomitris bieti*, n. sp., Tatsien-lou; E. OUSTALET, N. Arch. Mus. Paris (3) v, p. 34.

- Montifringilla altaica*, its synonymy ; H. E. DRESSER, *t. c.* pp. 377 & 378.
- Serinus hortulanus*, distribution in Europe ; W. HARTWIG, *Ornith. Monber.* i, pp. 1-7 ; K. C. F. RZEHAŁ, *t. c.* pp. 45 & 46 ; W. HARTWIG, *t. c.* pp. 80 & 81 ; K. G. ANDERSEN, *t. c.* pp. 100 & 101 : in Ireland ; E. WILLIAMS, *Zoologist*, 1893, p. 108.
- Telespiza cantans* [*Zool. Rec.* xxvii, *Aves*, p. 49], figured ; W. ROTHSCHILD, *Avif. Laysan*, pt. i, pl. 3.
- T. flavissima* [*Zool. Rec.* xxix, *Aves*, p. 53], figured ; W. ROTHSCHILD, *t. c.* p. 7, pl. iv. Nest and egg figured ; *id. t. c.* pl. xxxi, fig. 1.
- Passer petronia*, breeding in Thuringia ; H. VON BERLEPSCH, *Ornith. Monber.* i, p. 23.
- P. montanus*, in North Uist ; J. CAMPBELL-ORDE, *Ibis*, 1893, p. 592.
- Propyrrhula subhimalayensis*, ♂ juv. figured ; E. OUSTALET, *N. Arch. Mus. Paris* (3) v, p. 36, pl. iv, fig. 2.

Subfamily EMBERIZINÆ.

- Emberiza ciopsis ijiimæ*, n. sp., Tsushima ; L. STEJNEGER, *P. U. S. Mus.* xvi, p. 637.
- Plectrophenax nivalis*, breeding in S. Banffshire, N. B. ; W. R. OGILVIE-GRANT, *Bull. B. O. C.* i, p. lv ; L. W. HINXMAN & W. EAGLE CLARKE, *Ann. Scott. Nat. Hist.* ii, p. 181.
- Fringillaria saharae*, its synonymy ; H. E. DRESSER, *Ibis*, 1893, pp. 375-377.
- Calcarius lapponicus*, note on immigration of ; J. H. GURNEY, *Norf. & Norw. Nat. Soc.* v, p. 372.
- Rhyncophanes macownii*, in British Columbia ; W. BREWSTER, *Auk*, x, p. 237.
- Zonotrichia albicollis*, in Holderness ; J. CORDEAUX, *Zoologist*, 1893, p. 149.
- Z. albicollis* × *Junco hyemalis* ; W. STONE, *Auk*, x, pp. 213 & 214, pl. vi.
- Compsospiza garleppi*, n. sp., Bolivia ; H. VON BERLEPSCH, *Ibis*, 1893, pp. 207-210, pl. vi.
- Poospizopsis*, n. g. ; type, *P. caesar* (Scl. & Salv.) ; H. VON BERLEPSCH, *t. c.* p. 208, note.
- Junco ridgwayi*, in Colorado ; R. C. MCGREGOR, *Auk*, x, p. 206. *J. pinosus*, n. sp., from California ; L. M. LOOMIS, *t. c.* pp. 47 & 48.

Family ALAUDIDÆ.

- Ammonianes saharae*, nom. nudum pro *A. algeriensis*, Sharpe ; N. E. DRESSER, *Monogr. Corac.* (1), p. 46.
- Rhamphocoris clotbey*, ad. et juv. figured ; A. KOENIG, *J. f. O.* 1893, Tab. 2.
- Mirafra tigrina*, n. sp., Upper Congo ; E. OUSTALET, *Naturaliste*, xiv, p. 231.

Family MOTACILLIDÆ.

Anthus cervinus and *A. obscurus*, in East Prussia ; F. LINDNER & C. FLOERICKE, Ornith. Monber. i, p. 44.

Family MNIOTILTIDÆ.

Basileuterus vermivorus olivascens, n. subsp., Trinidad ; F. M. CHAPMAN, Auk, x, p. 343. *B. rufifrons juyi*, San Luis Potosi, Mexico, R. RIDGWAY, P. U. S. Mus. xv, p. 119 ; *B. rufifrons dugesi*, Guanajuato, Western Mexico, n. subsp., *id. ibid.*
Geothlypis poliocephala ralphi, n. subsp., Lower Rio Grande Valley ; R. RIDGWAY, t. c. p. 692.

Family CERTHIIDÆ.

Tichodroma muraria, its song ; S. BAUER, MT. ornith. Ver. Wien, xvii, No. 4, pp. 49 & 50.

Family MELIPHAGIDÆ.

Palmeria, n. g. ; type, *P. mirabilis*, n. sp., I. of Maui, Sandwich Group ; W. ROTHSCHILD, Ibis, 1893, pp. 113 & 114. [*Cf. Drepanidæ, ante*, p. 41.]

Family NECTARINIDÆ.

Cinnyris regia, n. sp., Central E. Africa ; A. REICHENOW, Ornith. Monber. i, p. 32. *C. stuhlmanni* and *C. purpureiventris*, n. spp., Central Africa ; *id. t. c.* p. 61. *C. teysmanni*, n. sp., Macassar ; J. BÜTTIKOFER, Notes Leyden Mus. xv, p. 179.
Arachnorhaphis everetti, n. sp., Kina Balu ; R. B. SHARPE, Ibis, 1893, p. 561.

Family DICÆIDÆ.

Dicæum splendidum, n. sp., Macassar ; J. BÜTTIKOFER, Notes Leyden Mus. xv, p. 180. *D. cyanonotum*, n. sp., Ichang, China ; F. W. STYAN, Ibis, 1893, p. 470. *D. sibuense*, n. sp., Si Butu I. ; R. B. SHARPE, Bull. B. O. C. iii, p. x.

Family ZOSTEROPIDÆ.

On the species of *Zosterops* found in the I. of Java ; H. SEEBOHM, Ibis, 1893, pp. 217-219.
Zosterops neglecta, n. sp., E. Java ; H. SEEBOHM, Bull. B. O. C. i, p. xxvi.
Z. griseovirescens, n. sp., Anno-Bom I., W. Africa ; J. v. BARBOZA DU BOCAGE, J. Sci. Lisb. ix, p. 18.

Family PARIDÆ.

- Pæcile songara*, distinct from *P. affinis*; T. PLESKE, Bull. B. O. C. iii, p. xiii.
- Parus palustris*, in Strathspey; W. EVANS, Ann. Scott. Nat. Hist. ii, pp. 207-213. *P. owstoni*, Ijima, Dôbuts. Yasshi, No. 62. *P. transcaspicus*, n. sp., Transcaspia; N. ZAROUDNOI, Bull. Soc. Moscou, 1893, pp. 365-368. *P. hensoni* and *P. seebohmi*, n. spp., Japan; L. STEJ-NEGER, P. U. S. Mus. xv, pp. 342-344. *P. hudsonicus* and allies; S. N. RHOADS, Auk, x, pp. 321-333. *P. hudsonicus ungava*, n. subsp., Labrador; *id. t. c.* p. 328. *P. hudsonicus columbianus*, n. subsp., from British Columbia; *id. t. c.* pp. 23 & 24. *P. fasciiventer*, n. sp., Central East Africa (Ruanzori); A. REICHENOW, Ornith. Monber. i, p. 31.
- Cyanistes berezovskii*, n. sp., Upper Chuan-che, China; T. PLESKE, Bull. B. O. C. iii, p. xiii.
- Lophophanes dichroides*, distinct from *L. dichrous*; T. PLESKE, *t. c.* p. xiii.
- Acredula caudata* and its allied forms; H. E. DRESSER, Ibis, 1893, pp. 240-243. *A. calva*, n. sp., Upper Chuan-che, China; T. PLESKE, Bull. B. O. C. ii, p. xiii.
- Ægithalus stoliczkae*, distinct from *Æ. pendulinus*; T. PLESKE, *t. c.* p. xiii.

Family PANURIDÆ.

- Panurus biarmicus*, figured; LORD LILFORD, Col. Fig. Br. Birds, pt. xxiv.

Family LANIIDÆ.

- Lanius excubitor*, in Norway; R. COLLETT, Arch. Naturv. Christian. xvi, p. 50. *L. ludovicianus gambelli*, in British Columbia; W. BREWSTER, Auk, x, p. 237. *L. excubitor* and *L. sibiricus*, notes on; L. STEJ-NEGER, P. U. S. Mus. xvi, pp. 217 & 218. *L. collaris*, distribution in Great Britain; O. V. APLIN, Tr. Norfolk Soc. v, pp. 286-310: nesting in Lanarkshire; J. PATERSON, Ann. Scott. Nat. Hist. ii, p. 182. *L. raddei*, Dresser, = *Otomela bogdanovi*, Bianchi; H. SCHALOW, J. Ornithol. 1893, p. 116; H. E. DRESSER, Ibis, 1893, pp. 378 & 379.
- Telephonus australis emini*, n. subsp., Central East Africa (Bukoba); A. REICHENOW, Ornith. Monber. i, p. 60.
- Dryoscopus major* and allies; A. REICHENOW, Jahresber. Hamburg. Anst. x, pp. 19-21. *D. pringlii*, n. sp., Mauungu, E. Africa; F. J. JACKSON, Bull. B. O. C. ii, p. iii.
- Pachycephala teysmanni*, and *P. meridionalis*, n. spp., Macassar; J. BÜTTIKOFER, Notes Leyden Mus. xv, pp. 167 & 168.

Family VIREONIDÆ.

Vireo huttoni insularis, n. subsp., British Columbia ; S. N. RHOADS, Auk, x, pp. 239-241.

Family SYLVIIDÆ.

Sylvia atricapilla, habits in Madeira ; J. LOWE, Zoologist, 1893, pp. 169-172.

Phylloscopus superciliosus, in East Prussia ; F. LINDNER & C. FLOERICKE, Ornith. Monber. i, p. 44.

Acanthopneuste ijimæ, n. sp., Seven Is., Japan ; L. STEJNEGER, P. U. S. Mus. xv, pp. 371-373.

Acrocephalus familiaris [Zool. Rec. xxix, Aves, p. 57], figured ; W. ROTHSCHILD, Avif. Laysan, pt. i, pl. i : nest and egg figured ; *id.* t. c. pl. xxxii, fig. 3.

Bradypterus nyasæ, n. sp., Nyasaland ; G. E. SHELLEY, Ibis, 1893, p. 16.

Locustella hondoensis, n. sp., Japan ; L. STEJNEGER, P. U. S. Mus. xvi, p. 633.

Calamocichla plebeia, n. sp., Cameroons ; A. REICHENOW, Ornith. Monber. i, p. 178.

Acanthiza ewingi in Tasmania ; W. V. LEGGE, P. Soc. Tasmania, 1893, pp. 77 & 78.

Burnesia tæniolata, n. sp., Cameroons ; A. REICHENOW, Ornith. Monber. i, p. 178.

Eremomela atricollis, n. sp., Galanga, Angola ; J. v. BARBOZA DU BOCAGE, J. Sci. Lisb. (2) xi, p. 153.

Camaroptera axillaris, n. sp., Central E. Africa (Uramba) ; A. REICHENOW, Ornith. Monber. i, p. 32.

Apalis flavigularis, n. sp., Nyasaland ; G. E. SHELLEY, Ibis, 1893, p. 10.

Graminicola striata, n. sp., Hainan ; F. W. STYAN, t. c. p. 54.

Melocichla atricauda, n. sp., Central Africa (Ukondjo) ; A. REICHENOW, Ornith. Monber. i, p. 61.

Cisticola discolor, n. sp., Cameroons ; Y. SJÖSTEDT, t. c. p. 84. *C. nuchalis*, n. sp., Central Africa (Kagera) ; A. REICHENOW, t. c. pp. 61 & 62.

Rectirostrum, n. g. ; type, *R. hypochondriacum*, Central E. Africa (Kinjawanga) ; A. REICHENOW, t. c. p. 32.

Dybouvskia, n. g. ; type, *D. kemoensis*, n. sp., R. Oubangui, Upper Congo ; E. OUSTALET, Naturaliste, xiv, p. 218.

Family TURDIDÆ.

On the species of *Merula* found in the Island of Java ; H. SEEBOHM, Ibis, 1893, pp. 219-222.

Turdus whitii, in Russia ; M. MENZBIER, t. c. pp. 371 & 372. *T. milan-jensis*, n. sp., Nyasaland ; G. SHELLEY, t. c. p. 12. *T. torquatus*, in Scotland in Winter ; R. SERVICE, Ann. Scott. Nat. Hist. ii, p. 42.

- Merula alpestris*, its range in Europe ; T. SALVADORI, Boll. Mus. Torino, viii, 1893. *M. javanica*, and its allies ; J. BÜTTIKOFER, Notes Leyden Mus. xv, pp. 107-110. *M. celebensis*, n. sp., Macassar ; *id. t. c.* p. 109.
- M. whiteheadi*, n. sp., E. Java ; H. SEEBOHM, Bull. B. O. C. i, pp. xxv & xxvi.
- Amalocichla sclateriana* [Zool. Rec. xxix, *Aves*, p. 59] allied to *Geocichla* ; P. L. SCLATER, Ibis, 1893, pp. 245 & 246.
- Cittocinclu nigricauda*, n. sp., Kangean Archipelago ; A. G. VORDERMAN, Natuurk. Tijdschr. Nederl. Ind. 1893, p. 197.
- C. tricolor*, from Nias I., teste Oustalet [Zool. Rec. xxix, *Aves*, p. 16] ; locality erroneous ; T. SALVADORI, Ibis, 1893, pp. 279 & 280.
- Callene anomala*, n. sp., Nyasaland ; G. E. SHELLEY, Ibis, 1893, pp. 14 & 15.
- Phæornis* : review of the genus, pp. 59-68. *P. obscurus*, juv., *P. myiadestina*, juv., and *R. lanaiensis*, juv., figured, *P. palmeri*, n. sp., Kauai ; W. ROTHSCHILD, Avif. Laysan, &c., pt. ii.
- Ruticilla tithys*, its breeding habits ; A. WALTER, Ornith. Monschr. Schutze, i, pp. 58-60.
- Saizicola moesta*, ♂ juv. figured ; A. KÆNIG, J. Ornithol. 1893, Tab. i.
- Pratincola* : notes on African species of the genus ; Y. SJÖSTEDT, Ornith. Monber. i, pp. 139-141.

Family CINCLIDÆ.

- Cinclus aquaticus*, nesting in Surrey ; R. H. READ, Zoologist, 1893, p. 308.

Family TROGLODYTIDÆ.

- Cistothorus palustris griseus*, n. subsp., Georgia ; W. BREWSTER, Auk, x, pp. 216-219.
- Cyphorhinus richardsoni*, n. sp., Nicaragua ; O. SALVIN, Bull. B. O. C. i, p. xxxii.
- Heleodytes*, vice *Campylorhynchus* ; T. S. PALMER, Auk, x, pp. 86 & 87.

Family MIMIDÆ.

- Galeoscoptes carolinensis*, nesting habits ; R. W. SHUFELDT, Auk, x, pp. 303 & 304.

Family TIMELIIDÆ.

- Pomatorhinus maclellandi*, var. *dedekensi*, n. subsp. ; E. OUSTALET, N. Arch. Mus. Paris (3) v, pl. iv, fig. 1.
- Trochalopteron ellioti* var. *bonvaloti*, n. subsp. ; E. OUSTALET, *t. c.* pl. iii, fig. 1. *T. henrici*, n. sp. ; *id. t. c.* pl. iii, fig. 2.

- Turdinus kalulongæ* and *T. tephrops*, n. spp., Mt. Kalulong, Sarawak ; R. B. SHARPE, Bull. B. O. C. i, p. liv.
- T. castaneus*, n. sp., Minahassa, North Celebes ; J. BÜTTIKOFER, Notes Leyden Mus. xv, p. 261.
- T. rufiventris*, n. sp., Camaroons ; A. REICHENOW, Ornith. Monber. i, p. 177.
- Staphidia castaneiceps*, figured ; E. C. STUART BAKER, J. Bombay Soc. viii, pl. A.
- S. everetti*, figured ; J. WHITEHEAD, Expl. Kina Balu, pl. xvi, fig. 3 : nest described ; R. B. SHARPE, Ibis, 1893, p. 563.
- Corythoichla crassa*, figured ; J. WHITEHEAD, Expl. Kina Balu, pl. xiv, fig. 1.

Family PYCNONOTIDÆ.

- The Bulbuls of North Cachar ; E. C. STUART BAKER, J. Bombay Soc. vii, pp. 413-424, viii, pp. 1-16.
- The following species are figured : *Chloropsis hardwickii*, *Molpastes burmanicus*, *M. bengalensis*, and *Spizixus canifrons*.
- Hemixus connectens*, figured ; J. WHITEHEAD, Expl. Kina Balu, pl. xiv, fig. 2.
- Hypsipetes amaurotis hensoni*, n. subsp., Japan ; L. STEJNEGER, P. U. S. Mus. pp. 347 & 348.
- Ixocincla madagascariensis rostrata*, n. subsp., Aldabra and Gloriosa Is. ; R. RIDGWAY, P. U. S. Mus. xvi, p. 597.
- Xenocichla xavieri*, n. sp., Upper Congo ; E. OUSTALET, Naturaliste, xiv, p. 218.
- X. clamans*, n. sp., Cameroons ; Y. SJÖSTEDT, Ornith. Monber. i, p. 28.
- X. fusciceps*, n. sp., Nyasaland ; G. E. SHELLEY, Ibis, 1893, p. 13.
- Andropadus alexandri*, n. sp., Upper Congo ; E. OUSTALET, Naturaliste, xiv, p. 231.
- Pycnonotus taiwanus*, n. sp., Formosa ; F. W. STYAN, Ibis, 1893, p. 470.
- Spizixus canifrons*, figured ; E. C. STUART BAKER, J. Bombay Soc. vii, pl. i, fig. 1.

Family CAMPOPHAGIDÆ.

- Pericrocotus cinereigula*, figured ; J. WHITEHEAD, Expl. Kina Balu, pl. vi, fig. 2.

Family MUSCICAPIDÆ.

- Muscicapa grisola*, figured ; LORD LILFORD, Col. Fig. Br. Birds, pt. xxvi.
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IV. REPTILIA AND BATRACHIA.

BY

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

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- ¹*Holodactylus*, n. g., allied to *Ceramodactylus*, Blanf.; BËTTGER, Zool. Anz. xvi, 1893, p. 113. *H. africanus*, n. sp., *id. ibid.* p. 114, Somaliland.

- Gymnodactylus fecæ*, p. 313, pl. vii, fig. 1, Karin Hills, and *peguensis*, p. 314, pl. vii, fig. 2, Pegu, n. spp., BOULENGER, Ann. Mus. Genova (2) xiii, 1893.
- Diplodactylus elderi*, n. sp., STIRLING & ZIETZ, Tr. R. Soc. S. Austral. xvi, 1893, p. 161, pl. vi, fig. 1, Central Australia. *D. inexpectatus*, n. sp., STEJNEGER, P. U. S. Mus. xvi, 1894, p. 714, Seychelles.
- Ptyodactylus*, Cuv.: on the Syrian forms of this genus; L. BOUTAN, Rev. biol. Nord France, v, 1893, p. 329. *P. bischoffsheimi*, p. 340, pl. iii, fig. 1, *montmahoui*, p. 369, pl. iii, fig. 2, *barroisi*, p. 375, pl. iii, fig. 3, and *puiseuxi*, p. 379, pl. iii, fig. 4, n. spp., *id. ibid.*, = *P. lobatus syriacus*; PERACCA, Boll. Mus. Torino, ix, 1894, No. 167, p. 1.
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- ↳ *Blasodactylus*, n. g., for *Hemidactylus sakalava*, Grand.: BÆTTGER, Katal. Senckenb. i, p. 32, 1893.
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- Coleonyx*, Gray, and *Eublepharis*, Gray: remarks by STEJNEGER, North Amer. Fauna, No. 7, 1893, p. 162. *Coleonyx brevis*, n. n. for *Eublepharis variegatus* (Baird, part.), Blgr.; *id. ibid.* p. 164.
- Eublepharis dovi*, Blgr., and *fusciatus*, Blgr., figured by GÜNTHER, Biol. Centr.-Amer., Rept. pl. xxxi, figs. A & B (1893).
- Coleonyx elegans*, Gray, described and figured by DUGÈS, Natureza (2) ii, 1893, p. 296, pl. xiii.
- ↳ *Hemitheconyx*, n. n. for *Psilodactylus*, Gray, *nec* Oken; STEJNEGER, t. c. p. 163.

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- Uroplatus fimbriatus*, Schneid.: skeleton described and figured by SIEBENROCK, Ann. Hofmus. Wien, viii, 1893, p. 517, figg., pl. xiv.
- U. phantasticus*, Blgr., redescribed by PERACCA, Boll. Mus. Torino, viii, 1893, No. 156, p. 1. *U. alluaudi*, n. sp., MOCQUARD, C.R. Soc. Philom. 1894, No. 9, p. 3, Madagascar.

AGAMIDÆ.

- Draco maximus*, p. 522, pl. xlii, fig. 1, and *microlepis*, p. 523, pl. xlii, fig. 2, n. spp., BOULENGER, P. Zool. Soc. London, 1893, Borneo.
- D. quadrasi*, n. sp., BÆTTGER, Katal. Senckenb. i, p. 41, 1893, Philippines. *D. hasei*, n. sp., BÆTTGER, Zool. Anz. xvi, 1893, p. 429, Siam.

- Japalura ornata*, n. sp., v. LIDTH DE JEUDE, Notes Leyden Mus. xv, 1893, p. 251, N. Borneo.
- Diptychodera*, n. g., allied to *Gonyocephalus*, for *D. lobata*, n. sp., BÆTTGER, t. c. p. 45, New Britain.
- Dendragama fruhstorferi*, n. sp., BÆTTGER, t. c. p. 335, Java.
- Calotes faw*, Blgr., = *Acanthosaura kakhienensis*, And.; BOULENGER, Ann. Mus. Genova (2) xiii, 1893, p. 317.
- Agama aspera*, n. sp., WERNER, Zool. Anz. xvi, 1893, p. 359, Algerian Sahara [= *A. inermis*, Reuss., var. ?—REC.].
- Phrynocephalus helioscopus*, Pall., n. var. *horvathi*, MÉHELY, Zool. Anz. xvii, 1894, p. 79, Armenia.
- Amphibolurus rufescens*, p. 164, pl. vi, fig. 2, and *scutulatus*, p. 165, pl. vii, figs. 1 & 2, n. spp., STIRLING & ZIETZ, Tr. R. Soc. S. Austral. xvi, 1893, Central Australia.
- Uromastix spinipes*, Daud., recorded from Biskra, Algeria; E. OLIVIER, Bull. Soc. zool. France, xviii, 1893, p. 62.

IGUANIDÆ.

- Anolis brevipes*, n. sp., BÆTTGER, Katal. Senckenb. i, p. 57, 1893, Costa Rica.
- Dactylocalotes*, n. g., for *D. elisa*, n. sp., WERNER, Zool. Anz. xvi, 1893, p. 361, = *Basiliscus vittatus*, Weigm.; *id. t. c.* p. 426.
- Crotaphytus baileyi*, Stejn., *wislizenii*, B. & G., and *silus*, Stejn.; further notes by STEJNEGER, North Amer. Fauna, No. 7, 1893, p. 170.
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- Uta lateralis*, Blgr., figured; GÜNTHER, *ibid.* fig. d.
- Sceloporus omiltemanus*, Gthr., *pleurolepis*, Gthr., and *rubriventris*, Gthr., figured; GÜNTHER, *ibid.* pl. xxxii. *S. magister*, Hallow., p. 178, pl. i, fig. 2, *graciosus*, B. & G., p. 183, and *biseriatus*, Hallow., p. 184; notes by STEJNEGER, t. c. *S. boulengeri*, p. 180, pl. i, fig. 5, Mazatlan, Mexico, and *orcutti*, p. 181, pl. i, fig. 4, San Diego Co., California, n. spp., *id. ibid.*
- Phrynosoma blainvillii*, Gray, is considered distinct from *P. coronatum*, Blainv., STEJNEGER, t. c. p. 187, pl. ii, figg. 1 & 2. *P. platyrhinus*, Gir., Notes, *id. ibid.* p. 190, pl. ii, fig. 4. *P. cerroense*, p. 187, Cerros I., Pacific Coast of Lower California, and *goodei*, p. 191, Coast deserts of the State of Sonora, Mexico, n. spp., *id. ibid.*

ZONURIDÆ.

- Zonurus frenatus*, Pfeff., redescribed and figured by PFEFFER, Jahresber. Hamburg. Anst. x, 1893, p. 73, pl. i, figg. 1 & 2.
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VARANIDÆ.

Varanus microstictus, n. sp., BËTTGER, *Katal. Senckenb.* i, p. 72, 1893, Abyssinia.

XANTUSIIDÆ.

Xantusia vigilis, Baird : notes by STEJNEGER, *North Amer. Fauna*, No. 7, 1893, p. 198, pl. iii, fig. i.

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Centropyx paulensis, n. sp., BËTTGER, *Katal. Senckenb.* i, p. 73, S. Paulo, Brazil. *C. viridistriga*, n. sp., BOULENGER, *Ann. Nat. Hist.* (6) xiii, 1894, p. 343, Paraguay.

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^ *Hyporhina*, n. g., type of a new family (*Hyporhinidæ*) distinguished from all living Amphisbænians by the presence of a postorbital arch ; *H. antiqua*, n. sp. (foss.), BAUR, *t. c.* p. 999, Miocene, S. Dakota.

LACERTIDÆ.

^ *Philochortus*, n. g., allied to *Tachydromus*, but with femoral pores [? = *Poromera*, Blgr.—REC.], for *P. neumanni*, n. sp., MATSCHIE, *SB. nat. Fr.* 1893, p. 30, Aden.

- Latastia* [*Eremias*, err.] *heterolepis*, n. sp., BÖTTGER, Zool. Anz. xvi, 1893, p. 115, Somaliland [= *L. hardeggeri*, Stdr.—REC.].
Eremias seateniata, p. 718, and *hoehneli*, p. 719, n. spp., STEJNEGER, P. U. S. Mus. xvi, 1894, Tana R., E. Africa.

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- Egernia kintorei*, n. sp., STIRLING & ZIETZ, Tr. R. Soc. S. Austral. xvi, 1893, p. 171, Central Australia.
Hemispharionodon tasmanicum, n. sp., FROST & LUCAS, P. Linn. Soc. N. S. Wales (2) viii, 1894, p. 227, Tasmania.
Mabuia wrightii, Blgr., = *M. sechellensis*, D. & B., STEJNEGER, P. U. S. Mus. xvi, 1894, p. 720. *M. chanleri*, n. sp., *id.* l. c. p. 721, Tana R., E. Africa. *M. ozori*, n. sp., BOCAGE, J. Sci. Lisb. (2) iii, 1893, p. 47, Anno Bom I., Guinea. *M. pulchra*, n. sp., MATSCHIE, SB. Nat. Fr. 1893, p. 29, Aden. *M. büttneri*, n. sp., *id.* t. c. p. 170, Togoland, W. Africa.
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Emoa spenceri, n. sp., LUCAS, P. Soc. Victoria (2) vi, 1894, p. 81, pl. ii, fig. 1, Victoria.
Siaphos maccoyi, n. sp., LUCAS, t. c. p. 85, pl. ii, fig. 2, Victoria.
Ablepharus festæ, n. sp., PERACCA, Boll. Mus. Torino, ix, 1894, No. 167, p. 8, Syria. *A. gloriosus*, n. sp., STEJNEGER, P. U. S. Mus. xvi, 1894, p. 723, Gloriosa I.
Eumeces skiltonianus, B. & G.: notes by STEJNEGER, North Amer. Fauna, No. 7, 1893, p. 201. *E. rovirosæ*, n. sp., DUGÈS, Naturalæza (2) ii, 1893, p. 298, pl. xiii, Tabasco, Mexico [= *E. lynxæ*, Wgm.—REC.].
Didosaurus mauritanus, Gthr.: notes on and figure of further remains; GADOW, Tr. Zool. Soc. London, xiii, 1894, p. 323, pl. xliv, figg. 1-16.

ANELYTROPIDÆ.

- ▷ *Voeltzkowia*, n. g., allied to *Typhlacontias*, Bocage, for *V. mira*, n. sp., BÖTTGER, Katal. Senckenb. i, p. 116, 1893, W. Madagascar.
Typhlosaurus meyeri, n. sp., BÖTTGER, Abh. Mus. Dresden, 1892-93, No. 5, 1894, Angra Pequena, S. W. Africa.

RHIPTOGLOSSA.

- F. MOCQUARD, CR. Soc. Philom. 1893, No. 19, pp. 4-6, draws attention to the presence of an auxiliary pit or pocket in certain Chameleons. [The Recorder would warn students of this group against basing species upon this character alone, which he finds to be unreliable. In

two out of three specimens of *C. polleui*, the pit is well marked; and it is sometimes present sometimes absent in *C. vulgaris* and *brevicornis*, of which species he has been able to compare a large number of specimens.] The same author regards *C. calcarifer*, Ptrs., as the ♂ of *C. calypttratus*, A. Dum., and *C. antimena*, Grand., = *rhinoceratus*, Gray.

Chamaleon gastrotenia, Blgr.: redescribed by PERACCA, Boll. Mus. Torino, viii, 1893, No. 156, p. 3. *C. arabicum*, n. sp., MATSCHIE, SB. nat. Fr. 1893, p. 27, Aden [= *C. calcarifer*, Ptrs.—REC.] *C. oustaleti*, n. sp., MOCQUARD, CR. Soc. Philom. 1894, No. 9, p. 3, Madagascar [= *C. verrucosus*, Cuv.—REC.]. *C. ruspolii*, n. sp., BETTGER, Zool. Anz. xvi, 1893, p. 116, Somaliland, = *C. dilepis*, var. *isabellinus*, Gthr., BETTGER, t. c. p. 193. *C. veltzkowi*, n. sp., BETTGER, Katal. Senckenb. i, p. 120, 1893, W. Madagascar.

Brookesia superciliaris, Kuhl: its osteology worked out by SIEBENROCK, SB. Ak. Wien, cii, 1893, p. 71, 2 pls. *B. minima*, n. sp., BETTGER, t. c. p. 123, Nossi Bé, Madagascar.

Rhampholeon battgeri, n. sp., PFEFFER, Jahresber. Hamburg. Anst. x, 1893, p. 76, pl. i, figg. 6 & 7, Bagamoyo, E. Africa.

DOLICHOSAURIA.

¹*Carcosaurus*, n. g., for *C. marchesettii*, n. sp., KORNHUBER, Abh. geol. Reichsanst. xvii, 1893, No. 3, 2 pls., Upper Cretaceous, Karst, Istria.

PYTHONOMORPHA.

L. DOLLO, Bull. Soc. belge Geol. vi, 1894, Mem. pp. 219–259, pls. iii–iv, deals with the osteology and phylogeny of the Mosasurs, which he regards as derived from the *Lacertilla* through the *Dolichosauria*.

Mosasaurus lemonnieri, Dollo: entire skeleton and limbs figured by DOLLO, t. c. pls. iii & iv.

Clidastes velox, Marsh: restoration by WILLISTON, Kansas Quart. ii, 1893, p. 83, pl. iii.

OPHIDIA.

E. D. COPE, Amer. Natural, xxvii, 1893, pp. 477–483, publishes a prodromus of a classification of the non-venomous Snakes, based to a great extent on the structure of the hemipenis. The Colubrines are divided into the following families and subfamilies:—

1. *Calamariidae*.
2. *Lycodontidae* (*Oligodontinae*, *Lycodontinae*, *Boodontinae*, *Cantoriinae*, *Uriechinae*).
3. *Colubridae* (*Colubrinae*, *Dipsadinae*, *Chrysopeleinae*).
4. *Xenodontidae* (*Xenodontinae*, *Scytalinae*).
5. *Natricidae*.

- On the anal pockets of Snakes ; PORTIER, C.R. cxviii, 1894, pp. 662 & 663.
- On the development of the pancreas in *Ophidia* ; SAINT-REMY, *op. cit.* xvii, pp. 405 & 406.
- On the toxic properties of the blood of the Viper (*Vipera aspis*, L.) ; PHISALIX & BERTRAND, *t. c.* p. 1099, and C.R. Soc. Biol. (9) v, 1893, pp. 996-999. The same authors also write on the presence of poison-glands in *Tropidonotus*, and on the toxic properties of the blood of these Snakes, C.R. cxviii, 1894, pp. 76-79, and Arch. Phys. norm. path. (5) vi, 1894, pp. 423-432. Remarks by S. JOURDAIN, C.R. cxviii, 1894, pp. 207 & 208.
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- ¹ *Primospina*, n. g., for *Sebastodes mystinus*, Jord. & Gilb.; EIGENMANN & BEESON, *ibid.*
- ¹ *Pteropodus*, n. g., for *Sebastodes maliger*, Jord. & Gilb.; EIGENMANN & BEESON, t. c. p. 670. *P. dallii*, n. sp.; *iid. op. cit.* xxviii, 1894, p. 66, San Francisco.
- Scorpæna dactyloptera*, Delaroché: notes and figure by W. E. CLARKE, P. Phys. Soc. Edinb. xii, 1893, p. 94, pl. ii. Recorded from the Yorkshire coast by T. H. NELSON & W. E. CLARKE, Naturalist, 1893, p. 81. On its occurrence on the East coast of Scotland; G. SIM, Ann. Scott. Nat. Hist. 1893, p. 204.

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CARANGIDÆ.

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CYTTIDÆ.

¹*Rhombocyttus*, n. g., for *Cyttus traversi*, Hutton; GILL, Mem. Ac. Washington, vi, 1893, p. 123.

²*Capromimus*, n. g., for *Platystethus abbreviatus*, Hector; GILL, *ibid.*

³*Bathystethus*, n. g., for *Platystethus*, Gthr., nec Mannerheim; GILL, *ibid.*

⁴*Eoistius*, n. g., for *Platystethus huttoni*, Gthr.; GILL, *ibid.*

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CORYPHÆNIDÆ.

Schedophilus, Cocco: review of the species by DOUGLAS-OGILBY, Rec. Austral. Mus. ii, 1893, pp. 65-73.

¹*Promethichthys*, n. n., for *Prometheus*, Lowe, nec Hubner; GILL, Mem. Ac. Washington, vi, 1893, p. 123.

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Echeneis naucrates, L.: on its accidental occurrence in the Gulf of Venice; E. F. TROIS, Atti Ist. Veneto (7) iv, 1893, p. 1636. *E. pediculus*, n. sp., A. A. GIRARD, Boll. Soc. Geogr. Lisb. xi, 1893, p. 611, pl. ii, Coast of Portugal.

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¹*Bathypercis*, n. g. (*Trachinina*), ALCOCK, J. Asiat. Soc. Bengal, lxii, 1893, p. 177. *B. platyrhynchus*, *id. t. c.* p. 178, pl. ix, fig. 1, Bay of Bengal, 128 faths.

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Gobioides petersenii, n. sp., STEINDACHNER, t. c. p. 235, Swatow, China.

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Eleotris klunzingerii, n. sp., *id. t. c.* p. 142, pl. iii, fig. 8, Zanzibar. *E. squamifrons*, n. sp., PERUGIA, Ann. Mus. Genova (2) xiii, 1893, p. 254, Engano I., Sumatra.

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HETEROLEPIDOTIDÆ.

- Erilepis*, n. n. for *Myriolepis*, Lockington nec Egerton ; GILL, Science, xxiii, 1893, p. 52.

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^d*Ericentrus*, n. g. for *Clinus rubrus*, Hutton ; GILL, Mem. Ac. Washington, vi, 1893, p. 123.
^d*Cologrammus*, n. g. for *Clinus flavescens*, Hutton ; GILL, *t. c.* p. 124.
^j*Nothoclinus*, n. g. for *Tripterygium fenestratum*, Forst. ; GILL, *ibid.*
^k*Plagiogrammus*, n. g. for *P. hopkinsi*, n. sp. ; BEAN, P. U. S. Mus. xvi, 1893, p. 699, fig., Monterey, California.

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Polyacanthus queenslandiæ, n. sp., S. KENT, Great Barrier Reef, pl. xvi, fig. 8, Queensland.

TRACHYPTERIDÆ.

- Regalecus mastei*, n. sp., DE VIS, P. R. Soc. Queensl. viii, 1892, p. 109, Queensland.

ACANTHOPTERYGII PHARYNGOGNATHI.

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- Labroides bicincta* and *auropinna*, n. spp., S. KENT, *t. c.* pl. xvi, figs. 4 & 9, Queensland.
- Charops hodgkinsonii*, n. sp., S. KENT, *t. c.* pl. xv, fig. 2, Queensland.
- Harpe navius*, n. sp., EIGENMANN, Ann. N. York Ac. vii, 1894, p. 630, Rio Janeiro.
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- Geophagus gymnogynys*, Hens., and *brasiliensis*, Q. & G., redescribed ; COPE, *t. c.* pp. 103 & 106. *G. camurus*, p. 104, pl. ix, fig. 17, and *brachyurus*, p. 105, pl. ix, fig. 18, n. spp., *id. t. c.*, Rio Grande do Sul.
- Retroculus*, n. g., allied to *Acaropsis*, Stdr., for *R. boulengeri*, n. sp. ; EIGENMANN & BRAY, *t. c.* p. 614, E. Brazil.
- Æquidens*, n. subg. of *Astronotus*, Sw. ; EIGENMANN & BRAY, *t. c.* p. 616.
- Chromis niloticus*, Hasselq., redescribed and figured by PFEFFER, Jahrb. Hamburg. Anst. x, 1893, p. 149, pl. iii, figs. 1, 2, & 4. *C. vorax*, n. sp. ; *id. t. c.* p. 151, pl. ii, figg. 9-11, Mozambique. *C. squamipinnis*, Gthr., redescribed and figured by GÜNTHER, P. Zool. Soc. London, 1893, p. 621, pl. liii (1894). *C. subocularis*, p. 621, pl. liv, fig. B, *johnstoni*, p. 622, pl. liv, fig. A, *lethrinus*, p. 622, pl. lv, fig. A, *tetra-stigma*, p. 623, pl. liv, fig. C, *callipterus*, p. 623, pl. lv, fig. B, *kirkii*, p. 624, pl. lvi, fig. A, and *williamsi*, p. 624, pl. lvi, fig. C, n. spp. ; *id. t. c.*, Lake Nyassa. *C. horei*, p. 630, pl. lviii, fig. A, *tanganicæ*, p. 630, fig., *burtoni*, p. 631, pl. lviii, fig. C, and *diagramma*, p. 632, pl. lviii, fig. B, n. spp. ; *id. t. c.*, Lake Tanganyika.

- Hemichromis modestus*, p. 625, pl. lvii, fig. A, *livingstonii*, p. 625, pl. lvi, fig. B, and *afer*, p. 626, pl. lvii, fig. B, n. spp.; GÜNTHER, *t. c.*, Lake Nyassa.
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- Physiculus argyropastus*, n. sp.; ALCOCK, J. Asiat. Soc. Bengal, lxii, 1893, p. 180, pl. ix, fig. 2, Bay of Bengal, 128 faths.

OPHIDIIDÆ.

- Dermatorus trichiurus*, Alcock, figured by ALCOCK in Ill. Zool. Investigator, pl. i, fig. 1.
- Lamprogrammus niger*, Alcock, figured; *t. c.* pl. i, fig. 2.
- Bathyonus glutinosus*, Alcock, figured; *t. c.* pl. i, fig. 3.
- Atleopus septemstriata*, Alcock, figured; *t. c.* pl. ii, fig. 2.
- Glyptophidium argenteum*, Alcock, figured; *t. c.* pl. ii, fig. 3.
- Paradicrolene multifilis*, Alcock, figured; *t. c.* pl. ii, fig. 4.
- Neobythites steaticus*, n. sp.; ALCOCK, J. Asiat. Soc. Bengal, lxii, 1893, p. 181, pl. ix, Bay of Bengal, 128 faths.
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MACRURIDÆ.

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- Clarias robecchii*, n. sp. ; VINCIGUERRA, Ann. Mus. Genova (2) xiii, 1893, p. 450, Somaliland.
- Hemisilurus scleronema*, Blkr., recorded from Borneo by BOULENGER, Ann. Nat. Hist. (6) xiii, 1894, p. 247.
- ²*Diastatomycter*, n. g. [since referred to *Hemisilurus*, Blkr.], for *D. chaperi*, n. sp. ; VAILLANT, Bull. Soc. zool. France, xviii, 1893, p. 61, and N. Arch. Mus. Paris (3) v, 1894, p. 65, pl. ii, fig. 3, Borneo.
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- ¹*Anopleutropius*, n. g., near *Pseudeutropius*, Blkr. : VAILLANT, Bull. Soc. Philom. (8) v, 1893, p. 198. *A. henrici*, n. sp., *id. t. c.* p. 199, Black River, Upper Tonkin.
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- Otocinclus flexilis*, p. 97, pl. vii, fig. 13, and *fimbriatus*, p. 98, pl. ix, fig. 16, n. spp.; COPE, t. c. Rio Grande do Sul.
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- oatesii*, p. 201, *schanicus*, p. 201, *nigrovittatus*, p. 202, and *compressus*, p. 202, n. spp.; BOULENGER, Ann. Nat. Hist. (6) 1893, xii, S. Shan States. *B. strigatus*, p. 247, *pentazona*, p. 248, and *everetti*, p. 248, n. spp.; *id. op. cit.* xiii, 1894, Borneo. *B. alboioleureus*, p. 201, and *bonvaloti*, p. 202, n. spp.; VAILLANT, Bull. Soc. Philom. (8) v, 1893, Black River, Upper Tonkin.
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- Opsopæodus emili*, Hay, and *bollmani*, Gilb., figured by WOOLMAN, *t. c.* pl. li.
- ⁴ *Aphelichthys*, n. g., allied to *Leuciscus*, for *A. lindahlii*, n. sp. (foss.); COPE, P. Ac. Philad. 1893, p. 19, Pliocene (?), Illinois.
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- Barilius barnoides*, Vincig., = *B. ornatus*, Sauv.; BOULENGER, Ann. Nat. Hist. (6) xii, 1893, p. 203.
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- Alburnus alexandrinus*, n. sp.; STEINDACHNER, SB. Ak. Wien, cii, 1893, p. 240, pl. iii, fig. 3, Egypt. *A. leydigii*, n. n., for a hybrid between *A. lucidus* and *Leucaspius delineatus*; KNAUTHE, Zool. Anz. xvi, 1893, pp. 416 & 448.
- ¹ *Nematabramis*, n. g., of the group *Abramidina*, but with a long maxillary barbel; BOULENGER, Ann. Nat. Hist. (6) xiii, 1894, p. 249. *N. everetti*, n. sp.; *id. t. c.* p. 250, Borneo.
- ⁴ *Engraulicypris*, n. g., elongate, cylindrical, like an Anchovy, for *E. pinguis*, n. sp.; GÜNTHER, P. Zool. Soc. London, 1893, p. 626, fig. (1894), Lake Nyassa.
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- Gastromyzon monticola*, Vaill., described and figured by VAILLANT, *t. c.* p. 94, pl. i, fig. 3 [= *G. borneensis*, Gthr.—REC.]

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- Acanthopphthalmus borneensis*, n. sp.; BOULENGER, *t. c.* p. 251, Borneo.
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- Bathytroctes squamosus*, Alcock, figured; *t. c.* pl. v, fig. 1.
- Aulastomatomorpha phosphorops*, Alcock, figured; *t. c.* pl. v, fig. 2.

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Halosaurus hoskynii, Alc., figured; t. c. pl. vii, fig. 3.

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- Branchiostoma cultellum*, Peters, note by A. WILLEY, Quart. J. Micr. Sci. xxxv, 1894, p. 361.

VI. TUNICATA.

BY

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

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I.—LIST OF PUBLICATIONS.*

1. BORGERT, A. Ueber *Doliolum denticulatum* und eine neue dieser Art nahe verwandte Form aus dem Atlantischen Ocean. Zeitschr. wiss. Zool. lvi, 3, pp. 402-408.
2. BROOKS, W. K. The origin of the organs of *Salpa*. Johns Hopkins Univ. Circ. xii, No. 106, pp. 93-97.
3. ——. The nutrition of the *Salpa* embryo. *T. c.* pp. 97 & 98.
4. ——. *Salpa* in its relation to the Evolution of Life. Stud. Johns Hopkins Univ. v, No. 3, pp. 129-211.
5. ——. The Genus *Salpa*. Mem. Johns Hopkins Univ. 371 pp., 57 pls.
6. DAVIDOFF, M. VON. Ueber den "Canalis neurentericus anterior" bei den Ascidien. Anat. Anz. viii, Nos. 8 & 9, pp. 301-303.
7. GARSTANG, W. Note on Salensky's account of the development of the Stigmata in *Pyrosoma*. Tr. Liverp. biol. Soc. vii, pp. 245-247.
8. HEIDEN, H. *Ascidia aggregata* und *Ascidia composita* von der Insel Menorca. Zool. Jahrb. Syst. vii, Ht. 3, pp. 341-364, Taf. xiii.

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

9. HEIDER, K. Mittheilungen über die Embryonalentwicklung der Salpen. Verh. deutsch. Zool. Ges., 3 Jahresvers. (Göttingen), pp. 38-48.
10. —. Ueber die Bedeutung der Follikelzellen in der Embryonalentwicklung der Salpen. SB. Ges. naturf. Berlin, 1893, No. 9, pp. 232-242.
11. HERDMAN, W. A. Notes on British *Tunicata*. Part II. J. Linn. Soc. xxiv, pp. 431-454, pls. xxxiii-xxxvi.
- 11A. —. Note on Atrial, or Circumloacal, Tentacles in the *Tunicata*. Bull. Sci. France Belgique, xxv, pp. 56-58.
12. HJORT, J. Ueber den Entwicklungscyclus der zusammengesetzten Ascidien. MT. Stat. Neapel, Bd. x, Ht. 4, pp. 584-617, 3 pls.
- *13. JACOBSON, G. C. Ueber die Tunicaten des Weissen Meeres (in Russian). Trav. Soc. St. Petersb. t. xxiii, liv. 2, pp. 158-167.
14. JULIN, CH. Structure et developpement des glandes sexuelles ; oogenèse, spermatogenèse, et fécondation chez *Styelopsis grossularia*. Bull. Sci. France Belgique, xxv, pp. 93-154.
15. KLÆR, JOH. Oversigt over Norges Ascidiæ simplices. Forh. Selsk. Christian. 1893, No. 9, pp. 1-105, 4 pls.
16. MEISSNER, M. Das Einnisten von *Crenella marmorata* in den Mantel der *Ascidella virginea*. SB. Ges. naturf. Berlin, 1893, No. 10, pp. 259 & 260.
17. METCALF, M. M. On the Eyes, subneural Gland, and central Nervous System in *Salpa*. Zool. Anz. xvi, No. 409, pp. 6-10.
18. —. Notes upon an apparently New Species of *Octacnemus*, a deep-sea *Salpa*-like Tunicate. Johns Hopkins Univ. Circ. xii, No. 106, pp. 98-100, 6 cuts.
19. MÆBIUS, K. Ueber die Thiere der Schleswig-holsteinischen Austerbänke, &c. SB. Ak. Berlin, 1893, viii, p. 74.
20. NEWSTEAD, A. H. L. On the Perivisceral cavity of *Ciona*. Quart. J. Micr. Sci. cxxxvii, pp. 119-128.
21. PIZON, A. Histoire de la Blastogénèse chez les Botryllidés. Ann. Sci. Nat. ser. 7, Zool. xiv, pp. 1-386, 1-9 pls.
22. RITTER, W. E. *Tunicata* of the Pacific Coast of North America. I. *Perophora annectens*, n. sp. P. Calif. Ac., ser. 2, iv, pp. 37-85, pls. i-iii.
23. SALENSKY, W. Morphologische Studien an Tunicaten. I. Ueber das Nervensystem der Larven und Embryonen von *Distaplia magnilarva*. Morphol. Jahrb. xx, 1 Ht., pp. 48-74, taf. iv & v. II. Ueber die Metamorphose der *Distaplia magnilarva*, &c. T. c. 4 Ht., pp. 449-542, taf. xvi-xx.
24. —. Ueber die Entstehung der Metagenesis bei Tunicaten. Biol. Centralbl. xiii, Nos. 4 & 5, pp. 126-146.

25. SEELIGER, O. Bronn, Klassen, und Ordnungen des Thierreichs. Bd. iii, Supp. *Tunicata* (Mantelthiere). Lief 1. Leipzig: 1893, pp. 1-48.
26. —. Berichtigung zu Herrn Salensky's Abhandlung "Morphologische Studien an Tunicaten, I." Zool. Anz. xvi, No. 436, pp. 472 & 473.
27. —. Ueber die Entstehung des peribranchial Raumes in den Embryonen der Ascidien. Zeitschr. wiss. Zool. lvi, pp. 365-401, pls. xix & xx.
28. —. Einige Beobachtungen über die Bildung des äusseren Mantels der Tunicaten. *T. c.* pp. 488-505, pl. xxiv.
29. TODARO, F. Sull' organo visivo delle *Salpa*. Atti Acc. Lincei (5) Rend. ii, 12, pp. 374-381.
30. TRAUSTEDT, M. P. A. Die *Thaliacea* der Plankton-Expedition: A. Systematische Bearbeitung. Ergeb. d. Plankton-Exp. ii, E. a. A. pp. 1-16, pl. i.
31. —. "Ascidiæ Simplicis" in Det Videnskabelige Udbytte af Kanonbaaden "Haughs" Togter, pp. 307-316.
32. WARHAM, AMY E. On Variations in the Dorsal Tubercle of *Ascidia virginea*. Tr. Liverp. biol. Soc. vii, pp. 98 & 99, pl. vii.
33. WILLEY, A. Studies on the Protochordata. I. Origin of the branchial stigmata, &c., in *Ciona*, &c. Quart. J. Micr. Sci. xxxiv, pt. 3, pp. 317-360, pls. xxx & xxxi.
34. —. Studies on the Protochordata. II. The development of the neurohypophysial system and sense-organs, &c.; and III. The position of the mouth, &c. *Op. cit.* xxxv, pp. 295-333, pls. xviii-xx.

II.—ANATOMY, EMBRYOLOGY, PHYSIOLOGY, AND GENERAL.

A.—GENERAL.

SEELIGER (25), in the first number of his article *Tunicata*, for Bronn's "Klassen und Ordnungen des Thierreichs," discusses the history of our knowledge of the group, commencing with Aristotle and the ancients, then working up through the Middle Ages and the Renaissance to the zoologists of the eighteenth century, and ending with the establishment of the group *Tunicata*, by Cuvier, Lamarck, and Savigny, in the early years of this century.

BROOKS discusses a number of phylogenetic points, and other matters of wide interest, in his chapter on *Salpa*, in its relations to the evolution of life (4). He also deals with such matters as the primitive pelagic fauna, the primary food supply, the phylogeny of the *Metazoa*, the ancestral

Chordates, and the systematic position and relations of *Salpa*. He declares very emphatically against the views that the *Vertebrata* are derived from Annelids, and that the *Tunicata* are degenerate Vertebrates.

B.—ANATOMY, ETC.

METCALF (18) describes the structure of a new species of *Octacnemus*, obtained by the "Albatross," off Patagonia, which differs in some respects from the "Challenger" forms examined by Moseley & Herdman. He finds that in this case the animals are not solitary, but are connected together by processes in chains, as in *Salpa*. Possibly the "Albatross" specimens are chain individuals, and the "Challenger" ones solitary individuals of the same species.

AMY E. WARIHAM (32) describes and figures the variations in the dorsal tubercle of forty individuals of *Ascidia virginea*. There appear to be two simple forms of tubercle, and several variations from each of these.

HERDMAN (11) gives some details of anatomy in regard to some of the British Simple Ascidiæ, such as *Forbesella tessellata*.

RITTER (22) gives a detailed account of the structure of the various organs in a new species of *Perophora* from California. He shows that the cells of the test are derived from mesodermal cells which migrate through the ectoderm.

JULIN (14) gives an account of the reproductive organs of *Styelopsis grossularia*.

TODARO (29) describes the structure of the eyes in *Salpa*, both solitary and aggregated. He maintains the homology of the *Salpa* eyes with the pineal and lateral eyes of Vertebrates. He classifies *Salpa* into *Brochoenterata*, *Orthoenterata*, and *Curioenterata*, according as the intestine forms a loop, a straight line, or a spiral coil.

One of the most important contributions of the year is W. K. BROOKS' work on *Salpa*—first in the form of preliminary notices in the Johns Hopkins University Circular (2, 3, 4), and then in his large, finely illustrated monograph on the genus (5), in which he gives an account of the structure and development both of the sexual and of the asexual forms, along with a very full discussion of theoretical matters.

METCALF gives an account of the structure of the eyes, subneural gland, and central nervous system in *Salpa*, both in his paper in the Zool. Anz. (17), and also as an appendix to Brooks' Monograph of the genus (5). He deals also with the homologies of the nervous system in other groups of the *Tunicata*.

NEWSTEAD (20) discusses the perivisceral cavity of *Ciona*, and considers that it is not the primitive blastocœle, but is rather a modified and enlarged epicardium. He regards the stolons of *Ciona* as modified budding organs.

C.—EMBRYOLOGY.

SALENSKY (23) comes to the conclusion that the sense-vesicle of the Ascidian larva's nervous system is homologous with the epiphysis of Vertebrates, and the Ascidian eye with the parietal eye.

SEELIGER (28) discusses the origin of the cells of the test, and confirms Kowalevsky's results. In *Oikopleura cophocerca*, however, he finds that ectoderm cells pass into the "Haus," and no mesoderm cells. In both *Salpa democratica* and *Clavelina lepadiformis* migrating mesoderm cells were found (see also RITTER, above).

SALENSKY (24) comes to the following conclusions:—(1) The original form of metagenesis in the *Tunicata* is represented in such Synascidian genera as in the larval condition are able to reproduce themselves sexually; (2) Amongst known Synascidians *Distaplia* alone represents an alternation of generations, while the development of the *Didemnidae* has nothing to do with alternation of generations; (3) The primordial bud of the *Distaplia* larva should be regarded as a transition form between the simple bud and the proliferous stolon of the metagenetic *Tunicata*; (4) The proliferous stolon is derived from the bud which, before separation from the maternal body, began itself to divide or bud; (5) In the oldest metagenetic forms the "nurse," after the production of the sexual generation, viz., the buds, must die; in the further development of metagenesis, the life of the nurse is always more prolonged. *Doliolum* represents in this connection a transition form between the Synascidians and *Salpa*.

The development of *Salpa*, both sexually from the embryo and also asexually by budding from the stolon, is discussed and described very fully by BROOKS (5), as well as the organogeny, and the foetal membranes and appendages.

DAVIDOFF (6) has a short note on the neurenteric canal of the Ascidian embryo.

HJORT (12) treats of the developmental cycle in the Compound Ascidians; and PRYON (21) also deals with the subject, specially in the *Botryllidae*.

WILLEY (33), in his Studies on the *Protochordata* (1), comes to the following morphological conclusions:—That the first four primary stigmata of *Ciona*, and probably also of *Ascidia mentula*, &c., represent and are derived from one primitive gill slit, and that three pairs of gill slits are formed altogether in *Ciona*, &c., and that all the stigmata of the adult branchial sac are derived from and represent these six primary stigmata. New transverse rows of stigmata arise by division of the pre-existing transverse rows. The long axis of the adult Ascidian is at right angles to the long axis of the larva. The atrial cavities are ectodermal invaginations. The pyloric gland of the Ascidian is homologous with the hepatic caecum of *Amphioxus*. *Appendicularia* is, he considers, not a primitive form, but represents a larval Ascidian which has secondarily

become pelagic and progenetic. The fixing point (stolon) is præoral on the anterior lobe, and in *Ciona* the longitudinal muscles converge to it. The pericardium arises from the endoderm of the branchial sac.

In his II "Studies" (34) he has worked at the later development of the nervous system in *Ciona*, and finds it is different from what is described by van Beneden and Julin. He also deals with the closure of the neuroporus and the origin of the sense organs in *Ascidia mentula*, and the origin of the neuro-hypophysial system in *Ciona* and in *Clavelina*.

In the III series, WILLEY deals with the position of the mouth in the larvæ of the Ascidiæ and *Amphioxus*, and its relations to the neuroporus. He considers that the hypophysis of the Ascidiæ is represented by the olfactory pit of *Amphioxus*, and that the primitive mouth was dorsal.

GARSTANG (7) corrects an error of Salensky in regard to the development of the stigmata in *Pyrosoma*, which never have their long axes parallel to the endostyle either in adult or embryo.

JULIN (14) gives an account of ovogenesis, spermatogenesis, and fertilization in *Styelopsis grossularia*. He considers the polar bodies to be aborted ova.

D.—PHYSIOLOGY.

From a study of the beating of the heart in *Perophora*, RITTER (22) comes to the conclusion that the reversal is due to regurgitation caused by engorgement of the capillaries.

The nutrition of the *Salpa* embryo, and a number of other more or less physiological matters in connection with *Salpa*, are discussed by BROOKS (5).

III.—GEOGRAPHICAL DISTRIBUTION.

MEISSNER (16) describes specimens of *Ascidella virginea* from the Biological Station at Heligoland, with *Crenella marmorata* imbedded in the test.

HEIDEN (8) records 24 species of Compound Ascidiæ from the Island of Minorca, and of these 13 are new species.

BORGERT (1) discusses the synonymy of *Doliolum denticulatum*, and describes a new closely-related species (*D. nationalis*) obtained in the Atlantic during the "Plankton" Expedition.

MÆBIUS (19) records *Cynthia rustica* and *Oikopleura flabellum* from the oyster banks off the German Coast. The former is, however, more probably *Styelopsis grossularia*, which is commonly found on oyster shells in British waters.

METCALF (18) records a new form of *Octacnemus* obtained from a depth of 1050 faths, off the east coast of Patagonia by the "Albatross." The genus was only previously known from the South Pacific.

TRAUSTEDT (30) describes 3 species of *Doliolum* and 13 species of *Salpa* (2 n. spp.) as having been obtained in the Atlantic by the Plankton Expedition. He also gives tables of the known distribution of the species of *Doliolum* and *Salpa* in the great oceans. TRAUSTEDT also (31) gives records of 20 species of Simple Ascidians found in Danish seas during the "Haugh's" expedition.

KLÆR (15) records 34 species of Simple Ascidians from Norway, of which 6 are new species. He gives tables of the geographical and bathymetrical distribution. The *Tunicata* of the White Sea are given in a paper by JACOBSON.

BROOKS (5) gives some information in regard to the geographical distribution of some of the species of *Salpa*.

IV.—SYSTEMATIC.

HERDMAN (11) discusses the synonymy and nomenclature of many of the British and North European Simple Ascidians, and redescribes and figures some of the older species of Forbes, Alder, and Hancock. He also gives an account of *Styela rustica*, and distinguishes this species from *S. monoceros*, Møller.

TRAUSTEDT (30) considers that *Salpa musculosa*, Herdman, and *S. punctata*, Forskahl, are the solitary and chain forms respectively of the same species. He gives useful synoptical schemes of the species of *Doliolum* and *Salpa*.

RITTER (22) describes a *Perophora*, which seems to form a remarkable transition from "Social" (Clavellinid) to Compound Ascidians, as the ascidiozooids are sometimes free and at other times completely imbedded in a common test.

ASCIDIACEA.

ASCIDIÆ COMPOSITÆ.

Fam. DIAZONIDÆ.

Diazona hyalina, n. sp., HEIDEN, (8) Zool. Jahrb. Syst. vii, p. 342.

Fam. DISTOMIDÆ.

Cystodytes inflatus, n. sp., HEIDEN, (8) t. c. p. 344. *C. polyorchis*, n. sp., *id.* t. c. p. 346. *C. irregularis*, n. sp., *id.* t. c. p. 347.

Distomus tridentatus, n. sp., HEIDEN, (8) t. c. p. 347.

Distaplia intermedia, n. sp., HEIDEN, (8) t. c. p. 348.

Fam. POLYCLINIDÆ.

Amarœcium blochmanni, n. sp., HEIDEN, (8) *t. c.* p. 351. *A. willi*, n. sp., *id.*
t. c. p. 353. *A. fimbriatum*, n. sp., *id.* *t. c.* p. 354. *A. rodriguezii*,
 n. sp., *id.* *t. c.* p. 355. *A. robustum*, n. sp., *id.* *t. c.* p. 356.

Fam. DIDEMNIDÆ.

Leptoclinum infundibulum, n. sp., HEIDEN, (8) *t. c.* p. 359. *L. verrucosum*,
 n. sp., *id.* *t. c.* p. 359.

ASCIDIÆ SIMPLICES.

Fam. ASCIDIIDÆ.

Asciella minuta, n. sp., KLÆR, (15) Vid. Selsk. Forhandl. Christiania,
 1893, No. 9, p. 26. *A. expansa*, n. sp., *id.* *t. c.* p. 26.
Ascidia gelatinosa, n. sp., KLÆR, (15) *t. c.* p. 30. *A. longisiphonata*, n. sp.,
id. *t. c.* p. 41.

Fam. CYNTHIIDÆ.

Polycarpa finmarkensis, n. sp., KLÆR, (15) *t. c.* p. 60. *P. libera*, n. sp., *id.*
t. c. p. 62.

THALIACEA.

Fam. DOLIOLIDÆ.

Doliolum nationalis, n. sp., BORGERT, (1) Zeitschr. wiss. Zool. lvi, 3,
 p. 406.

Fam. OCTACNEMIDÆ.

Octacnemus patagoniensis, n. sp. (?), METCALF, (18) Johns Hopkins Univ.
 Circ. xii, No. 106, p. 99.

Fam. SALPIDÆ.

Salpa rostrata, n. sp., TRAUSTEDT, (30) Ergeb. d. Plankton-Exp. ii, p. 8.
A. henseni, n. sp., *id.* *t. c.* p. 9.

VII. MOLLUSCA.

BY

B. B. WOODWARD, F.G.S., F.R.M.S.

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THE Recorder thinks it right to state that the same course has been followed this time with regard to Palæontological papers as was pursued last year, viz., new generic and sectional names, when ascertainable, have been recorded in the Systematic part; new species have not always been noted; but references to all important Palæontological papers will be found under the heading Geological, in Sect. II.

TITLES.*

- ABERCROMBIE, A. [See MELVILL & ABERCROMBIE (238).]
1. ADAMS, L. E. A theory as to the possible introduction of *Hydrobia jenkinsi* [into England]. *J. Conch.* vii, pp. 148-150.
 2. ADCOCK, D. J. A hand list of the Aquatic *Mollusca* inhabiting South Australia. Adelaide: 1893, 8vo, 14 pp.
 3. AMMON, L. VON. Die Gastropodenfauna des Hochfellen-Kalkes und über Gastropoden-Reste aus Ablagerungen von Adnet, vom Monte Nota und den Raibler Schichten. *Geognost. Jahresh.* 1892, pp. 161-219, figg.
 4. ANCEY, C. F. Note sur l'habitat des espèces du groupe de l'*Helix raymondi*, Moq. *Naturaliste*, 1893, p. 91.
 5. —. Remarques sur quelques espèces du genre *Buliminus* avec les descriptions de plusieurs espèces nouvelles de ce genre. *Bull. Soc. zool. France*, xviii, pp. 35-40.
 6. —. Faunes malacologiques de l'Afghanistan et du Béloutchistan. *T. c.* pp. 40-47.
 7. —. Description d'une nouvelle Hélice [*Helix subaperta*] de Kabylie. *T. c.* pp. 136-138, fig.
 8. —. Description d'une espèce nouvelle de *Pupa* [*P. cartennensis*] provenant de l'Algérie. *T. c.* p. 138.
 9. —. Études sur la Faune malacologique des Iles Sandwich. 9. Monographie du genre *Carelia*. 10. Description d'un *Microcystis* nouveau [*M. lymaniana*]. *Mem. Soc. zool. France*, vi, pp. 321-330.
 10. ANDRÉ, E. Contribution à l'anatomie et à la physiologie des *Ancylus lacustris* et *fluviatilis*. *Rev. Suisse Zool.* i, pp. 427-461, 1 pl. Abstr. in *J. R. Micr. Soc.* 1894, p. 329.
 11. —. Sur les téguments du *Zonites cellarius*. *Zool. Anz.* xvi, pp. 39 & 40, fig. Abstr. in *J. R. Micr. Soc.* 1893, p. 617.
 12. APPELLÖF, A. Teuthologische Beiträge. III. Bemerkungen über die auf der Norwegischen Nord-Meer-Expedition (1876-78) gesammelten Cephalopoden. IV. Ueber einen Fall von doppelseitiger Hektokotylistation bei *Eledone cirrhosa* (Lam.), D'Orb. *Bergens Mus. Aarbog.* i, 15 pp., 1 pl.
 13. AUSTEN, E. E. *Mollusca* [near Rugby]. *Rep. Rugby Soc.* 1892 (1893), pp. 16 & 17.
 14. BALDWIN, D. D. Catalogue [of] Land and Freshwater Shells of the Hawaiian Islands. Honolulu: 1893, 8vo, 25 pp.

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

15. BELT, A. On the band and colour varieties of *Helix nemoralis* and *H. hortensis* in Ealing and Hanwell. Rep. Ealing Soc. 1892 (1893), pp. xvii-xxiii.
16. BERGH, R. Opisthobranches provenant des campagnes du yacht l'Hirondelle [Fasc. iv. of "Résultats des Campagnes scientifiques . . . par Albert I. de Monaco"]. Monaco : 4to.
See Zool. Rec. xxix, *Moll.* p. 2.
17. —. Die gattung *Gastropteron*. Zool. Jahrb. Anat. vii, pp. 281-308, 2 pls. Abstr. in J. R. Micr. Soc. 1894, p. 180.
18. —. Die Gruppe der Doridiiden. MT. Stat. Neapel, xi, pp. 107-135, 1 pl. Abstr. in J. R. Micr. Soc. 1894, pp. 179 & 180.
19. —. Ueber einiger verkannte und neue Doridiiden. Verh. Ges. Wien, xliii, pp. 408-420, 1 pl.
20. BIGOT, A. Sur les Trigonies jurassiques de Normandie. C.R. Ass. Franc. 1892, ii, pp. 392-396.
21. —. Contributions à l'étude de la faune jurassique de Normandie. I. Sur les Trigonies. Mem. Soc. Normandie, xvii, pp. 259-344, 10 pls.
22. BILLINGHURST, F. L. Notes on the Land and Freshwater *Mollusca* of Castlemaine and neighbourhood. Victorian Natural, x, pp. 61-64.
23. BITTNER, A. Ueber die gattung *Oncophora*. Verh. geol. Reichsanst. 1893, pp. 141-144.
24. BLAKE, J. F. On the bases of the Classification of *Ammonites*. P. Geol. Ass. xiii, pp. 24-39, 2 pls.
25. BOEHM, G. *Calastarte* und *Heteropis*. Ber. Ges. Freiburg, vii, pp. 169-177, 1 pl.
26. BOEHMIG, L. Zur feineren Anatomie von *Rhodope veranii*, Köll. Zeitschr. wiss. Zool. lvi, pp. 40-116, 4 pls., figg. Abstr. in J. R. Micr. Soc. 1893, pp. 482 & 483.
27. BÖTTGER, O. Die Verhältnisszahlen der palæarktischen Najaden. Nachrbl. deutsch. malak. Ges. 1893, pp. 65-79.
28. —. Die marinen Mollusken der Philippinen . . . I. Die Rissoiden. II. Die Assimineiden. *T. c.* pp. 97-115.
29. —. III. Die Eulimiden. *T. c.* pp. 153-167.
30. —. Nachtrag. I. Rissoiden ; III. Eulimiden. *T. c.* pp. 185-193.
31. —. Drei neue Pneumonopomen aus Borneo. *T. c.* pp. 194-197.
— [See also DEGRANGE-TOUZIN (108).
32. BONARELLI, G. *Hectioceras*, novum genus Ammonidarum. Bull. Soc. malac. Ital. xviii, pp. 73-104.
33. BONNEMÈRE, L. Les Perles fines de l'ouest de la France. Rev. Sci. Nat. Ouest, iii, pp. 97-99.

34. BOUTAN, L. Mémoire sur le système nerveux de la *Nerita polita* et de la *Navicella porcellana*. Arch. Zool. exp. iii, 1, pp. 221-266, 2 pls. Abstr. in J. R. Micr. Soc. 1894, p. 181.
35. —. Sur le développement de l'*Haliotide*, &c. C.R. Ass. Franc. 1892, ii, pp. 522-525.
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II.—ANATOMY, PHYSIOLOGY, &c.

1. GENERAL.

On the distortion of hermaphrodite *Gastropoda*; BOUVIER (39).—Anatomy of *Schizoglossa* [n. g.] *novoseelandica*, Pfr. (*Daudebardia*); HEDLEY (159).—Anatomy of *Parmacochlea fischeri*; HEDLEY (157).—Anatomy of *Paryphanta hochstetteri*; GODWIN-AUSTEN (135).—Anatomy of *Helicarion adolphi*, Böttg., *Macrochlamys minuta*, v. Mart., *Nanina wallacei*, Pfr., *cidaris*, Lam., *nemorensis*, Müll., *rareguttata*, Mouss. *rumphii*, v. d. Busch, *vomer*, v. Mart., *Trochomorpha planorbis*, Less., *costulata*, v. Mart., *Helix* (*Plectotropis*) *sumatrana*, v. Mart., *rotatoria*, Busch, (*Rhagada*) *solorensis*, v. Mart., (*Hadra*) *argillacea*, Fér., (*Chloritis*) *crassula*, Phil., *tuba*, Alb., *amphidromus*, *adamsi*, Reeve, *porcellanus*, Mouss., *contrarius*, Müll., *Stenogyra octona*, Chemn., *panayensis*, Pfr., *Clausilia obesa*, v. Mart., *moluccensis*, v. Mart.; WIEGMANN (404).—Anatomy of species of *Vallonia*; STERKI (360).—Anatomy of *Arion flagellus*, n. sp.; COLLINGE (81).—Anatomy of the *Oncidiidae*; PLATE (296).—Anatomy of *Ancylus lacustris* and *fluvialilis*; ANDRÉ (10).—Anatomy of some species of *Doris* and *Chromodoris*; BERGH (19).—Anatomy of *Actæon*; BOUVIER (36-38); PELSENEER (276).—Anatomy of *Gastropteron*; BERGH (17): of *Doridiidae*; *id.* (18).—Anatomy of *Phyllaplysia lafonti*, Fischer; MAZZARELLI (231).—Anatomy of *Gadinia peruviana*, Gray; PLATE (297).—Anatomy of *Siphonaria*; KOEHLER (194, 195).—Anatomy of *Rhodope veranii*; BOEHMIG (26).—Anatomy of *Melongena melongena*; VANSTONE (385).—Anatomy of *Triton*, *Dolium*, and *Strombus*; HALLER (146).—Anatomy of *Coleophysis truncatula*, Brug., and *Ammonicera* [n. g.] *fischeriana*, Monteros.; VAYSSIÈRE (389, 390).—Anatomy of *Neritina*; FISCHER &

GROSSE (125).—Anatomy of *Ephippodonta macdougalli*, Tate ; WOODWARD (415).—Anatomy of *Aplacophora* ; SIMROTH in BRONN (44).—Anatomy of *Chatoderma nitidulum*, Lovén ; WIRÉN, (409) 1892.—Anatomy of *Proneomenia sluiteri* ; HEUSCHER (164).

2. SHELL AND INTEGUMENT.

Note on the protoconch of *Orthoceras* ; CLARKE (65).—Coiling of the shell in embryonic *Gastropoda* ; FISCHER (122).—Chitin of *Mollusca* ; KRAWKOW, Zeitschr. Biol. xxix, p. 190.—The chromatophores of *Cephalopoda* ; SAMASSA (312).—Chromato-dilation in *Cephalopoda* is paralysed by the destruction of the sub-oesophageal ganglia : chromato-contraction by that of the supra-oesophageal ganglia ; PHISALIX (282).—Peculiar chromatophores (thermoscopic eyes?) in *Chiroteuthis bonplandi* ; JOUBIN (179).—Reply to criticisms on the question of the chromatophores of *Cephalopoda* ; JOUBIN (181).—Coloured organs on the skin of two species of *Chiroteuthis* ; JOUBIN (182).—Note on the tegument of [*Hyalina*] *Zonites cellarius* ; ANDRÉ (11).—Development of the cerata in *Æolis* ; DAVENPORT (107).—In *Philine* and *Doridium* a narrow canal leads from the shell cavity to the exterior ; PELSENEER (278).

3. MUSCULAR SYSTEM.

[None.]

4. DIGESTIVE SYSTEM.

On the snout and buccal apparatus of the *Prosobranchiata* ; OSWALD (264A & 265).—The labial palps are employed by *Pelecypoda*, especially *Pholas*, to prevent foreign, inedible substances from entering the digestive system, and to drive such bodies to the exhalent siphon ; COUPIN (86).—Radulæ of *Mollusca*, monograph by TROSCHEL (380), completed by THIELE.—Changes during growth in the radula of land *Mollusca* ; STERKI (361).—On the lingual cartilages and cartilaginous tissue in *Gastropoda* and in *Cephalopoda* ; LOISEL (211–213).

5. CIRCULATORY SYSTEM.

The renal circulation of *Helix pomatia* ; GIROD (134).—On the heart of *Aplysia limacina* ; SCHOENLEIN (322).—Circulatory and renal organs of *Chitons* ; PLATE (297).—Heart of *Ostrea* and *Pandora* is in some species traversed by the rectum ; PELSENEER (274).—On a fourth kind of respiratory globulin, δ -achroglubine, in the blood of *Doris* ; GRIFFITHS (143).—Phagocytosis in gills of *Pelecypoda* ; BRUYNE (52).—Defensive phagocytosis in green Oysters ; PELSENEER (275).

6. RESPIRATORY SYSTEM.

Structure of the gills of *Pelecypoda*; JANSSENS (174).

7. EXCRETORY AND SECRETORY SYSTEM.

Excretory apparatus of *Elysia*; PELSENEER (277).—So-called primitive kidneys of *Gastropoda*; ERLANGER (116).—The organ of the funnel of *Cephalopoda* (Müller's organ) is the equivalent of the pedal mucous pore of *Gastropoda*; JATTA (175).—Phosphorescent organs in *Histioteuthis ruppellii*; JOUBIN (183).

8. NERVOUS SYSTEM.

Structure of the nervous system of *Gastropoda*; NABIAS (254).—Physiological researches into the nervous system of *Eledone moschata*; UEXKÜLL (384).—Histology and anatomy of the nervous centres of some *Pulmonata*; NABIAS (256).—*Acteon* is streptoneurous; BOUVIER (36-38), PELSENEER (276).—Nervous system of *Heteropoda*; PELSENEER (273), [see also Zool. Rec. 1892, *Moll.* p. 31].—Nervous system of *Nerita polita* and *Navicella porcellana*; BOUTAN (34).—Comparison of the central nervous system of *Pelecypoda* with that of *Gastropoda*; HARDIVILLER (148).—On the nerve fibres of *Pelecypoda*; CHATIN (60).—Ocular nerves of *Spondylus gaderopus*; CHATIN (62).

9. SENSORY SYSTEM.

Sensory organs of *Mollusca*; PELSENEER (279).—Eyes of some *Gastropoda*; PELSENEER (280).—The tentacula are the seat of the olfactory organs in *Helix*; GRIFFITHS (142).—Branchial sensory organs of *Patina pellucida*; THIELE (376).

10. GENERATIVE ORGANS.

Double hectocotylisation in a specimen of *Eledone cirrhosa*; APPELLÖF (12).—Morphology of the generative system in *Testacella*; COLLINGE (79).—Absence of male organs in individuals of *Helix aspersa* and *Arion intermedius*; COLLINGE (75).—Genitalia of *Bulimus acutus* [i.e., *Cochlicella acuta*]; MOSS & PAULDEN (251).—Genitalia of *Achatina mosambica*, *Helix similaris*, *Goudotiana lucubensis*; BRANCSIK, Trencsen term. Evkon. xv, pp. 117, 208 & 209, figg.—Reproductive apparatus of *Elysia*; PELSENEER (277).

11. EMBRYOLOGY.

Embryology of *Gastropoda*; ERLANGER (116).—Development and power of self-fertilization of *Arion ater*; WOTTON (416), SIMROTH (333).—Development of *Umbrella mediterranea*; HEYMONS (165).—Abnormal features in the development of *Cassidaria echinophora*; ERLANGER

(117).—Development of *Haliotis*; BOUTAN (35).—Notes on embryology of *Chiton*; METCALF (241), the ova are fertilized after extrusion.—Structure and segmentation of the egg of *Cyclus cornea*, L.; STAUF-FACHER (353, 354).—Embryology of *Unio complanata*; LILLIE (198).—Embryology of *Ostræa glomerata*; KENT (187).

12. PHYLOGENY AND CLASSIFICATION.

Classification of *Mollusca* after Pelseener; LAHILLE (197); WOODWARD (414).—Classification of *Ammonites*; BLAKE (24).—On the systematic value of the operculum; MOELLENDORFF (248).—The *Streptoneura* and *Euthyneura* are connected by *Actæon*, which is streptoneurous; BOUVIER (36–38), PELSENER (276).—Phylogeny of *Oncidiidæ*; PLATE (296) [see also Zool. Rec. 1892, *Moll.* p. 35].—*Rhodope veranii* is most nearly allied to the *Nudibranchiata* in its anatomy, but to the *Turbellaria* in its development, and should form a new class; BOEHMIG (26).—Phylogeny of *Docoglossa*; DALL (95) replies to criticisms by Thiele.

The *Polyplacophora* are finally classified by PILSBRY in TRYON (381), as under:—

I. Superfam. EOPLACOPHORA.

Fam. LEPIDOPLEURIDÆ.

Genus *Lepidopleurus*.

Genus *Hanleya*.

Genus *Hemiarthrum*.

Genus *Microplax*.

II. Superfam. MESOPLACOPHORA.

Fam. ISCHNOCHITONIDÆ.

Subfam. *Ischnochitoninæ*.

Genus *Tonicella*.

Genus *Schizoplax*.

Genus *Callochiton*.

Genus *Trachydermon*.

Genus *Chatopleura*.

Genus *Pallochiton*.

Genus *Dinoplax*.

Genus *Ischnochiton*.

Subfam. *Callistoplacinaæ* (nov.).

Genus *Callistochiton*.

Genus *Nuttallina*.

Genus *Craspedochiton*.

Genus *Angasia*.

Genus *Callistoplax*.

Genus *Ceratozona*.

Fam. MOPALIIDÆ (nov.).

Genus *Mopalia*.

Genus *Placiphorella*.

Genus *Plaxiphora*.

Fam. ACANTHOCHITIDÆ (nov.).

- Genus *Spongiochiton*.
- Genus *Acanthochites*.
- Genus ? *Leptoplax*.
- Genus *Katharina*.
- Genus *Amicula*.
- Genus *Cryptochiton*.

Fam. CRYPTOPLACIDÆ,

- Genus *Cryptoplax*.
- Genus *Choneplax*.

III. Superfam. TELEOPLACOPHORA.

Fam. CHITONIDÆ.

Subfam. *Chitoninæ* (nov.).

- Genus *Chiton*.
- Genus *Eudoxochiton*.

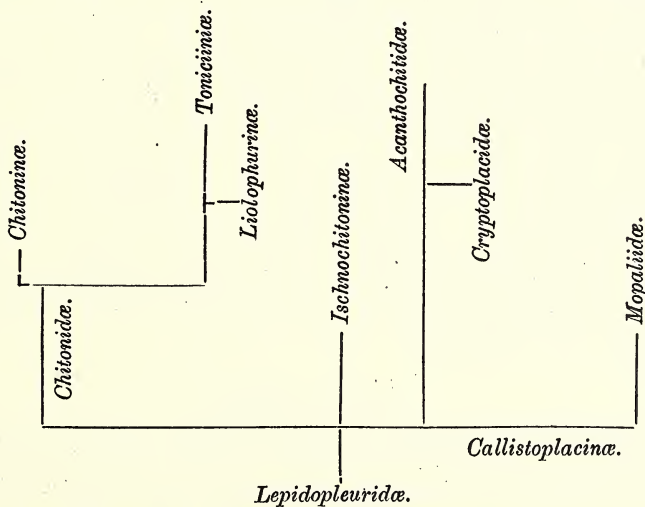
Subfam. *Toniciinæ* (nov.).

- Genus *Tonicia*.
- Genus *Acanthopleura*.

Subfam. *Liolophurinæ* (nov.).

- Genus *Schizochiton*.
- Genus *Lorica*.
- Genus *Enoplochiton*.
- Genus *Onithochiton*.
- Genus *Liolophura* (nov.).

PILSBRY further gives the following diagram of the phylogenetic relationship of the families and subfamilies :—



besides other diagrams of the genera, *Ischnochitoninæ*, *Chitonidæ*, and *Acanthochitidæ*.

SIMROTH (in BRONN, 44) classifies the *Aplacophora* as follows :—

SUBORDER.	FAMILY.	GENERA.
<i>Chatodermatina</i>	<i>Chatodermatidæ</i>	<i>Chatodermæ.</i>
	<i>Neomeniidæ</i>	<i>Neomenia.</i>
<i>Neomeniina</i>	<i>Proneomeniidæ</i>	<i>Proneomenia.</i>
		<i>Solenopus.</i>
	<i>Dondersiidæ</i>	<i>Rhopalomenia</i> , n. g.
		<i>Macellomenia</i> , n. g.
		<i>Dondersia.</i>
		<i>Myzomenia</i> , n. g.
<i>Parameniidæ</i>	<i>Nematomenia</i> , n. g.	
	<i>Paramenia.</i>	
	<i>Ismenia.</i>	
		<i>Lepidomenia.</i>
		(?) <i>Echinomenia</i> , n. g.

Classification of *Pelecypoda* : Fischer's families arranged according to Pelseneer's scheme ; WOODWARD (413).

13. STRAY NOTES.

Principles of Malacology ; WESTERLUND (397).—"Conchology as a popular Science" ; ADAMS, J., Northampton Soc. vii, pp. 204-212.—Influence of environment on the development of *Mollusca* ; LOCARD (204).—Climate and the variation of Slugs ; COCKERELL (70).—Filtration of water by *Mollusca* ; FISCHER (124).—Dispersal of non-marine *Mollusca* ; KEW (187A).—Dispersal of freshwater bivalves by the agency of Vertebrates ; GUERNE (144).—Habits of *Octopus* in captivity ; HORNELL (170).—Mode of feeding of *Testacella scutulum* ; WEBB (396).—Life-history of *Arion ater* ; WOTTON (416).—Slugs injuring coffee ; COCKERELL (71).—*Idalia elegans*, Leuck., preys on Tunicates ; PROUHO (302).—Feeding lines of a living land Gastropod on lichen-covered slate ; WOODWORTH, Science, xxi, p. 157. — Food-supply of oyster, clam, and mussel ; LOTSY (218).—Occurrence of *Crenella marmorata*, Forb., in the mantle of *Ascidella virginea*, Müll. ; MEISSNER (233).—"Mimicry" of *Lamellaria perspicua* ; HERDMAN (162).—Seat of colouration in green oysters ; CHIATIN (61).—On the causes of viridity in oysters ; JOURDAIN (184).—Teratological conchology ; DAUTZENBERG, Feuille Natural. xxiii, pp. 30 & 31 : *Ibid.*, DAVY, t. c. p. 77.—Historical researches on Printer's shells ; LOCARD (202).

14. ECONOMICS.

Edible *Mollusca* of Southern California ; WILLIAMSON (406).—Oyster-culture in the Black Sea ; STOHL, Congr. Internat. Zool. ii, pt. 2, pp. 28-36.—Oyster-culture at Roscoff ; LACAZE-DUTHIERS, C.R. Ac. Sci. cxvi, pp. 414-419, and cxvii, pp. 428-434.—Pearls from the West of France ; BONNEMÈRE (33).

15. COLLECTION, MUSEUMS, &c.

Beach-shell collecting in connection with oceanic phenomena; WILLIAMSON (407).—Type fossils in the Woodwardian Museum; WOODS, Geol. Mag. 1893, pp. 113-116.—Catalogue of the types and figured specimens in the Geological Department, Manchester Museum; BOLTON, Museum Handbook (*Moll.*) pp. 11-20.

III.—DISTRIBUTION.

GEOGRAPHICAL.

NON-MARINE MOLLUSCA.

a. PALÆARCTIC ZONE.

Unionidæ; BOETTGER (27).

1. Septentrional Region.

Vallonia excentrica, declivis (?), n. spp.; STERKI (360).—Notes on some European species of *Arion*; COLLINGE (76).—The *Dreissensia* of the European system, with alleged new species; LOCARD (201).

British Isles: Notes on the Conchological Society's List; COCKERELL, Sci. Gossip, pp. 15, 16, & 25-28: occurrence of *Arion lusitanicus*, Mab.; COLLINGE (80): theory as to the introduction of *Hydrobia jenkinsi*; ADAMS (1).

England: Derbyshire: *Mollusca* of; MILNES (243).—Herts: shells collected at Much Hadham; ROPE (307).—Kent: list of *Mollusca* near Maidstone; ELGAR & LAMB (114).—Leicester: *Pisidia* near; OLDHAM, J. Conch. vii, p. 167.—Middlesex: varieties of *Helix nemoralis* and *hortensis* near Ealing; BELT (15).—Nottinghamshire: list of Molluscan fauna; DODD (109); GAIN (130).—Warwickshire: *Mollusca* near Rugby; AUSTEN (13).

Scotland: additions to the comital census; ROEBUCK, Ann. Scott. Nat. Hist. 1893, pp. 164-170.—Argyle: *Mollusca* of Oban and the Is. of Lismore; STANDEN & HARDY (352).—Clackmannanshire and Southern Perthshire, conchology of; MACDOUGALL (219).—Inverness: Egg shells; MCMURTRIE (221).—Stirlingshire: list, with notes; McLELLAN (220).

Ireland: distribution of *Geomalacus maculosus*; SCHARFF (316).—Cork: *Arion flagellus*, n. sp.; COLLINGE (77, 81).—Donegal: *Mollusca* around Portsalon; STANDEN (351).

France: fresh and brackish-water *Mollusca*; LOCARD (199).—Paris: *Mollusca* of the water conduits; LOCARD (203).—France: *Hyalinia*, 3 alleged new species; LOCARD (210).—*Arion occidentalis*, n. sp.? COCKERELL (68).—*Helix nemoralis*, in the Pyrenees; SCHARFF (317).—*Bythinia*; LOCARD (205).—*Anodonta discoidea, albica, baudoniana*, alleged n. spp.; DROUËT (111).

Finland: *Anodonta planulata, flava*, alleged n. spp. ; DROUËT (111).

Germany: new localities ; GEYER (132) : occurrence of *Limax schwabii*, Frauentf. ; MUELLER (252) : occurrence of *Lithoglyphus naticoides*, C. Pfr., in the Rhine near Wiesbaden ; MARTENS (227).—Bavaria : *Vitrea goldfussi*, n. sp. ; WESTERLUND (398).—Prussia : list of species from Prussian Ober Lausitz ; WOHLBEREDT (411).—Saxony : Molluscan fauna ; NEUMANN (260) : new locality for *Amalia marginata* ; SIMROTH (327).

Lapland : *Sphærium physale*, n. sp. ; WESTERLUND (398).

Norway : *Pisidium arcticum*, n. sp. ; WESTERLUND (398).

Sweden : *Anodon*, 9 alleged new species ; DROUËT (111).

Russian Transcaspia : fauna with *Buliminus varenzovi*, n. sp. ; ROSEN (308A).

Central Asia : *Buliminus goldfussi*, from Alai Mountains ; KOBELT (193).

2. *Circum-Mediterranean Region.*

The *Dreissensia* of the European system with alleged new species ; LOCARD (201).

Spain : *Vitrina tarraconensis, zapateri*, n. spp. ; WESTERLAND (398) : *Unio*, 8 alleged new species ; DROUËT (111).

France : fresh and brackish-water *Mollusca* ; LOCARD (199) : list of terrestrial *Mollusca* from the environs of Bandol (Var) ; CAZIOT (59) : *Helix (Xerophila) bavayi*, alleged new species ; POLLONERA (299) : *Helix*, 5 alleged new species ; LOCARD (208) : *Bythinia* ; LOCARD (205) : catalogue of the *Mollusca* of the environs of Avignon ; CAZIOT (58).

Italy : *Helix (Iberus) signatus* in the Roman province ; MELI (234) : list of species found in winter at San Remo ; SCHNEIDER (321).—Sardinia : Molluscan fauna ; MARCIALIS (223) : *Helix (Xerophila)*, 2 alleged new species ; POLLONERA (299).—Sicily : *Helix (Xerophila)*, 3 alleged new species ; POLLONERA (299).

Greece : *Zonites labiosus*, n. sp., and *Olausilia*, 5 new species ; WESTERLUND (398) : *Helix*, 2 new species ; KOBELT in ROSSMAESSLER (309) : *Helix coracis*, n. sp., and *Campylæa*, 3 new species ; KOBELT (190) : *Unio scissus, mansellianus*, alleged n. spp. ; DROUËT (111).—Corfu : *Helix pantocratoris* ; KOBELT (190).

Crete : *Helix theobaldi* and *Hyalinia heracleensis*, n. spp. ; WESTERLUND (398).

Asia Minor : *Buliminus*, 2 new species, *Unio*, 2 new species ; KOBELT (193) : *Unio bithynicus*, n. sp. ; KOBELT in ROSSMAESSLER (309).

Persia, N.W. : on the Molluscan fauna ; MOELLENDORFF (249).

Syria : *Unio*, 2 alleged new species from the basin of the Orontes ; DROUËT (111).

Palestine : *Helix (Pomatia) moabitica*, n. sp. ; GOLDFUSS (138) : *Buliminus longulus*, n. sp. ; ROLLE (305).

Algeria : Slugs of Algeria with *Amalia cabiliانا*, n. sp. ; POLLONERA

(300): *Helix (Xerophila)*, 6 new species; KOBELT in ROSSMAESSLER (309): *Helix (Xerophila)*, 6 alleged new species; POLLONERA (299): *Helix subaperta*, n. sp., ANCEY (7); also described as *H. mazzulopsis*, Ancey, n. sp., by PILSBRY in TRYON (382): *Buliminus djurdjurenensis*, ANCEY (5); *Pupa cartennensis*, n. sp., ANCEY (8).

Morocco: *Helix culminicola*, n. sp.; KOBELT in ROSSMAESSLER (309).

3. Central Asiatic Region.

Turkestan: *Helix* (?) *sturanyana*, n. sp.; KOBELT in ROSSMAESSLER (309): *Buliminus semenovi*, *annenkovi*, n. spp.; ANCEY (5).

Afghanistan and Beloochistan: list of species, with *Buliminus kayberensis*, n. sp.; ANCEY (6).

4. Chinese Region.

Tonkin: 8 new species; DAUTZENBERG (104).—Fauna of Hainan I., 2nd suppt., 4 spp.; FISCHER (123).

5. Japanese Region.

[None.]

6. Atlantidean Region.

[None.]

b. PALÆOTROPICAL AFRICAN ZONE.

7. Central African Region.

Colouration of some East African Slugs; SIMROTH (330).—East Central Africa: new species, unnamed, of *Atoxon*, *Stuhlmannia*, n. g.?, *Vaginula*, 7 new species, only 2 named; SIMROTH (329).—British Central Africa: 13 new species; SMITH (334).

8. West African Region.

Species collected by the American expedition; STEARNS (355).—*Pseudachatina nachtigali*, n. sp.; KOBELT in MARTINI & CHEMNITZ (228).—Accra: *Oncidiella accrensis*, n. sp.; PLATE (296).—Congo: *Spatha corrugata*, n. sp.; DAUTZENBERG (105).—Gold Coast: *Pseudoglessula abeti-fiana*, n. sp.; ROLLE (306).—Grand Bassam: *Ennea bassamensis*, n. sp.; SMITH (335).—Togoland: list of species, VON MARTENS, Mitth. Forschungsreis. & Gelehr. Deutsch. Schutzgeb. vi, Hft. 3, Kling & Büttner, p. 216.—St. Helena: *Patula sexdentata*, *perarmata*, n. spp.; SMITH (345).

9. *South African Region.*

Ennea, 10 new species, *Macrocyclis quekettiana*, *Achatina*, 2 new species, *Stenogyra crawfordi*, *Buliminus*, 3 new species, *Succinea bowkeri*, *Planorbis*, 2 new species; MELVILL & PONSONBY (240).—*Patula somersetensis* and *Helix strobilodes*, n. spp., *Pupa*, 7 new species, and *Ennea*, 4 new species; MELVILL & PONSONBY (239).—*Veronicella saxicola*, n. sp.; COCKERELL (66).—Angra Pequena: *Oncidiella maculata*, n. sp.; PLATE (296).

10. *Malagasy Region.*

Distribution; COOKE (82).—Madagascar: *Acroptychia albocincta*, n. sp.; SMITH (343).—Comoro Is.: *Ennea longula*, n. sp., Mayotta Is.; SMITH (335).—Seychelles: list of species; DAUTZENBERG (100).

11. *Afro-Arabic Region.*

Abyssinia: *Helix jickeliana*, n. sp.; KOBELT in ROSSMAESSLER (309).—Arabia: *Helix beadlei*, n. sp.; PILSBRY in TRYON'S Manual (382).

c. PALÆOTROPICAL ORIENTAL ZONE.

12. *Indian Region.*

India: *Peronina*, n. g. (*Oncidiidae*), with *P. alta*, n. sp.; PLATE (296).

13. *Indo-Chinese Region.*

Annam: 6 new species; SMITH (340).—Assam, Manipur, and Burmah: *Alycæus*, 7 new species; GODWIN-AUSTEN (136).—Burma: *Oncis inspectabilis*, n. sp.; PLATE (296): *Clausilia stoliczkana*, n. sp.; SYKES (371).—Cambodia: *Parmarion martensi*, n. sp.; SIMROTH (331).—Laos: *Helix remoratrix*, *Clausilia paviei*, *Glessula paviei*, *Cyclophorus tornatus*, and *Melania dugasti*, n. spp.; MORLET (250).—Singapore: *Oncis martensi*, n. sp.; PLATE (296).—Nicobars: *Alycæus busbyi*, n. sp.; GODWIN-AUSTEN (136): *Oncidium nangkauriense*, *simrothi*, n. spp.; PLATE (296).

14. *Indo-Malay Region.*

Borneo: 27 new species; SMITH (336): *Oncidium nigrum*, n. sp.; PLATE (296): *Opisthostoma otostoma*, n. sp., *Alycæus*, 2 new species; BOETTGER (31): *Rhiostoma bonalli*, n. sp.; GODWIN-AUSTEN (137).—Java: *Parmarion weberi*, (*Microparmarion*, n. subg.) *strubelli*, *austeni*, n. spp.; SIMROTH (331).—Sumatra: *Clausilia*, 2 new species and 1 new var.; SYKES (369).

15. *Philippine Region.*

Philippines: contribution to the fauna, 146 species, with 34 new species, and 4 new sections; MOELLENDORFF (246, 247): a small collection, with 5 new species; SMITH (338): *Hemiglypta*, n. g., with 4 new

species ; MOELLENDORFF (247) : *Trochomorpha neglecta* ; PILSBRY in TYRON'S Manual (382) : *Oncidium multinotatum*, *branchiferum*, *Oncis semperi*, *montana*, n. spp. ; PLATE (296).—Luzon : 31 new species belonging to the genera *Vitrinoconus*, *Macrochlamys*, *Kaliella*, *Lamprocystis*, *Bensonia*, *Plectopylis*, *Chloræa*, *Cochlostyla*, *Hapalus*, *Opeas*, *Cyclotus*, *Leptopoma*, *Pupinella*, *Moulinsia*, *Palaina*, *Diplommatina*, *Omphalotropis*, and *Helicina* ; QUADRAS & MOELLENDORFF (303).—Palawan : *Cassidula bicolor*, n. sp. ; GODWIN-AUSTEN (137).

d. AUSTRALIAN ZONE.

HEDLEY (158) considers that the area of distribution of *Placostylus* (viz. : the Austro-Polynesian and Neozelanian Regions with the Solomon Islands) should form a Zoological Province.

16. Austro-Malay Region.

Amboina : *Oncidium amboinæ*, *Oncis cæca*, n. spp. ; PLATE (296).—Moluccas : *Macrochlamys martini*, n. sp. ; SCHEPMAN (318) : *Planispira tietzeana*, n. sp. ; ROLLE (305).—New Britain : *Oncis lata*, n. g. and sp. ; PLATE (296).—New Guinea : *Nanina infelix*, n. sp. ; SMITH (342).

17. Australian Region.

Baudin Is. (N. W. coast Australia) : *Helix (Gonostoma) baudinensis*, *collingii*, n. spp. ; SMITH (341).—Queensland : observations on the land-snail fauna ; HEDLEY (154).—South Australia : hand list of aquatic *Mollusca* ; ADCOCK (2).—Victoria : *Mollusca* fauna of near Castlemaine ; BILLINGHURST (22) : *Oncidiella pachyderma*, n. sp. ; PLATE (296).

18. Austro-Polynesian Region.

New Hebrides : *Placostylus alienus*, n. sp. ; PILSBRY (287).

19. Polynesian Region.

Sandwich Islands : catalogue of shells ; BALDWIN (14) : monograph of the genus *Carelia*, with 2 new species and description of *Microcystis lymaniana*, n. sp. ; ANCEY (9).

20. Neozelanian Region.

New Zealand : reference list, with *Rhenea*, n. n. for *Elæa* ; HEDLEY & SUTER (160) : contributions to the Molluscan fauna ; SUTER (366) : observations on the Helices, JHERING (178) ; reply by PILSBRY (289) : *Oncidiella obscura*, n. sp. ; PLATE (296) : the supposed *Leptopoma* probably a *Lagochilus* ; MOELLENDORFF (245).

e. NEANTARCTIC ZONE.

Lists and descriptions of South American *Mollusca* ; HIDALGO (166).

f. NEOTROPICAL ZONE.

Lists and descriptions of South American *Mollusca* ; HIDALGO (166).

23. *Peruvian Region.*

Bolivia : *Clausilia boliviana*, n. sp. ; SYKES (370).—Peru : *Clausilia steeriana*, n. sp. ; SYKES (370).—Galapagos Is. : report on Molluscan fauna, with complete list ; STEARNS (357) : 7 new species ; DALL (99).

24. *Columbian Region.*

New Granada : *Clausilia perplexa*, n. sp. ; SYKES (370).

25. *Brazilian Region.*

Brazil : *Unionidæ* of Piracicaba, 16 species ; NEHRING (258).—*Unionidæ* of S. Paulo, with 9 new species, and their geographical distribution ; JHERING (176).

26. *Mexican Region.*

Bulinulus, 4 new species ; DALL (94).—Mexico and Central America : MARTENS (225) ; FISCHER & CROSSE (125).—Guatemala : *Ostomus championi*, n. sp. ; MARTENS (225).—Lower California : *Mollusca* of, with *Melaniella* ? *eiseniana* and *Planorbis*, 2 new species ; COOPER (83).—*Bulinulus montezuma*, n. n. for *B. proteus*, Binney, non Brod ; DALL (97).—Mexico : *Ostomus*, 2 new species, *Bulinulus durangoanus*, n. sp. ; MARTENS (225).—*Unio*, 3 new species, and *Anodonta chalconensis*, n. sp. ; CROSSE & FISCHER (91).—*Anodonta tehuantepecensis*, n. sp. ; CROSSE & FISCHER (90).—Nicaragua : *Orthalicus maclurae*, n. sp. ; MARTENS (225) : *Thysanophora coloba*, n. sp. ; PILSBRY (283).—Panama : *Ostomus bugabensis*, n. sp. ; MARTENS (225).

27. *Caribbean Region.*

Dominica Is. : a collection from ; PILSBRY (284).—Jamaica : occurrence of *Agriolimax agrestis*, Linn. ; COCKERELL (72).—Little Cayman Is. : *Hemitrochus caymanensis*, n. sp. ; MAYNARD in TRYON'S Manual (382).—St. Lucia : *Veronicella lucia*, n. sp. ; COCKERELL (66).—Trinidad : *Mollusca* of ; GUPPY (145).

g. NEARCTIC ZONE.

Notes on the variation of some North American land *Mollusca* ; COCKERELL (74).—North American species of *Succinea* ; COCKERELL (73).

28. *American Region.*

Vallonia excentrica, *parvula*, *perspectiva*, n. spp.; STERKI (360).—Relationships and distribution of the *Unionidæ*; SIMPSON (323).—*Mollusca* of N.W. Louisiana and Harrison County, Texas; VAUGHAN (386).—Arkansas: List of species; SAMPSON (314).—Indiana: shells of Henry Co.; PLEAS (298).—Michigan: notes on the shell-bearing *Mollusca*; WALKER (395).—New Mexico: shells from the sand of a dry salt lake at Eddy; STERKI (362).—North Carolina: *Polygyra subpalliata*, n. sp.; PILSBRY (290).

29. *Californian Region.*

Vallonia cyclophorella, n. sp.; STERKI (360).—Arizona: *Anodonta nearnsiana*, n. sp.; SIMPSON (324).—Colorado: shells of William's Cañon; SAMPSON (313).—Nevada: *Ammicola micrococcus*, n. sp.; PILSBRY in STEARNS (358).

30. *Canadian Region.*

Canada: *Vallonia albula*, n. sp.; STERKI (360).—Gaspé district: a list of species; HANHAM (147).—British Columbia: shells from Laggan, Rocky Mts.; TAYLOR (375).

MARINE MOLLUSCA.

1. *Arctic Province.*

Fauna of the Russian Arctic Sea; HERZENSTEIN (163).

2. *Boreal Province.*

Norway: *Mollusca* of Trondhjem Fiord; NORMAN (262).

3. *Celtic Province.*

British Isles: additions [mostly varr.] to Somerville's list; MARSHALL (224).—Cornwall: *Mollusca* found near Falmouth; VALLENTIN, J. Inst. Cornwall, xi, pp. 319–324.—Devon: list of *Mollusca* at Teignmouth; BYNE (56).—Essex: living examples of *Crepidula fornicata*; CROUCH (92).—Scotland: *Mollusca* of the upper portion of Loch Linnhe; KNIGHT (188).—North Sea *Cephalopoda* collected on the Norwegian Expedition; APPELÖF (12).—Sweden: Summary of *Cephalopoda*; LÖNNBERG (215) 1891.—Holland: *Acanthopsole coronata*, Forbes, and *Amphorina aurantiaca*, A. & H., added to fauna; LOMAN (214): *Cephalopoda*; HOEK (168).

4. *Lusitanian Province.*

Cephalopoda collected by the "Melita"; JOUBIN (180).—Cape Verd Is. : *Latirus maximus*, n. sp. ; SOWERBY (350) : *Ischnochiton nebulosus*, n. sp. ; PILSBRY (381).—Portugal : *Ischnochiton obtusus*, n. sp. ; PILSBRY (381).—France : additions to the fauna of St. Lunaire (Ille et Vilaine) ; DAUTZENBERG (106).—*Veneridæ* and *Petricolide* of Roussillon ; BUCQUOY and others (54).—*Mollusca* of Bandol (Var) ; CAZIOT (59) : fauna of Granville and St. Pair ; DAUTZENBERG (101) : *Alexia*, 3 alleged new species ; LOCARD (207).—Italy : list of *Mollusca* found at San Remo in winter ; SCHNEIDER (321) : *Hermæa cremoniana*, n. sp., from the Gulf of Naples ; TRINCHESE (379) : *Cyerce jheringi*, n. sp., from Naples ; PELSENER (271).—Sardinia : Molluscan fauna ; MARCIALIS (223).—Bathymetrical distribution of *Mollusca* in the Black Sea ; OSTROUMOV (263).—Tunis : *Littorina neruillei*, n. sp. ; DAUTZENBERG (103).

5. *Aralo-Caspian Province.*

Black Sea and Sea of Azov : Molluscan fauna ; OSTROUMOV (264).

6. *West African Province.*

West Coast Africa : species collected by the American expedition ; STEARNS (355).

7. *South African Province.*

Acanthochites carpenteri, n. sp. ; PILSBRY (381).—*Cerithium natalense*, *inaquisculptum*, n. spp. ; KOBELT in MARTINI & CHEMNITZ (228).

8. *Indo-Pacific Province.*

[*Cypræa*] *Arabica gillei*, n. sp. ; JOUSSEAUME (185).—E. Africa ? : *Pleurotoma albovaricosa*, n. sp. ; SOWERBY (347).—Zanzibar : *Acanthochites involutus*, n. sp. ; PILSBRY (381).—Mascarene Is. : *Cerithium mascarenarum*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (228).—Mauritius : *Pleurotoma*, 2 new species, *Daphnella elata*, n. sp., *Defrancia*, 2 new species ; SOWERBY (347) : *Latirus præstantior*, n. sp. ; MELVILL (237) : *Columbella sutoris*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (228).—Seychelles : list of species ; DAUTZENBERG (100).—Red Sea *Callistochiton heterodon*, n. sp. ; PILSBRY (381).—Bombay : list of marine *Mollusca* ; MELVILL & ABERCROMBIE (238) : 25 new species ; MELVILL (236).—Ceylon : *Angasia tetrica*, n. sp. ; PILSBRY (381).—Pondicherry : *Sphenia sowerbyi*, n. sp. ; SMITH (339).—British Burmah : *Chiton burmanus*, n. sp. ; PILSBRY (381).—Penang : *Cancellaria eudeli*, n. sp. ; SOWERBY (349) : *Scapharca deyrollei*, *penangana*, n. spp. ; JOUSSEAUME (186).—Singapore : *Sphenia inæqualis*, n. sp. ; SMITH (339).—Hongkong :

Pleurotoma, 2 new species, *Daphnella*, 2 new species, *Cythara ringens*, n. sp.; SOWERBY (347).—Philippines: *Cerithium citrinoides*, n. sp., KOBELT in MARTINI & CHEMNITZ (228): *Rissoidea*, 10 new species (*Pachyrissoina* and *Parazebinella*, n. sectt.); *Assimineæ*, 2 new species; BOETTGER (28): *Eulimida*, 9 new species; BOETTGER (29): *Onoba quadrasi*, n. sp., *Rissoina*, 2 new species; BOETTGER (30).—Rotti Is.: *Cerithidea tenkati*, n. sp.; SCHEPMAN (320).—Australia: synonymy of some Australian *Murex*; BRAZIER (43): Catalogue of species of *Murex*; BRAZIER (41): *Pleurotoma huberti*, n. sp.; SOWERBY (347): *Cythara guentheri*, n. sp.; SOWERBY (347): *Rissoina walkeri*, n. sp., from Baudin Is.; SMITH (341): *Euchelus ampullus*, n. sp.; TATE (373): *Chiton miles*, n. sp., from Torres Straits; PILSBRY (381): *Dolium pictum*, n. sp., from "New Holland?"; SCHEPMAN (319): *Plaxiphora excurvata*, n. sp., from Australia? PILSBRY (381).—New Ireland: *Chiton pulvinatus*, n. sp.; PILSBRY (381).—Pacific Ocean: *Doridium diomedeaum*, *ocelligerum*, n. spp.; BERGH (18): *Carinaria elata*, n. sp.; SOWERBY (348).—Marquesas Is.: *Chiton marquesanus*, n. sp.; PILSBRY (381).

9. Australo-Zelandic Province.

Catalogue of species of *Murex* of Australia and Tasmania; BRAZIER (41).—Australia: 15 new species and additions to the fauna; TATE (373, 374).—Hand list of aquatic *Mollusca*; ADCOCK (2).—*Pleurotoma walcoota*, n. sp.; SOWERBY (347).—*Pholas obturamentum*, n. sp.; HEDLEY (153).—New Zealand: *Plaxiphora obtecta*, *Eudoxochiton huttoni*, n. spp.; PILSBRY (381).

10. Japonic Province.

Japan: *Calliostoma crumpii*, n. sp.; PILSBRY (286).—*Ischnochiton cutratus*, *hakodadensis*, *Chiton densiliratus*, n. spp.; PILSBRY (381).—*Teredo japonica*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (228).

11. Alleutian Province.

Bering Is.: *Placiphorella borealis*, n. sp.; PILSBRY (381).—British Columbia: check list: [NEWCORBE] (261): notes on some forms, with *Pecten vancouverensis*, n. sp.; WHITEAVES (402).

12. Californian Province.

Rare and little-known forms; STEARNS (356).—*Mitra ida*, n. sp.; MELVILL (235): *Pallochiton lanuginosus*, *Callistochiton palmulatus*, *crassicostatus*, *Placiphorella velata*, n. spp.; PILSBRY (381): *Yoldia montereyensis*, n. sp.; DALL (98).—Monterey Bay: species obtained; WOOD (412).—Sta. Catalina Is.: *Doridium purpureum*, n. sp.; BERGH (18).

13. *Panamic Province.*

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- Schizoglossa*, n. g., for *Daudebardia novoseelandica*, Pfr., with description of its anatomy; HEDLEY, P. Linn. Soc. N. S. Wales, vii, p. 391, figg.
- Streptaxis (Eustreptaxis) dorri*, Tonkin, DAUTZENBERG, J. Conchyl. xli, p. 160, fig., n. sp.
- Testacella*: morphology of the generative system; COLLINGE, Ann. Nat. Hist. xii, pp. 21-25, 1 pl. *T. scutulium*, mode of feeding; WEBB, Zoologist, xvii, pp. 281-289 & 356, 1 pl.

LIMACIDÆ.

- Agriolimax agrestis*, Linn., in Jamaica; COCKERELL, Nautilus, vii, pp. 21 & 22.
- Amalia cabiliiana*, Algeria, POLLONERA, Medit. Natural. iii, p. 424, n. sp.
- †*Ariophanta saucatsensis*, Oligocene, S. W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 132, figg., n. sp.
- Atoxon*, 8 new species unnamed, SIMROTH, Ber. Ges. Leipzig, 1892-93, pp. 13-17, n. sp.
- Beusonia cardiostoma*, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 172, n. sp.
- ‡*Coneuplecta*, n. sect. of *Euplecta*, type *E. scalarina*, Pfr.; MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 64.
- Conulus fulvus*, Müll., dentate variety; STERKI, Nautilus, vii, pp. 4 & 5.
- C. galapaganus*, Galapagos I., DALL, Nautilus, vii, p. 55, n. sp.
- Euplecta (Pareuplecta) quadrasi, kochiana*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 63, figg., n. spp.
- Helicarion adolfi*, Böttg.: anatomy; WIEGMANN, (404) pp. 114-119, figg.
- ‡*Hemiglypta* n. g., p. 1, type *Helix blainvilleana*, Lea, with *Hemiglypta semperi*, p. 11, *connectens*, p. 14, *infrastrata*, p. 22, *microglypta*, p. 25, MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, n. spp.
- [*Hyalinia*] *Zonites cellarius*: note on the tegument; ANDRÉ, Zool. Anz. xvi, pp. 39 & 40, fig. *Hyalinia pura*, Alder: misplacement of the names of type and variety; NELSON & STANDEN, J. Conch. vii, pp. 151-153.
- H. terveri, recta*, p. 110, *exæquata*, p. 111, alleged n. spp., France, LOCARD, Echange, ix; *H. (Polita) heracleensis*, Crete, WESTERLUND, Nachrbl. deutsch. malak. Ges. 1893, p. 118; *H. chathamensis*, Galapagos Is., DALL, Nautilus, vii, p. 54: n. spp. [See also *Vitreu* and *Zonites*.]
- Kaliella haiphongensis*, Tonkin, DAUTZENBERG, J. Conchyl. xli, p. 163, fig.; *K. micropetatus*, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 171; *K. transitans*, p. 68, *tenuisculpta*, p. 69, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, figg.: n. spp.

- Lamprocystis chlororhaphae*, Palawan, SMITH, Ann. Nat. Hist. xi, p. 348, figg.; *L. flavescens*, p. 171, *leucosphaerion*, p. 172, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893; *L. pseudo-succinea*, p. 70, *appendiculata*, p. 72, *subcrystallina*, p. 73, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, figg. : n. spp.
- Limax cinereo-niger*, Wolf, specific rank of; ROEBUCK, Ann. Nat. Hist. xi, pp. 225-228. *L. maximus*, L., var. *cinereo-niger*, a reply to Roebuck; COLLINGE, t. c. pp. 286 & 287. *L. schwabii*, Frauenf., in Germany, MUELLER, Nachrbl. deutsch. malak. Ges. 1893, p. 197.
- Macrochlamys minuta*, v. Mart., anatomy; WIEGMANN, (404) pp. 151 & 152, figg.
- M. pseustes*, Palawan, SMITH, Ann. Nat. Hist. xi, p. 348, fig.; *M. promiscua*, Annam, SMITH, P. Malac. Soc. London, i, p. 10, fig.; *M. tenuigranosa*, Tonkin, DAUTZENBERG, J. Conchyl. xli, p. 162, fig.; *M. martini*, Moluccas, SCHEPMANN, Notes Leyden Mus. xv, p. 149, fig.; *M. caganiana*, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 170 : n. spp.
- Microcystis mirmido*, Tonkin, DAUTZENBERG, J. Conchyl. xli, p. 162, fig.; *M. lymanina*, Sandwich Is., ANCEY, Mem. Soc. zool. France, vi, p. 331 : n. spp.
- ¹ *Microparmarion*, n. subg. of *Parmarion* [q.v.].
- Nanina*, anatomy of *N. wallacei*, Pfr., pp. 119 & 120, *cidaris*, Lam., pp. 120-123, *nemorensis*, Müll., pp. 123-142, *rareguttata*, Mouss., pp. 142-146, *rumphii*, V. d. Busch, pp. 146 & 147, *vomer*, v. Mart., pp. 147-151; WIEGMANN (404) figg. *N. (Ariophanta) dohertyi*, Aldrich, figured, Nautilus, vi, pl. ii.
- N. infelix*, New Guinea, SMITH, Conchologist, ii, p. 109; *N. (Xesta) moluensis*, Borneo, SMITH, J. Linn. Soc. Zool. xxiv, p. 342, fig.; [*N.*] *Xesta unilineata*, Tonkin, DAUTZENBERG, J. Conchyl. xli, p. 161, fig. : n. spp.
- Parmacochlea fischeri*, Smith, note on, with anatomy; HEDLEY, Macleay Memor. Vol. Linn. Soc. N.S. Wales, pp. 201-204, 1 pl.
- Parmarion*: notes on the genus, with *P. weberi*, p. 105, Java, *martensi*, p. 107, Cambodia (*microparmarion*, n. subg.), *strubelli*, p. 108, *austeni*, p. 109, Java; SIMROTH (331).
- Rhyssota pergrandis*, Annam, SMITH, P. Malac. Soc. London, i, p. 11, fig., n. sp.
- Sitala varicostulata*, p. 342, *baritensis*, *moluensis*, p. 343, Borneo, SMITH, J. Linn. Soc. Zool. xxiv, figg., n. spp.
- ² *Stuhlmannia*, n. g., for an unnamed n. sp., East Central Africa; SIMROTH, Ber. Ges. Leipzig, 1892-93, p. 18?
- Trochonanina paraguensis*, Palawan, SMITH, Ann. Nat. Hist. xi, p. 349, fig., n. sp.
- Vitrea goldfussi*, Bavaria, WESTERLUND, Nachrbl. deutsch. malak. Ges. 1893, p. 117, n. sp. [See also *Hyalinia* and *Zonites*.]
- Vitrina (oligolimax) tarraconensis*, *zapateri*, Spain, WESTERLUND, Nachrbl. deutsch. malak. Ges. 1893, p. 116, n. spp.

- Vitrinoconus suturalis*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 61, figg.; *V. trochiscus*, p. 169, *latissimus*, p. 170, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893 : n. spp.
- Zonites labiosus*, Greece, WESTERLUND, Nachrbl. deutsch. malak. Ges. 1893, p. 118, n. sp. [See also *Hyalinia* and *Vitraea*.]
- Zonitida*, notes on some ; STERKI, Nautilus, vii, pp. 13-17.

ARIONIDÆ.

- Arion*: notes on some European species ; COLLINGE, Conchologist, ii, pp. 113-117. *A. ater*, life history ; WOTTON, Rep. Cardiff Soc. xxiv, pp. 25-30 : development and power of self-fertilization ; WOTTON, J. Conch. vii, pp. 158-167 : remarks on the same ; SIMROTH, *t. c.* pp. 208 & 209. *A. intermedius*, absence of male organs in an individual of ; COLLINGE, J. Anat. Phys. xxvii, p. 238. *A. lusitanicus*, Mab., occurrence in the British Isles, and descriptions of 4 varieties ; COLLINGE, Ann. Nat. Hist. xii, pp. 414 & 415.
- A. flagellus*, and anatomy, COLLINGE, Ann. Nat. Hist. xii, pp. 252-254, 1 pl., and Conchologist, ii, p. 157 ; *A. occidentalis*, " apparently new," Pau (Basses Pyrenees), COCKERELL, J. Conch. vii, p. 192, figg. : n. spp.
- Geomalacus maculosus*, Allman, distribution in Ireland ; SCHARFF, P. Malac. Soc. London, i, pp. 17 & 18, map.

HELICIDÆ.

PATULA GROUP.

- Nesophila*, n. sect. of *Endodonta*, type *Helix tiara*, Migh. ; PILSBRY in TRYON'S Manual, 2nd series, ix, p. 27.
- Paratrochus*, n. sect. of *Endodonta*, type *E. dalbertini*, Brazier ; PILSBRY in TRYON'S Manual, 2nd series, viii, p. 295.
- [*Patula*] *Endodonta (Flammulina) infundibulum*, Hombr. & Jacq., note on ; HEDLEY, Nautilus, vii, p. 35.
- Patula somersetensis*, S. Africa, MELVILL & PONSONBY, Ann. Nat. Hist. xi, p. 19, fig. ; *P. (Endodonta) sexdentata, perarmata*, St. Helena, SMITH, Conchologist, ii, pp. 164 & 165, figg. : n. spp.
- Phenacharopa*, n. subg. of *Endodonta*, type *Pupa novoseelandica*, Pfr. ; PILSBRY in TRYON'S Manual, 2nd series, ix, p. 29.
- Pterodiscus*, n. n. for *Tropidoptera*, Ancey, sect. of *Endodonta* ; PILSBRY in TRYON'S Manual, 2nd series, ix, p. 36.
- Thaumatodon*, n. sect. of *Endodonta* = *Pitys*, Pease (in part) ; PILSBRY in TRYON'S Manual, 2nd series, ix, p. 26.
- Thysanophora coloba*, Nicaragua, PILSBRY, P. Ac. Philadelphia, 1893, p. 403, fig., n. sp.
- Trochomorpha*, anatomy of *T. planorbis*, Less., pp. 152-159, *costulata*, v. Mart., pp. 159 & 160 ; WIEGMANN, (404) figg.

- T. neglecta*, Philippines, PILSBRY in TRYON'S Manual, 2nd series, viii, p. 124, figg. ; *T. (Videna) sericina*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 74, figg. : n. spp.

HELICIDÆ, s.s.

Monograph of the genus *Helix* continued by KOBELT in MARTINI & CHEMNITZ (228), pp. 627-650, pls. clxxxv-clxxxviii.

- Lyrodiscus*, n. n. for *Lyra*, Mousson, type *Helix circumscissa*, Shuttlew. ; PILSBRY in TRYON'S Manual, 2nd series, ix, p. 48.

Papuina [= *Gestrochus*], notes on ; HEDLEY, Nautilus, vii, pp. 73 & 74.

Pella, Albers, is a mixed group, and the name preoccupied : after eliminating species belonging elsewhere, PILSBRY refers the remainder to *Phasis*, Albers, with a new subsect. *Trachycystis* ; TRYON'S Manual, 2nd series, viii, pp. 134 & 135.

- Strobilops*, n. n. for *Strobila*, Morse, non Sars. ; PILSBRY, P. Ac. Philad. 1892, p. 403 : note on the species ; PILSBRY, Nautilus, vii, pp. 56 & 57.

Trachycystis, n. sect. of *Phasis* = *Pella*, Alb., 'in part' ; type *Helix biscalpta*, Benson ; PILSBRY in TRYON'S Manual, 2nd series, viii, p. 136.

- Tropidocochlis*, n. g., type *Helix explanata* ; LOCARD, Echange, ix, p. 97.

Valonia : observations on the genus, *V. pulchella* and *costata* are considered distinct species, and "varieties" are described ; also *V. excentrica*, p. 252, Septentrional and American Regions ; *declivis* (?), p. 257, Central Europe ; *albula*, p. 263, Canada ; *parvula*, p. 265, *perspectiva*, p. 271, American Region ; *cyclophorella*, p. 272, Californian Region, n. spp. ; STERKI, P. Ac. Philad. 1893, pp. 234-279, 1 pl. of figg. of radulæ and jaws : the new species are also described and figured in TRYON'S Manual, 2nd series, vol. viii, pp. 249-259, pls. xxxii & xxxiii.

(PALÆARCTIC SPECIES.)

- Helix aspersa*, absence of male organs in an individual of ; COLLINGE, J. Anat. Physiol. xxvii, p. 237. *H. nemoralis*, and white-lipped var. in the Pyrenees ; SCHARFF, J. Conch. vii, p. 157 ; HORSLEY, t. c. p. 174. *H. arbustorum*, L., note on its distribution ; KOBELT, Nachrbl. deutsch. malak. Ges. 1893, pp. 87-92. *H. (Campylæa) nicatis*, Costa, note on ; PANTANELLI, Bull. Soc. malac. Ital. xviii, pp. 109 & 110. *H. (Iberus) signatus*, Fér., in the Province of Rome ; MELI, Boll. Soc. Rom. Zool. ii, pp. 242-252. *H. raymondi*, Moq., notes on species of the group ; ANCEY, Naturaliste, 1893, p. 91. *H. (Cochlicella) acuta*, genitalia ; MOSS & PAULDEN, Tr. Manchester Micr. Soc. 1892 (1893), pp. 75-79, 1 pl.
- H. (Macularia) pantocratoris*, p. 43, Corcyra, *coracis*, (*Campylæa*) *erymanthia*, p. 44, *pterolakæ*, p. 45, *eliaca*, p. 46, Greece, KOBELT, Nachrbl. deutsch. malak. Ges. 1893 ; *H. çoracis*, p. 50, (*Xerophila*)

- salonisana*, p. 65, Greece, *mactæ*, p. 166, *subsphaerita*, *keratæ*, p. 67, *nedromæ*, *madharica*, p. 69, *batnensis*, p. 73, Algeria, *jickeliana*, Abyssinia, p. 73, (?) *sturanyana*, Turkestan, p. 75, (*Iberus*) *culminicola*, Morocco, p. 78, KOBELT in ROSSMAESSLER'S *Iconographie*, vi, figg. *H. (Xerophila) inelegans*, p. 29, *impolita*, p. 30, *indigens*, *indefinita*, p. 33, *apparens*, p. 34, *infima*, p. 42, Algeria, *neutra*, p. 35, *himerensis*, p. 36, *drepanitana*, p. 42, Sicily, *bavayi*, p. 38, S. France, *lamarmoreæ*, p. 39, *deterior*, p. 44, Sardinia [alleged n. spp.], POLLONERA, *Bull. Soc. malac. Ital.* xvii, figg.; *H. (Theba) theobuldi*, Crete, WESTERLUND, *Nachrbl. deutsch. malak. Ges.* 1893, p. 119; *H. (Pomatia) moabitica*, Palestine, GOLDFUSS, *t. c.* p. 86 : n. spp.
- H. subaperta*, Djurdjura, Algiers; ANCEY, *Bull. Soc. zool. France*, xviii, p. 136, fig. Also described as *H. (Pomatia) mazzulopis*, Ancey, n. sp., PILSBRY in TRYON'S *Manual*, 2nd series, viii, p. 238, fig.; *H. niepcei*, *subfruticum*, *opimata*, *falsani*, *avarica*, S. France [alleged n. spp.], LOCARD, *Echange*, ix, p. 86. [For n. spp. of *Valonia*, see *ante*, first section of HELICIDÆ, s. s.]

(PALÆOTROPICAL AFRICAN SPECIES.)

- Helix (Pella) whytei*, Fort Johnston, Upper Shiré, SMITH, *P. Zool. Soc. London*, 1893, p. 634, figg.; *H. (Pella) strobilodes*, S. Africa, MELVILL & PONSONBY, *Ann. Nat. Hist.* xi, p. 19, fig.; *H. (Macrocyclis) quekettiana*, Natal, MELVILL & PONSONBY, *op. cit.* xii, p. 103, fig.; *H. beudlei*, Arabia, PILSBRY in TRYON'S *Manual*, 2nd series, viii, p. 176, fig. : n. spp.

(PALÆOTROPICAL ORIENTAL SPECIES.)

- Helix*: anatomy of *H. (Plectotropis) sumatrana*, v. Mart., pp. 160-166, *rotatoria*, Busch., pp. 166-169, (*Rhagada*) *solorensis*, v. Marts., pp. 169-171, (*Hadra*) *argillacea*, Fér., pp. 171-189, (*Chloritis*) *crassula*, Phil., pp. 189-90, *tuba*, Alb., pp. 190 & 191; WIEGMANN (404).
- H. (Chloritis) remoratrix*, Laos, MORLET, *J. Conchyl.* xl, p. 317, fig.; *H. (Hadra) pachychilus*, Annam, SMITH, *P. Malac. Soc. London*, i, p. 11, fig., also described as "*Cumæna pachychila*, Smith," by PILSBRY in TRYON'S *Manual*, 2nd series, viii, p. 265; [*H.*] *Plectopylis quadrasi* Luzon, MOELLENDORFF in QUADRAS & MOELLENDORFF, *Nachrbl. deutsch. malak. Ges.* 1893, p. 172; [*H.*] *Planispira tietzeana*, Halmaheira, Moluccas, ROLLE, *t. c.* p. 33 : n. spp.

(AUSTRALIAN AND POLYNESIAN SPECIES.)

- Helices of New Zealand, observations on; JHERING, *Nautilus*, vi, pp. 121-124. Reply by PILSBRY, *t. c.* pp. 129 & 130.
- Helix (Gonostoma) baudinensis*, p. 97, *collingii*, p. 98, Baudin Is., N.W. Australia, SMITH, *Conchologist*, ii, figg., n. spp.

(NEOTROPICAL SPECIES.)

- Hemitrochus caymanensis*, Little Cayman Is., MAYNARD in TRYON'S *Manual*, 2nd series, viii, p. 241, fig., n. sp.

(NEARCTIC SPECIES.)

[*Helix*] *Polygyra subpalliata*, North Carolina, PILSBRY, *Nautilus*, vii, p. 7, n. sp.

[For new species of *Valonia*, see *ante*, first section of HELICIDÆ, s. s.]

(FOSSIL SPECIES.)

†*Helix (Valonia) brochoni*, Oligocene, S.W. France, DEGRANGE-TOUZIN, *Act. Soc. Bordeaux*, xlv, p. 139, figg., n. sp.

COCHLOSTYLA GROUP.

Chloræa hennigiana, cristatella, p. 173, *malleata*, p. 174, Luzon, QUADRAS & MOELLENDORFF, *Nachrbl. deutsch. malak. Ges.* 1893, n. spp.

Cochlostyla (Callicochlias) chryseæ, semperi, p. 175, *streptostoma, (Orustia) pulchella*, p. 176, Luzon, QUADRAS & MOELLENDORFF, *Nachrbl. deutsch. malak. Ges.* 1893; *C. (Hypselostyla) connectens*, Philippines, MOELLENDORFF, *Ber. Senckenberg. Ges.* 1893, p. 97, fig. : n. spp.

ORTHALICIDÆ and BULUMULIDÆ.

Amphidromus : anatomy of *A. adamsi*, Reeve, pp. 191-204, *porcellanus*, Mouss., pp. 204-208, *contrarius*, Müll., pp. 208-210; WIEGMANN (404) figg.

A. kobelti, hab. ?, ROLLE, *Nachrbl. deutsch. malak. Ges.* 1893, p. 34; *A. costifer*, Annam, SMITH, *P. Malac. Soc. London*, i, p. 12, fig. : n. spp.

Bulimulus chaperi, Crosse & Fischer: note on the animal; FISCHER, *J. Conchyl.* xli, pp. 32 & 33; *B. (Pleuropyrgus) habeli*, Stearns, figured, *P. U. S. Mus.* xvi, pl. li.

B. (Nesiotus) duncanus, p. 52, *olla*, p. 53, *tortuganus, bauri*, p. 54, Galapagos Is., DALL, *Nautilus*, vii; *B. (Scutalus) montezuma*, Lower California, n. n. for *B. proteus*, Binney, non Brod., DALL, *t. c.* p. 26, figured in *P. U. S. Mus.* xvi, pl. lxxii, fig. 1; *B. (Scutalus) baileyi*, p. 640, (*Leptobysrus*) *zeledoni*, p. 644, *bryanti (inscendens, var. Cooper), reseyanus*, p. 645, Mexican Region, DALL, *P. U. S. Mus.* xvi, figg.; *B. durangoanus*, Mexico, MARTENS, *Biol. Centr.-Amer. Moll.* p. 246, fig. : n. spp.

Orthalichus. [sic] *macluræ*, Nicaragua, MARTENS, *Biol. Centr.-Amer. Moll.* p. 188, fig., n. spp.

Otostomus trimarianus, Mexico, p. 216, *bugabensis*, Panama, p. 218, *championi*, Guatemala, p. 222, *moritinctus*, Mexico, p. 228, MARTENS, *Biol. Centr.-Amer. Moll.* figg., n. spp.

Partula : conclusion of catalogue; HARTMAN, *Nautilus*, vi, pp. 97-99, figg.

Placostylus, range of; HEDLEY, *P. Linn. Soc. N.S. Wales*, vii, pp. 335-339. Reprinted *Ann. Nat. Hist.* xi, pp. 435-439.

P. alienus, New Hebrides, PILSBRY, *Nautilus*, vi, p. 116, n. sp.

BULIMINIDÆ and PUPIDÆ.

- Bifidaria*, n. subg. of *Pupa*, type *P. arizonensis*, Gabb., with 5 sections ; STERKI, *Nautilus*, vi, pp. 4 & 99-101.
- Buliminus longulus*, Palestine, ROLLE, *Nachrbl. deutsch. malak. Ges.* 1893, p. 34 ; *B. trojanus, priamus*, Troy, p. 150, (*Chondrula goldfussi*, Alai Mts., Central Asia, p. 151, KOBELT, *Nachrbl. deutsch. malak. Ges.* 1893 (—also described as n. spp. in ROSSMAESSLER'S *Iconographie*, vi, pp. 81 & 82, figg.) ; *B. varenzovi*, Russian Transcaspia, ROSEN, (308A) p. 178 ; *B. annenkovi*, p. 36, Turkestan, *djurdjurenensis*, p. 39, Algiers, *kayberensis*, p. 45, Kayber Pass, ANCEY, *Bull. Soc. zool. France*, xviii ; *B. (Pachmodus) maritzburgensis*, Natal, *transvaalensis*, p. 105, *jejunus*, p. 106, Transvaal, MELVILL & PONSONBY, *Ann. Nat. Hist.* xii, figg. : n. spp.
- † *Campolæmus*, n. g., for *Tomigerus* (?) *perezilis*, Smith ; PILSBRY, *Nautilus*, vi (1892), p. 96.
- Clausilia*, anatomy of, (*Phaedusa*) *obesa*, v. Mart., pp. 224-229, *molucensis*, v. Mart., pp. 229-231 ; WIEGMANN (404), figg. *C. vespa*, Gould, and its allies ; SYKES, *Conchologist*, ii, pp. 165-167, figg. *C. massiei*, Morlet, is a synonym for *C. mouhoti*, Pfr. ; SYKES, *t. c.* pp. 167 & 168.
- C. boliviana*, Bolivia, p. 100, *steeriana*, Peru, *perplexa*, New Granada, p. 101, SYKES, *Conchologist*, ii, figg. ; *C. (Oospira) stoliczkana* [= *C. vespa*, Gould, of Stoliczka], Burma, SYKES, *t. c.* p. 166, fig. ; *C. enigmatica*, p. 28, *melvilli*, p. 29, Sumatra, SYKES, *P. Malac. Soc. London*, i, fig. ; *C. (Strigillaria) mystica*, p. 125, (*Herilla* ?) *peloponnesiaca*, p. 126, (*Papillifera*) *praestans*, p. 127, *subsuturalis*, *symphyta*, p. 128, Greece, WESTERLUND, *Nachrbl. deutsch. malak. Ges.* 1893 ; *C. paviei*, p. 319, *dautzenbergi*, p. 320, Laos, MORLET, *J. Conchyl.* xl, figg. : n. spp.
- Pupa cartennensis*, Algeria, ANCEY, *Bull. Soc. zool. France*, xviii, p. 138.
- P. tabularis, dysorata, quantula*, p. 20, *sykesii, haploa, pretoriensis*, p. 21, *griqualandica*, p. 22, MELVILL & PONSONBY, *Ann. Nat. Hist.* xi, figg. ; further note on *P. dysorata* and *sykesii*, *op. cit.* xii, p. 111 : n. spp.

STENOGYRIDÆ, HELICTERIDÆ, and SUCCINEIDÆ.

- Achatina mossambica*, Mozambique, BRANCSIK in FREY, Trencsen term. *Evkon*. xv, p. 116 ; fig. of genitalia ; *A. scævola, penestes*, Transvaal, MELVILL & PONSONBY, *Ann. Nat. Hist.* xii, p. 104, figg. : n. spp.
- Achatinidæ* : monograph begun by KOBELT in MARTINI & CHEMNITZ, (228) pp. 1-56, pls. A & i-xvii.
- Carelia* : monograph of the genus, with *C. glutinosa*, p. 324, *dolei*, p. 328, n. spp. ; ANCEY, *Mem. Soc. zool. France*, vi, pp. 321-330.
- Glessula paviei*, Laos, MORLET, *J. Conchyl.* xl, p. 321, fig., n. sp.
- Melaniella ? eiseniana*, Lower California, COOPER, *P. Calif. Ac.* iii, p. 339, fig., n. sp.

- Opeas nitidum*, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 177, n. sp.
- Pseudachatina nachtigali*, W. Africa, KOBELT in MARTINI & CHEMNITZ, (228) Achatinidæ, p. 12, fig., n. sp.!
- Pseudoglessula abetifiana*, Gold Coast, ROLLE, Nachrbl. deutsch. malak. Ges. 1893, p. 86, n. sp.
- Stenogyra*, anatomy of (*Subulina*) *actona*, Chemn., pp. 210-223, (*Opeas*) *panayensis*, Pfr., pp. 223 & 224; WIEGMANN (404) fig.
- S. crawfordi*, Van Staaden's Riv. [Port Elizabeth], MELVILL & PONSONBY, Ann. Nat. Hist. xii, p. 105, fig., n. sp.
- Succinea*, North American species; COCKERELL, Nautilus, vi, pp. 21-23 & 29-31; vii, pp. 43-46. 33 species enumerated, of which "possibly not more than about half will prove valid."
- S. bowkeri*, Malvern, South Africa, MELVILL & PONSONBY, Ann. Nat. Hist. xii, p. 110, fig.; *S. corbis*, Galapagos Is., DALL, Nautilus, vii, p. 55; *S. philippinica*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 101, figg. : n. spp.

ATHORACOPHORIDÆ, VAGINULIDÆ, and ONCIDIIDÆ.

- An enumeration of the *Janellidæ*; HEDLEY, Tr. N. Zealand Inst. xxv, pp. 156-162.
- Oncidiella steindachneri*, Stearns, figured; P. U. S. Mus. xvi, pl. li.
- O. maculata*, Angra Pequena, p. 201, *accensis*, Accra, p. 203, *pachyderma*, Victoria, p. 204, *obscura*, New Zealand, p. 207, PLATE, Zool. Jahrb. Anat. vii, figg., n. spp.
- Oncidiidæ*, monograph, with anatomy and descriptions of new genera and species; PLATE, Zool. Jahrb. Anat. vii, pp. 93-234, 6 pls.
- Oncidium lesliei*, Stearns, figured; P. U. S. Mus. xvi, pl. li.
- O. nangkauriense*, p. 170, *simrothi*, p. 174, Nicobars, *amboinae*, Amboina, p. 177, *giseum*, Polynesia?, p. 179, *multinotatum*, p. 181, *branchiferum*, p. 183, Manilla, *nigrum*, Borneo, p. 188, PLATE, Zool. Jahrb. Anat. vii, figg., n. spp.
- ↳ *Oncis* [nom. preocc. *Onchis* (i.e., *Oncis*), Fér., = *Peronia*, Blainv.], n. g., p. 164, type *O. coriacea*, Semper, with *O. lata*, New Britain, p. 191, *semperi*, p. 192, *montana*, Philippines, p. 194, *martensi*, Singapore, p. 196, *inspectabilis*, Burma, p. 198, *coeca*, Amboina, p. 199; PLATE, Zool. Jahrb. Anat. vii, figg.
- ↳ *Peronia*, n. g., p. 166, for *P. alta*, n. sp., India [Madras?]; PLATE, Zool. Jahrb. Anat. vii, figg.
- Vaginula stuhlmanni*, p. 20?, *schnitzleri*, p. 21?, and 5 unnamed new species, pp. 22-25?, East Central Africa; SIMROTH, Ber. Ges. Leipzig, 1892-93.
- Veronicella saxicola*, p. 216, Port Elizabeth, *luciae*, p. 220, St. Lucia, COCKERELL, Conchologist, ii, n. spp.

BASOMMATOPHORA.

AURICULIDÆ.

- Alexia exilis, parva, ringicula*, Atlantic coast of France, LOCARD, Echange, ix, p. 62, alleged n. spp.
- † *A. benoisti*, Oligocene, S.W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 149, figg., n. spp.
- † *Blauneria (Solidoma) guestieri*, Oligocene, S.W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 152, figg., n. sp.
- Cassidula bicolor*, Palawan, GODWIN-AUSTEN, Ann. Nat. Hist. xii, p. 33 ;
 † *C. orthezensis*, Oligocene, S.W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 156, n. spp.
- † *Leuconia elegans*, Oligocene, S.W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 151, figg., n. spp.
- † *Proplecotrema*, n. g., for *Plectotrema marginalis*, Gratel. ; DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 157.

LIMNÆIDÆ and PHYSIDÆ.

- Ancylus fluviatilis* and *lacustris*, anatomy of ; ANDRÉ, Rev. Suisse Zool. i, pp. 427-461, 1 pl.
- † *Limnaea tournoueri*, p. 162, *boettgeri*, p. 163, and 2 species indet., Oligocene, S.W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, figg., n. spp.
- † *Papyrotheca*, n. g., for *P. mirabilis*, p. 161, *pseudogyra*, p. 162, *contraria*, p. 163, Pontic beds of Servia ; BRUSINA, Conchologist, ii, figg.
- Physa karougensis*, Karouga, British Central Africa, SMITH, P. Zool. Soc. London, 1893, p. 640, fig., n. sp.
- Planorbis bowkeri, crawfordi*, Van Staaden's Riv. [Port Elizabeth], MELVILL & PONSONBY, Ann. Nat. Hist. xii, p. 111, figg. ; *P. (Anisus) anitensis*, p. 341, *peninsularis*, p. 342, Lower California, COOPER, P. Calif. Ac. iii, figg. ; *P. (Gyraulus) quadrasi*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 105, figg. : n. spp.

[For *Gadinia* and *Siphonaria*, see TECTIBRANCHIA.]

OPISTHOBRANCHIATA.

NUDIBRANCHIATA.

- Morphology of the *Sacoglossa* ; JHERING, Acta Ac. German, lviii, pp. 361-435, 2 pls.
- Æolis* : development of the cerata ; DAVENPORT, Bull. Mus. Harvard, xxiv, pp. 141-148, 2 pls.

- Acanthopsole coronata*, Forbes, added to the fauna of Holland; LOMAN, Tijdschr. Nederland. Dierk. Ver. iv, p. 35.
- Amphorina aurantiaca*, A. & H., added to fauna of Holland; LOMAN, Tijdschr. Nederland. Dierk. Ver. iv, p. 36, figg.
- Cyerce jheringi*, Naples, PELSENER, Bull. Soc. malac. Belgique, 1892 [1894], p. xx, fig., n. sp.
- Doto uncinata*, Hesse, belongs to the genus *Hancockia*; GARSTANG, Conchologist, ii, p. 110.
- Elysia*: excretory and reproductive apparatus; PELSENER, Zool. Anz. 1893, pp. 458-460.
- Glaucus atlanticus*, colouration and colour variation in; SIMROTH, Ber. Ges. Leipzig, 1892-93, pp. 83-86.
- Hermæa cremoniana*, Gulf of Naples, TRINCHESE, Rend. Acc. Napoli, vii, p. 155, n. sp.
- Idulia elegans*, Leuck., notes on its habits; PROUHO, Arch. Zool. exp. iii, i, pp. 105-111, figg.
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- Rhodope veranii*, Köll, in its anatomy is most nearly allied to the *Nudibranchiata*, but in its development to the *Turbellaria*, and should form a new Class; BOEHMIG, Zeitschr. Wiss. Zool. lvi, pp. 40-116, 4 pls., and figg.

TECTIBRANCHIATA.

PLEUROBRANCHIDEA.

- Gadinia peruviana*, Gray, anatomy; PLATE, SB. Ak. Berlin, 1893, pp. 959-962, who states that the genus belongs to the *Opisthobranchiata*.
- Siphonaria*, anatomy of the genus; KOEHLER, Zool. Jahrb. Anat. vii, pp. 1-92, 6 pls., who agrees with Haller [see Zool. Rec. 1892, Moll. p. 12, No. 166] that it is a Tectibranch; also in Ber. Oberhess. Ges. xix, pp. 107-112.
- S. basseinensis*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 63, fig., n. sp.
- Umbrella mediterranea*, development of; HEYMONS, Zeitschr. wiss. Zool. lvi, pp. 245-298, 3 pls.

APLYSIDEA.

[Including PTEROPODA GYNOSOMATA.]

- Aclesia intrapicta*, Jamaica, COCKERELL, Ann. Nat. Hist. xi, p. 219, n. sp.
- Aplysia*: researches on the egg-capsule; ENGEL, Zeitschr. Biol. xxviii (1891), pp. 345-352. *A. limacina*, notes on the heart of; SCHOENLEIN, *op. cit.* xxx, pp. 186-220, 2 pls.
- Phyllaplysia lafonti*, Fischer, note on the anatomy; MAZZARELLI, Boll. Soc. Napoli, vii, pp. 5-8, 1 pl.

BULLIDEA.

[Including PTEROPODA THECOSOMATA.]

- Pteropoda Thecosomata* of the "Albatross" voyage from the N. Atlantic to the N. Pacific; PECK, P. U. S. Mus. xvi, pp. 451-463, 3 pls.
- Actæon*: notes on its anatomy. *A.* is streptoneurous and forms the link between the streptoneura and euthyneura; BOUVIER, Bull. Soc. Philom. v, pp. 64-71, figg., and C.R. Soc. Biol. v, pp. 25-30; PELSENEER, Bull. Soc. malac. Belgique, 1893. [Advance copy 3 pp.]
- A. reevei*, hab.?, SMITH, Conchologist, ii, p. 99, n. sp.
- Coleophysis (Utriculus) truncatula*, Brug., anatomy; VAYSSIÈRE, Ann. Fac. Marseille, iii [pp. 13], figg.
- † *Conulariidae* of the Swedish Cambro-Silurian, monograph with many new species, and *Torellecta*, n. g.; HOLM, Sveriges geol. Unders. Afh. c 112.
- Diaphana (?) lotta*, E. coast U. S. A., BUSH, Bull. Mus. Harvard, xxiii, p. 222, fig., n. sp.
- Doridiidae*, monograph with anatomy, &c.; BERGH, MT. Stat. Neapel, xi, pp. 107-135, 1 pl.
- Doridium* has a narrow canal leading from the shell cavity to the exterior; PELSENEER, C.R. Ac. Sci. cxvii, pp. 810 & 811.
- D. punctilucens*, Carribbean Sea, p. 131, *purpureum*, Sta. Catalina Is., *diomedeam*, *ocelligerum*, Pacific Ocean, p. 133, BERGH, MT. Stat. Neapel, xi, n. spp.
- Gastropteron*, monograph of the genus with anatomy, and *G. pacificum*, p. 303, n. sp.; BERGH, Zool. Jahrb. Anat. vii, pp. 281-303, figg.
- † *Hyalithidae* of the Swedish Cambro-Silurian, monograph with many new species, and *Orthotheca*, n. subg.; HOLM, Sveriges geol. Unders. Afh. c 112.
- Navarchus ænigmaticus*, Bay of Panama, BERGH, MT. Stat. Neapel, xi, p. 134, fig., n. sp. [*Navarchus* is preoccupied for *Pisces*.]
- † *Orthotheca*, n. subg. of *Hyalithus* for *H. teretiusculus*, Linrs., and 3 new species; HOLM, Sveriges geol. Unders. Afh. c 112, p. 49.
- Peltide* of the Gulf of Naples [brief abst.]; MAZZARELLI, Rend. Acc. Napoli, vii, p. 122.
- Philine* has a narrow canal leading from the shell cavity to the exterior; PELSENEER, C.R. Ac. Sci. cxvii, pp. 810 & 811.
- † *Ringiculidae* from the Tertiaries of Piedmont and Liguria, with *Ringiculospongia*, *Ringiculella*, *Ringiculocosta*, n. subgg. [misdated 1892], and many species said to be new; SACCO (311).
- † *Torellecta*, n. g., and *Torellectidae*, n. fam. of *Conularia*, type *Hyalithus lævigatus*, Linrs.; HOLM, Sveriges geol. Unders. Afh. c 112, p. 146.
- Weinkauffia diaphana*, description of the animal; VAYSSIÈRE, J. Conchyl. xli, pp. 90-97, 1 pl.

[NUCLEOBRANCHIATA: See PROSOBRANCHIATA.]

PROSOBRANCHIATA.

On the snout and buccal apparatus of Prosobranchs; OSWALD, Viertel-jahrschr. Ges. Zurich. xxxviii, pp. 346-353, and *id.* Jena Zeitschr. xxviii, pp. 119-162, 2 pls.

PECTINIBRANCHIATA.

NUCLEOBRANCHIATA.

- Heteropoda* are streptoneurous; PELSENER, Bull. Soc. malac. Belgique, 1892 [1894], pp. lii-liv. [See Zool. Rec. 1892, *Moll.* p. 70.]
Heteropoda of the "Albatross" voyage from the N. Atlantic to the N. Pacific; PECK, P. U. S. Mus. xvi, pp. 463-466, 1 pl.
Atlanta has a sinistral operculum; PELSENER, Bull. Soc. malac. Belgique, 1892 [1894], p. xxxv.
Carinaria: notes on the species, with *C. elata*, n. sp., p. 16, Western Pacific; SOWERBY, P. Malac. Soc. London, i, pp. 14-16, figg.

TOXOGLOSSA.

TEREBRIDÆ, CONIDÆ, PLEUROTOMIDÆ, and CANCELLARIIDÆ.

- Cancellaria eudeli*, Penang, SOWERBY, P. Malac. Soc. London, i, p. 27, fig. n. sp.
 †*Conide* from the Tertiaries of Piedmont and Liguria, with many species said to be new; SACCO (311).
Conus californicus, Hinds, notes on the animal; HEMPHILL, Zool. Soc. N.S. Wales, viii, p. 43.
Cythara guentheri, N.W. Australia, *ringens*, Hong Kong, SOWERBY, P. Zool. Soc. London, 1893, p. 491, figg., n. spp.
Daphnella fusco-picta, *spenceræ*, Hong Kong, *elata*, Mauritius, SOWERBY, P. Zool. Soc. London, 1893, p. 490, figg., n. spp.
Defrancia infracincta, *mauritiana*, Mauritius, SOWERBY, P. Zool. Soc. London, 1893, p. 491, figg., n. spp.
 †*Haliidæ* from the Tertiaries of Piedmont and Liguria; SACCO (311).
Mangilia leuca, E. coast U. S. A., BUSH, Bull. Mus. Harvard, xxiii, p. 209, fig., n. sp.
Pleurotoma walcotæ, S. Australia, *huberti*, N.E. Australia, p. 487, *albo-varicosa*, E. Africa?, *edithæ*, Hong Kong, *inclinata*, Mauritius, p. 488, *keeni*, hab.?, *hungerfordi*, Hong Kong, *infracincta*, Mauritius?, p. 489, SOWERBY, P. Zool. Soc. London, 1893, figg.; *P. (Drillia) amblytera*, E. coast U. S. A., BUSH, Bull. Mus. Harvard, xxiii, p. 203, figg.; *P. (Clavus) præclara*, Bombay, MELVILL, Mem. Manchester Soc. vii, p. 52, fig.: n. spp.

- Pleurotomella atypha*, p. 205, *sulcifera*, p. 207, *leptalea*, *dalli*, p. 208, E. coast U. S. A., BUSH, Bull. Mus. Harvard, xxiii, figg., n. spp.
Terebra simplex, Cpr., notes on the animal; HEMPHILL, Zool. i, p. 352.

RHACHIGLOSSA.

MARGINELLIDÆ, VOLUTIDÆ, and MITRIDÆ.

- Marginella (Gibberula) mazagonica*, Bombay, MELVILL, Mem. Manchester Soc. vii, p. 57, n. sp.
Mitra ida, Lower California, MELVILL, Conchologist, ii, p. 140, fig., n. sp.
 † *Volutoderma woolmani*, Lower Green Marls, New Jersey, WHITFIELD, Nautilus, vii, p. 37, fig., n. sp.

FASCIOLARIIDÆ and TURBINELLIDÆ.

- Latirus maximus*, Cape Verd Is., SOWERBY, Conchologist, ii, p. 139, fig.;
L. prestantior, Mauritius, MELVILL, Mem. Manchester Soc. v, p. 92 : n. spp.
Melongena melongena, on some points in the anatomy; VANSTONE, J. Linn. Soc. Zool. xxiv, pp. 369-373, 1 pl. *M. fusiformis*, Blainv., on the systematic position of; CRAVEN, Bull. Soc. malac. Belgique, 1892 [1894], p. xxv.

BUCCINIDÆ, NASSIDÆ, and COLUMBELLIDÆ.

- Columbella*: monograph continued by KOBELT in MARTINI & CHEMNITZ, (228) pp. 129-176, pls. xix-xxiv.
C. sutoris, hab. ?, p. 130, *alabastroides*, Mauritius, p. 167, KOBELT in MARTINI & CHEMNITZ, (228) fig.; *C. (Mitrella) flavilina*, *euterpe*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 56, fig.; *C. (Mitrella) vincta*, S. Australia, TATE, Tr. R. Soc. S. Austral. xvii, p. 190, fig. : n. spp.
Engina zea, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 55, fig., n. sp.
Nassa brunneostoma, Gulf of California, STEARNS, Nautilus, vii, p. 10, n. sp.
Nitidella incerta, Stearns, figured; P. U. S. Mus. xvi, pl. li.
Sipho (?) mimeticus, St. Vincent Gulf, S. Australia, TATE, Tr. R. Soc. S. Austral. xvii, p. 189, fig., n. sp.
 † *Ukko*, n. n. for *Jumala*, Friele, 1882; FRIELE in NORMAN, Ann. Nat. Hist. xii, p. 352.

MURICIDÆ.

- Murex*: catalogue of Australian and Tasmanian species; BRAZIER (41).
M. (Ocinebra) bombayanus, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 52, fig.; *M. (Pteronotus) pygmaeus*, E. Coast U. S. A., BUSH, Bull. Mus. Harvard, xxiii, p. 213, figg. : n. spp.

- Purpura (Cuma) coronata*, Lmk., note on the varieties ; CRAVEN, Bull. Soc. malac. Belgique, 1892 [1894], pp. xxiii & xxiv.
- P. (Stramonita) blanfordi*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 53, fig., n. sp.
- Sistrum subnodulosa, konkanensis*, p. 54, *xuthedra*, p. 55, Bombay, MELVILL, Mem. Manchest. Soc. vii, figg., n. spp.
- Trophon verrillii*, E. coast U. S. A., BUSH, Bull. Mus. Harvard, xxiii, p. 214, fig., n. sp.

TÆNIOGLOSSA.

TRITONIDÆ, CASSIDIDÆ, DOLIIDÆ, and CYPRÆIDÆ.

- Cassidaria echinophora*, abnormal features in the development ; ERLANGER, Zool. Anz. xvi, pp. 1-6, figg.
- Cypræa cruenta*, Gmel., var. *Gregori*, n. var. ; FORD, Nautilus, vi, pp. 112 & 113, figg. on pl. ii : raised to specific rank ; FORD, *op. cit.* vii, p. 40, fig. : not a species ; SMITH, *t. c.* p. 64 : reply to Smith ; FORD, *t. c.* pp. 78-81.
- [*Cypræa*] *Arabica gillei*, Pacific, JOUSSEAUME, Naturaliste, 1893, p. 171, fig. ; † *C. squyeri*, Cretaceous, E. Montana, CAMPBELL, Nautilus, vii, p. 52, fig. : n. spp.
- Dolium* : anatomy and morphology ; HALLER, Morphol. Jahrb. xix, pp. 563-577, figg.
- D. pictum*, "New Holland ?" , SCHEPMAN, Notes Leyden Mus. xv, p. 276, n. sp.
- Triton* : anatomy and morphology ; HALLER, Morphol. Jahrb. xix, pp. 554-563, figg.
- Tritonina* of the Mediterranean, living and fossil ; GREGORIO (140).
- Trivia solandri*, Gray, notes on the animal ; HEMPHILL, Zoe, iii, p. 350.

STROMBIDÆ and APORRHAIIDÆ.

- † *Chenopidæ* from the Tertiaries of Piedmont and Liguria ; SACCO (311).
- † *Strombidæ* from the Tertiaries of Piedmont and Liguria, with *Sulco-gladus*, n. subg. ; SACCO (311).
- Strombus* : anatomy and morphology ; HALLER, Morphol. Jahrb. xix, pp. 577-586, figg.
- † *Terebellidæ* from the Tertiaries of Piedmont and Liguria ; SACCO (311).

CERITHIIDÆ.

- Bittium estuarinum*, S. Australia, TATE, Tr. R. Soc. S. Austral. xvii, p. 190, fig., n. sp.
- Cerithidea tenkatei*, Rotti Is., SCHEPMAN, Tijdschr. Nederland. Dierk. Ver. iv, p. 66, n. sp.

- Cerithiopsis marmorata*, S. Australia, TATE, Tr. R. Soc. S. Austral. xvii, p. 190; *C. (Seila) bandorensis*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 62, fig. : n. spp.
- Cerithium* : monograph continued by KOBELT in MARTINI & CHEMNITZ, (228) pp. 89-160, pls. xix-xxx.
- C. citrinoide*, Philippines, p. 122, (*Cerithidea natalense*, p. 157, *inæquisculptum*, p. 158, Natal, *mascarenarum*, Mascarenes, p. 160, KOBELT in MARTINI & CHEMNITZ, (228) figg. ; † *C. pilsbryi*, Lower Green Marls, New Jersey, WHITFIELD, Nautilus, vii, p. 38, fig. : n. spp.

MELANIIDÆ.

- Melania woodwardi*, p. 638, Lake Nyassa, *mweruensis*, *imitatrix*, *crawshayi*, p. 639, Lake Mweru, British Central Africa, SMITH, P. Zool. Soc. 1893, figg. ; *M. dugasti*, Laos, MORLET, J. Conchyl. xli, p. 153, fig. : n. spp.
- Pachymelania*, n. n. for *Claviger*, Haldeman, = *Vibex*, Gray ; type *Nerita aurita*, Müll., with synonymy ; SMITH, Conchologist, ii, p. 142.

LITTORINIDÆ.

- Littorina nervillei*, Tunis, DAUTZENBERG, J. Conchyl. xli, p. 35, fig., n. sp.
- Tectarius galapagensis*, Stearns, figured, P. U. S. Mus. xvi, pl. li.

SOLARIIDÆ.

- † *Discohelix castellii*, Pliocene of Orciano, Tuscany, MANTOVANI, P.-v. Soc. Tosc. viii, p. 5, n. sp.
- † *Solariidæ* from the Tertiaries of Piedmont and Liguria, with *Grano-solarum*, n. subg. [misdated 1892], and many species said to be new ; SACCO (311).
- Solarium (Torinia) delectabile*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 57, fig., n. sp.
- Torinia foveolatu*, S. Australia, TATE, Tr. R. Soc. S. Austral. xvii, p. 191, fig., n. sp.

HOMALOGYRIDÆ.

- Ammonicera*, n. g., for *Homalogyra fischeriana*, Monterosato, with anatomy ; VAYSSIÈRE, Ann. Faculté Sci. Marseille, iii [14 pp.], figg. : note on the shell ; VAYSSIÈRE, J. Conchyl. xli, pp. 108 & 109, fig.
- Homalogyra* : notes on the animal ; VAYSSIÈRE, C.R. Ac. Sci. cxvii, pp. 59 & 60. *H. polyzona*, Brusina, notes on the shell of ; VAYSSIÈRE, J. Conchyl. xli, pp. 106-108, figg.

RISSOIIDÆ.

- Alvania mahimensis*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 61, fig. ; *A. quadrasi*, Philippines, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893, p. 101 : n. spp.
- Cingula sulcata*, Philippines, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893, p. 99, n. sp.
- Fairbankia quadrasi*, Philippines, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893, p. 112, n. sp.
- Onoba philippinica*, p. 99, *tenuilirata*, p. 100, *quadrasi*, p. 186, Philippines, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893, n. spp.
- † *Parazebinella*, n. sect. of *Rissoina* [*q.v.*].
- † *Pachyrissoina*, n. sect. of *Rissoina*, for *A. walkeri*, Smith ; BOETTGER, Nachrbl. deutsch. malak. Ges. 1893, p. 104.
- Rissoa* : notes on the genus ; TOMLIN, Brit. Natural. 1893, pp. 122, 123, 198, & 199.
- R. versoverana*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 61, fig., n. sp.
- Rissoina bilabiata*, p. 102, (*Zebinella*) *moellendorffi*, p. 107, (*Parazebinella*, n. sect.) *crenilabris*, p. 109, (*Moerchiella*) *detrita*, p. 110, (*Rissolina*) *signata*, p. 187, (*Zebinella*) *trigonostoma*, p. 189, Philippines, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893 ; *R. walkeri*, Baudin Is., N.W. Australia, SMITH, Conchologist, ii, p. 98, fig. ; *R. (Zebina)* *applanata*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 60, fig. : n. spp.

HYDROBIIDÆ and PALUDINIDÆ.

- Ammicola micrococcus*, Nevada, PILSBRY in STEARNS, (358) p. 277, fig., n. sp.
- Bythinella* : the species described in 1892 by Nicolas, criticised by COUTAGNE, Ann. Soc. Agric. Lyon, v, pp. 349-367.
- † *B. (Belgrandia) falloti*, Oligocene, S.W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 185, figg., n. sp.
- Bythinia*, on French species, *B. stranicensis*, *parva*, S. France, LOCARD, Échange, ix, pp. 4 & 5, ? n. spp.
- Cleopatra johnstoni*, *mweruensis*, Lake Mweru, British Central Africa, SMITH, P. Zool. Soc. 1893, p. 637, figg., n. spp.
- † *Fossarulus paulensis*, Miocene, S.W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 187, figg., n. sp.
- Hydrobia jenkinsi*, Smith, theory as to its introduction into England ; ADAMS, J. Conch. vii, pp. 148-150.
- † *H. andreaei*, p. 180, *girondica*, p. 183, Oligocene and Miocene, S.W. France, BOETTGER, Act. Soc. Bordeaux, xlv, figg., n. spp.

- Lithoglyphus naticoides*, C. Pfr., in the Rhine at Walluf, near Wiesbaden; MARTENS, SB. Ges. naturf. Berlin, 1893, pp. 269 & 270.
- † *Pseudamnicola balizacensis*, Oligocene, S.W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 189, figg., n. sp.
- † *Saccoia*, n. g., type *Melania oriza*, Sism.; BRUSINA, Bull. Soc. malac. Ital. xviii, p. 49.
- † *Staliopsis*, n. g., type *Littorina moravica*; RZEHAK, Verh. Ver. Brunn. xxxi, p. 171, figg.
- † *Stenothyra aquensis*, Miocene, S.W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 186, figg., n. sp.
- Viviparus mweruensis*, p. 636, *crawshayi*, p. 637, Lake Mweru, British Central Africa, SMITH, P. Zool. Soc. London, 1893, figg., n. spp.

VALVATIDÆ and ASSIMINEIDÆ.

- † *Aphanotylus*, p. 182, n. g., for *Valvata adeorboides*, Fuchs, and *A. cosmanni*, p. 185, *fuchsi*, p. 186, n. spp., Tertiary, Hungary, BRUSINA, J. Conchyl. xli.
- Assiminea crassitesta*, p. 113, *semilirata*, p. 115, Philippines, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893, n. spp.

CYCLOPHORIDÆ.

- Alycaeus bi-rugosus*, Assam and Manipur, *subculmen*, *granum*, p. 593, *magnus*, Assam, *rubinus*, *ochraceus*, Upper Burmah, p. 594, *dohertyi*, Burmah, *busbyi*, Nicobars, p. 595, GODWIN-AUSTEN, P. Zool. Soc. London, 1893; *A. dohrni*, p. 195, *rimatus*, p. 196, Borneo, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893 : n. spp.
- Arinia borneensis*, *similis*, Borneo, SMITH, J. Linn. Soc. xxiv, p. 350, figg., n. spp.
- Cyathopoma (Jerdonia) pyramidatum*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 106, figg., n. sp.
- Cyclophorus eudeli*, *consociatus*, Annam, SMITH, P. Malac. Soc. London, i, p. 13; *C. everetti*, Borneo, SMITH, J. Linn. Soc. xxiv, p. 343; *C. tornatus*, Laos, MORLET, J. Conchyl. xl, p. 322, figg. : n. spp.
- Cyclotus (Platyrrhaphé) coptoloma*, *mammillatus*, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 178, n. spp.
- Diplommatina sulphurea*, *moluensis*, p. 348, *symmetrica*, *excentrica*, *everetti*, p. 349, *baritensis*, p. 350, Borneo, SMITH, J. Linn. Soc. xxiv, figg.; *D. (Sinica) quadrasi*, *leytensis*, p. 128, *breviplica*, p. 129, *micropleuris*, *subcrystallina*, p. 130, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, figg.; *D. cagayanica*, (*Sinica*) *flicostata*, *concolor*, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 182 : n. spp.

- Ditropis decollata*, p. 109, *conulina*, *pyramidata*, p. 110, *corniculum*, p. 111, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, figg., n. spp.
- Geothauma*, Crosse, and *Gyrostropha*, Ancey, are unnecessary genera; SMITH, Ann. Nat. Hist. xi, pp. 284 & 285.
- Helicomorpha quadrasi*, p. 121, *appendiculata*, p. 122, *depressa*, p. 123, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, figg., n. spp.
- Lagocheilus baritensis*, *jucundus*, p. 344, *inornatus*, *altus*, p. 345, *borneensis*, p. 346, Borneo, SMITH, J. Linn. Soc. xxiv, figg.; *L. similis*, Balabec and Palawan, SMITH, Ann. Nat. Hist. xi, p. 352, figg.; *L. concolor*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 117, figg. : n. spp.
- Leptopoma* : the supposed New Zealand species, probably a *Lagochilus*; MOELLENDORFF, P. Linn. Soc. N. S. Wales, vii, p. 385.
- L. palawanensis*, Palawan, SMITH, Ann. Nat. Hist. xi, p. 352, fig.; *L. quadrasi*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 120, figg.; *L. subulatum*, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 179 : n. spp.
- Moulinisia quadrasi*, Luzon, MOELLENDORFF in QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 180, n. sp.
- Opisthostoma mirabile*, *everetti*, p. 346, *jucundum*, *wallacei*, *baritense*, p. 347, *busauense*, p. 348, Borneo, SMITH, J. Linn. Soc. xxiv, figg.; *O. otostoma*, Borneo, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893, p. 194 : n. spp.
- Palaina conspicua*, p. 180, *cristata*, *modesta*, p. 181, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893; *P. mirabilis*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. p. 127, figg. : n. spp.
- Pupina dorri*, Tonkin, DAUTZENBERG, J. Conchyl. xli, p. 164, fig., n. sp.
- Pupinella quadrasi*, Luzon, MOELLENDORFF in QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, n. sp.
- Rhiostoma boxalli*, Borneo, GODWIN-AUSTEN, Ann. Nat. Hist. xii, p. 32, figg., n. sp.

CYCLOSTOMATIDÆ and TRUNCATELLIDÆ.

- Acroptychia albocincta*, n. sp., Madagascar; SMITH, Conchologist, ii, p. 130, figg., with fig. of *A. notabilis*.
- Omphalotropis columellaris*, *semperi*, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 183; *O. (Solenomphala) conjungens*, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 136, figg. : n. spp.

Truncatella quadrasi, (*Takeitia*) *albida*, Philippines, MOELLENDOFF, Ber. Senckenberg. Ges. 1893, p. 137, figg.; †*T. bezanconi*, Oligocene of Etampes; COSSMANN, J. Conchyl. xl, p. 358, fig. : n. spp.

CAPULIDÆ and LAMELLARIIDÆ.

Crepidula fornicata found alive in Essex; CROUCH, P. Malac. Soc. London, i, p. 19. *C. moulinsii*, Mich., description of the animal; VAYSSIÈRE, J. Conchyl. xli, pp. 97-105, 1 pl.
Lamellaria perspicua, Linn., "mimicry" of; HERDMAN, Conchologist, ii, p. 129.

NATICIDÆ.

†*Heligmope*, n. g., for *H. demanti*, n. sp., Lower Tertiaries of S. Australia; TATE, Tr. R. Soc. S. Austral. xvii, p. 329, figg.
Naticina pomatiella, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 62, fig., n. sp.

PTENOGLOSSA.

Janthina: notes on the young shells; SIMROTH, Ber. Ges. Leipzig, 1892-93, p. 9?

GYMNOGLOSSA.

EULIMIDÆ and PYRAMIDELLIDÆ.

Amathis filia, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 58, fig., n. sp.
Eulima saccata, n. n. for *E. inflexa*, Pease; BOETTGER, Nachrbl. deutsch. malak. Ges. 1893, p. 158.
E. quadrasi, p. 157, *recurva*, *imitatrix*, p. 160, *spina*, p. 161, *pachychila*, *oblonga*, p. 162, Philippines, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893; †*E. koeneni*, n. n. for *E. microstoma*, Koen; *E. newtoni*, n. n. for *E. microstoma*, Newton, BRUSINA, t. c. p. 83 : n. spp.
Niso quadrasi, Philippines, BOETTGER, Nachrbl. deutsch. malak. Ges. 1893, p. 165, n. sp.
†*Odontostomia lamberti*, Oligocene of Etampes, COSSMANN, J. Conchyl. xl, p. 347, fig., n. sp.
Oscilla tornata, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 59, fig., n. sp.
†*Pyramidellidæ* from the Tertiaries of Piedmont and Liguria, with many species said to be new; SACCO (311).

- Pyrgulina callista*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 60, fig., n. sp.
Stylifer quadrasi, p. 166, *variabilis*, p. 167, Philippines, BOETTGER, Nachrbl. deutsch. malak. ges. 1893, n. sp.

SCUTIBRANCHIATA.

RHIIPIDOGLOSSA.

HELICINIDÆ and HYDROCENIDÆ.

- ⁴*Ceratopoma*, n. sect. of *Helicina*, type *H. caroli*, Kob. ; MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 139.
Eutrochatella, P. Fischer, notes on the animal, &c. ; FISCHER, J. Conchyl. xli, pp. 85-89, 1 pl.
Georissa gomantonensis, similis, hosei, Borneo, SMITH, J. Linn. Soc. xxiv, p. 351, figg. ; *G. quadrasi*, p. 144, *turritella*, p. 145, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, figg. : n. spp.
Helicina citrinella, Philippines, MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 141 ; *H. (Ceratopoma) hennigiana*, Luzon, QUADRAS & MOELLENDORFF, Nachrbl. deutsch. malak. Ges. 1893, p. 184 : n. spp.
⁵*Pleuropoma*, n. sect. of *Helicina*, type *H. dichroa*, v. Molldff. ; MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 140.
⁶*Sulphurina*, n. sect. *Helicina*, type *H. citrina*, Grat. ; MOELLENDORFF, Ber. Senckenberg. Ges. 1893, p. 141.

NERITINIDÆ.

- Navicella porcellana*, Linn., memoir on the nervous system ; BOUTAN, Arch. Zool. exp. (3) i, pp. 221-266, figg.
Nerita polita, Linn., memoir on the nervous system ; BOUTAN, Arch. Zool. exp. (3) i, pp. 221-266, figg.
Neritina : anatomy and characters of the genus ; FISCHER & CROSSE, Miss. Scient. Mexique, &c., vii, ii, pp. 458-472.

TURBINIDÆ, TROCHIDÆ, and CYCLOSTREMATIDÆ.

- Calliostoma crumpii*, Japan, PILSBRY, Nautilus, vi, p. 105, fig. on pl. ii ; *C. spinulosum*, S. Australia, TATE, Tr. R. Soc. S. Austral. xvii, p. 195, fig. : n. spp.
Clanculus consobrinus, euchioides, S. Australia, TATE, Tr. R. Soc. S. Austral. xvii, p. 193, figg., n. spp.
Cyclostrema solariellum, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 63, fig., n. sp.

- Euchelus fenestratus*, p. 195, *pumilio*, *vixumbilicatus*, *annectans*, p. 196, *ampullus*, p. 197, Australia, TATE, Tr. R. Soc. S. Austral. xvii, figg., n. spp.
 † *Guilfordia acanthochila*, note on ; JAHN, Verh. geol. Reichsanst. 1893, p. 346.
Thalotia neglecta, S. Australia, TATE, Tr. R. Soc. S. Austral. xvii, p. 194, fig., n. sp.
Turbo (Astralium) rutidoloma, S. Australia, TATE, Tr. R. Soc. S. Austral. xvii, p. 192, fig., n. sp.

HALIOTIDÆ and PLEUROTOMARIIDÆ.

- Haliotis*: development ; BOUTAN, C.R. Ass. Franc. 1892, ii, pp. 522-525.
Pleurotomaria: notes on the genus ; BOUVIER, Naturaliste, 1893, pp. 11-13, figg.

DOCOGLOSSA.

- Phylogeny ; DALL, P. Ac. Philadelphia, 1893, pp. 285-287. Replies to Thiele's criticisms.
Patina pellucida, note on the branchial sensory organs ; THIELE, Zool. Anz. xvi, pp. 49 & 50.

III. SCAPHOPODA.

[None.]

IV. PELECYPODA.

- Structure of the gills ; JANSSENS, Cellule, ix, pp. 5-90, 2 pls.—Phagocytosis in gills of *Pelecypoda* ; BRUYNE, C.R. Ac. Sci. cxvi, p. 65.—Note on the nerve-fibres ; CHATIN, C.R. Soc. Philom. 1893, No. 14, pp. 2 & 3.—Classification : Fischer's families arranged according to Pelseeneer's scheme ; WOODWARD, Ann. Nat. Hist. xi, pp. 156-159 & 335.—Dispersal of freshwater *Pelecypoda* by the agency of Vertebrates ; GUERNE, C.R. Soc. Biol. v, pp. 625 & 626.

SEPTIBRANCHIATA.

- † *Cuspidaria miocenica*, Miocene, Sardinia, PARONA, Atti Soc. Ital. xxxiv, p. 170, figg., n. sp.

EULAMELLIBRANCHIATA.

ANATINACEA.

- † *Goniomeris*, n. g., for *G. gaudryi*, n. sp., Jurassic of Portugal ; CHOFFAT, (64) p. 38, fig.
- Pandora* : in some species the heart is traversed by the rectum ; PELSENEER, Bull. Soc. malac. Belgique, 1892 [1894], p. 1v, fig.
- Thracia salsettensis*, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 65, fig., n. sp.

PHOLADACEA.

- Pholadea* : monograph continued by CLESSIN in MARTINI & CHEMNITZ, (228) pp. 41-88, pls. xiii-xxi, and Abth. 4a, pls. i-iii.
- Pholas obturamentum*, Sydney Harb., HEDLEY, Rec. Austral. Mus. ii, p. 56, 1 pl., n. sp.
- Teredo japonica*, Japan, CLESSIN in MARTINI & CHEMNITZ, (228) *Pholadea*, p. 78, fig., n. sp.

MYACEA.

- Sphenia* : notes on the genus, with *S. sowerbyi*, Pondicherry, *similis*, hab. ?, p. 280, *inæqualis*, Singapore, p. 281, n. spp.; SMITH, Ann. Nat. Hist. xii, pp. 277-281, figg.

CARDIACEA.

- † *Hippurites* : revision of the species, with many new species ; DOUVILLÉ, Mem. Soc. geol. France, iii, fasc 4, pp. 57-94, 8 pls.

VENERACEA.

- Clementia subdiaphana*, Cpr., in San Pedro Bay ; WILLIAMSON, Nautilus, vi, p. 116.
- Cyclas*, see *infra Sphærium*.
- † *Oncophora* : note on the genus ; BITTNER, Verh. geol. Reichsanst, 1893, pp. 141-144 : a good genus ; SANDBERGER, t. c. p. 401.
- Pisidium (Fossarina) arcticum*, Norway, WESTERLUND, Nachrbl. deutsch. malak. Ges. 1893, p. 132, n. sp.

- Sphærium corneum*, Lin., structure and segmentation of the egg ;
 STAUFFACHER, Vierteljahrschr. Ges. Zurich, xxxviii, pp. 361-370,
 figg., and Jena Zeitschr. xxviii, pp. 196-246, 5 pls.
S. (Corneola) physale, Lapland, WESTERLUND, Nachrbl. deutsch. malak.
 Ges. 1893, p. 131, n. sp.
Veneridæ and *Petricolidæ* of Roussillon ; BUCQUOY and others (54).

TELLINACEA.

- Tellina kolabana*, p. 64, (*Mæra*) *lechriogramma*, p. 65, Bombay, MELVILL,
 Mem. Manchest. Soc. vii, figg., n. spp.
Raeta abercrombiei, Bombay, MELVILL, Mem. Manchest. Soc. vii, p. 64,
 fig., n. sp.

SUBMYTILACEA.

(Marine Forms.)

- ¹ *Coelastarte*, n. sect. of *Astarte*, type *A. excavata*, Sow. ; BOEHM, Ber. Ges.
 Freiburg, vii, p. 175.
Ephippodonta, Tate, note on its habitat ; MATTHEWS, Conchologist, ii,
 pp. 144 & 145. *E. macdougalli*, Tate, anatomy ; WOODWARD, P. Malac.
 Soc. London, i, pp. 20-25, 1 pl.
⁴ † *Heteropsis*, n. g., for *Opis carinata*, Quenst. ; BOEHM, Ber. Ges. Freiburg,
 vii, p. 175, fig.
 † *Lucina bouryi*, Cossmann, is a synonym for *L. galeottiana*, Nyst. ; VIN-
 CENT, Bull. soc. malac. Belgique, 1892 [1894], pl. lxxv.
L. blakeana, E. coast U. S. A., BUSH, Bull. Mus. Harvard, xxiii, p. 231,
 figg., n. sp.
⁻ † *Triodontia*, n. g., for *T. clara, deleta*, n. spp., Lower Eocene of Lattorf ;
 KOENEN, Abh. Preuss. geol. Landesanst. x, Lief 5, pp. 1209-1211, figg.
 [Classed by Koenen with *Cyprinidæ*.]

(Freshwater Forms.)

- Anodonta discoidea*, p. 46, *albica*, p. 47, *baudoniana*, p. 49, France, *planu-*
lata, p. 48, *viridiflava*, p. 49, Finland, *macella, lanceolata*, p. 173,
limbata, p. 174, *lævigata, retziana*, p. 175, *gregalis*, p. 176, *æneolina*,
pulchella, p. 177, *fuliginea*, p. 178, Sweden ; alleged n. spp., DROUËT, J.
 Conchyl. xli ; *A. mearnsiana*, Arizona, SIMPSON, Nautilus, vi, p. 134 ;
A. tehuatepecensis, p. 32, *chalcoensis*, p. 110, Mexico, CROSSE &
 FISCHER, J. Conchyl. xli : n. spp.

- † *Anthracomya*, on the affinities of, with new species; HIND, Quart. J. Geol. Soc. xlix, pp. 257-273, figg.
- √† *Asthenodonta*, n. g., for *A. westoni*, n. sp., Coal-measures of South Joggins; WHITEAVES, Tr. Soc. Canada, 1893, sect. 4, p. 24, figg.
- Castalina nehringi*, p. 75, *martensi*, p. 81, Brazil, JHERING, Arch. Naturg. lix, figg., n. spp.
- † *Congeria ungula-caprae*, Müntst., p. 47, and *C. simulans*, p. 49; BRUSINA, Verh. geol. Reichsanst. 1893.
- Dreissensia*: a monograph of the forms belonging to the "European System" [in which the author includes Asia Minor and Mesopotamia], with descriptions of a number of alleged new species to which MS. names had been attached by Bourguignat; LOCARD, Rev. Suisse Zool. i, pp. 113-185, 3 pls.
- † *D. girondica* (Benoist MS.), Oligocene and Miocene, S. W. France, DEGRANGE-TOUZIN, Act. Soc. Bordeaux, xlv, p. 194, figg.; † *D. muensteri* (= *Congeria ungula-caprae*, Müntst., pro parte), n. sp., BRUSINA, Verh. geol. Reichsanst. 1893, p. 48: n. spp.
- Fossula balzani*, Brazil, JHERING, Arch. Naturg. lix, p. 65, fig., n. sp.
- Glabaris nehringi*, n. n. for *Mycetopus plicatus*, Cless.; JHERING, Arch. Naturg. lix, p. 60.
- Mutelidæ* and *Unionidæ*: review of Von Jhering's paper; SIMPSON, Nautilus, vii, pp. 17-21: notes on the genera; PILSBRY, t. c. p. 30.
- Plagiodon balzani*, Brazil, JHERING, Arch. Naturg. lix, p. 69, fig., n. sp.
- Spatha corrugata*, Congo, DAUTZENBERG, J. Conchyl. xli, pp. 50 & 167, fig., n. sp.
- Unio*: from which a portion of the umbo was wanting; MARTENS, SB. Ges. naturf. Berlin, 1893, p. 169. *U. complanata*, embryology; LILLIE, J. Morphol. viii, pp. 569-578, 1 pl. *U. coruseus*, Gould, notes on; WRIGHT, Nautilus, vi, pp. 126 & 127.
- U. barroisi*, p. 36, *tinctus*, p. 38, Syria, *scissus*, *mansellianus*, p. 40, Greece, *circinatus*, p. 167, *rhysoptygus*, p. 168, *cameratus*, *limosellus*, p. 169, *decurtatus*, p. 170, *almenarensis*, p. 171, *callypygus*, *turditanus*, p. 172, Spain; DROUËT, J. Conchyl. xli, alleged n. spp. The first two also in Rev. biol. Nord France, v, pp. 285 & 287. *U. lapidosus*, p. 151, *bithynicus*, p. 152, Asia Minor, KOBELT, Nachrbl. deutsch. malak. Ges. 1893, and in ROSSMAESSLER (309), p. 96, fig.; *U. paulista*, p. 94, *greeffeanus*, p. 96, *caipira*, p. 98, *martensi*, p. 100, *frenzelii*, p. 111, KOBELT in ROSSMAESSLER (309), figg.; *U. (Metaptera) johnstoni*, Lake Mweru, Brit. Central Africa, SMITH, P. Zool. Soc. London, 1893, p. 640, figg.; *U. distinctus*, p. 110, *soledadensis*, p. 111, *sallei*, p. 179, Mexico, CROSSE & FISCHER, J. Conchyl. xli: n. spp.

Unionidæ: on the descent of the Nayades; WOEHRMANN, *Jahrb. geol. Reichsanst.* xliii, pp. 1-28, 2 pls. List of Palæarctic species of *Unionidæ*; BOETTGER, *Nachrbl. deutsch. malak. Ges.* 1893, pp. 65-79. Relationships and distribution of North American *Unionidæ*; SIMPSON, *Amer. Natural.* 1893, pp. 353-358. The *Unio* muddle; WRIGHT, *Nautilus*, vi, pp. 113-116: see also sensible remarks by PROF. WHEELER, *op. cit.* vii, pp. 9 & 10. Review of Von Jhering's paper on *Unionidæ* and *Mutelidæ*; SIMPSON, *Nautilus*, vii, pp. 17-21: notes on the genera; PILSBRY, *t. c.* p. 30.

PSEUDOLAMELLIBRANCHIATA.

Ostrea: in some species the heart is traversed by the rectum; PELSENER, *Bull. Soc. malac. Belgique*, 1892 [1894], pl. lv, fig. *O. glomerata*, embryology; KENT, *P. R. Soc. Queensland*, vii (1891), pp. 37-40, 1 pl. Defensive phagocytosis in the green oyster; PELSENER, *Bull. Soc. malac. Belgique*, 1892 [1894], pp. lxii-lxiv.

Pecten (*Pseudamysium*) *vancouverensis*, Vancouver Is.; WHITEAVES, *Ottawa Natural*, vii, p. 133, figg., n. sp.

Spondylus gederopus, on the ocular nerves; CHATIN, *C.R. Ac. Sci.* cxvi, p. 1156.

PTLIBRANCHIATA.

†*Anthrucoptera*, on the affinities of, with new species; HIND, *Quart. J. Geol. Soc.* xlix, pp. 249-257, figg.

Crenella marmorata, Forb., in the mantel of *Ascidella virginea*, Müll.; MEISSNER, *SB. Ges. naturf. Berlin*, 1893, pp. 259 & 260.

†*Lithodomus isilensis*, Miocene, Sardinia, PARONA, *Atti Soc. Ital.* xxxiv, p. 176, figg., n. sp.

†*Modiolatus*, n. g., for *M. stultorum* (n. n. for *Modiola plicata*, Reeve, non Chemn.); JOUSSEAUME, *Naturaliste*, 1893, p. 192, fig.

†*Mytilus hamatoides*, Eocene of Arkansas, CALL, *Rept. Geol. Surv. Arkansas*, 1889, ii (1891), p. 202, n. sp.

Scapharca deyrollei, *penangana*, Penang, JOUSSEAUME, *Naturaliste*, 1893, p. 191, figg., n. spp.

Trigonia: on the systematic position of the genus; WOEHRMANN, *Jahrb. geol. Reichsanst.* xliii, pp. 1-28, 2 pls. †*Trigonia*: species from the Jurassic of Normandy, with 21 new species; BIGOT, *Mem. Soc. Normandie*, xvii, pp. 259-244, figg., and *C.R. Ass. Franc.* 1892, ii, pp. 392-396. †*T. semiundulata*, McCoy, in New South Wales; ETHERIDGE, Jun., *Rec. Geol. Surv. N.S. Wales*, iii, pp. 115-117.

PROTOBRANCHIATA.

- † *Nucula cossmanni*, Sables Moyens, Paris Basin, VINCENT, Bull. Soc. malac. Belgique, 1892 [1894], p. xl, fig., n. sp.
Yoldia montereyensis, California, DALL, Nautilus, vii, p. 29; *Y. callista*, E. coast U.S.A., BUSH, Bull. Mus. Harvard, xxiii, p. 233, figg. : n. spp.

V. AMPHINEURA.

APLACOPHORA.

Monograph : SIMROTH in BRONN, (44) pp. 133-233.

Chatoderma nitidulum, Lovén, structure and anatomy; WIRÉN, Svensk. Ak. Handl. xxiv, No. 12 (1892), 66 pp., 7 pls.

↓ *Echinomenia*, n. g., type *Lepidomenia corallophila*, Kow. & Mar.; SIMROTH, Zeitschr. wiss. Zool. lvi, p. 325, and in BRONN, (44) p. 233.

↓ *Macellomenia*, n. g., type *Paramenia palifera*, Pruvot; SIMROTH, Zeitschr. wiss. Zool. lvi, p. 323, and in BRONN, (44) p. 231.

↓ *Myzomenia*, n. g., type *Dondersia banyulensis*, Pruvot; SIMROTH, Zeitschr. wiss. Zool. lvi, p. 324, and in BRONN, (44) p. 231.

↓ *Nematomenia*, n. g., type *Dondersia flavens*, Pruvot; SIMROTH, Zeitschr. wiss. Zool. lvi, p. 324, and in BRONN, (44) p. 232.

Paramenia pruvoti, n. n. for *P. vagans*, Pruvot; SIMROTH, Zeitschr. wiss. Zool. lvi, p. 325, and in BRONN, (44) p. 232.

↓ *Pararrhopalia*, n. subg. of *Paramenia*, type *P. pruvoti*, n. n. for *P. vagans*, Pruvot; SIMROTH in BRONN, (44) p. 232.

Proneomenia sluiteri, Hubrecht, anatomy; HEUSCHER, Jena Zeitschr. xxvii, pp. 477-512, 4 pls., text figg. *P. langi*, n. n. for *P. sluiteri*, Lang, non Hubrecht; SIMROTH in BRONN, (44) p. 228.

↓ *Rhopalomenia*, n. g., type *Neomenia gorgonophila*, Kowalewski; SIMROTH, Zeitschr. wiss. Zool. lvi, p. 322, and in BRONN, (44) p. 229.

POLYPLACOPHORA.

Monograph completed (save appendix) by PILSBRY (381) who revises his classification; for conclusions, see *ante*, pp. 30 & 31. The following are new: subfam. *Callistoplacinae*, fam. *Mopoliidae*, *Acanthochitidae*; subfam. *Chitoninae*, *Toniciinae*, *Liolophurinae*. — Circulatory and renal organs of Chitons; PLATE, SB. Ak. Berlin, 1893, pp. 962-966.

- Acanthochites exquisitus*, La Paz, Lower California, *rhodens*, Panama, (*Notoplax*) *hemphilli*, Florida, PILSBRY, *Nautilus*, vii, p. 32: PILSBRY in TRYON'S Manual, xv, pp. 23, 26, & 34, figg.; *A. bisulcatus*, hab.?, p. 28, *carpenteri*, S. Africa, *involutus*, Zanzibar, p. 35 [from drawings!], PILSBRY, *t. c.* figg.: n. spp.
- Acanthochitidæ*: note on; PILSBRY, *Nautilus*, vii, pp. 31 & 32, he divides *Acanthochites* into sections: 1, *Acanthochites*; 2, *Notoplax*, 3, *Cryptoconchus*; 4, *Loboplax*, n. sect.
- Acanthopleura* divided by PILSBRY into 4 subgenera: *Acanthopleura*, *Maugeria*, *Amphitomura*, n. subg., and *Mesotomura*, n. n.; *Nautilus*, vi, pp. 104 & 105.
- ¹ *Amphitomura*, n. subg. of *Acanthopleura*, type *Chiton borbonicus*, Desh.; PILSBRY, *Nautilus*, vi, p. 105, and in TRYON'S Manual, xiv, p. 230.
- Angasia tetrica* (Carppter. MS.), Ceylon, PILSBRY in TRYON'S Manual, xiv, p. 287, figg., n. sp.
- Callistochiton palmulatus* (Carppter. MS.), p. 262, *crassicosatus* (*ib.*), p. 264, California, *infortunatus*, Ecuador, Mexico, p. 266, *gabbi*, Gulf of California, p. 270, *shuttleworthianus*, Florida, p. 273, *heterodon*, Red Sea, p. 276, PILSBRY in TRYON'S Manual, xiv, figg., n. spp.
- Chiton densiliratus* (Carppter. MS.), Japan, p. 169, *marquesanus*, Marquesas Is., p. 170, *burmanus* (Carppter. MS.), Brit. Burmah, p. 171, *pulvinatus* (*ib.*), New Ireland, p. 179, *miles* (*ib.*), Torres Straits, p. 189, PILSBRY in TRYON'S Manual, xiv, figg., n. spp.
- Eudoxochiton huttoni*, New Zealand, PILSBRY in TRYON'S Manual, xiv, p. 194, fig., n. sp.
- Ischnochiton cultratus* (Carppter. MS.), Japan, p. 131, *nebulosus* (*ib.*), Cape Verde Is., p. 134, *obtusus* (*ib.*), Portugal, p. 134, *tridentatus*, Lower California, p. 140, *hakodadensis* (Carppter. MS.), Japan, p. 147, PILSBRY in TRYON'S Manual, xiv, figg., n. spp.
- ¹ *Liolophura*, n. sect. of *Chitonidæ*, type *Chiton japonicus*, Lischke.; PILSBRY, *Nautilus*, vi, p. 105, afterwards made n. g. of subfam. *Liolophurinae*, PILSBRY in TRYON'S Manual, xiv, p. 232 (and p. 239).
- ¹ *Loboplax*, n. sect. of *Acanthochites*, type *A. violaceus*, Quoy; PILSBRY, *Nautilus*, vii, p. 32, and in TRYON'S Manual, xv, p. 38.
- ¹ *Mesotomura*, n. n. for *Corephium*, Gray, a subg. of *Acanthopleura*, type *Chiton echinatum*, Barnes; PILSBRY, *Nautilus*, vi, p. 105, and in TRYON'S Manual, xiv, p. 218.
- Onithochiton semisculptus*, hab.?, PILSBRY in TRYON'S Manual, xiv, p. 247, fig., n. sp.
- Pallochiton lanuginosus* (Carppter. MS.), California, p. 257, *filosus* (*ib.*), hab.?, p. 258, PILSBRY in TRYON'S Manual, xiv, p. 257, figg., n. sp.

Placiphorella velata (Carpenter. MS.), California, p. 306, *borealis*, Bering Is., p. 309, PILSBRY in TRYON'S Manual, xiv, figg., n. spp.

✓ *Placophoropsis*, n. subg. of *Plaxiphora*, type *P. atlantica*, Verrill & Smith; PILSBRY in TRYON'S Manual, xiv, p. 313.

Plaxiphora excurvata (Carpenter. MS.), Australia?, p. 327, *obtecta* (*ib.*), New Zealand, p. 330, PILSBRY in TRYON'S Manual, xiv, figg., n. spp.

Tonicia rubridens, Chili, PILSBRY in TRYON'S Manual, xiv, p. 202, fig., n. sp.

VIII. BRACHIOPODA.

BY

B. B. WOODWARD, F.G.S., F.R.M.S., &c.

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I.—TITLES.*

1. *BEECHER, C. E. Revision of the Families of Loop-bearing *Brachiopoda*.
2. *——. The Development of *Terebratalia obsoleta*, Dall.
Both in Tr. Connect. Ac. ix.
——. [See also SCHUCHERT (11).]
3. BITTNER, A. Neue Koninckiniden des Alpinen Lias. Jahrb. geol. Reichsanst. xliii, pp. 133-144, 1 pl.
4. BLOCHMANN, F. Bemerkungen zur Brachiopodenlitteratur. Zool. Anz. xvi, pp. 40-43.
CLARKE, J. M. [See HALL & CLARKE (8, 9).]
5. CRANE, MISS A. The distribution and generic evolution of some recent *Brachiopoda*. Nat. Sci. ii, pp. 46-53.
6. ——. The generic evolution of the Palæozoic *Brachiopoda*. Science, xxi, pp. 72-4. Reprinted in Amer. Geol. xi, pp. 400-406.
A review of J. Hall's "Introduction to the study of the genera of Palæozoic Brachiopoda."
7. HAAS, H. J. Kritische Beiträge zur Kenntniss der jurassischen Brachiopodenfauna des Schweizerischen Juragebirges und seiner angrenzenden Landestheile. Thl. III, pp. 103-147, pls. xi-xxiii, Abh. Schweiz. Pal. Ges. xx.

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

8. HALL, J., & CLARKE, J. M. An introduction to the study of the *Brachiopoda*, etc. Rep. N. York Mus. 1891 (1892) [pub. 1894].
For Review see CRANE (6).
9. *— & —. Palæontology of New York, vol. viii, pt. 2, fasc. i. An introduction to the study of the genera of the Palæozoic *Brachiopoda*.
[Fide MISS CRANE, Geol. Mag. 1893, pp. 518–521, who reviews it.
No copy has been sent the Zool. Rec. nor can one be purchased.]
10. MAURER, F. Mittheilungen über einige Brachiopoden aus der Grauwacke von Seifen. N. Jahrb. Min. 1893, i, pp. 1–14, 4 pls.
11. SCHUCHERT, C. A classification of the *Brachiopoda*. Amer. Geol. xi, pp. 141–167, 1 tab. Abstr. Geol. Mag. 1893, pp. 318–320.
With *Dallininae* and *Magellaninae*, n. subfams. by BEECHER.
12. WALKER, J. F. On the *Brachiopoda* recently discovered in the Yorkshire Oolites. Rep. Yorksh. Soc. 1892 (1893), pp. 47–51.
13. WHIDBORNE, G. F. A monograph of the Devonian fauna of the South of England. Vol. ii, pp. 91–160, pls. vii–xvii.

II.—CLASSIFICATION, &c.

SCHUCHERT (11) gives the following classification of the BRACHIOPODA:—

Subclass LYOPOMATA [= *Inarticulata*].

Order ATREMATA.

—Fam. *Paterinidae*, n. (p. 148).

Fam. *Obolidae*.

Fam. *Trimerellidae*.

—Fam. *Lingulellidae*, n. (p. 149).

Fam. *Lingulidae*.

—Fam. *Lingulasmatidae*, n. (p. 149).

Order NEOTREMATA.

Subord. DAIKAULIA.

—Fam. *Trematidae*, n. (p. 149).

Fam. *Discinidae*.

—Fam. *Acrotretidae*, n. (p. 150).

Fam. *Siphonotretidae*.

Subord. GASTEROPEGMATA.

Fam. *Craniidae*.

Subclass ARTHROPOMATA [= *Articulata*].

Order PROTREMATA.

—Subord. TRULLACEA, n. (p. 151).

—Fam. *Kutorginidae*, n. (p. 151).

—Fam. *Clitambonitidae*, n. (p. 151).

Fam. *Pentameridae*.

Fam. *Porambonitidae*.

- Subord. THECACEA, n. (p. 152).
 - Fam. *Billingsellidæ*, n. (p. 152).
 - Fam. *Strophomenidæ*.
 - Subfam. *Orthothesinæ*.
 - Subfam. *Rufinesquinæ*, n. (p. 153).
 - Subfam. *Cadomellinæ*.
 - Fam. *Thecidiidæ*.
 - Subfam. *Thecidiinæ*.
 - Subfam. *Lyttoninæ*.
 - Fam. *Productidæ*.
 - Fam. *Richthofenidæ*.
 - Fam. *Orthidæ*.

Order TELOTREMATA.

- Subord. ROSTRACEA, n. (p. 155).
 - Fam. *Rhynchonellidæ*.
 - Fam. ? *Eichwaldiidæ*, n. (p. 155).

Subord. HELICOPEGMATA.

- Fam. *Atrypidæ*.
 - Subfam. *Zygospirinæ*.
 - Subfam. *Atrypinæ*.
- Fam. *Spiriferidæ*.
 - Subfam. *Suessinæ*.
 - Subfam. *Uncitinæ*.
 - Subfam. *Trigonotretinæ*, n. (p. 156).
- Fam. *Nucleosporidæ*.
- Fam. *Athyridæ*.
 - Subfam. *Athyrinæ*.
 - Subfam. *Meristellinæ*.
- Fam. *Koninckinidæ*.

Subord. ANCYLOBRACHIA.

- Fam. *Terebratulidæ*.
 - Subfam. *Centronellinæ*.
 - Subfam. *Stringocephalinæ*.
 - Subfam. *Terebratulinæ*.
- Fam. ? *Dyscoliidæ*.
- Fam. *Terebratellidæ*.
 - Subfam. *Dallininæ*, n. (Beecher, p. 159).
 - Subfam. *Platidinæ*.
 - Subfam. *Megathyrinæ*.
 - Subfam. *Magellaninæ*, n. (Beecher, p. 160).
 - Subfam. *Magasinæ*.
 - Subfam. *Kraussinæ*.

His paper is accompanied by a table showing the relationships and geological distribution of these families.

Generic evolution of some recent *Brachiopoda*; CRANE (5).

Generic evolution of Palæozoic *Brachiopoda*; CRANE (6).

Type fossils in the Woodwardian Museum; WOODS, Geol. Mag. p. 113.

Catalogue of the types and figured specimens in the Geological Department, Manchester Museum; BOLTON, Museum Handbooks, (*Brach.*) pp. 9 & 10.

III.—DISTRIBUTION.

A.—GEOGRAPHICAL.

Distribution of some recent *Brachiopoda*; CRANE (5).

Norwegian Coast: 4 species collected in Trondhjem Fiord; NORMAN, Ann. Nat. Hist. xii, pp. 441-443.

Russian Arctic Seas: 3 species; HERZENSTEIN (*Moll.*, No. 163) p. 138.

British Columbia: Check list; [NEWCOMBE] (*Moll.*, No. 261).

South Australia: List; ADCOCK (*Moll.*, No. 2).

B.—GEOLOGICAL.

Table showing the geological distribution of the *Brachiopoda*; SCHUCHERT (11).

Tertiary *Brachiopoda* from Australia; TATE & DENNANT, Tr. R. Soc. S. Austral. xvii, p. 225.

Pliocene *Brachiopoda* from the environs of Bologna: *Terebratulina seguenzæ*, n. sp.; FORESTI, Bull. Soc. malac. Ital. xviii, pp. 55-72, 1 pl.

Miocene *Brachiopoda* from the beds at Kralitz, in Mähren; TOULA, Ann. Hofmus. Wien, viii, p. 290.

Eocene *Brachiopoda* of the Sables blancs d'Assche; VINCENT, Bull. Soc. malac. Belgique, 1892 [1894] pp. xviii & xix.

Cretaceous *Brachiopoda* from Tunis; PERON, Explor. Scient. Tunisie, Descript. Invert. Foss. pp. 329-338, figg.

Jurassic: *Thecidea ornata* and *Terebratulina substriata* recently discovered in the Yorkshire Oolites; WALKER (12).—Jurassic *Brachiopoda* from the Swiss Jura, few new species; HAAS (7).—Jurassic fossils from the Balkans, N. of Sofia, with *Terebratula lakatnikensis*, n. sp.; TOULA, SB. Ak. Wien, Abth. I, Bd. cii, pp. 191-206, figg.—Jurassic *Brachiopoda* with new species from the Caucasus; NEUMAYR & UHLIG, Denk. Ak. Wien, lix, pp. 4-17, figg.—Upper Jurassic *Brachiopoda* of N. Germany, with *Rhynchonella jaekeli*, n. sp.; FIEBELKORN, Zeitschr. Geol. Ges. xlv, pp. 390-395.—Upper Jurassic *Brachiopoda* of Poland, with 2 new species; SIEMIRADZKI, t. c. pp. 130-142.—Corallian *Brachiopoda* from the Bernese Jura; LORIOL (see ante, *Moll.*, p. 15, No. 216); *Brachiopoda* from the Sequanian beds at Tonnere (Yonne); LORIOL (see ante, *Moll.* p. 15, No. 217.)

—Corallian *Brachiopoda* of Oberbuchsiten; GREPPIN (see *ante*, *Moll.* p. 10, No. 141).—Oxford clay fauna with *Rhynchonella aquatorialis*, n. sp.; TORNQUIST, *Jahrb. Hamburg. Aust.* x, p. 281.—*Brachiopoda* from the Tithonian of the Crimea, with *Lingula tithonia*, n. sp.; RETOWSKI, *Bull. Soc. Moscow*, 1893, pp. 286–288.—*Brachiopoda* from the Lower Jurassic of the southern Jura; RICHE, *Ann. Univ. Lyon*, vi, Fasc. 3.

Liassic *Brachiopoda*, 5 n. ff.; GRECO, *P.-v. Soc. Toscana*, viii, p. 38.—Revision of the Liassic fauna of Gozzano, Piedmont, with *Koninckina* (?) *aquoniae*, *Rhynchonella bulga, restituta*, and *Waldheimia pedemontana*, n. spp.; PARONA, *Mem. Ac. Torino*, xliii, pp. 20–51, figg.—New *Koninckionida* from the Alpine Lias; BITTNER (3).—Lower Lias fossils from Monte S. Giuliano, with *Rhynchonella iuliana*, n. sp.; NERI, *P.-v. Soc. Toscana*, viii, p. 97.—Lower Lias *Brachiopoda* from the Apuanian Alps, and Lunigianian Appenines, with *Rhynchonella canavarii* and *Terebratula cocchii*, n. spp.; FUCINI, *Atti Soc. Toscana*, xii, pp. 295–305, figg.

Palæozoic *Brachiopoda*, CRANE (6): working list of Palæozoic fossils of Cornwall; COLLINS, *Tr. geol. Soc. Cornwall*, xi, pp. 437–452.—Devonian *Brachiopoda* of the South of England, with several n. spp. and *Enantiosphen*, n. g.; WHIDBORNE (13).—Fauna of the Malevka-Mourayevnia bed (Upper Devonian) with n. spp. and lists [Russ. with Fr. résumé]; PEETZ, *Trudui St. Petersb. Obsch.* xxii, pp. 43–66, figg.—*Brachiopoda* from the Grauwacke at Seifen (no n. spp.), MAURER (10); *Brachiopoda* from the St. John's Group, New Brunswick, MATTHEW, *Bull. Soc. N. Brunswick*, x, pp. xvi & xvii; *ib.*, *Tr. R. Soc. Canada*, x, Sect. iv, pp. 100–104, figg., n. spp. and vars.—Silurian *Brachiopoda* from Arisaig, Nova Scotia; AMI, *P. N. Scotia Inst.* (2) i, pp. 187 & 188.—*Lower Silurian *Brachiopoda* of Minnesota; WINCHELL & SCHUCHERT, *Final Rep. Minnesota Geol. Surv.* iii, chap. v: Review in *Geol. Mag.* 1893, pp. 421–424.

IV.—SYSTEMATIC.

An introduction to the study of the *Brachiopoda*; HALL & CLARKE, *Rep. N. York Mus.* 1891 (1892).

Classification of the *Brachiopoda* with many n. fam. and subfam., &c., (for which see *ante*, pp. 2, 3); SCHUCHERT, *Amer. Geol.* xi, pp. 141–167.

† *Amphiclinodonta adnethica*, Alpine Lias, BITTNER, *Jahrb. geol. Reichsanst.* xliii, p. 141, figg., n. sp.

‡ *Amphistrophia*, n. subg. of *Strophonella*; type *S. striata*, Hall, HALL & CLARKE, *Nat. Hist. New York, Palæont.* viii, pt. 1, 1892, p. 292 (buried in text).

‡ *Anoplia*, n. subg. of *Chonetes*; type *Leptæna nucleata*, Hall, HALL & CLARKE, *Nat. Hist. New York, Palæont.* viii, pt. 1, 1892, p. 309 (buried in text).

‡ *Enantiosphen*, n. g., for *Meyanteris*? *vicaryi*, Davidson; WHIDBORNE (13), p. 97, fig.

- † *Koninckina pichleri*, p. 136, *wachneri*, (*Koninckodonta fuggeri*, p. 137, *geyeri*, p. 140, Alpine Lias, BITTNER, Jahrb. geol. Reichsanst. xliii, figg., n. spp.
- ↳ *Koninckodonta*, n. subg. of *Koninckina* [*q.v.*].
- ↳ † *Leptostrophia*, n. subg. of *Stropheodonta*; type *S. magnifica*, Hall, HALL & CLARKE, Nat. Hist. New York, Palæont. viii, pt. I, 1892, p. 188 (buried in text).
- ↳ † *Pholidostrophia*, n. subg. of *Stropheodonta*; type *S. nacrea*, Hall, HALL & CLARKE, Nat. Hist. New York, Palæont. viii, pt. I, 1892, p. 287 (buried in text).

See = R 33, Brach 4.

IX. BRYOZOA.

BY

B. B. WOODWARD, F.G.S., F.R.M.S., &c.

(With kind assistance from Mr. R. KIRKPATRICK, of the British Museum,
Natural History.)

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Entoprocta	5	Phylactolamata	7

I.—TITLES.

1. BRAEM, F. Notiz ueber *Cristatella*. Zool. Anz. xvi, pp. 65 & 66.
2. CORI, C. J. Die Nephridien der *Cristatella*. Zeitschr. wiss. Zool. lv, pp. 626-644, 2 pls. Abstr. in J. R. Micr. Soc. 1893, p. 317.
3. DAVENPORT, C. B. On *Urnatella gracilis*. Bull. Mus. Harvard, xxiv, pp. 1-44, 6 pls. Abstr. in J. R. Micr. Soc. 1893, pp. 316 & 317.
4. DUERDEN, J. E. On some new and rare Irish *Polyzoa*. P. Irish Ac. iii, pp. 121-136, 1 pl.
No new species.
5. EHLERS, E. Zur Morphologie der Bryozoen. Nachr. Ges. Gottingen, 1893, pp. 483-490.
A criticism of PROUHO (13).
6. GABBETT, H. S. On the Marine *Polyzoa* of Eastbourne. Tr. Eastbourne Soc. ii, pp. 342-349.
7. GREGORY, J. W. On the British Palæogene *Bryozoa*. Tr. Zool. Soc. London, xiii, pp. 219-279, 4 pls.
Good bibliography.

8. HINCKS, T. Contributions towards a general history of the Marine *Polyzoa*. Appendix [continued]. Ann. Nat. Hist. xi, pp. 175-182; xii, pp. 140-147.
The misleading addition of "sp. n." to species already described is continued throughout.
9. KIRKPATRICK, R. Reports on the Zoological Collections made in Torres Straits by Prof. A. C. Haddon, 1888-89 . . . *Polyzoa*. P. Dublin Soc. vi (1890), pp. 611-625, 2 pls.
10. MEISSNER, M. Eine anscheinend neue Süßwasser-Bryozoe [*Lophius jheringi*, n. sp.] aus Brasilien. SB Ges. naturf. Berlin, 1893, pp. 260-263, fig.
11. —. Beitrag zur Kenntniss der geographischen Verbreitung der Bryozoengattung *Plumatella* in Africa. Zool. Anz. xvi, pp. 385 & 386.
12. NORMAN, A. M. A month on the Troudhjem Fiord. Ann. Nat. Hist. xii, pp. 441-452, 1 pl.
Bryozoa occupy pp. 446-452.
13. PROUHO, H. Contribution à l'histoire des Bryozoaires. Arch. Zool. exp. x, pp. 557-656, 8 pls. Abstr. in J. R. Micr. Soc. 1894, pp. 183-185.
For criticism, see EHLERS (5).
14. WHEATCROFT, W. G. *Polyzoa*. Int. J. Micr. iii, pp. 405-411, 1 pl.
15. VINE, G. R. Report . . . on the Cretaceous *Polyzoa*. Rept. Brit. Assoc. 1892 (1893), pp. 301-337.
16. —. Notes on the *Polyzoa*, *Stomatopora*, and *Proboscina* groups, from the Cornbrash of Thrapston, Northamptonshire. P. Yorks. Geol. Soc. xii, pp. 247-258, 2 pls.

II.—ANATOMY, &c.

PROUHO (13) continues his investigation of marine *Bryozoa*. A colony is composed of an *oozoite* and of a certain number of *blastozoites*. The oozoite is the founder of the colony and is the immediate result of the metamorphosis of the larva: the blastozoites arise from it by blastogenesis. The term *Bryozoite* is employed for any member of a colony, whether oozoite or blastozoite: it is an indivisible unity, and is not to be regarded as composed of two individuals, zoecium and polypide, though these terms are still used for convenience of description. The zoecium, or cystid, is the protective external skeleton; the polypide includes the digestive, nervous, and muscular organs; the dual, polypocystid interpretation of the individual Bryozoite is rejected. The author discusses the relations of the adult tissues to those of the larva in *Gymnolemata*, taking *Flustrella hispida* as the type. The "intertentacular organ" of *Gymnolemata* is a genital duct existing only in the sexual

Bryozoites, never exhibiting the structure of a nephridium, but having the same position as the orifice of the metanephridium in *Phylactolemata*, and serving, secondarily, for the evacuation of the débris of the degenerated polypides. The development of the ovum is described by the author, who considers that all Ectoproctous *Bryozoa* with a free development, have a larva of the *Cyphonautes* type. In *Bryozoa* the ectoderm retains the power of forming a fresh endoderm, or intestinal epithelium. *Ectoprocta* and *Entoprocta* should be kept in one class. The degeneration of the Polypide may be related to the absence of an excretory system. The loss of the calyx in *Entoprocta* is not analogous to the formation of "brown bodies" in *Ectoprocta*. EHLERS (5) reviews the above-named investigations of Prouho, discussing in particular the openings to the exterior; he briefly indicates how his conclusions bear upon the relationships of the different types.

Anatomy and reproduction of *Urnatella gracilis*; DAVENPORT (3).—Nephridia of *Cristatella*; CORI (2).—Terminology for the apertures and pores in the *Cheilostomata*, revised and amended; GREGORY (7).

GREGORY (7) classifies the CHEILOSTOMATA as follows:—

I. Subord. STOLONATA.

Fam. 1. *Aeteidae*.

Fam. 2. *Eucratiidae*.

Fam. 3. *Chlioniidae*.

II. Subord. CELLULARINA.

Fam. 4. *Cellulariidae*.

Fam. 5. *Bicellariidae*.

Fam. 6. *Epistomiidae*.

Fam. 7. *Catenicellidae*.

Fam. 8. *Bifaxariidae*.

III. Subord. ATHYRIATA (NOV.).

Fam. 9. *Farciminariidae*.

Fam. 10. *Flustridae*.

Fam. 11. *Membraniporidae*.

Subfam. 1. *Membraniporinae*.

Subfam. 2. *Electrininae*.

Subfam. 3. *Lunulitinae*.

Fam. 12. *Cribrilinidae*.

Subfam. 1. *Cribrilininae*.

Subfam. 2. *Hiantoporinae*.

Subfam. 3. *Steginoporinae*.

Fam. 13. *Microporidae*.

Subfam. 1. *Microporinae*.

Subfam. 2. *Selenarinae*.

Fam. 14. *Steganoporellidae*.

Fam. 15. *Cellariidae*.

IV. Subord. SCHIZOTHYRIATA (nov.).

Fam. 16. *Schizoporellide*.Subfam. 1. *Schizoporelline*.Subfam. 2. *Schizoreteporine*.Subfam. 3. *Schismoporine*.Subfam. 4. *Biporine*.Fam. 17. *Adeonellide*.Fam. 18. *Microporellide*.Subfam. 1. *Microporelline*.Subfam. 2. *Schismoporelline*.Subfam. 3. *Adeonine*.

V. Subord. HOLOTHYRIATA (nov.).

Fam. 19. *Lepraliide*.Subfam. 1. *Lepraliine* (*Cycliopora*—*Lepralia*).Subfam. 2. *Teichoporine*.Subfam. 3. *Reteporine*.Fam. 20. *Celleporide*.Fam. 21. *Smittiide*.

DAVENPORT (3) gives reasons for adopting the view that *Bryozoa* have probably been derived from Rotifer-like ancestors.

III.—DISTRIBUTION.

A.—GEOGRAPHICAL.

British Islands—Eastbourne: Marine *Bryozoa*; GABBETT (6).—
Ireland: Species rare, or new to the fauna; DUERDEN (4).

France: *Bryozoa* at Bandol (Var); CAZIOU, Feuille Natural. xxiii,
p. 127.

Norway: List of *Bryozoa* from Beitstadfjord; NORDGAARD, Bergens
Mus. Aarbog, 1892, Afhandl 2, pp. 7 & 8.—Fauna of Trondhjem Fiord,
with *Scrupocellaria intermedia*, n. sp.; NORMAN (12).

Africa: Note on the distribution of *Plumatella*; MEISSNER (11).

Brazil: New freshwater species, *Lophopus jheringi*; MEISSNER (10)

Torres Straits: *Stirparia haddoni*, *Lepralia filamentososa*, *Smittia levis*,
Barentsia laxa, n. spp., 1890; KIRKPATRICK (9).

B.—GEOLOGICAL.

Post-Tertiary: *Bryozoa* from a deposit at Selsea, Sussex; BELL, Rep.
Yorksh. Soc. 1892 (1893), p. 65, figg.

Neogene: *Bryozoa* from Bessarabia; SINTZOV, Zapiski Novoross.
Obshch. xvii, pp. 51–57, figg.

Miocene: *Bryozoa* from Kvalitz in Mähren; TOULA, Ann. Hofmus.
Wien, viii, pp. 289–290.

Palæogene: British Palæogene *Bryozoa* with many n. spp., and *Biselenaria*, n. n., *Schismoporella*, *Teichopora*, *Meniscopora*, n. g.; GREGORY (7).

Cretaceous: *Bryozoa* from Tunis, several n. spp. and *Globulipora*, n. g.; PERON & THOMAS, Explor. Scient. Tunisie, Descript. Invert. Foss. pp. 339-366, figg.—*Bryozoa* of the British Isles, many tables and some new names without descriptions; VINE (15).

Jurassic: *Bryozoa* from the Cornbrash of Thrapston, Yorks, with *Stomatopora*, 2 n. spp., *Proboscina*, 4 n. spp.; VINE (16).

IV.—SYSTEMATIC.†

ENTOPROCTA.

Barentsia laxa, Torres Straits, KIRKPATRICK, P. Dublin Soc. vi (1890), p. 624, fig., n. sp.

Pedicellinopsis, Hincks, this genus is cancelled as a synonym of *Barentsia*; HINCKS, Ann. Nat. Hist. xii, p. 140.

Urnatella gracilis, anatomy and reproduction; DAVENPORT, Bull. Mus. Harvard, xxiv, pp. 1-44, 6 pls. *Urnatella* is, structurally, one of the *Pedicellinidæ*, and most nearly resembles *Arthropodaria benedeni*.

ECTOPROCTA.

GYMNOLÆMATA.

CYCLOSTOMATA.

†*Entalophora tergemina*, London Clay, Sheppey, GREGORY, Tr. Zool. Soc. London, xiii, p. 260, figg., n. sp.

†*Globulipora*, n. g., for *G. africana*, n. sp., Cretaceous, Tunis; PERON & THOMAS, Explor. Scient. Tunisie, Descript. Invert. Foss. pp. 349 & 352, figg.

†*Idmonea bialternata*, London Clay, London, GREGORY, Tr. Zool. Soc. London, xiii, p. 257, figg., n. sp.

†*Heteropora glandiformis*, Palæogene, S. E. England, GREGORY, Tr. Zool. Soc. London, xiii, p. 261, figg., n. sp.

†*Proboscina obscura*, p. 255, *divisa*, p. 256, *ornata*, *thrapstonensis*, p. 257, Cornbrash, Thrapston, VINE, P. Yorks. geol. Soc. xii, figg., n. spp.

†*Stomatopora phillipsii*, p. 250, *intermixta*, p. 252, Cornbrash, Thrapston, Yorkshire, VINE, P. Yorksh. geol. Soc. xii, figg., n. spp.

CTENOSTOMATA.

Alcyonidium variegatum, p. 569, *duplex*, p. 580, Mediterranean, PROUHO, Arch. Zool. exp. x, figg., n. spp.

† is prefixed to fossil forms.

CHILOSTOMATA.

- A revised and amended terminology for the apertures and pores is given by GREGORY, Tr. Zool. Soc. London, xiii, pp. 220 & 221, who also proposes (p. 222) the following new suborders:—*Athyriata*, *Schizothyriata*, and *Holothyriata* (see his classification given *ante*, p. 3).
- Adeonellida*: systematic position defined; with list of species belonging to the genus *Adeonella*, and of those which have been referred to it; GREGORY, Tr. Zool. Soc. London, xiii, pp. 241–245.
- † *Adeonellopsis wetherelli*, London Clay, London Basin, GREGORY, Tr. Zool. Soc. London, xiii, p. 245, figg., n. sp.
- † *Biselenaria*, n. n. for *Diplotaxis*, Reuss., with *B. offa*, n. sp., Barton Beds, Barton; GREGORY, Tr. Zool. Soc. London, xiii, pp. 234 & 235, figg.
- † *Conescharellina clithridiata*, London Clay, London, GREGORY, Tr. Zool. Soc. London, xiii, p. 252, figg., n. sp.
- † *Cribrilina vinei*, London Clay, Sheppey, GREGORY, Tr. Zool. Soc. London, xiii, p. 236, fig., n. sp.
- Lepralia filamentosa*, Torres Straits, KIRKPATRICK, P. Dublin Soc. vi (1890), p. 619, fig., n. sp.
- † *Membranipora buski*, *crassomuralis*, p. 229, *tenuimuralis*, p. 231, *virguliformis*, p. 232, British Palæogene, GREGORY, Tr. Zool. Soc. London, xiii, figg., n. spp.
- † *Meniscopora*, n. g., with *M. bigibbera*, n. sp., Bracklesham Beds, Huntingbridge; GREGORY, Tr. Zool. Soc. London, xiii, pp. 250 & 251, figg.
- † *Micropora cribriformis*, Barton Beds, Barton, GREGORY, Tr. Zool. Soc. London, xiii, p. 237, fig., n. sp.
- † *Mucronella angustocœcium*, Palæogene, S.E. England, GREGORY, Tr. Zool. Soc. London, xiii, p. 254, figg., n. sp.
- † *Onychocella magnoperta*, Brockenhurst Beds, Brockenhurst, GREGORY, Tr. Zool. Soc. London, xiii, p. 238, fig., n. sp.
- † *Schismoporella*, n. g., for *Cellepora schizogaster*, Reuss.; GREGORY, Tr. Zool. Soc. London, xiii, p. 243.
- † *Schizoporella magnoperta*, Barton Beds, Barton, GREGORY, Tr. Zool. Soc. London, xiii, p. 239, fig., n. sp.
- Scrupocellaria intermedia*, Trondhjem Fiord, NORMAN, Ann. Nat. Hist. xii, p. 451, figg., n. sp.
- Smittia levis*, Torres Straits, KIRKPATRICK, P. Dublin Soc. vi (1890), p. 620, fig.; † *S. tubularis*, London Clay, Hampstead, GREGORY, Tr. Zool. Soc. London, xiii, p. 255, figg., n. spp.
- Stirparia haddoni*, Torres Straits, KIRKPATRICK, P. Dublin Soc. vi (1890), p. 613, fig., n. sp.
- † *Teichopora*, n. g., with *T. clavata*, n. sp., Barton Beds, Barton, GREGORY, Tr. Zool. Soc. London, xiii, p. 249, figg.
- † *Umbonula bartouense* [sic], Barton Beds, Barton, p. 248, *calcariformis*, London Clay, Fareham, p. 249, GREGORY, Tr. Zool. Soc. London, xiii, figg., n. spp.

PHYLACTOLÆMATA.

Cristatella : note on the nephridia ; CORI, Zeitschr. wiss. Zool. iv, pp. 626-644, 2 pls. *C. mucedo*, note on ; BRAEM, Zool. Anz. xvi, pp. 65 & 66.

Lophopus jheringi, Brazil, MEISSNER, SB. Ges. naturf. Berlin, 1893, p. 260, fig., n. sp.

Plumatella : note on the distribution of the genus in Africa ; MEISSNER, Zool. Anz. xvi, pp. 385 & 386, who found the statoblasts attached to the shells of *Ætheria*.

X. CRUSTACEA.

(Including GIGANTOSTRACA AND PANTOPODA.)

By R. I. Pocock.

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II.—SUBJECT-INDEX TO PAPERS ON EMBRYOLOGY, ANATOMY, PHYSIOLOGY, DISTRIBUTION, PALÆONTOLOGY, &c.

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6. DISTRIBUTION.

Palæarctic Region.

Great Britain.—Wanstead Park: *Entomostraca*; SCOURFIELD.—Liverpool Bay: *Podophthalma*; WALKER (1): *Copepoda*; J. C. THOMSON.—Firth of Forth, &c.: mostly *Entomostraca*; SCOTT, T. (1-6), SCOTT, T. & A.

Norway: *Amphipoda*; SARS.—T'rondhjem Fjord: *Crustacea*; NORMAN. Hungary: *Ostracoda*, &c.; DADAY.

Austria (Cracow, &c.) *Crustacea*; JAWOROWSKI: *Assellidæ* and *Phyllopoda*; FISZERA (1, 2).

Germany: *Copepoda*; SCHMEIL (1, 2): Lake Plön, *Crustacea*; ZACHARIAS (1, 2).

Switzerland: *Ostracoda*; KAUFMANN: *Cladocera*; KLOCKE.

France: Pelagic fauna of the Lakes of the French Jura and of the Pyrenees; GUERNE & RICHARD (1, 2): *Amphipoda* of Boulonnais; BONNIER of Saint Vaast-la-Hogue; CHEVREUX & BOUVIER: record of *Cypris bispinosa*; GUERNE, and of two new types of *Chionostomatidæ*; GIARD & BONNIER.

Spain: *Isopoda*; DOLLFUS (2).

Portugal: *Crustacea*; OSORIO.

Canary Island: *Isopoda*; DOLLFUS (1).

Azores: *Crustacea*; BENEDICT.

Mediterranean: *Cirripedia*; CHEVREUX & GUERNE: *Orchestidæ*; CHEVREUX (2).—Gulf of Naples: *Gammarini*; DELLA VALLE.

Syria, Egypt, and Palestine: *Copepoda*; RICHARD: *Decapoda*; BARROIS.

Japan: *Decapoda*; ORTMANN (1, 2): *Isopoda*; HILGENDORF (3).

Ethiopian Region.

Ashanti, Cape Town, &c.: *Crustacea*; BENEDICT.

Togoland (West Africa): *Malacostraca*; HILGENDORF (1, 2).

Zanzibar : *Copepoda* ; BOURNE.
 Nossibé : *Crustacea* ; BRANCSIK.
 Madagascar : *Entomostraca* ; GUERNE & RICHARD (3).
 South-east coast of Madagascar : *Crustacea* ; CONNORTON.
 Seychelles : *Isopoda* ; DOLLFUS (6).

Oriental and Australian Regions.

Indian Ocean : *Crustacea* ; WOOD-MASON & ALCOCK (1, 2).
 India, Ceylon, Birma : *Decapoda* and *Stomatopoda* ; HENDERSON.
 Malay Archipelago : *Podophthalma* ; DE MAN.
 Australian and China Seas : *Stomatopoda* ; POCOCK (1).
 Tasmania and New Zealand : *Crustacea* ; THOMSON, G. M. (1, 2).

Nearctic Region.

Wisconsin : *Copepoda* ; MARSH (1, 2).
 Cincinnati : *Entomostraca* ; TURNER (1).
 Indiana : Crayfishes ; HAY.
 West coast of North America and Sandwich Islands : *Brachyura* ;
 RATHBUN (2).

Neotropical Region.

Central America, Galapagos, &c. : *Decapoda* ; FAXON.—Central and
 South America, and West Indies : *Telphusida* ; RATHBUN (3).
 Lower California : *Pagurida* ; BOUVIER.
 Venezuela : *Isopoda* ; BUDDE-LUND.
 St. Vincent (W. Indies) : *Decapoda* ; POCOCK (2).
 Barbados : *Crustacea* ; BENEDICT.
 Bahamas : *Stomatopoda* ; BIGELOW (2).
 Lower Amazons : *Copepoda* ; DAHL (1).
 Argentine Republic : *Entomostraca* ; WIERZEJSKI.

III.—SYSTEMATIC.

MALACOSTRACA.

PODOPHTHALMA.

DECAPODA.

BRACHYURA.

(1) *Oxyrrhyncha*.

MAIDÆ and INACHIDÆ.

Achaopsis superciliaris, Japan, p. 36, pl. 3, fig. 3, ORTMANN, Zool. Jahrb.
 Syst. vii, n. sp.
Anamathia occidentalis, West coast Central America, p. 150, FAXON,
 Bull. Mus. Harvard, xxiv, n. sp.

- Anasimus rostratus*, Lower California, p. 227, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Collodes tenuirostris*, Gulf of California, p. 230, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Chionæetes tanneri*, Behring Sea to California, p. 76, pl. iv, figg. 1-4, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Cœlocerus grandis*, Gulf of Mexico, p. 79, pl. v, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Coryrhynchus mexicanus*, Gulf of California, p. 225, *lobifrons*, Lower California, p. 226, RATHBUN, P. U. S. Mus. xvi, n. spp.
- Cyrtomaia smithi*, Sandwich Islands, p. 228, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Doclea japonica*, Japan, p. 46, pl. iii, fig. 4, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
- ¹*Ericerus*, n. g., p. 223, *latimanus*, n. sp., California, &c., p. 224 ; RATHBUN, P. U. S. Mus. xvi.
- ¹*Ereileptus*, n. g., p. 226, *spinosus*, n. sp., California, p. 227 ; RATHBUN, P. U. S. Mus. xvi.
- Euprognatha granulata*, West coast Central America, p. 149, FAXON, Bull. Mus. Harvard, xxiv ; *E. bifida*, Gulf of California, p. 231, RATHBUN, P. U. S. Mus. xvi : n. spp.
- ¹*Hoplophrys*, n. g., p. 346, *oatesii*, n. sp., Gulf of Martaban, p. 347, pl. xxxvi, figg. 1-4 ; HENDERSON, Tr. Linn. Soc. London, v.
- Hyastenus diacanthus* (de Haan), n. var. *elongata*, Japan, p. 55 ; ORTMANN, Zool. Jahrb. Syst. vii.
- H. caribbaeus*, Colombia, p. 85, pl. vi, fig. 2, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Inachoides magdalenensis*, Lower California, p. 228, RATHBUN, P. U. S. Mus. xvi, n. sp.
- ¹*Lepteces*, n. g., p. 83, *ornatus*, n. sp., Yucatan, p. 84, pl. vi, fig. 1 ; RATHBUN, P. U. S. Mus. xvi.
- ¹*Maiopsis*, n. g., p. 180, *panamensis*, n. sp., Panama, p. 151 ; FAXON, Bull. Mus. Harvard, xxiv.
- Majella*, n. g., *brevipes*, n. sp., Japan, p. 51, pl. iii, fig. 5 ; ORTMANN, Zool. Jahrb. Syst. vii.
- Micippa margaritifera*, Gulf of Martaban, p. 348, pl. xxxvi, figg. 5-7, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
- Naxia mammillata*, Japan, p. 56, pl. iii, fig. 7, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
- Neorhynchus mexicanus*, Gulf of California, p. 233, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Paramithrax* (*Leptomithrax*) *bifidus*, Japan, p. 52, pl. iii, fig. 6, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
- Pleistacantha oryx*, Japan, p. 39, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
- Podochela tenuipes*, Gulf of California, p. 224, RATHBUN, P. U. S. Mus. xvi, n. sp.

- Pugettia minor*, Japan, p. 44, ORTMANN, Zool. Jahrb. Syst. vii ; *P. dalli*, California, p. 232, RATHBUN, P. U. S. Mus. xvi : n. spp.
Sphenocarcinus agassizi, Gulf of California, RATHBUN, P. U. S. Mus. xvi, p. 231, n. sp.

PARTHENOPIDÆ.

- Heterocrypta transitans*, Japan, p. 417, pl. xvii, fig. 2, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
Lambrus hassleri, West coast Central America, p. 152, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
L. (Parthenopoides) pteromerus, Japan, p. 416, pl. xvii, fig. 1, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
Mesorhœca gilli, Gulf of California, p. 235, RATHBUN, P. U. S. Mus. xvi, n. sp.
Parthenolambrus exilipes, Lower California, p. 234, RATHBUN, P. U. S. Mus. xvi, n. sp.

(2) *Cyclometopa*.

CANCRIDÆ.

[Including *Oziidæ*, *Menippidæ*, and *Xanthidæ* of ORTMANN.]

- Actæa peronii* (M.-Edw.), *squamosa*, Muttuwartu Par., p. 357, HENDERSON, Tr. Linn. Soc. London, v, n. var.
Actumnus verrucosus, Tuticorin, p. 364, pl. xxxvi, figg. 15 & 16, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
Cancer pygmaeus, p. 426, pl. xvii, fig. 4, *japonicus*, p. 427, pl. xvii, fig. 5, Japan, ORTMANN, Zool. Jahrb. Syst. vii, n. spp.
Cymo tuberculatus, Mahé Atoll, p. 443, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
Cyclozanthus californiensis, California, p. 237, RATHBUN, P. U. S. Mus. xvi, n. sp.
Halimede thurstoni, Tuticorin, p. 360, pl. xxxvi, figg. 13 & 14, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
Hypocælus rugosus, Tuticorin, p. 358, pl. xxxvi, figg. 9-11, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
Lophactæa fissa, Tuticorin, p. 355, pl. xxxvi, fig. 8, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
Lophozanthus frontalis, California, p. 236, RATHBUN, P. U. S. Mus. xvi, n. sp.
Lophozozymus dodone (Herbst), *glabra*, Fiji, p. 458, ORTMANN, Zool. Jahrb. Syst. vii, n. var.
Menippe convexa, Honolulu, p. 239, RATHBUN, P. U. S. Mus. xvi, n. sp.
Micropanope polita, Lower California, p. 238, RATHBUN, P. U. S. Mus. xvi, n. sp.

- Panopeus areolatus*, Jamaica, &c., p. 361, *dissimilis*, Trinidad, p. 366, *ovatus*, Gulf of California, p. 368, *angustifrons*, Massachusetts, Florida, &c., p. 373, *hemphillii*, Florida, p. 374, *bermudensis*, Bermuda, p. 376, BENEDICT & RATHBUN, P. U. S. Mus. xiv ; *P. latus*, p. 153, *tanneri*, p. 154, West coast Central America, FAXON, Bull. Harvard Mus. xxiv : n. spp.
- Pilodius flavus*, Sandwich Is., p. 239, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Pilumnus margaritatus*, Tahiti, p. 436 ; *major*, Japan, p. 439, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
- P. gonzalensis*, Gonzales Bay, p. 240, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Xantho bifrons*, Ecuador, p. 450, pl. xvii, fig. 7, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
- Xanthodes minutus*, Sandwich Is., p. 238, RATHBUN, P. U. S. Mus. xvi ; *X. sulcatus*, West coast of Central America, p. 152, FAXON, Bull. Harvard Mus. xxiv : n. spp.

PORTUNIDÆ.

- Achelous affinis*, West coast of America, p. 155, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
- Callinectes tumidus*, Ordwad, *gladiator*, Bezah River, p. 537, BENEDICT, P. U. S. Mus. xvi, n. var.
- ¹*Gonioneptunus*, n. g., *subornatus*, n. sp., Japan, p. 79, pl. iii, fig. 9 ; ORTMANN, Zool. Jahrb. Syst. vii.
- Neptunus (Hellenus) iridescens*, Gulf of California, p. 241, RATHBUN, P. U. S. Mus. xvi, n. sp.

CORYSTIDÆ.

- ¹*Podocatactes*, n. g., p. 29, *hamifer*, n. sp., Japan, p. 29, pl. iii, fig. 1 ; ORTMANN, Zool. Jahrb. Syst. vii.
- ¹*Trachycarcinus*, n. g., *corallinus*, n. sp., West coast of America, p. 156 ; FAXON, Bull. Mus. Harvard, xxiv.

TELPHUSIDÆ.

[Including *Pseudotelphusidæ* and *Trichodactylidæ*.]

- Deckenia alluaudi*, Seychelles, p. 335, pl. viii, MILNE-EDWARDS & BOUVIER, Ann. Sci. Nat. xv, n. sp.
- Dilocarcinus margaritifrons*, Peru, p. 492, pl. xvii, fig. 11, *cryptodus*, Peru, p. 493, ORTMANN, Zool. Jahrb. Syst. vii, n. spp.
- Epilobocera haytensis*, Hayti, p. 658, pl. lxxvii, figg. 4 & 5, *granulata*, West Indies, p. 659, pl. lxxvii, fig. 6, RATHBUN, P. U. S. Mus. xvi, n. spp.
- Paratelphusa salangensis*, Salanga, p. 487, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
- Potamocarcinus nicaraguensis*, ~~Stimp.~~, Nicaragua, p. 656, pls. lxxvi & lxxvii, figg. 1-3, RATHBUN, P. U. S. Mus. xvi.

- Pseudotelphusa jouyi*, Lake Chapala (Mexico), p. 649, pls. lxxiii & lxxiv, figg. 1-3, *dugesii*, Cuernavaca, p. 651, pl. lxxiv, figg. 4 & 5, *terrestris*, Guadalajara, p. 651, pl. lxxiv, figg. 6 & 7, *verticalis*, Tehuantepec, p. 652, pl. lxxiv, figg. 8 & 9, *xantusi*, ? Mexico, p. 652, *colombianus*, Colombia, p. 653, pl. lxxiv, fig. 10, pl. lxxv, figg., *lamellifrons*, Tehuantepec, p. 654, pl. lxxv, figg. 2-5, *richmondi*, Nicaragua, p. 654, pl. lxxv, figg. 6-10, RATHBUN, P. U. S. Mus. xvi, n. spp.
- Telphusa masoniana*, Jumna, &c., p. 381, pl. xxxvii, figg. 1-4, *pocockiana*, Jubbulpore, p. 384, pl. xxvii, figg. 5-8, HENDERSON, Tr. Linn. Soc. London, v, n. spp.
- Trichodactylus quinquedentatus*, Nicaragua, p. 660, pl. lxxvii, fig. 7, RATHBUN, P. U. S. Mus. xvi, n. sp.

(3) *Catometopa*.

GRAPSIDÆ and GECARCINIDÆ.

- Gecarcinus malpilensis*, Malpilo I., p. 157, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
- Heterograpsus jouyi*, Mexico, p. 247, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Pachygrapsus longipes*, Honolulu, p. 247, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Sesarma cruciata*, Mindanao, p. 624, pl. xxi, fig. 6, *demani*, Siargao, p. 625, pl. xxi, fig. 7, *semperi*, Bohol, p. 630, pl. xxi, fig. 1, BURGER, Zool. Jahrb. Syst. vii, n. spp.
- Xenopthalmus obscurus*, Gulf of Martaban, p. 394, pl. xxxvi, figg. 18 & 19, HENDERSON, Tr. Linn. Soc. London, v, n. sp.

OCYPODIDÆ.

- Carcinoplax dentatus*, Gulf of California, p. 243, RATHBUN, P. U. S. Mus. xvi, n. sp.
- Gelasimus gracilis*, California, p. 244, *latimanus*, Lower California, p. 245, *coloradensis*, Lower California, p. 246, RATHBUN, P. U. S. Mus. xvi, n. spp.
- Ediplax*, n. g., p. 241, *granulatus*, n. sp., Gulf of California, p. 242; RATHBUN, P. U. S. Mus. xvi.
- Speocarcinus granulimanus*, Gulf of California, p. 242, RATHBUN, P. U. S. Mus. xvi, n. sp.

PINNOTHERIDÆ.

- Cryptophrys*, n. g., p. 250, *concharum*, n. sp., Puget Sound, p. 250; RATHBUN, P. U. S. Mus. xvi.
- Pinnixa occidentalis*, Alaska and Lower California, p. 248, *californiensis*, California, p. 249, RATHBUN, P. U. S. Mus. xvi; *P. panamensis*, Panama, p. 158, FAXON, Bull. Harvard Mus. xxiv : n. spp.

- Opisthopus*, n. g., p. 251, *transversus*, n. sp., California, p. 252, RATHBUN, P. U. S. Mus. xvi.
Scleroplax, n. g., p. 250, *granulatus*, n. sp., Lower California, p. 251; RATHBUN, P. U. S. Mus. xvi.

(4) *Oxystomata.*

CALAPPIDÆ.

- Mursia hawaiiensis*, Sandwich Is., p. 252, RATHBUN, P. U. S. Mus. xvi, n. sp.
Platymera californiensis, California, p. 253, RATHBUN, P. U. S. Mus. xvi, n. sp.

DORIPPIDÆ.

- Æthusa ciliatifrons*, p. 159, *pubescens*, p. 160, West coast Central America, p. 159, FAXON, Bull. Mus. Harvard, xxiv; *Æ. lata*, Gulf of California, p. 258, RATHBUN, P. U. S. Mus. xvi : n. spp.
Æthusina smithiana, West coast Central America, p. 160, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Cymopolia fragilis, Lower California, p. 259, *zonata*, Gulf of California, p. 259, RATHBUN, P. U. S. Mus. xvi; *C. tuberculata*, West coast Central America, p. 161, FAXON, Bull. Mus. Harvard, xxiv : n. spp.

LEUCOSIIDÆ.

- Ebalia fallax*, Gulf of Martaban, &c., p. 402, pl. xxxviii, figg. 4-6, HENDERSON, Tr. Linn. Soc. London, v; *E. americana*, Gulf of California, p. 254, RATHBUN, P. U. S. Mus. xvi : n. spp.
Myra townsendi, Gulf of California, p. 255, *subovalis*, Gulf of California, p. 256, RATHBUN, P. U. S. Mus. xvi, n. spp.
Nursia tuberculata, Gulf of California, p. 257, RATHBUN, P. U. S. Mus. xvi, n. sp.
Philyra verrucosa, Madras, p. 399, pl. xxxvii, figg. 10-12, *polita*, Madras, p. 401, pl. xxxviii, figg. 1-3, HENDERSON, Tr. Linn. Soc. London, v, n. spp.
Pseudophilyra pusilla, Gulf of Martaban, p. 398, pl. xxxvii, figg. 13-15, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
Randallia distincta, Sandwich Is., p. 257, RATHBUN, P. U. S. Mus. xvi, n. sp.

MATUTIDÆ.

- Osachila lata*, West coast of America, p. 159, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

(5) *Raninidea*.

RANINIDÆ.

- Raninoides serratifrons*, Cheval Par., p. 408, pl. xxxviii, figg. 10-12, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
Raninops fornicata, West coast Central America, p. 162, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

MACRURA.

(1) *Anomala*.

LITHODIDÆ.

- Echidnocerus diomedea*, West coast Central America, p. 164, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Lithodes panamensis, West coast Central America, p. 166, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Paralomis aspera, p. 164, *longipes*, p. 165, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Rhinolithodes cristatipes, West coast Central America, p. 163, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

PORCELLANIDÆ and ALBUNEIDÆ.

- Albunea thurstoni*, Cheval Par., p. 409, pl. xxxviii, figg. 13-15, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
Pachycheles panamensis, Panama, p. 175, FAXON, Bull. Mus. Harvard, xxiv; *P. tomentosus*, Karachi, p. 428, pl. xxxix, figg. 16-18, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
Petrolisthes agassizii, West coast Central America, p. 174, FAXON, Bull. Mus. Harvard, xxiv; *P. tenkatei*, p. 289, pl. vii, fig. 2, *indicus*, p. 293, pl. vii, fig. 3, Flores, DE MAN, Notes Leyden Mus. xv: n. spp.
P. barbatus (Heller), described p. 296, figured, pl. vii, fig. 4; DE MAN, Notes Leyden Mus. xv.
Rhaphidopus indicus, Madras, p. 427, pl. xxxix, figg. 19-22, HENDERSON, Tr. Linn. Soc. London, v, n. sp.

GALATHEIDÆ.

- Diptychus spinosus*, p. 306, MILNE-EDWARDS & BOUVIER, Ann. Sci. nat. xvi, n. sp.
Galacantha diomedea, West coast Central America, p. 180, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Galathea rufipes, p. 252, MILNE-EDWARDS & BOUVIER, Ann. Sci. nat. xvi, n. sp.

Munida curvimana, p. 256, *perarmata*, p. 257, MILNE-EDWARDS & BOUVIER, Ann. Sci. nat. xvi; *M. obesa*, p. 176, *refulgens*, p. 177, *propinqua*, p. 178, *gracilipes*, p. 179, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv, n. spp.

Munidopsis vicina, p. 181, *agassizii*, p. 182, *villosa*, p. 182, *hystrix*, p. 183, *sericea*, *margarita*, p. 184, *crinita*, p. 185, *ornata*, *scabra*, p. 186, *tanneri*, *hamata*, p. 187, *quadrata*, p. 188, *depressa*, *curinipes*, p. 189, *hendersoniana*, p. 190, *inermis*, p. 191, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv; *M. talismani*, *media*, *aculeata*, p. 275, MILNE-EDWARDS & BOUVIER, Ann. Sci. nat. xvi : n. spp.

Oroporhynchus platirostris, p. 287, MILNE-EDWARDS & BOUVIER, Ann. Sci. nat. xvi, n. sp.

Uroptychus nitidus, M.-Edw., *occidentalis*, n. subsp., West coast Central America, p. 192; FAXON, Bull. Mus. Harvard, xxiv.

U. pubescens, p. 192, *bellus*, p. 193, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

PAGURIDÆ.

Cancellus tanneri, West coast Central America, p. 167, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

Catapagurus ensifer, Gulf of Martaban, p. 424, pl. xxxviii, figg. 16-19, HENDERSON, Tr. Linn. Soc. London, v; *O. diomedea*, West coast Central America, p. 171, FAXON, Bull. Mus. Harvard, xxiv : n. spp.

Diogenes affinis, Madras, p. 415, pl. xxxix, figg. 1 & 2, *violaceus*, Madras, p. 416, pl. xxxix, figg. 3 & 4, *planimanus*, Madras, p. 416, pl. xxxix, figg. 5 & 6, *costatus*, Madras, p. 418, pl. xxxix, figg. 7 & 8, HENDERSON, Tr. Linn. Soc. London, v, n. spp.

Eupagurus zebra, Muttuwarta Par., p. 425, pl. xxxix, figg. 12-15, HENDERSON, Tr. Linn. Soc. London, v, n. sp.

Paguristes fecundus, West coast Central America, p. 173, FAXON, Bull. Mus. Harvard, xxiv; *P. digueti*, Lower California, pp. 18-24, with figg., BOUVIER, Bull. Soc. Philom. (8) v, Pt. 1, n. spp.

Pylopagurus longimanus, p. 168, *affinis*, p. 169, *hirtimanus*, p. 176, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

^Δ*Troglopagurus*, n. g., *manuarensis*, n. sp., Tuticorin, p. 421, pl. xxxix, figg. 9-11, HENDERSON, Tr. Linn. Soc. London, v.

Spiropagurus occidentalis, West coast Central America, p. 172, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

(2) *Thalassinidea*.

AXIIDÆ, CALOCARIDÆ (= THAUMASTOCHELIDÆ), and GEBIIDÆ.

Axius crista-galli, West coast Central America, p. 193, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

¹*Calastacus*, n. g. of *Calocaridae*, *stilirostris*, n. sp., West coast Central America, p. 194; FAXON, Bull. Mus. Harvard, xxiv.

- Gebia simsoni*, Tasmania, p. 49, pl. i, figg. 3-5, THOMSON, P. Soc. Tasmania, 1893, n. sp.
Gebiopsis darwinii, Miers, and *intermedia*, De Man, are identical; HENDERSON, Tr. Linn. Soc. London, v, p. 432.

(3) *Astacidea*.

ERYONTIDÆ.

- Eryonicus spinulosus*, West coast Central America, p. 198, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Polycheles tanneri, p. 196, *granulatus*, p. 197, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
P. sculptus, Smith, *pacificus*, n. subsp., West coast Central America, p. 196; FAXON, Bull. Mus. Harvard, xxiv.
Willemasia inornata, West coast Central America, p. 195, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

NEPHROPSIDÆ, POTAMOBIDÆ, and PARASTACIDÆ.

- On grounds of expediency, STEBBING proposes the new family name *Nephropsidæ*, for *Nephrops*, *Nephropsis*, &c., and *Astacus*; for *Astacus* is the true generic term for the species recently included under *Homarus*; and the species commonly regarded as constituting *Astacus* must be called *Potamobia*, from which is derived the family name *Potamobiidæ*.
Cambarus pellucidus testii, Mayfield Cave (Indiana), p. 285, pls. xlv & xlv, HAY, P. U. S. Mus., xvi, n. subsp.
Nephropsis occidentalis, West coast Central America, p. 195, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Parastacus: notes upon; JHERING, Congr. Internat. Zool. 1893, pl. ii, pp. 43-49.

(4) *Penæidea*.

PENÆIDÆ.

- Aristæus occidentalis*, West coast Central America, p. 215, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Benthescymus tanneri, West coast Central America, p. 215, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Haliporus nereus, p. 213, *doris*, *thetis*, p. 214, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv, n. spp.
Hemipenæus triton, West coast Central America, p. 215, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Peneopsis diomedea, West coast Central America, p. 212, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

- Penaeus balboae*, West coast Central America, p. 211, FAXON, Bull. Mus. Harvard, xxiv; *P. compressipes*, Gulf of Martaban, p. 450, pl. xl, figg. 21 & 22, HENDERSON, Tr. Linn. Soc. London, v : n. spp.
- Sicyonia affinis*, p. 209, *picta*, p. 210, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
- Solenocera agassizii*, West coast Central America, p. 211, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

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- Acetes americanus*, Tocantins, p. 39, pl. ii, fig. 2, ORTMANN, Decapoden und Schizopoden der Plankton Expedition, n. sp.
- Sergestes inous*, p. 216, *phorceus*, *halia*, p. 217, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv; *S. sargassi*, Sargasso Sea, p. 34, pl. ii, fig. 1, ORTMANN, Decapoden und Schizopoden der Plankton Expedition : n. spp.
- Sergia henseni*, Guinea Current, p. 38, pl. iii, fig. 3, ORTMANN, Decapoden und Schizopoden der Plankton Expedition, n. sp.

(5) *Caridea.*

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- Ægeon orientalis*, Gulf of Martaban, p. 446, pl. xl, figg. 16 & 17, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
- Glyphocrangon alata*, p. 201, *spinulosa*, *sicarius*, p. 202, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv, n. spp.
- Paracrangon areolata*, West coast Central America, p. 201, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
- Pontophilus challengerii*, n. n. for *P. gracilis*, Bate, p. 49; ORTMANN, Decapoden und Schizopoden der Plankton Expedition.
- P. occidentalis*, West coast Central America, p. 200, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
- Sclerocrangon atrox*, *procar*, West coast Central America, p. 199, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

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- Alpheus malabaricus* (Fabr.), Pulicat, described p. 434, figured pl. xl, figg. 1-3; HENDERSON, Tr. Linn. Soc. London, v.
- A. ascensionis*, Ascencion I., p. 45, ORTMANN, Decapoden und Schizopoden der Plankton Expedition, n. sp.
- Heterocarpus vicarius*, p. 203, *hostilis*, *affinis*, p. 204, West coast Central America, FAXON, Bull. Mus. Harvard, xxiv, n. spp.
- Oryzris occidentalis*, Tocantins, p. 46, pl. iii, fig. 4, ORTMANN, Decapoden und Schizopoden der Plankton Expedition, n. sp.

ATYIDÆ.

- Curidina nilotica*, syn. *longirostris*, p. 130 ; BARROIS, Rev. Biol. v.
C. timorensis, Timor, p. 300, pl. viii, fig. 6, DE MAN, Notes Leyden Mus.
 xv ; *C. togoensis*, Togoland, p. 156, HILGENDORF, SB. Ges. naturf.
 Berlin, 1893 : n. spp.
Hemicaridina desmarestii, figured, p. 127 ; BARROIS, Rev. Biol. v.

PALÆMONIDÆ.

- Leander tenuipes*, Bombay, Madras, p. 440, pl. xl, figg. 14 & 15, HENDERSON, Tr. Linn. Soc. London, v, n. sp.
Palæmon dayanus, Calcutta, &c., p. 443, pl. xl, figg. 7-13, *altifrons*, Delhi, &c., p. 444, pl. xl, figg. 4-6, HENDERSON, Tr. Linn. Soc. London, v ;
P. paucidens, Togoland, p. 155, HILGENDORF, SB. Ges. naturf. Berlin, 1893 : n. spp.

GNATHOPHYLLIDÆ, NEMATOCARCINIDÆ, &c.

- Gnathophyllum panamense*, Panama, p. 198, FAXON, Bull. Mus. Harvard, xxiv, n. sp.
Nematocarcinus agassizii, West coast of Central America, p. 206, FAXON, Bull. Mus. Harvard, xxiv, n. sp.

- Angasia stimpsonii*, Gulf of Martaban, p. 437, pl. xl, pp. 18-20, HENDERSON, Tr. Linn. Soc. London, v, n. sp. [The Recorder does not know to which family of CARIDEA the genus *Angasia* should be referred.]

ACANTHEPHYRIDÆ OR MIERSIIDÆ.

- Acanthephyra cristata*, *cucullata*, p. 206, West coast of Central America, FAXON, Bull. Mus. Harvard, xxiv, n. spp.
Notostomus fragilis, p. 207, *westergreni*, p. 208, West coast of Central America, FAXON, Bull. Mus. Harvard, xxiv, n. spp.

PASIPHÆIDÆ.

- Leptochela carinata*, Tocantins, p. 41, pl. iv, fig. 1, ORTMANN, Decapoden und Schizopoden der Plankton Expedition, n. sp.
Parapasiphæa (Eupasiphæa) gilesii, Andaman Sea, p. 166, fig. 2, WOOD-MASON & ALCOCK, Ann. Nat. Hist. (6) xi, n. sp.
Pasiphæa cristata, Bate., *americana*, n. subsp., West coast of Central America, p. 208, FAXON, Bull. Mus. Harvard, xxiv ; *P. magna*, West coast Central America, p. 209, FAXON, Bull. Mus. Harvard, xxiv ;
P. unispinosa, Wood-Mason, Andaman Is., p. 163 ; WOOD-MASON & ALCOCK, Ann. Nat. Hist. (6) xi : n. spp.

- ¹ *Phye*, n. g., for *Parapasiphaea alcocki*, Wood-Mason, Andaman Is., p. 164 ;
WOOD-MASON & ALCOCK, Ann. Nat. Hist. (6) xi.
Psathyrocaris, Wood-Mason, recharacterized, p. 168, *P. fragilis*,
Andaman Sea, p. 171, pls. x & xi, WOOD-MASON & ALCOCK, Ann.
Nat. Hist. (6) xi, n. sp.

SCHIZOPODA.

ANASPIDÆ, n. fam.

THOMSON, P. Soc. Tasmania, 1893, p. 51 :

- ¹ *Anaspis*, n. g., p. 51, *tasmanica*, n. sp., Tasmania (fresh-water), p. 51 ;
THOMSON, P. Soc. Tasmania, 1893.

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- Euphausia gibboides*, Sargasso Sea, p. 12, pl. i, fig. 8, *pseudogibba*, Sargasso
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MANN, Decapoden und Schizopoden der Plankton Expedition, n. spp.
Stylocheiron flexipes, Equatorial Current, p. 18, pl. i, fig. 7, ORTMANN,
Decapoden und Schizopoden der Plankton Expedition, n. sp.
Thysanopoda biproducta, Sargasso Sea, p. 8, pl. i, fig. 1, *monacantha*,
Guinea, p. 9, pl. i, fig. 2, *pectinator*, North Equatorial Stream, p. 10,
pl. i, fig. 4, ORTMANN, Decapoden und Schizopoden der Plankton
Expedition, n. spp.

EUCOPIIDÆ and LOPHOGASTRIDÆ.

- Eucopia sculpticauda*, West coast Central America, p. 218, FAXON, Bull.
Mus. Harvard, xxiv, n. sp.
Gnathophausia dentata, West coast Central America, p. 217, FAXON, Bull.
Mus. Harvard, xxiv, n. sp.

MYSIDÆ.

- ¹ *Cæsaromysis*, n. g., *hispidus*, n. sp., Equatorial Current, p. 24, pl. i, fig. 8 ;
ORTMANN, Decapoden und Schizopoden der Plankton Expedition.
¹ *Ceratomysis*, n. g., *spinosa*, n. sp., West coast Central America, p. 220 ;
FAXON, Bull. Mus. Harvard, xxiv.
¹ *Chlamydopleon*, n. g., *aculeatum*, n. sp., Tocantins River, p. 25, pl. ii,
fig. 1 ; ORTMANN, Decapoden und Schizopoden der Plankton Expe-
dition.
¹ *Hansenomysis*, n. n. for *Arctomysis*, Hans., preoccupied ; STEBBING, A
History of Crustacea, p. 268.
Petalophthalmus pacificus, West coast Central America, p. 218, FAXON,
Bull. Mus. Harvard, xxiv, n. sp.
¹ *Scolophthalmus*, n. g., *lucifugus*, n. sp., West coast Central America,
p. 219, FAXON, Bull. Mus. Harvard, xxiv.

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- Gonodactylus smithii*, Arafura Sea, p. 475, pl. xx, fig. 1, *tuberosus*, Macclesfield Bank, p. 476, pl. xx, fig. 2, *hansenii*, Macclesfield Bank, p. 477, pl. xx, fig. 3, *carinifer*, Holothuria Bank, p. 478, pl. xx, fig. 4, POCCOCK, Ann. Nat. Hist. (6) xi; *G. spinosus*, Mauritius, p. 101, BIGELOW, Johns Hopkins Univ. Circ. xii; *G. demanii*, Rameswaram, p. 455, pl. xl, figg. 23 & 24, HENDERSON, Tr. Linn. Soc. London, v : n. spp.
- Lysiosquilla biminiensis*, Bimini (Bahamas), p. 102, BIGELOW, Johns Hopkins Univ. Circ. xii, n. sp.
- Odontodactylus*, n. g., for *Gonodactylus scyllarus*, p. 100, *havanensis*, Havana, n. sp., p. 101; BIGELOW, Johns Hopkins Univ. Circ. xii.
- Pseudosquilla megalophtalma*, Mauritius, p. 101, BIGELOW, Johns Hopkins Univ. Circ. xii, n. sp.
- Squilla quadridens*, Florida, *mantoidea*, Borneo, *aculeata*, Chili, p. 101, *intermedia*, Bahamas, *rugosa*, Gulf of Mexico, p. 102, *alba*, Bimini (Bahamas), p. 103, BIGELOW, Johns Hopkins Univ. Circ. xii, n. spp.

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- Actæcia euchroa*, Dana, Tasmania, p. 56, pl. ii, figg. 1-8; THOMSON, P. Soc. Tasmania, 1893.
- Alloniscus papillosus*, p. 123, *ambiguus*, p. 124, *compar*, p. 124, *quisquiliarum*, p. 125, *tomentosus*, p. 126, Venezuela, BUDE LUND, Ent. Meddel. iv, n. spp.
- Anomaloniscus*, n. g., *ovatus*, n. sp., Seychelles, p. 187, figg. 2 & 3; DOLLFUS, Bull. Soc. zool. France, xviii.
- Armadillo*: a curious form allied to *Armadillo*, but generically distinct, described and figured, but not named; THOMSON, Ann. Nat. Hist. (6) xii, pp. 227 & 228, pl. iv.
- A. rubropunctatus*, p. 113, *venustus*, p. 114, *pumilus*, p. 115, *grenadensis*, p. 115, *truncorum*, p. 116, Venezuela, BUDE LUND, Ent. Meddel. iv; *A. canariensis*, Fuertaventura, p. 48, fig. 1, *ausseli*, Teneriffe, p. 48, fig. 2, DOLLFUS, Mem. Soc. zool. France, vi. : n. spp.
- Asellus goplanus*, with n. var. *switeziana*, Galicia, pp. 86-97, pl. i, FISZERA, Sprawozd. Kom. Krajo, 1893, n. sp.
- Bathytropa hispanica*, Valencia, p. 50, with fig., DOLLFUS, An. Soc. Espan. (2) ii (xxii), n. sp.
- Metoponorthrus stricticauda*, Palma, p. 55, fig. 7, DOLLFUS, Mem. Soc. zool. France, vi, n. sp.
- Munna studeri*, Japan, p. 2, HILGENDORF, SB. Ges. naturf. Berlin, 1893, n. sp.
- ¹ *Nasicopea*, n. g., for *Cymodoce abyssorum*, Bedd., p. 363; STEBBING, A History of Crustacea.

- Oniscus punctatus*, Thoms., Tasmania, p. 54, pl. i, figg. 6-13; THOMSON, P. Soc. Tasmania, 1893.
- Pericyphis cristifrons*, Cameroons, p. 152, *nigropunctatus*, Togoland, p. 153, HILGENDORF, SB. Ges. naturf. Berlin, 1893, n. spp.
- Pericyphops*, n. subg. of *Pericyphis triarticulatus*, n. sp., Togoland, p. 152; HILGENDORF, SB. Ges. naturf. Berlin, 1893.
- Philoscia büttneri*, Togoland, p. 154, HILGENDORF, SB. Ges. naturf. Berlin, 1893; *P. diminuta*, p. 120, *debilis*, p. 121, *seriepunctata*, p. 122, Venezuela, BUDE LUND, Ent. Meddel. iv, n. spp.
- Porcellio ovalis*, Canaria, p. 50, fig. 3, *canariensis*, Canaria, Tenerife, p. 50, *alluaudi*, Tenerife, p. 52, fig. 5, *spinipes*, Canary Is., p. 53, fig. 6, DOLLFUS, Mem. Soc. zool. France, vi, n. spp.
- Rhycotus parallelus*, p. 119, *spherocephalus*, p. 120, Venezuela, BUDE LUND, Ent. Meddel. iv, n. spp.
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- Scleropactes senex*, Venezuela, p. 128, BUDE LUND, Ent. Meddel. iv, n. sp.
- Spheroma dugesi*, Mexico, p. 115, figg. 1 & 2, DOLLFUS, Bull. Soc. zool. France, xviii, n. sp.
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- Amphilocheus neapolitanus*, p. 595, pl. xxix, fig. 16, *brunneus*, p. 596, pl. iv, fig. 5, Naples, DELLA VALLE, Fauna des Golfes von Neapel, Gammarini, n. spp.
- Amphithoe mitsukurii*, Naples, p. 460, pl. lvii, figg. 30-32, DELLA VALLE, Fauna des Golfes von Neapel, Gammarini, n. sp.
- Anonyx petalocerus*, Naples, p. 816, pl. lxi, figg. 1-9, DELLA VALLE, Fauna des Golfes von Neapel, Gammarini, n. sp.
- Atyloides tasmanica*, Tasmania, p. 65, pl. ii, figg. 9-15, pl. iii, figg. 1 & 2, THOMSON, P. Soc. Tasmania, 1893, n. sp.
- Autonoe spiniventris*, Naples, p. 400, pl. v, fig. 7, pl. lvi, figg. 17-34, DELLA VALLE, Fauna des Golfes von Neapel, Gammarini, n. sp.
- Biancolina*, n. g., p. 562, *algicola*, n. sp., p. 562, pl. iii, fig. 11; DELLA VALLE, Fauna des Golfes von Neapel, Gammarini.
- Ceina*, n. g., p. 530, for *Nicea egregia*, Chilton, pl. lviii, figg. 14-21; DELLA VALLE, Fauna des Golfes von Neapel, Gammarini.
- Cerapopsis*, n. g., p. 388, *longipes*, n. sp., Naples, p. 388, pl. iii, fig. 10, pl. ix, figg. 20-40; DELLA VALLE, Fauna des Golfes von Neapel, Gammarini.
- Cyproidea brevirostris*, Moray Firth, p. 244, pl. xiii, figg. 1-11, SCOTT, Ann. Nat. Hist. (6) xii, n. sp.
- Elasmopus affinis*, Naples, p. 734, pl. i, fig. 9 pl. xxii, figg. 1-15, DELLA VALLE, Fauna des Golfes von Neapel, Gammarini, n. sp.

- Epimeria tuberculata*, Norway, p. 367, pl. cxxix, fig. 2, SARS, Crustacea of Norway, n. sp.
- Eusirus propinquus*, p. 417, pl. cxlvii, fig. 1, *minutus*, p. 419, pl. cxlvii, fig. 2, *leptocarpus*, p. 422, pl. clxviii, fig. 2, Norway, SARS, Crustacea of Norway, n. spp.
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- ↓ *Haliragoides*, n. g., p. 432, for *Halirages inermis*, Sars, p. 433, pl. cliii ; SARS, Crustacea of Norway.
- ↓ *Iphimediopsis*, n. g., p. 585, for *Iphimedia eblance*, Bate, p. 586, pl. viii, fig. 5 ; DELLA VALLE, Fauna des Golfes von Neapel, Gammarini.
- ↓ *Laphystiopsis*, n. g., p. 386, *planifrons*, n. sp., Norway, p. 386, pl. cxxxv ; SARS, Crustacea of Norway.
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- Microdeutopus stationis*, p. 418, pl. v, fig. 2, pl. x, figg. 31-41, *algitola*, p. 418, pl. i, fig. 3, pl. ii, figg. 1-12, Naples, DELLA VALLE, Fauna des Golfes von Neapel, Gammarini, n. spp.
- Niphargus mortoni*, p. 68, pl. iv, figg. 11 & 12, pl. v, figg. 1-5, *montanus*, p. 70, pl. vi, figg. 1-3, Tasmania, THOMSON, P. Soc. Tasmania, 1893, n. spp.
- Ædicerus griseus*, Naples, p. 551, pl. xxxiii, figg. 16-26, DELLA VALLE, Fauna des Golfes von Neapel, Gammarini, n. sp.
- Paramphithoe monocuspis*, Norway, p. 351, pl. cxxiii, fig. 2, SARS, Crustacea of Norway, n. sp.
- ↓ *Paratylus*, n. g., p. 462, for *Atylus swammerdamii*, M.-Edw., p. 463, pl. clxiii ; SARS, Crustacea of Norway.
- Pardalisca tenuipes*, Norway, p. 404, pl. cxlii, fig. 2, SARS, Crustacea of Norway, n. sp.
- ↓ *Pardaliscella*, n. g., p. 407, for *Pardalisca boeckii*, Malm., p. 408, pl. cxliii, fig. 2 ; SARS, Crustacea of Norway.
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- ↓ *Stenopleustes*, n. g., p. 354, for *Amphithopsis malmgreni* (Boeck), p. 355 ; SARS, Crustacea of Norway.
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- Ectinosoma barroisi*, Lake of Tiberias, p. 434, BARROIS, Rev. Biol. v, n. sp.
- Epactophanes*, n. g., *richardi*, n. sp., Bohemia, p. 108, pl. v, fig. 38; MRÁZEK, Zool. Jahrb. Syst. vii.
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- Heterocyclops*, n. g., for *C. affinis*; CLAUS, Arb. Inst. Wien, x, p. 348.
- Laophonte spinosa*, Liverpool Bay, p. 198, pl. xxxiii, figg. 1-13, THOMPSON, P. Liverp. biol. Soc. vii; *L. littorale*, Firth of Forth, p. 238, p. xi, figg. 7-14, SCOTT, Ann. Nat. Hist. (6) xii : n. spp.
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BY

R. I. POCCOCK.

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- [SIMON, E.] (3) Arachnides de la Mission scientifique de M. Ch. Alluaud aux Iles Seychelles. Bull. Soc. zool. France, xviii, pp. 204-211.
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Hydrachnidae, p. 381.

II.—ANATOMY, PHYSIOLOGY, EMBRYOLOGY, CLASSIFICATION, HABITS.

GENERAL.

- Comparative embryology of *Arachnida* and *Limulus*; KINGSLEY.
Structure and classification of *Arachnida* and their relations with the *Eurypterida*; LAURIE (1, 2).
Views on classification and development discussed; CARPENTER (2, 3).
Origin of tracheæ; BERNARD (1): value of tracheæ in phylogeny; BERNARD (4).
Blood of *Arachnida*; GRIFFITHS.
Vascular system and cœlom of Arthropods; LANKESTER.
Walk of Arthropods; DIXON.
Structure and significance of the endosternite in *Arachnida*; SCHIMKÉ-WITSCH.
Procephalic lobes of *Arachnida*; BERNARD (8).
Digestive processes of *Arachnida*; BERNARD (7).
Morphology and classification of the *Arachnida*; POCKOCK (8).
Organs and characters in different orders of *Arachnida*; HANSEN.

SCORPIONES, PEDIPALPI, SOLIFUGÆ, PSEUDOSCORPIONES.

Alleged parasite of Scorpion ; TOWNSEND, J. Inst. Jamaica, i, p. 221.

On the parasitism or commensalism of Chelifers with regard to Beetles, Flies, &c. ; BERG, HICKSON, JHERING (2), LEYDIG, MONIEZ.

On the anatomy and vestigial stigmata of Chelifers ; BERNARD (6).

Observations upon living examples of *Thelyphonus* ; MARX (4) : of Scorpions ; POCKOCK (6), "R. V.," NOE, ICONOMOPOULOS.

Sensory organ in the palp of *Galeodes* and of *Phrynus* ; BERNARD (2).

Structure of the head in *Galeodes* ; BERNARD (8).

On the classification of Scorpions ; POCKOCK (5).

On the coxal gland of Scorpions ; BERNARD (3).

ARANEÆ.

ANATOMY, PHYSIOLOGY, &C.

The respiratory organs of *Caponia* and *Nops*, pp. 326 & 327 ; SIMON (5).—On the development of the lungs in Spiders ; JAWOROWSKI (2).

Degeneration of organs in Spiders owing to disuse ; MARX (3).

Monstrosities amongst Spiders ; CASTELLI (2).

Circulatory system of *Mygale* ; CAUSARD.—Activity of the heart in Spiders ; WAGNER (2).

Epigyne of Spiders ; HASSELT (1).

Parthenogenesis in *Filistata* ; DAMIN.

Fat-body in Spiders ; KOWALEWSKY.

Venom of Spiders ; GAUBERT.—Spider bites ; EFTS, Insect Life, v, p. 348.—Poisonous effects of the bite of *Lathrodectus* ; PUGA-BORRE.

HABITS, COLOURATION, MIMICRY, and MISCELLANEOUS SUBJECTS.

Protective colouration of *Epeira* ; HARTMANN, CARPENTER (1) : of *Argiope* ; BELL.

Spider mimicry ; LULL, Insect Life, vi, p. 38, see also Int. J. Anat. Phys. iii, p. 414.

Food of *Tarantula* ; SCHAFFER : of young Spiders ; F. CAMBRIDGE (2) : see also Field Club, iv, p. 46.

Spider capturing Centipede ; Field Club, iii, p. 10.

Trap-door Spiders ; ISABELL.—The nest of Californian Trap-door Spider : CLEVELAND : of *Atypoides* ; RIVERS.

Spiders' webs ; MARX (2).—On the webs of *Argiope* and *Dolomedes* from Sierra Leone ; CLEMENTS.—On the snare of *Argiope* from the Gold Coast ; BELL.

Oviposition of *Agelena* ; WARBURTON (2).

Cocoons of *Phidippus opifex* ; DAVIDSON, Ent. News Philad. 1893, p. 194.

Spinning apparatus of *Epeiridae* ; WARBURTON (1).

General observations on the habits, sense organs, &c., of *Amaurobius*, *Pholcus*, *Epeira*, &c. ; POCKOCK (7).

Notes on *Argyroneta* ; JOHNSON : on *Pholcus* ; GAUBERT (2) : on *Marpissa* ; HASSELT (3) : on *Nephila madagascariensis* ; CAMBOUÉ : on two South African Epeiroids ; KOLBE : on a jumping Spider ; CURTIS : on *Epeira quadrata* ; F. CAMBRIDGE (3).

ACARI.

Embryology of *Ixodes* ; WAGNER (1)

Reproduction of *Sarcoptidæ* ; TROUESSART (2), MEGNIN.

Zoological and anatomical studies on *Tyroglyphus* and *Hemisarcoptes* ; LIGNIERES (1, 2).

Anatomy of *Bdella* ; KARPELLES (2).

On the hexapodous larva of *Hydrachnida* ; KRAMER.

Notes on Ticks parasitic on men ; ALT, Centrbl. Bakter. xiv, p. 468, NEUMANN, HESSLER.

On *Sarcoptidæ* parasitic on mice ; NEUMANN (2), RAILLIET & LUCET.

Ticks in the ears of *Mammalia* ; C. H. T. TOWNSEND, Ent. News Philad. 1893, pp. 246 & 267, also J. N. York Ent. Soc. i, p. 49.

Notes on the Cattle Tick ; CURTICE, Ent. News Philad. 1893, p. 125.—On *Ixodes* from Antigua ; MICHAEL, P. Zool. Soc. London, 1893, p. 177.

On the itch caused in the Rabbit by *Sarcoptes scabiei*, and its transmissibility to the Ferret ; RAILLIET.

Ticks on the Iguana ; MEADEN.

Mites on Beetles and Wood-lice ; M. MASKELL.

On the parasitism of *Acari* ; BRANDES, BOMAN.

General observations upon *Hjdrachnida* ; KOENIKE (1, 2, 3), PIERSIG (1, 2).

On the geographical distribution of *Atax* ; JHERING (1).

On Mites found infesting hay ; ORMEROD : infesting mushrooms ; OSBORN.

III.—DISTRIBUTION.

1. *Palæarctic Region.*

Spitzbergen : *Acari* ; TROUESSART (3).

British Is. : *Araneæ* ; O. P. CAMBRIDGE (2), F. O. P. CAMBRIDGE (1).

Scotland : *Araneæ* ; CARPENTER (4).—Perthshire : *Araneæ* ; TRAIL.—Inverness-shire : record of *Argyroneta* ; EVANS.

England : Cornwall : *Acari* ; MICHAEL.—Northampton : record of *Sparassus smaragdulus* ; F. W. H., J. Northampt. Soc. No. 54, p. 230.—Cambridge : *Araneæ* ; WARBURTON (3).

France : *Phytoptidæ* of Elbenf ; MARTEL.

Italy : *Phytoidæ* ; CASTELLI, CANESTRINI (1), CANESTRINI & MASSA-LONGO (1, 2).

Tyrol : *Phytoidæ* ; DALLE-TORRE.

Germany : Lake Plon : *Hydrachnidæ* ; ZACHARIAS (1, 2).

Austria : *Hydrachnidæ* ; JAWOROWSKI (1).

Hungary : *Acari* ; KARPELES (1).

Russia : *Acari* ; BIRULA (2).

Transcaspia : *Solifugæ* ; BIRULA (1), BERNARD (5), LANSDELL, p. 418, Chinese Central Asia, London, 1893.

2. Ethiopian Region.

West Coast of Africa : *Aranæ* ; MARX (1), BANKS (7).

East Africa : *Hydrachnidæ* ; KOENIKE (4).

South Africa : *Scorpiones* ; POCOCK (5).

Lakes Rudolph and Stephanie : *Arachnida* ; SIMON (6).

Madagascar (Nossibó) : *Arachnida* ; BRANCSIK.

Seychelles : *Arachnida* ; SIMON (3).

3. Oriental and Australian Regions.

N. India and Tenasserim : *Scorpiones* ; POCOCK (5).

Ceylon : *Aranæ* ; HASSELT (4).

Malaysia : *Aranæ* ; SIMON (4), WORKMAN.

Sumatra and Java : *Aranæ* ; HASSELT (4).—*Scorpions* ; POCOCK (5).

Celebes : *Scorpiones* ; POCOCK (1).

Flores : *Scorpiones* ; POCOCK (1).—*Opiliones* ; LOMAN.

New South Wales : *Aranæ* ; RAINBOW (1, 2).

S. Australia : *Scorpiones (Urodacus)* ; POCOCK (5).

Tasmania : *Aranæ* ; URQUHART (1).

New Zealand : *Aranæ* ; URQUHART (2).

4. Nearctic Region.

Alaska : *Epeiridæ* ; KEYSERLING.

United States : *Aranæ* ; BANKS (1).—*Epeiridæ* ; KEYSERLING.—*Opiliones* ; BANKS (2, 4), WEED (5).—*Pseudoscorpiones* ; BANKS (3).

New England : *Attidæ* and *Thomisidæ* ; EMERTON (1, 2).

South Dakota : *Phalangidæ* ; WEED (4).

Mississippi : *Phalangidæ* ; WEED (6).

Ohio : *Phalangidæ* ; WEED (1, 7).

California : *Opiliones* ; OSBORN.

Colorado : *Aranæ*, &c. ; COCKERELL (3).

New Mexico : *Aranæ* ; TOWNSEND.

5. *Neotropical Region.*

Central America : Guerrero, Guatemala, &c. : *Araneæ* ; O. P. CAMBRIDGE (1).—Costa Rica : *Epeiridæ* ; GÉTAZ.

West Indies : *Scorpiones* and *Pedipalpi* ; POCOCK (2).—Jamaica : *Araneæ* ; COCKERELL (1, 2).—St. Vincent : *Attidæ* ; PECKHAM.—Trinidad : *Pseudidiops*, &c. ; POCOCK (4).

South America : Venezuela : *Araneæ* ; SIMON (2).—Various localities : *Scorpiones* ; POCOCK (3).—*Epeiridæ* ; KEYSERLING.

IV.—SYSTEMATIC.

(A) SCORPIONES.

POCOCK, Ann. Nat. Hist. (6) xii, pp. 305–313, classifies the group as follows :—Fam. I. *Scorpionidæ*, with subfamilies *Scorpionini*, *Ischnurini*, *Diplocentrini*, *Hemiscorpiini*, *Uradacini*. Fam. II. *Iuridæ*, with subfamilies *Iurini*, *Charilini*, *Chactini*. Fam. III. *Bothriuridæ*. Fam. IV. *Buthidæ*.

BUTHIDÆ.

Centrurus: descriptions, with synonymy, of the known West Indian species; the following described and figured :—*insulanus*, Thor., Jamaica, p. 388, pl. xxx, fig. 12, *testaceus*, De Geer, Montserrat, p. 389, pl. xxx, fig. 11, *nitidus*, Thor., Hayti, p. 390, pl. xxix, fig. 5, POCOCK, J. Linn. Soc. xxiv.

† *Heteroctenus*, n. g., p. 391, for *junceus*, Herbst., syn. *hemprichii*, Gerv., Hayti, p. 392 ; *agamemnon*, C. Koch, Brazil, p. 393 ; POCOCK, J. Linn. Soc. xix.

Isometrus mucronatus (Fabr.), discussed, p. 85, figured, pl. vi, fig. 1, *flavimanus*, Thor., Sumatra, p. 87, pl. vi, fig. 2 ; POCOCK, in Max Weber's Zool. Ergebnisse, &c., ii.

I. formosus, Buitenzorg, p. 88, pl. vi, fig. 3, POCOCK, in Max Weber's Zool. Ergebnisse, &c., ii, n. sp.

‡ *Pseudobuthus*, n. n. for *Rhoptrurus*, Karsch, preoccupied, p. 312 ; POCOCK, Ann. Nat. Hist. (6) xii.

† *Tityobuthus*, n. g., for *Rhoptrurus baroni*, Poc., p. 312 ; POCOCK, Ann. Nat. Hist. (6) xii.

Tityus, C. Koch, restored for the American species referred by Thorell and others to *Isometrus*, with *Phassus* and *Androcottus* as synonyms, p. 376 ; *androcottoides*, Karsch, Trinidad, p. 377, pl. xxix, fig. 3, *americanus*, Linn., Hayti, Porto Rico, p. 378, pl. xxix, fig. 2, *insignis*, St. Lucia, p. 379, pl. xxix, fig. 10 ; POCOCK, J. Linn. Soc. xxiv.

T. melanostictus, Trinidad, p. 381, pl. xxix, fig. 4, *pictus*, St. Vincent, p. 382, pl. xxx, fig. 8, *smithii*, Grenada, with n. var. *microdon*, the Grenadines, p. 383, pl. xxx, fig. 9, Pocock, J. Linn. Soc. xxiv; *T. asthenes*, Peru, p. 313, *quelchii*, British Guiana, Para, p. 314, pl. xiv, fig. 1, *pusillus*, Iguarassu, p. 315, Pocock, Ann. Nat. Hist. (6) xii : n. spp.

BOTHRIURIDÆ.

Bothriurus coriaceus, Chili, p. 95, pl. v, fig. 12, *keyserlingii*, Chili or Peru, p. 96, pl. 5, fig. 9, *asper*, Iguarassu, p. 96, pl. v, fig. 10, *signatus*, Theresopolis, p. 97, pl. v, fig. 11, Pocock, Ann. Nat. Hist. (6) xii, n. spp.

**Brachistosternus*, n. g., syn. *Mecocentrus*, Simon, not Karsch, for *Scorpio ehrenbergii*, Gervais, syn. *glaber*, Gervais, *politus*, L. Koch, ? W. Indies, pp. 402 & 403; Pocock, J. Linn. Soc. xxiv.

Cercophonius brachycentrus, Thor., is referred to the genus *Urophonius*; Pocock, Ann. Nat. Hist. (6) xii, p. 101.

♂ *Phoniocercus*, n. g., p. 99, *pictus*, n. sp., loc. ?, p. 99; Pocock, Ann. Nat. Hist. (6) xii.

♂ *Urophonius*, n. g., p. 100, *jheringii*, n. sp., Rio Grande do Sul, p. 101, pl. vi, fig. 14; Pocock, Ann. Nat. Hist. (6) xii.

IURIDÆ.

Iurini.

**Anuroctonus*, n. g., p. 328, for *Uroctonus phæodactylus* (Wood); Pocock, Ann. Nat. Hist. (6) xii.

♂ *Cavaboctonus*, n. g., *keyserlingii*, n. sp., Coquimbo, &c., p. 92, pl. v, fig. 8; Pocock, Ann. Nat. Hist. (6) xii.

Chærilus cavernicola, from Ngalau Cavern, in Sumatra, p. 90, pl. vi, fig. 5, *celebensis*, Celebes, p. 93, Pocock, in Max Weber's Zool. Ergebnisse, &c., ii, n. spp.

C. variegatus, Sim., Tjibodas, Java, p. 90, pl. vi, fig. 4, Pocock, *t. c.*

Hadruroides, n. g., for *Hadrurus charcasus*, Karsch, p. 329; Pocock, Ann. Nat. Hist. (6) xii.

Scorpiops petersii, syn. *hardwickii*, Peters, Simla, p. 323, pl. xiv, fig. 10; *leptochirus*, loc. ?, p. 328, pl. xiv, fig. 11, *longimanus*, Silhet, p. 326, pl. xiv, fig. 12, *binghamii*, Tenasserim, p. 327, pl. xiv, fig. 13, Pocock, Ann. Nat. Hist. (6) xii, n. spp.

Chactini.

Broteas characterized, p. 77, *gervaisii*, loc. ?, p. 78, pl. v, fig. 1, Pocock, Ann. Nat. Hist. (6) xii, n. sp.

B. læripes, Karsch, and *æquinoctialis*, Karsch, are referable to the genus *Chactus*; Pocock, Ann. Nat. Hist. (6) xii, p. 87.

- ↳ *Broteochactas*, n. g., with type *nitidus*, n. sp., Trinidad, p. 377, pl. v, fig. 2 ; Pocock, Ann. Nat. Hist. (6) xii : further described and figured in J. Linn. Soc. xxiv, p. 399, pl. xxix, fig. 7.
- Ohactas delicatus*, Karsch, of which *Chactas opacus*, Karsch, is the male, belongs to *Broteochactas* ; Pocock, Ann. Nat. Hist. (6) xii, pl. v, fig. 2, and Pocock, J. Linn. Soc. xxiv, p. 401 ; *van benedenii*, p. 84, *lepturus*, Thor., syn. *thorellii*, Karsch, p. 85 ; *amazonicus*, Sim., p. 86, described ; Pocock, Ann. Nat. Hist. (6) xii.
- C. keyserlingii*, Colombia, p. 87, *simonii*, Venezuela, p. 88, *chrysopus*, loc. p., p. 89, *whymperi*, Ecuador, p. 90, pl. v, fig. 7, Pocock, Ann. Nat. Hist. (6) xii ; *C. karschii*, new name for *C. lepturus*, Karsch, not of Thorell, Pocock, t. c. p. 86 : n. spp.
- ↳ *Hadrurochactas*, n. g., pp. 78 & 80, *sclateri*, n. sp., British Guiana, p. 80, pl. v, fig. 5, Pocock, Ann. Nat. Hist. (6) xii.
- ↳ *Heterochactas*, n. g., pp. 78 & 81, *gervaisii*, n. sp., Cuença, p. 82, pl. v, fig. 6 ; Pocock, Ann. Nat. Hist. (6) xii.

SCORPIONIDÆ.

- ↳ *Chiromachus*, n. g., for *Ischnurus ochropus*, C. Koch, with which *asper* and *chrysopus*, Peters, are synonyms ; Pocock, Ann. Nat. Hist. (6) xii, p. 320.
- Cyphocentrus*, Karsch, = *Nebo*, Simon ; Pocock, Ann. Nat. Hist. (6) xii, p. 308.
- Diplocentrus antillanus*, St. Lucia, St. Vincent, pl. xxix, fig. 6, *scaber*, Jamaica, Barbadoes, p. 396, Pocock, J. Linn. Soc. xxiv, n. spp.
- Hormurus weberi*, Celebes, p. 97, pl. vi, fig. 7, Pocock, in Max Weber's Zool. Ergebnisse, &c., ii, n. sp.
- Iodacus*, Pocock, = *Urodacus*, Peters ; Pocock, Ann. Nat. Hist. (6) xii, pp. 308 & 320.
- ↳ *Iomachus*, n. g., for *Hormurus læviceps*, Poc., p. 320, pl. xiv, figg. 5 & 6 ; Pocock, Ann. Nat. Hist. (6) xii.
- ↳ *Æcopetrus*, n. n. for *Petro-æcus*, Karsch, preoccupied, p. 307 ; Pocock, Ann. Nat. Hist. (6) xii.
- Opisthacanthus elatus*, Gerv., probably = *Scorpio lepturus*, Pal. de Beauvois, p. 398 ; Pocock, J. Linn. Soc. xxiv.
- ↳ *Opisthocentrus*, n. g., for *Opisthacanthus africanus*, Sim., syn. *7-dentatus*, Karsch, p. 317, *lecomtei* (Luc.), syn. *12-dentatus*, Karsch, *validus*, Thor., syn. *capensis*, Thor., *divemptus* (Karsch), *asiaticus*, Keyserling, p. 318 ; Pocock, Ann. Nat. Hist. (6) xii.
- O. lævipes*, Transvaal, p. 319, pl. xiv, Pocock, Ann. Nat. Hist. (6) xii, n. sp.
- Scorpio indicus* (Linn.), figured, pl. vi, fig. 6 ; Pocock, in Max Weber's Zool. Ergebnisse, &c., ii.
- Urodacus keyserlingii*, Poc., = *U. abruptus*, Poc. ; Pocock, Ann. Nat. Hist. (6) xii, p. 321.

- U. planimanus*, Perth, p. 321, pl. xiv, fig. 7, pl. xv, fig. 1, *woodwardii*, Darling Range, pl. xiv, figg. 8 & 9, POCOCK, Ann. Nat. Hist. (6) xii, n. spp.

(B) PEDIPALPI.

- Tarantula reniformis* (Linn.), with alleged synonymy, described from West Indies, pp. 404-407 ; POCOCK, J. Linn. Soc. xxiv.

(C) ARANEÆ.

AGELENIDÆ.

- Tegenaria livoris*, Maketu (near Auckland), p. 167, URQUHART, Tr. N. Zealand Inst. xxv, n. sp.
T. hibernica, Camb., figured, fig. 6 ; O. P. CAMBRIDGE, P. Dorset Club, xiv.
Cryphæca diversa, Carlisle, p. 148, fig. 2, O. P. CAMBRIDGE, P. Dorset Club, xiv, n. sp.

AMMOXENIDÆ.

- New family allied to *Hersiliidæ* ; SIMON, Hist. Nat. Araignées, i, p. 452.
Ammozenus, n. g., *coccineus*, S. Africa, n. sp., p. 455 ; SIMON, Hist. Nat. Araignées, i.

ATTIDÆ.

- Anoka*, n. g., *vernalis*, St. Vincent, n. sp., p. 701, pl. lxii, fig. 9 ; PECKHAM, P. Zool. Soc. London, 1893.
A. peckhamii, Kingston, Jamaica, p. 221, COCKERELL, J. Inst. Jamaica, n. sp.
Attus rarus, p. 185, *suffusus*, p. 186, *kirikii*, p. 187, Wellington (N. Zealand), *tenebrosus*, Hunua, p. 188, *adustus*, Ohaupo, p. 189, URQUHART, Tr. N. Zealand Inst. xxv ; *A. silvestris*, New England, p. 247, pl. xx, fig. 4, EMERTON, Tr. Connect. Ac. viii, Pt. 2 ; *A. (Amycus ?) præmandibularis*, Sumatra, p. 157, HASSELT, Tijdschr. Ent. xxxvi ; *A. (Hasarius) bistriatus*, Sumatra, p. 157, HASSELT, t. c. : n. spp.
Cybele, n. g., *obscura*, p. 695, pl. lxi, fig. 3, *vincentii*, p. 696, pl. lxi, fig. 4, n. spp., St. Vincent ; PECKHAM, P. Zool. Soc. London, 1893.
Cydonia, n. g., *luteola*, St. Vincent, n. sp., p. 700 ; PECKHAM, P. Zool. Soc. London, 1893.
Cyrene, n. g., *decorata*, St. Vincent, n. sp., p. 698, pl. lxii, fig. 6 ; PECKHAM, P. Zool. Soc. London, 1893.
Dendryphantes octopunctatus, St. Vincent, p. 697, pl. lxi, fig. 5, PECKHAM, P. Zool. Soc. London, 1893 ; *D. æneolus*, California, p. 332, CURTIS, Zoe, iii ; *D. montanus*, New England, p. 229, pl. xvii, fig. 3, EMERTON, Tr. Connect. Ac. viii, Pt. 2 : n. spp.

- Dynamius metallicus*, St. Vincent, p. 694, pl. lxi, fig. 2, PECKHAM, P. Zool. Soc. London, 1893, n. sp.
- Euophrys pulchella*, St. Vincent, p. 699, pl. lxii, fig. 7, PECKHAM, P. Zool. Soc. London, 1893; *E. monadnock*, p. 241, pl. xx, fig. 2, *cruciatus*, p. 241, New England, EMERTON, Tr. Connect. Ac. viii, Pt. 2 : n. spp.
- Habrocestum agile*, n. n. for *H. auratum*, Peckh., not of Hentz, p. 126; BANKS, J. N. York ent. Soc. i.
- Icius hartii*, pl. xviii, fig. 5, *formicarius*, p. 235, New England, EMERTON, Tr. Connect. Ac. viii, Pt. 2, n. spp.
- Keyserlingella minuta*, St. Vincent, p. 693, PECKHAM, P. Zool. Soc. London, 1893, n. sp.
- Mævia roseo-limbata*, Ceylon, p. 150, *margaritacea*, Sumatra, p. 158, HASSELT, Tijdschr. Ent. xxxvi, n. spp.
- Neon pompatus*, St. Vincent, p. 703, pl. lxii, fig. 11, PECKHAM, P. Zool. Soc. London, 1893, n. sp.
- Phidippus multiformis*, p. 224, *brunneus*, p. 225, pl. xvi, fig. 2, New England, EMERTON, Tr. Connect. Ac. viii, Pt. 2, n. spp.
- Plexippus validus*, Tasmania, p. 127; URQUHART, P. Soc. Tasmania, 1893, n. sp.
- Prostheclina pygmaea*, St. Vincent, p. 702, pl. lxii, fig. 10, PECKHAM, P. Zool. Soc. London, 1893, n. sp.
- Synemosyna smithi*, St. Vincent, p. 692, pl. lxi, fig. 1, PECKHAM, P. Zool. Soc. London, 1893, n. sp.
- Viciria tenuimanus*, Seychelles, p. 210, SIMON, Bull. Soc. zool. France, xviii, n. sp.
- Zygoballus terrestris*, New England, p. 231, pl. xvii, fig. 5, EMERTON, Tr. Connect. Ac. viii, Pt. 2, n. sp.

ARCHEIDÆ.

- Dolichognatha tigrina*, Venezuela, p. 330, SIMON, Ann. Soc. ent. France, lxii, n. sp.
- Landana cygnea*, Caraccas, p. 329, SIMON, Ann. Soc. ent. France, lxii, n. sp.

AVICULARIIDÆ (THERAPHOSIDÆ).

- Macrothele aculeata*, Tasmania, p. 94, URQUHART, P. Soc. Tasmania, 1893, n. sp.
- Pseudidiops hartii*, Trinidad, p. 407, pl. xix, figg. 1 & 2, POCOCC, Ann. Nat. Hist. (6) xi, n. sp.
- Selenocosmia nigroventris*, Congo, p. 587, pl. lxx, fig. 1, MARX, P. U. S. Mus. xvi, n. sp.

CAPONIIDÆ.

- Caponina longipes*, Caraccas, p. 450, SIMON, Ann. Soc. ent. France, lxii, n. sp.

Nops marthani, S. Paulo de Olivença, p. 307, *maculata*, Caraccas, p. 449, *sublævis*, Tovar, p. 456, SIMON, Ann. Soc. ent. France, lxii, n. spp.

DICTYNIDÆ (AMAUROBIIDÆ).

Amaurobius (Titanæca) patellaris, Caraccas, p. 434, SIMON, Ann. Soc. ent. France, lxii, n. sp.

Auximus plagiatus, p. 430, *crinitus*, p. 431, Tovar (Venezuela), SIMON, Ann. Soc. ent. France, lxii, n. spp.

Thallunetus salax, Venezuela, p. 434, SIMON, Ann. Soc. ent. France, lxii, n. sp.

DRASSIDÆ.

SIMON, Hist. Nat. Araignées, i, p. 341, divides this family into *Hemiclæina*, *Drassodina*, *Citharonina*, *Cybæodina*.

Andromma, n. g., *æthiopicum*, Ethiopia, n. sp., p. 390, SIMON, Hist. Nat. Araignées, i.

Anagraphis, n. g. for *pallens*, Sim.; SIMON, Hist. Nat. Araignées, i, p. 352. *A. pallens*, Cape of Good Hope, p. 308, SIMON, Ann. Soc. ent. France, lxii, n. sp.

Aphantaulax australis, Port Elizabeth, p. 309, SIMON, Ann. Soc. ent. France, lxii, n. sp.

Cesonia, n. g., for *Herpyllus bilineatus*, Hentz, p. 375; SIMON, Hist. Nat. Araignées, i.

Clubiona nitida, Hunua (Auckland), p. 166, URQUHART, Tr. N. Zealand Inst. xxv; *C. canestrinii*, Italy, p. 205, CASTELLI, Atti Soc. Veneto-Trent. (2) i; *C. elaphines*, p. 100, *apiata*, p. 102, Tasmania, URQUHART, P. Soc. Tasmania, 1893; *C. mahensis*, Seychelles, p. 207, SIMON, Bull. Soc. zool. France, xviii : n. spp.

Drassus pellus, p. 97, *brunneolus*, p. 98, Tasmania, URQUHART, P. Soc. Tasmania, 1893; *D. scutululus*, Hunua (Auckland), p. 165, URQUHART, Tr. N. Zealand Inst. xxv : n. spp.

Drassodes, Westr., is to supersede *Drassus* of modern authors, p. 340; *deserticola*, Algeria, *paroculus*, Spain, p. 360, *citipes*, Egypt, *lancearius*, Sina, p. 362, SIMON, Hist. Nat. Araignées, i, n. spp.

Delozeuma, n. g., p. 105, *formidabile*, n. sp., Guanajuato, p. 106, pl. xiv, fig. 5; CAMBRIDGE, Biol. Centr.-Amer.

Echemus relucens, Valencia, p. 455, pl. ix, figg. 26 & 27, *lubricus*, Tovar, p. 456, SIMON, Ann. Soc. ent. France, lxii, n. spp.

Hemiclæina, n. g., for *Hemiclæa somersetensis*, Thorell, p. 346; SIMON, Hist. Nat. Araignées, i.

Herpyllus suavis, Tovar (Venezuela), p. 455, SIMON, Ann. Soc. ent. France, lxii, n. sp.

Lampona sub-aquila, Tasmania, p. 96, URQUHART, P. Soc. Tasmania, 1893, n. sp.

- Latonigena*, n. g., for *auricomis* (Sim.), p. 372, SIMON, Hist. Nat. Araignées, i; *auricomis*, n. sp., Buenos Ayres, p. 310, SIMON, Ann. Soc. ent. France, lxii.
- Laronia*, n. g., p. 457, *rufithorax*, Valencia, p. 457, *variegata*, Uruguay, p. 458, *cincta*, Sierra Leone, p. 312, n. spp.; SIMON, Ann. Soc. ent. France, lxii.
- Lygromma*, n. g., *senoculatum*, Caraccas, p. 451, pl. ix, figg. 16 & 17, *valencianum*, Valencia, p. 452, n. spp.; SIMON, Ann. Soc. ent. France, lxii.
- Macrophyes*, n. g., p. 106, *attenuata*, n. sp., Teapa, p. 107, pl. xiv, fig. 8; CAMBRIDGE, Biol. Centr.-Amer.
- Melanophora* (*Prosthesima*) *ernsti*, *caracusana*, Caraccas, p. 454, SIMON, Ann. Soc. ent. France, lxii, n. spp.
- Phacodus*, n. g., p. 370, for *Drassus braccatus*, S. Europe; SIMON, Hist. Nat. Araignées, i.
- Pæcilochroa latefasciata*, Pebas (Peru), p. 309, SIMON, Ann. Soc. ent. France, lxii, n. sp.
- Scotopheus*, n. g., for *Drassus quadripunctatus* (Linn.), p. 371; SIMON, Hist. Nat. Araignées, i.
- Setaphis*, n. g., for *Prosthesima suavis*, Sim., p. 374, SIMON, Hist. Nat. Araignées, i; *sexmaculata*, Kimberley, p. 311, n. sp., SIMON, Ann. Soc. ent. France, lxii.
- Sergiolus cyaneventris*, Florida, p. 311, SIMON, Ann. Soc. ent. France, lxii, n. sp.
- Talanites*, n. g., *fervidus*, n. sp., Syria, p. 363; SIMON, Hist. Nat. Araignées, i.
- Theuma*, n. n. for *Scylax*, Sim., preoccupied, p. 350, *xylina* and *aprica*, S. Africa, p. 351, SIMON, Hist. Nat. Araignées, i, n. spp.
- Trachycosmus*, n. g., *sculptilis*, n. sp., Tasmania, p. 347; SIMON, Hist. Nat. Araignées, i.
- Tricongius*, n. g., *collinus*, n. sp., Caraccas, p. 453; SIMON, Ann. Soc. ent. France, lxii.

DYSDERIDÆ.

SIMON, Hist. Nat. Araignées, i, pp. 311, &c., divides this family into *Dysderinæ* and *Segestriinæ*.

- Ariadne segmentata*, Tasmania, p. 306, *tovarensis*, Tovar (Venezuela), p. 448, *tubicola*, Caraccas, p. 448, SIMON, Ann. Soc. ent. France, lxii, n. spp.
- Orsolobus*, n. g., p. 319, for *Segestria singularis*, Nic., from Chili; SIMON, Hist. Nat. Araignées, i.
- Rhode biscutata*, Edough (East Algeria), p. 306, SIMON, Ann. Soc. ent. France, lxii, n. sp.

EPEIRIDÆ.

Synopsis of the American genera which are referred to the following sections:—*Gasteracanthi*, *Acrosomi*, *Cercidi*, *Cyrtarachni*, *Epeiri*, *Meti* and *Gelanori*; KEYSERLING, Spinnen Amerikas, pp. vi–viii.

- Acrosoma furvum*, Taquara, p. 7, pl. i, fig. 4, *bifissum*, *rubrospinusum*, Blumenau, p. 30, pl. i, figg. 27 & 28, KEYSERLING, Spinnen Amerikas; *A. trapa*, Costa Rica, GÉTAZ, Ann. Inst. Costa Rica, iv : n. spp.
- Ærea magnifica*, Tasmania, p. 119, URQUHART, P. Soc. Tasmania, 1893, n. sp.
- Anepsia crinita*, New South Wales, p. 23, pl. iii, fig. 5, RAINBOW, P. Linn. Soc. N.S. Wales, viii, n. sp.
- Arachnura trilobata*, Urq., Tasmania, p. 119; URQUHART, P. Soc. Tasmania, 1893.
- Argiope personata*, Acapulco, p. 110, pl. xiv, fig. 14, CAMBRIDGE, Biol. Centr.-Amer., n. sp.
- Argyropeira polita*, Guatemala, p. 351, pl. xviii, fig. 259, *ludibunda*, Serra Vermella, p. 252, pl. xviii, fig. 260, *ravipila*, Rio Janeiro, p. 354, pl. xviii, fig. 261, *flabilis*, Rio Janeiro, p. 355, pl. xviii, fig. 262, *voluptabilis*, Rio Janeiro, p. 356, pl. xviii, fig. 263, *volupis*, Taquara, Rio Grande do Sul, p. 356, pl. xviii, fig. 263, *turbida*, Rio Janeiro, p. 357, pl. xix, fig. 265, *severa*, Rio Janeiro, p. 358, pl. xix, fig. 266, *uberta*, Rio Janeiro, p. 361, pl. xix, fig. 268, KEYSERLING, Spinnen Amerikas, n. spp.
- A. taczanowskii*, n. n. for *argentea*, Tacz., preoccupied, p. 341; MARX, in Keyserling's Spinnen Amerikas.
- Azilia formosa*, Chorillos (Peru), p. 268, pl. xiv, fig. 199, KEYSERLING, Spinnen Amerikas; *A. affinis*, Teapa, p. 115, CAMBRIDGE, Biol. Centr.-Amer., n. spp.
- Carepalxis normalis*, Taquara, p. 53, pl. ii, fig. 42, KEYSERLING, Spinnen Amerikas, n. sp.
- Cercidia funebris*, Florida, p. 37, pl. ii, fig. 32, KEYSERLING, Spinnen Amerikas, n. sp.
- Cyclosa culta*, Omilteme, p. 112, pl. xiv, fig. 12, CAMBRIDGE, Biol. Centr.-Amer.; *C. paupercula*, Sarawak, p. 323, SIMON, Rev. Suisse Zool. 1893 : n. spp.
- Cyrtarachne dugesi*, Guanajuato, p. 113, pl. xiv, fig. 13, CAMBRIDGE, Biol. Centr.-Amer.; *C. quinque-spinosa*, Espirito Santo, p. 55, pl. iii, fig. 44, KEYSERLING, Spinnen Amerikas : n. spp.
- Cyrtophora tuberculata*, Florida, p. 265, pl. xiv, fig. 197, KEYSERLING, Spinnen Amerikas, n. sp.
- ¹*Dyschiriognatha*, n. g., near *Pachygnatha*, *bedoti*, n. sp., Sarawak, p. 324; SIMON, Rev. Suisse Zool. xviii.
- Epeira trispinosa*, Uruguay, New Grenada, &c., p. 78, pl. 4, fig. 59, *rubellula*, Rio Grande do Sul, p. 81, pl. iv, fig. 61, *rostratula*, Taquara, p. 82, pl. iv, fig. 62, *citrina*, Taquara, Rio Janeiro, p. 88, pl. iv, fig. 66, *monticola*, Serra Vermella, p. 94, pl. iv, fig. 70, *minas*, Rio Minas, p. 95, pl. v, fig. 71, *walckenaerii*, Bogota, Taquara, &c., p. 98, pl. v, fig. 85, *rivalis*, Guatemala, p. 103, pl. v, fig. 76, *ulecebrosa*, Taquara, p. 104, pl. v, fig. 77, *mæsta*, Arizona, p. 108, pl. 5, fig. 80, *rimosa*, Bogota, p. 110, pl. vi, fig. 82, *incestifica*, Alaska, p. 132, pl. vii, fig. 98, *minuscula*, Rio Grande do Sul, p. 140, pl. vii, fig. 103, *taquara*,

- Taquara, p. 143, pl. vii, fig. 105, *voluptifica*, Rio Grande do Sul, p. 152, pl. viii, fig. 112, *glomerabilis*, Taquara, Rio Janeiro, p. 154, pl. viii, fig. 113, *genialis*, Rio Grande do Sul, p. 156, pl. viii, fig. 114, *viriosa*, Taquara, p. 165, pl. viii, fig. 122, *gressa*, Taquara, p. 166, pl. viii, fig. 123, *mundula*, Rio Grande do Sul, p. 179, pl. ix, fig. 132, *astimabilis*, Guatemala, p. 181, pl. ix, fig. 133, *mormon*, Utah, Columbia, p. 182, pl. ix, fig. 134, *delicata*, Serra Vermella, p. 183, pl. ix, fig. 135, *corporosa*, Taquara, p. 189, pl. ix, fig. 140, *carbonarioides*, Colorado, p. 206, pl. x, fig. 152, *aculifera*, Guatemala, p. 207, pl. x, fig. 153, *vincibilis*, Rio Grande do Sul, p. 209, pl. x, fig. 154, *omnicolor*, Rio Minas, p. 210, pl. x, fig. 155, *vigilax*, Taquara, p. 211, pl. x, fig. 156, *seditiosa*, Rio Grande, pl. x, fig. 157, *stabilis*, Rio Minas, p. 213, pl. x, fig. 158, *tranquilla*, Washington, p. 224, pl. xi, fig. 166, *sanguinosa*, Taquara, p. 225, pl. xi, fig. 167, *rostrata*, Guatemala, p. 230, pl. xi, fig. 171, *deliciosa*, Serra Vermella, p. 234, pl. xi, fig. 174, *linteraria*, Rio Grande, p. 236, pl. xi, fig. 176, *unquiformis*, Rio Grande, p. 237, pl. xi, fig. 177, *mobilis*, Guatemala, p. 240, pl. xii, fig. 179, *reptilis*, Florida, p. 244, pl. xii, fig. 182, *saga*, Uruguay, p. 253, pl. xiii, fig. 188, *sagana*, Rio Janeiro, p. 254, pl. xiii, fig. 189, *cambridgii*, Guatemala, p. 255, pl. xiii, fig. 190, *strenua*, Taquara, p. 257, pl. xiii, fig. 192, KEYSERLING, Spinnen Amerikas; *E. nigropustulata*, Teapa, p. 111, *nigrohumeralis*, Mexico, p. 112, CAMBRIDGE, Biol. Centr.-Amer.; *E. eclipsis*, Congo, p. 590, pl. lxx, fig. 6, MARX, P. U. S. Mus. xvi; *E. diversicolor*, pl. iii, fig. 1, *pulchra*, pl. iii, figg. 2 & 3, p. 18, Sydney, *rubripunctata*, Manly, p. 19, pl. iii, fig. 4, *sinuosa*, Sydney, p. 20, pl. iii, fig. 6, *hamiltoni*, Mudgee, p. 21, pl. iii, fig. 7, RAINBOW, P. Linn. Soc. N. S. Wales, viii; *E. phalerata*, p. 114, *obscurata*, p. 116, *sub-flavida*, p. 117, Tasmania, URQUHART, P. Soc. Tasmania, 1893; *E. angusticlava*, Waikato, p. 173, *estica*, p. 175, *viridana*, p. 175, *munda*, p. 177, n. var. *inversa*, p. 177, Taupiri, *albo-lineata*, Ohaupo, *blattea*, Ohaupo, p. 179, URQUHART, Tr. N. Zealand Inst. xxv : n. spp.
- E. deludens*, n. n. for *tetragnathoides*, Camb., preoccupied, Guatemala and Florida, p. 261, pl. xiii, fig. 195, MARX in KEYSERLING, Spinnen Amerikas.
- Gasteracantha elliptica*, Costa Rica, p. 104, GETÁZ, Ann. Inst. Costa Rica, iv, n. sp.
- Gelanor alti thorax*, Blumenau, Taquara, p. 370, pl. xix, fig. 276, KEYSERLING, Spinnen Amerikas, n. sp.
- ¹ *Ildibaha*, n. g., *albomaculata*, n. sp., Blumenau, p. 31, pl. ii, fig. 29; KEYSERLING, Spinnen Amerikas.
- Kaira dromedaria*, Teapa, p. 115, CAMBRIDGE, Biol. Centr.-Amer.; *K. obtusa*, Taquara, p. 66, pl. iii, fig. 51, KEYSERLING, Spinnen Amerikas : n. spp.
- Larinia forata*, Texas, p. 295, pl. xv, fig. 218, KEYSERLING, Spinnen Amerikas, n. sp.

- ^s *Mahadeva*, n. g., *undulata*, Rio Grande do Sul, p. 67, pl. iii, fig. 52, *zebra*, Espirito Santo, p. 68, pl. iii, fig. 53, *meridionalis*, Rio Grande do Sul, Rio Janeiro, p. 74, pl. iii, fig. 57, n. spp. ; KEYSERLING, Spinnen Amerikas.
- Mela quadripenicillata*, Sumatra, p. 136, HASSELT, Tijdschr. Ent. xxxvi, n. sp.
- ^c *Paphlagon*, n. g., *beatus*, n. sp., p. 117, pl. xiv, fig. 10 ; CAMBRIDGE, Biol. Centr.-Amer.
- Salassia tricuspis*, Costa Rica, p. 105, GETÁZ, Ann. Inst. Costa Rica, iv, n. sp.
- Singa duodecim-guttata*, New Grenada, p. 286, pl. xiv, fig. 211, *abbreviata*, New Grenada, p. 287, pl. xv, fig. 212, KEYSERLING, Spinnen Amerikas, n. sp.
- Taczanowskia 6-tuberculata*, Taquara, p. 60, pl. iii, fig. 47, KEYSERLING, Spinnen Amerikas, n. sp.
- Tetragnatha tenella*, Taranaki, p. 172, URQUHART, Tr. N. Zealand Inst. xxv ; *T. quadrinotata*, Tasmania, p. 113, URQUHART, P. Soc. Tasmania, 1893 : n. spp.
- Theridiosoma picteti*, Malaysia (no definite locality), p. 323, SIMON, Rev. Suisse Zool. xviii, n. sp.
- ?*Turckheimia armata*, Guerrero, p. 114, pl. xiv, fig. 11, CAMBRIDGE, Biol. Centr.-Amer., n. sp.
- Zilla punctata*, Neu-Freiburg, p. 305, pl. xv, fig. 255, *decolorata*, Guatemala, p. 306, pl. xv, fig. 226, KEYSERLING, Spinnen Amerikas, n. spp.

HERSILIIDÆ and LEPTONETIDÆ.

- Hersilia mexicana*, Amula, p. 107, pl. xiv, figg. 6 & 7, CAMBRIDGE, Biol. Centr.-Amer., n. sp.
- Hersiliola australis*, S. Africa, p. 447, SIMON, Hist. Nat. Araignées, i, n. sp.
- Ochyrocera ianthinipes*, San Esteban, p. 439, *vesiculifera*, Tovar (Venezuela), p. 440, SIMON, Ann. Soc. ent. France, lxii, n. spp.

LYCOSIDÆ, OXYOPIDÆ, and CTENIDÆ.

- Ctenus argentipes*, Sumatra, p. 148, HASSELT, Tijdschr. Ent. xxxvi ; *C.* (or *Phoneutria*) *pallii*, Sumatra, p. 146, HASSELT, *t. c.* : n. spp.
- Dendrolycosa tenella*, Seychelles, p. 208, SIMON, Bull. Soc. zool. France, xviii, n. sp.
- Lycosa brevipes*, Congo, p. 587, fig. 12, BANKS, P. U. S. Mus. xvi ; *L. albi-pilata*, Tasmania, p. 123, URQUHART, P. Soc. Tasmania, 1893 : n. spp.
- Pardosa valida*, Congo, Sierra Leone, p. 587, fig. 13, BANKS, P. U. S. Mus. xvi, n. sp.
- Oxyopes cinerea*, New Hampshire, p. 133, *rufipes*, Washington, p. 133, BANKS, J. N. York ent. Soc. i ; *O. alluaudi*, Seychelles, p. 209, SIMON, Bull. Soc. zool. France, xviii : n. spp.

MIMETIDÆ.

- † *Archemorus*, n. g., near *Oarcis*, *simsoni*, n. sp., Tasmania, p. 328 ; SIMON, Ann. Soc. ent. France, lxii.
- † *Arcidius*, n. g., near *Gnolus*, *unipunctatus*, p. 327, pl. vii, fig. 6, *lemniscatus*, p. 328, Minas, n. spp. ; SIMON, Ann. Soc. ent. France, lxii.
- † *Arocha*, n. g., *erythrophthalma*, n. sp., Brazil and Peru, p. 325 ; SIMON, Ann. Soc. ent. France, lxii.
- Bertrana rufostriata*, Peru, p. 325, *flavosellata*, Para, p. 326, n. spp. ; SIMON, Ann. Soc. ent. France, lxii.
- † *Spintharidius*, n. g., near *Bertrana*, *rhomboidalis*, Paraguay, p. 326, *cerinus*, Minas, p. 327, n. spp. ; SIMON, Ann. Soc. ent. France, lxii.

OONOPIDÆ.

- † *Aprusia*, n. g., *strenuus*, n. sp., Ceylon ; SIMON, Hist. Nat. Araignées, i.
- Cinetomorpha puberula*, Caraccas, p. 442, *tovarensis*, *silvestris*, Tovar (Venezuela), p. 443, SIMON, Ann. Soc. ent. France, lxii, n. spp.
- Dysderina armata*, Caraccas, p. 441, pl. ix, fig. 9, SIMON, Ann. Soc. ent. France, lxii, n. sp.
- Gamasomorpha arabica*, Suez, p. 302, *camelina*, Singapore, *taprobanica*, Kandy, p. 303, *nigropalpis*, Kandy, p. 304, SIMON, Ann. Soc. ent. France, lxii, n. spp.
- † *Hytanis*, n. g., near *Gamasomorpha oblonga*, n. sp., Porto Cabella, p. 440 ; SIMON, Ann. Soc. ent. France, lxii.
- Ischnothyreus bipartitus*, Galle, *lymphaseus*, *vestigator*, Kandy, SIMON, Ann. Soc. ent. France, lxii, n. spp.
- Opopæa ambigua*, Galle, p. 302, SIMON, Ann. Soc. ent. France, lxii, n. sp.
- Oonops toxoscelinus*, Tovar, p. 445, SIMON, Ann. Soc. ent. France, lxii, n. sp.
- † *Oonopinus*, n. g., *aurantiacus*, n. sp., Caraccas, p. 446 ; SIMON, Ann. Soc. ent. France, lxii.
- Orchestina tubifera*, Kandy, p. 301, *saltabunda*, Caraccas, p. 447, SIMON, n. spp., Ann. Soc. ent. France, lxii.
- Scaphiella scutiventris*, p. 443, *itys*, p. 444, Caraccas, SIMON, Ann. Soc. ent. France, lxii, n. spp.
- Stenoonops egenulus*, Caraccas, p. 447, SIMON, Ann. Soc. ent. France, lxii, n. sp.
- † *Telchius*, n. g., p. 445, *micans*, Tovar, *barbarus*, Algeria, p. 446, n. spp. ; SIMON, Ann. Soc. ent. France, lxii.
- Xestaspis tumidula*, p. 304, *parumpunctata*, p. 305, Sierra Leone, *sublevis*, Colombo, p. 305, SIMON, Ann. Soc. ent. France, lxii, n. spp.

ŒCOBIDÆ and PRODIDOMIDÆ.

- Œcobius concinnus*, Porto Cabello, p. 435, pl. ix, fig. 2, SIMON, Ann. Soc. ent. France, lxii, n. sp.

- † *Elelis*, n. g., *crinita*, n. sp., Cape of Good Hope, p. 337 ; SIMON, Hist. Nat. Araignées, i.
Prodidomus penicillatus, Algeria, p. 308, *nigricauda*, Corosal, p. 450, *opacithorax*, San Esteban, p. 451, SIMON, Ann. Soc. ent. France, lxii, n. spp.

PALPIMANIDÆ.

- SIMON, Hist. Nat. Araignées, i, p. 393, divides this family into *Palpimaninæ*, *Stenochilinæ*, and *Huttoninæ*.
 † *Anisedus*, n. g., p. 405, for *A. gaujoni*, Sim., SIMON, Hist. Nat. Araignées, i. ; *gaujoni*, n. sp., Ecuador, p. 314, SIMON, Ann. Soc. ent. France, lxii.
 † *Boagrius*, n. g., for *pumilus*, Sim, p. 405, SIMON, Hist. Nat. Araignées, i ; *pumilus*, Singapore, p. 314, n. sp., SIMON, Ann. Soc. ent. France, lxii.
 † *Colopea*, n. g., for *Stenochilus pusillus*, p. 397 ; SIMON, Hist. Nat. Araignées, i.
 † *Diaphorocellus*, n. g., for *D. biplagiatus*, Simon, p. 405, SIMON, Hist. Nat. Araignées, i ; *biplagiatus*, Cape of Good Hope, p. 314, n. sp., SIMON, Ann. Soc. ent. France, lxii.
 † *Metronax*, n. g., for *Stenochilus crocatus*, Sim., p. 396 ; SIMON, Hist. Nat. Araignées, i.
Otiotrops lapidicola, Caraccas, *brevis*, San Esteban, p. 459, SIMON, Ann. Soc. ent. France, lxii, n. spp.
Palpimanus transvaalicus, Transvaal, *capensis*, Port Elizabeth, p. 312, *globulifer*, Port Elizabeth, p. 313, SIMON, Ann. Soc. ent. France, lxii, n. spp.
Perissoblemma approximatum, Panama, p. 105, pl. xiv, fig. 4, CAMBRIDGE, Biol. Centr.-Amer., n. sp.
Sarascelis raffrayi, Singapore, p. 313, SIMON, Ann. Soc. ent. France, lxii, n. sp.

PHOLCIDÆ.

- This family is divided by SIMON into the *Pholcinæ* and *Ninetidinæ*, Hist. Nat. Araignées, i, pp. 461 & 486.
 † *Blechoscelis*, n. g., for *Pholcus annulipes*, Keys., p. 483 ; SIMON, Hist. Nat. Araignées, i.
 † *Coryscoenemis*, n. g., p. 483, SIMON, Hist. Nat. Araignées, i ; for *callaica*, Venezuela, *uncata*, Peru, p. 321, n. sp., SIMON, Ann. Soc. ent. France, lxii.
 † *Crossopriza*, n. g., for *Artema pristina*, Sim., p. 476 ; SIMON, Hist. Nat. Araignées, i.
 † *Hedypsilus*, n. g., p. 486, SIMON, Hist. Nat. Araignées, i ; for *culicinus*, Orinoco, p. 322, n. sp., SIMON, Ann. Soc. ent. France, lxii.
 † *Leptopholcus*, n. g., Ceylon, p. 474, SIMON, Hist. Nat. Araignées, i ; for *signifer*, Congo, p. 319, n. sp., SIMON, Ann. Soc. ent. France, lxii.

- ^ *Litoporus*, n. g., p. 483, SIMON, Hist. Nat. Araignées, i; for *aerius*, Venezuela, p. 321, n. sp., SIMON, Ann. Soc. ent. France, lxii.
- ^ *Mecolæstus*, n. g., near *Priscula*, p. 482, SIMON, Hist. Nat. Araignées, i; for *longissimus*, Venezuela, p. 320, n. sp., SIMON, Ann. Soc. ent. France, lxii.
- ^ *Metagonia*, n. g., SIMON, Hist. Nat. Araignées, i, p. 472; for *bifida*, n. sp., p. 318, SIMON, Ann. Soc. ent. France, lxii.
- ^ *Modosimus*, n. g., p. 485, SIMON, Hist. Nat. Araignées, i; for *glaucus*, St. Domingo, p. 322, n. sp., SIMON, Ann. Soc. ent. France, lxii.
- ^ *Physocyclus*, n. g., for *Pholcus gibbosus*, Tacx., p. 470, SIMON, Hist. Nat. Araignées, i; *dugesi*, Mexico, p. 320, n. sp., SIMON, Ann. Soc. ent. France, lxii.
- ^ *Priscula*, n. g., near *Artema*, p. 478, SIMON, Hist. Nat. Araignées, i; for *gularis*, Quito, p. 319, n. sp., SIMON, Ann. Soc. ent. France, lxii.
- ^ *Psilochorus*, n. g., for *Theridion pullulum*, Hentz, p. 482; SIMON, Hist. Nat. Araignées, i.
Spermophora longiventris, Sumatra, p. 321, SIMON, Rev. Suisse Zool. 1893, n. sp.
- ^ *Systemita*, n. g., p. 483, SIMON, Hist. Nat. Araignées, i; for *prasina*, Venezuela, p. 318, n. sp., Ann. Soc. ent. France, lxii.
- ^ *Ulthina*, n. g., near *Smeringopus*, *luzonica*, n. sp., Manilla, p. 476; SIMON, Hist. Nat. Araignées, i.

SICARIIDÆ.

SIMON, Hist. Nat. Araignées, ii, p. 264, divides this family into the *Plectreurinae*, *Periegopine*, *Scytodine*, *Sicariine*, *Loxoscelina*, *Drymusinae*.

Drymusa capensis, Cape of Good Hope, SIMON, Hist. Nat. Araignées, i, p. 278, n. sp.

Loxosceles speluncarum, Transvaal, p. 273, SIMON, Hist. Nat. Araignées, i, n. sp.

^ *Periegops*, n. g., p. 267, *hirsutus*, n. sp., New Zealand, p. 268; SIMON, Hist. Nat. Araignées, i.

^ *Plectreurys*, n. g., p. 300, *tristis*, Arizona, p. 300, *castanea*, California, p. 301, n. spp.; SIMON, Ann. Soc. ent. France, lxii.

Scytodes luteola, p. 437, *guttipes*, p. 438, Caraccas, SIMON, Ann. Soc. ent. France, lxii, n. spp.

THERIDIIDÆ.

[Including *Linyphiidæ*.]

^ *Ceratinella*, n. g., for European species of *Ceratina*, p. 130; BANKS, J. N. York ent. Soc. i.

^ *Idionella*, n. g., for *Ceratinella formosa*; BANKS, p. 130, J. N. York ent. Soc. i.

- Linyphia melanozantha*, p. 103, *quindecim-punctata*, p. 105, *sub-lutea*, p. 107, *nilens*, p. 108, *pilulina*, p. 109, Tasmania, URQUHART, P. Soc. Tasmania, 1893, n. spp.
- Linyphia (Lepthypantes) culta*, Ireland, p. 152, fig. 8, O. P. CAMBRIDGE, P. Dorset Club, xiv, n. sp.
- Neriere (Scintula) pygmaea*, Morden Park, Dorset, p. 155, fig. 3, *indecora*, Bloxworth, p. 156, fig. 7, O. P. CAMBRIDGE, P. Dorset Club. xiv, n. spp.
- Paculla bicornis*, Philippines, *scrobiculata*, Ceylon, p. 324, SIMON, Ann. Soc. ent. France, lxii, n. spp.
- Steatoda nubilosa*, Maketu, p. 168, URQUHART, Tr. N. Zealand Inst. xxv, n. sp.
- Stegosoma lacunosa*, Hunua, p. 169, *excussa*, Ohaupo, p. 171, URQUHART, Tr. N. Zealand Inst. xxv, n. spp.
- Topinopa bilineata*, Washington, p. 128, BANKS, J. N. York ent. Soc. i, n. sp.
- Tecmessa quinquemucronata*, Rio, p. 324, SIMON, Ann. Soc. ent. France, lxii, n. sp.
- Theridium honorum*, Cambridge, p. 151, fig. 4; O. P. CAMBRIDGE, P. Dorset Club, xiv, n. sp.
- Trithena flavolimbata*, Ecuador, p. 322, *biocellata*, Minas, *cribrata*, Paraguay, p. 323, SIMON, Ann. Soc. ent. France, lxii, n. spp.

THOMISIDÆ.

- Coriarachne brunneipes*, Washington, p. 133, BANKS, J. N. York ent. Soc. i, n. sp.
- Episinus similitudus*, Pirongia, p. 181, *simulanus*, Waikato, p. 182, URQUHART, Tr. N. Zealand Inst. xxv; *E. cognatus*, Teapa, p. 109, CAMBRIDGE, Biol. Centr.-Amer. : n. spp.
- Euryopsis lineatipes*, Guatemala, p. 108, CAMBRIDGE, Biol. Centr.-Amer., n. sp.
- Misumena ornata*, Amula, p. 119, CAMBRIDGE, Biol. Centr.-Amer., n. sp.
- Machomenus*, n. g., p. 589, *albidus*, n. sp., Congo, p. 589, pl. lxx, fig. 4; MARX, P. U. S. Mus. xvi.
- Oxyptila cinerea*, New England, p. 366, pl. xxix, fig. 6, EMERTON, Tr. Connect. Ac. viii, Pt. 2, n. sp.
- Philodromus maculatipes*, Guerrero, p. 118, CAMBRIDGE, Biol. Centr.-Amer.; *P. pictus*, syn. *rufus*, Banks, not Walck., p. 373, pl. xxxi, fig. 2; *lineatus*, p. 374, pl. xxxi, fig. 4, *bidentatus*, p. 378, pl. xxxi, fig. 5, *brevis*, pl. xxxi, fig. 2, *robustus*, pl. xxxii, fig. 1, p. 376, EMERTON, Tr. Connect. Ac. viii, Pt. 2; *P. luteo-virescens*, Tasmania, p. 122, URQUHART, P. Soc. Tasmania, 1893 : n. spp.
- Phrynarachne kannegieterii*, Sumatra, p. 154, HASSELT, Tijdschr. Ent. xxxvi, n. sp.,
- Selenops brownii*, Congo, p. 589, pl. lxx, fig. 5, MARX, P. U. S. Mus. xvi, n. sp.

- Stephanopis aspera*, Bungendore (Australia), p. 471, pl. xii, figg. 1-5, RAINBOW, P. Linn. Soc. N.S. Wales, vii, No. 4, n. sp.
Synema culta, Mexico, p. 119, *interrupta*, Teapa, p. 120, CAMBRIDGE, Biol. Centr.-Amer., n. spp.
Thanatus lycosooides, New England, p. 379, pl. xxxii, fig. 6, EMERTON, Tr. Connect. Ac. viii, Pt. 2, n. sp.
Xysticus albo-brunneus, Ohaupo, p. 184, URQUHART, Tr. N. Zealand Inst. xxv; *X. graminis*, p. 364, pl. xxix, fig. 2, *inornatus*, p. 366, pl. xxix, fig. 5, New England, EMERTON, Tr. Connect. Ac. viii, Pt. 2 : n. spp.

ULOBORIDÆ.

- Miagrammopes mexicanus*, Amula, p. 116, CAMBRIDGE, Biol. Centr.-Amer.; *M. corticeus*, p. 427, *bambusicola*, p. 428, *albo-cinctus*, p. 429, Venenzuela, SIMON, Ann. Soc. ent. France, lxii : n. spp.
Uloborus semiargenteus, Le Para, p. 299, *manicatus*, S. Paulo de Olivenças, p. 299, *ægrotus*, *campestratus*, p. 425, *semitulosus*, p. 426, *servulus*, p. 427, Caraccas, SIMON, Ann. Soc. ent. France, lxii, n. spp.

ZODARIIDÆ.

- SIMON, Hist. Nat. Araignées, i, p. 411, divides this family into the *Stenomorphinæ*, *Cydrelinæ*, *Cryptothelinæ*, *Zodariinæ*, and *Homalonychinæ*.
¹*Capheris*, n. g., for *Cydrela crassimana*, Sim., p. 419; SIMON, Hist. Nat. Araignées, i.
¹*Cæsetius*, n. g., p. 419, SIMON, Hist. Nat. Araignées, i; for *murinus*, Cape Town, *politus*, Transvaal, p. 316, SIMON, Ann. Soc. ent. France, lxii: n. spp.
¹*Chariobas*, n. g., p. 416, SIMON, Hist. Nat. Araignées, i; for *cylindræceus*, Gaboon, p. 315, n. sp., SIMON, Ann. Soc. ent. France, lxii.
Cydrela brunnea, Congo, p. 558, pl. lxx, fig. 2, *maculata*, Kilima-Njaro, p. 588, MARX, P. U. S. Mus. xvi, n. spp.
¹*Diores*, n. g., *bivittatus*, n. sp., S. Africa, p. 436; SIMON, Hist. Nat. Araignées, i.
Habronestes flavipedes, Tasmania, p. 111, URQUHART, P. Soc. Tasmania, 1893, n. sp.
¹*Heradida*, n. g., *loricata*, n. sp., S. Africa, p. 438, SIMON, Hist. Nat. Araignées, i.
¹*Hermippus*, n. g., p. 425, SIMON, Hist. Nat. Araignées, i; for *loricatus*, near Lake Tanganyika, p. 316, n. sp., SIMON, Ann. Soc. ent. France, lxii.
¹*Leprolochus*, n. g., near *Storena*, p. 460, *spinifrons*, La Guaira, p. 461, n. sp.; SIMON, Ann. Soc. ent. France, lxii.
²*Mallinus*, n. g., *nitidiventris*, n. sp., S. Africa, p. 436; SIMON, Hist. Nat. Araignées, i.
¹*Patiscus*, n. g., p. 415, SIMON, Hist. Nat. Araignées, i; for *peringueyi* n. sp., SIMON, Ann. Soc. ent. France, lxii.

Suffucia septemmaculata, Saigon, p. 317, SIMON, Ann. Soc. ent. France, lxii, n. sp.

Storena analis, Ecuador, p. 317, SIMON, Ann. Soc. ent. France, lxii, n. sp.

(D) SOLIFUGÆ.

Galeodes araneoides (Pall.) discussed, pp. 82-87; *pallidus*, Bir., described, p. 87, figured, pl. iii B, fig. f; BIRULA, Horæ Soc. ent. Ross. xxvii.

Gylippus syriacus, described, p. 89, pl. iii B, fig. f2; BIRULA, Horæ Soc. ent. Ross. xxvii.

Rhax melanopyga, Walter, discussed, p. 88; BIRULA, Horæ Soc. ent. Ross. xxvii.

Rhax nigrocincla, Vellore, p. 361, pl. xxvi, fig. 2, *howesii*, Geogh Teppe (Transcaspia), p. 362, fig. 1, BERNARD, J. Linn. Soc. xxiv, n. spp.

(E) PSEUDOSCORPIONES.

Chelanops pallipes, California, *latus*, Florida, p. 64, *grossus*, Colorado, p. 65, BANKS, Canad. Ent. xxv, n. spp.

Chthonius spinosus, Florida, p. 67, BANKS, Canad. Ent. xxv, n. sp.

Ideoroncus obscurus, Washington, p. 66, BANKS, Canad. Ent. xxv, n. sp.

Olpium obscurum, Florida, p. 65, BANKS, Canad. Ent. xxv, n. sp.

Roncus pacificus, Washington, p. 66, BANKS, Canad. Ent. xxv, n. sp.

(F) OPILIONES.

Beloniscus ochraceus, Sumatra, p. 19, *pustulosus*, Sumatra, p. 20, LOMAN, in Max Weber's Zool. Ergebnisse, &c. iii, Pt. i, n. spp.

↓ *Caletor*, n. g. of *Epedanidæ*, *unguidens*, n. sp., Java, p. 15, pl. i, figg. 7-9; LOMAN, in Max Weber's Zool. Ergebnisse, iii, Pt. 1, n. sp.

↓ *Dino*, n. g. of *Epedanidæ*, p. 17, *weberi*, n. sp., Sumatra, p. 17, pl. i, figg. 10 & 11; LOMAN, in Max Weber's Zool. Ergebnisse, iii, Pt. 1.

↓ *Eurybunus*, n. g. of *Phalangiidæ*, *brunneus*, n. sp., S. California, p. 209; BANKS, Canad. Ent. xxv.

Gagrella atra, Flores, p. 7, pl. i, fig. 3, *sepia*, Java, p. 8, *celerrimo*, Java, p. 9, *albicoxa*, Java, p. 10, n. var. *nivea*, p. 11, LOMAN, in Max Weber's Zool. Ergebnisse, iii, Pt. 1, n. spp.

↓ *Globipes*, n. g. of *Phalangidæ*, *spinulatus*, n. sp., S. California, p. 208; BANKS, Canad. Ent. xxv.

↓ *Homolophus*, n. g. of *Phalangiidæ*, *arcticus*, n. sp., Siberia, p. 208; BANKS, Canad. Ent. xxv.

Lacinius texanus, Texas, p. 402, BANKS, Psyche, vi, n. sp.

↓ *Leptobunus*, n. g. of *Phalangiidæ*, *californicus*, n. sp., California, p. 209; BANKS, Canad. Ent. xxv.

Liobunum townsendi, Las Cruces, p. 295, WEED, Amer. Natural. xxvii; *L. himaculatum*, California, p. 210, BANKS, Canad. Ent. xxv: n. spp.

- L. politum*, n. subsp., *magnum*, Mississippi, p. 428, pl. 15; WEED, *Psyche*, vi; *L. ventricosum*, its variations discussed, pp. 534-541, pls. xiii & xiv; WEED, *Amer. Natural.* xxvii.
- Marthana cuspidata*, Java, p. 12, pl. i, fig. 4, LOMAN, in Max Weber's *Zool. Ergebnisse*, iii, Pt. i, n. sp.
- Nothippus affinis*, Sumatra, p. 22, LOMAN, in Max Weber's *Zool. Ergebnisse*, iii, Pt. 1, n. sp.
- Oligolophus montanus*, New Hampshire, p. 252, BANKS, *Canad. Ent.* xxv, n. sp.
- Pelitnus segnipes*, Sumatra, p. 25, pl. i, figg. 13-15, LOMAN, in Max Weber's *Zool. Ergebnisse*, iii, Pt. 1, n. sp.
- Platybunus mirus*, Sumatra, p. 5, pl. i, figg. 1 & 2, LOMAN, in Max Weber's *Zool. Ergebnisse*, iii, Pt. i, n. sp.
- Protolophus*, n. g. of *Phalangiidæ*, *tuberculatus*, *singularis*, S. California, pp. 206 & 207, BANKS, *Canad. Ent.* xxv, n. spp.
- Pygoplus intermedius*, Flores, pl. i, fig. 12, LOMAN, in Max Weber's *Zool. Ergebnisse*, iii, Pt. 1, n. sp.
- Sabacon spinosus*, New Hampshire, p. 574, WEED, *Amer. Natural.* xxvii, n. sp.
- Sclerobunus brunneus*, Washington, p. 152, BANKS, *Tr. Amer. ent. Soc.* xx, n. sp.
- Sinis*, n. g. of *Epedanidæ*, p. 12, *vagus*, n. sp., Java, p. 13, pl. i, figg. 5 & 6; LOMAN, in Max Weber's *Zool. Ergebnisse*, iii, Pt. 1, n. sp.
- Sitalces californica*, S. California, p. 151, BANKS, *Tr. Amer. ent. Soc.* xx, n. sp.

ACARI.

BDELLIDÆ, EUPODIDÆ, GAMMARIDÆ, and HOPLOPODIDÆ.

- Bdella maculata*, p. 105, *longipalpis*, p. 106, pl. xv, fig. 5, Hungary, KARPELLES, *Math. naturw. Ber. Ungarn*, xi, n. spp.
- Hoplopus sculptus*, Hungary, p. 119, pl. xvii, fig. 3, KARPELLES, *Math. naturw. Ber. Ungarn*, xi, n. sp.
- Scyphiodes maxillatus*, Hungary, p. 116, pl. xx, fig. 1, KARPELLES, *Math. naturw. Ber. Ungarn*, xi, n. sp.
- Tydeus sulcatus*, Hungary, p. 117, pl. xv, fig. 6, KARPELLES, *Math. naturw. Ber. Ungarn*, xi, n. sp.
- Gamasus krameri*, pl. xiii, fig. 7, *multispinosus*, pl. xvi, fig. 1, p. 96, Hungary, KARPELLES, *Math. naturw. Ber. Ungarn*, xi, n. spp.
- Trachynotus simplex*, Hungary, p. 100, pl. xv, fig. 3, KARPELLES, *Math. naturw. Ber. Ungarn*, xi, n. sp.

HALACARIDÆ.

- Acaromantis*, n. g., p. 207, *squilla*, n. sp., Loire Inférieure, p. 208, *Naturaliste*; TROUESSART & NEUMANN.

- Agaua ornata*, Cape Verdes, p. 86, pl. xi, figg. 3 & 4, LOHMANN, Halacarinen der Plankton Expedition, n. sp.
- Halacarus borealis*, p. 257, fig. 28, *poucheti*, p. 259, fig. 29, *reticulatus*, p. 262, fig. 30, Arctic Ocean, TROUËSSART, Arch. miss. Sci. v ; *H. nationalis*, Bermudas, &c., p. 70, pls. i & ii, *hispidus*, Sidney, p. 71, pl. iii, figg. 7-11, *panopæ*, Sidney, p. 72, pl. iii, figg. 1-8, pl. iv, figg. 8 & 9, *hypertrophicus*, Zanzibar, p. 74, pl. iii, figg. 2-4, pl. iv, figg. 1 & 2, *thaleia*, Zanzibar, p. 75, pl. iii, figg. 5 & 6, *pulcher*, Sidney, Bermuda, p. 77, pl. v, fig. 7, *speciosus*, Guinea, p. 78, pl. vii, fig. 5, *lamellosus*, Sidney, p. 79, pls. vi & vii, figg. 1-4, *oblongus*, p. 83, pl. ix, figg. 1-3, pl. x, figg. 3-7, LOHMANN, Halacarinen der Plankton Expedition : n. spp.

HYDRACHNIDÆ.

- Arrhenurus stuhlmanni*, Zanzibar, p. 5, pl. i, figg. 1 & 2, *gibbus*, Muemba, p. 8, pl. i, figg. 3-6, *concauus*, Bagamoyo, p. 11, pl. i, figg. 7-10, *plenipalpis*, Quilimane, p. 16, pl. i, figg. 13 & 14, *pectinatus*, Zanzibar, p. 20, pl. i, fig. 15, KOENIKE, in Stuhlmann's Zool. Ergebnisse ; *A. oblongus*, p. 311, figg. 2 & 3, PIERSIG, Zool. Anz. xvi : n. spp.
- A. chavesi*, Barr., = *A. emarginatus*, Müll. ; BARROIS, Rev. Biol. v, p. 206.
- Atax triangularis*, p. 395, PIERSIG, Zool. Anz. xvi ; *A. spinipes*, Zanzibar, p. 23, pl. ii, figg. 16-18, *simulans*, Quilimane, p. 25, pl. ii, figg. 19 & 20, KOENIKE, in Stuhlmann's Zool. Ergebnisse, &c. : n. spp.
- Axonopsis*, n. g., *bicolor*, n. sp., p. 310, fig. 1 ; PIERSIG, Zool. Anz. xvi.
- Bargena*, n. g., *mirifica*, n. sp., Zanzibar, p. 47, pl. iii, figg. 35-41 ; KOENIKE, in Stuhlmann's Zool. Ergebnisse, &c.
- Curvipes forcipatus*, Bagamoyo, p. 29, pl. ii, figg. 21-25, *clathratus*, Zanzibar, p. 33, pl. iii, figg. 26-29 ; KOENIKE, in Stuhlmann's Zool. Ergebnisse, &c.
- Hydrachna spinosa*, Zanzibar, p. 43, pl. iii, figg. 32-33 ; KOENIKE, in Stuhlmann's Zool. Ergebnisse, &c.
- Hydryphantes schäubi*, Quilimane, p. 37, pl. iii, fig. 30, *incestus*, Quilimane, p. 40, pl. iii, fig. 31 ; KOENIKE, in Stuhlmann's Zool. Ergebnisse, &c.
- Thyas angusta*, Rhætia, p. 94, KOENIKE, Zool. Anz. xvi, n. sp.

IXODIDÆ.

- Gonixodes rostralis*, Guanajuato, p. 164, DUGÈS, Natureleza, ii, n. sp.
- Ixodes hungaricus*, Hungary, p. 123, pl. xviii, fig. 5, KARPELLES, Math. naturw. Ber. Ungarn, xi, n. sp.
- I. herrerae*, Dug., figured on pl. viii ; DUGÈS, Natureleza, ii.

ORIBATIDÆ.

- Belba mirabilis*, p. 85, pl. xiii, fig. 2, Hungary, KARPELLES, Math. naturw. Ber. Ungarn, xi, n. sp.
- Damaeus bulbipes*, Hungary, p. 91, pl. xiii, fig. 1, KARPELLES, Math. naturw. Ber. Ungarn, xi, n. sp.
- Hermannia oblonga*, Hungary, p. 93, pl. xx, fig. 3, KARPELLES, Math. naturw. Ber. Ungarn, xi, n. sp.
- Nothrus corticalis*, Hungary, p. 86, pl. xiii, fig. 3, KARPELLES, Math. naturw. Ber. Ungarn, xi, n. sp.
- Oppia hungarica*, Hungary, p. 89, pl. xiii, fig. 4, KARPELLES, Math. naturw. Ber. Ungarn, xi, n. sp.
- Oribata homodactyla*, p. 82, pl. xiv, fig. 1, *distincta*, p. 83, pl. xiii, fig. 6, Hungary, KARPELLES, Math. naturw. Ber. Ungarn, xi, n. spp.

PHYTOPTIDÆ.

- NALEPA, Denk. Ak. Wien, lix, pp. 525-540, 4 pls., gives synopsis of the known genera of *Phytoptidæ*, and redescribes and figures for the first time the following species :—*Phytoptus patrichus*, *cladophthirus*, *anthocoptes*, *brevirostris*, *anceps*, *squalidus*, *euspis*, *nalepai*, *anthonomus*, *exilis*, *leiosoma*, *laticinctus*, *leoproctus*, *gemita*, *eucricoles*, *trifolii*, *schlechtendali*, *informis*, *euanthus*, *varius*, *cerastii* ; *Cecidophyes convolvens*, *parvulus*.
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- Phytoptus malpighianus*, p. 127, CANESTRINI & MASSALONGO, Bull. Soc. Veneto-Trent. v, No. 3 ; *P. megacerus*, p. 152, CANESTRINI & MASSALONGO, t. c. ; *P. rhodiola* and *silvicola*, p. 198, CANESTRINI, Atti Soc. Veneto-Trent. (2) i ; *P. juglandis*, p. 129, pl. xix, fig. 5, *tilia*, p. 129, *quercus*, p. 130, pl. xx, fig. 6, Hungary, KARPELLES, Math. naturw. Ber. Ungarn, xi ; *P. hypochærum*, p. 31, NALEPA, SB. Ak. Wien, 1893, No. iv ; *P. ribis* and *spirææ*, p. 105, NALEPA, op. cit. No. xii ; *P. scaber* and *psilaspis*, p. 190, NALEPA, op. cit. No. xviii : n. spp.
- Trimerus mussalongianus*, p. 32, NALEPA, SB. Ak. Wien, 1893, No. iv, n. sp.

SARCOPTIDÆ.

- ↙ *Campylochirus*, n. g., *adherens*, n. sp., on *Anomalurus erythronotus*, pp. 698-700 ; TROUËSSART, C.R. Soc. Biol. v, No. 24.
- Onemidocoptes philomelæ* and *glaberrimus*, pp. 134-137, SICHER, Bull. Soc. Veneto-Trent. v, No. 3, n. spp.
- ↘ *Hemisarcoptes*, n. g., *coccisugus*, n. sp., on *Kermes conchiformis*, pp. 75-77, fig. ; LIGNIÈRES, C.R. Soc. Biol. v.

Psorergates simplex, on the mouse, p. 330, NEUMANN, C.R. Soc. Biol. v, No. 11, n. sp.

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TROMBIDIIDÆ.

Megamerus ocellatus, Hungary, p. 109, pl. xvi, fig. 1, KARPELLES, Math. naturw. Ber. Ungarn, xi, n. sp.

Rhyncholophus plumipes, Armenia, BIRULA, Horæ Soc. Ent. Ross. xxvii, p. 387, pl. vii; *R. longus*, Hungary, p. 112, pl. xvi, fig. 4, KARPELLES, Math. naturw. Ber. Ungarn, xi : n. spp.

Smaridea hungarica, Hungary, p. 108, pl. xvi, fig. 3, KARPELLES, Math. naturw. Ber. Ungarn, xi, n. sp.

TYROGLYPHIDÆ.

Lentungula, n. g., p. 264, *algivorans*, n. sp., p. 268, pl. xviii, Cornwall; MICHAEL, P. Zool. Soc. London, 1893.

Nodipalpus, n. g., *ulmi*, n. sp., Hungary, p. 128, pl. xviii, fig. 7; KARPELLES, Math. naturw. Ber. Ungarn, xi.

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XII. MYRIOPODA AND PROTOTRACHEATA.

BY

R. I. POCKOCK.

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— (3) Notes on the synonymy of *Myriopoda*. *T. c.* pp. 136-143.

— (4) Notes upon the species of *Myriopoda Syngnatha* described by Thomas Say. *T. c.* pp. 144-149.

— (5) A list of the *Myriopoda* of Minnesota. *T. c.* pp. 181-185.

— (6) Notes on the *Polyzoniidae*. *T. c.* 186-189.

— (7) Notes upon a Collection of Myriopods belonging to the U. S. National Museum. *T. c.* pp. 190-200.

— (8) Notes upon the North American Myriopods described by C. L. Koch. *T. c.* pp. 150-152.

— (9) Classification of *Myriopoda*. *T. c.* pp. 153-162.

— (10) Classification of the *Syngnatha*. *T. c.* pp. 163-167.

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No new species.

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— (4) Bemerkungen über einige nicht publicierte Diplopoden. *T. c.* pp. 387 & 388.

— (5) Ueber *Chordeuma germanicum mihi* (*Diplopoda*). *T. c.* pp. 477-479.

— (6) Vorläufige Mittheilung über neue Schaltstadium-Beobachtungen bei Juliden, eine neue Gruppierung der alten Gattung *Julus* und einige neue und seltene Diplopoden aus Tirol. *T. c.* pp. 479-482.

— (7) Ueber Proterandrie der Diplopoden. *Berlin ent. Zeitschr.* xxxvii, pp. 491 & 492.

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— (2) L'organe de Tömösvary de *Lithobius forficatus*. *T. c.* pp. lxxi & lxxii.

II.—ANATOMY, PHYSIOLOGY, CLASSIFICATION, HABITS, &c.

Classification of *Chilopoda*, *Diplopoda*, and *Hexapoda*; POCOCK (5, 6): of *Myriopoda*; BOLLMAN (9): of *Syngnatha*; BOLLMAN (10): of *Julide*; VERHOEFF (6).

Mouth parts of Chilopods; BANKS.

Immature stages in the males of *Julus*; VERHOEFF (1, 2, 6).

Structure of the copulatory organ of *Diplopoda*; VERHOEFF (7).

On the origin of Tracheæ; BERNARD.—Structure of Tracheæ in *Scutigera*; SINCLAIR.

On the fat-body of *Myriopoda*; KOWALEWSKY.

The relations between the cœlom and vascular system ; LANKESTER.
Digestive processes ; ADLERZ.

Structure of eyes in *Scutigera* ; ADENSAMER : in *Lithobius* and *Polyxenus* ; WILLEM (1) : of Cerebral nuclei in Myriopods ; CHATIN : of Tömösvary's organ in *Lithobius* ; WILLEM (2).

Luminosity of *Orya barbarica* ; DUBOIS.
Blaniulus affecting the vine ; FONTAINE.

III.—DISTRIBUTION.

Palæarctic Region.

Ireland : POCOCK (7) : Rugby, POCOCK (8).

France : MONIEZ, *Scolopendrella*.

Switzerland : *Scutigera* ; GODET.

Galicia : FISZERA.—Bosnia and Herzegovina : KARLINSKI.

Portugal : VERHOEFF (3, 4).

Syria : PORAT (1).

Samarkand : LANSDELL, *Scutigera*.

Burma : POCOCK (3), *Iulidæ*, *Chordeumidæ*, and *Polyzonidæ*.

Ethiopian Region.

West Africa : COOK & COLLINS. West and South Africa : PORAT (2).

Lakes Rudolph and Stephanie (E. Africa) : KARSCH.

Nossi Bé (Madagascar) : BRANCSIK.

Nearctic and Neotropical Regions.

North America in General : BOLLMAN (1, 2, 11). Minnesota : BOLLMAN (5).

Colorado : COCKERELL (1). Nebraska : KENYAN (1, 2).

Bermuda : POCOCK (1).

West Indies in General : POCOCK, *Chilopoda* (4). Jamaica : COCKERELL (2).

IV.—SYSTEMATIC.

CHILOPODA.

SCUTIGERIDÆ.

Scutigera planiceps, Cape Town, p. 124, POCOCK, Ann. Nat. Hist. (6) xi, p. 124 ; *S. flavipes*, Bahamas, p. 200, BOLLMAN, Bull. U. S. Mus. xlvii : n. spp.

S. guildingii, Newport, St. Vincent, described, p. 456 ; POCOCK, J. Linn. Soc. xxiv.

LITHOBIIDÆ.

- Henicops tristani*, Tristan d'Acunha, p. 125, POCOCK, Ann. Nat. Hist. (6) xi; *H. sinuata*, Cape Colony, p. 5, PORAT, Bih. Svenska Ak. xviii, No. 4 : n. spp.
- Lithobius transmarinus* and *mordax*, Koch, are synonymous with *L. spinipes*, Say; BOLLMAN, Bull. U.S. Mus. xlvii, p. 146. *L. fasciatus*, Newp., *macrops*, Karsch, and two unnamed species recorded from Syria and identified; PORAT, Rev. Biol. Nord France, vi, pp. 64-66. *L. kochii*, Stuxb., n. var. *coloradensis*, Colorado, p. 370; COCKERELL, Tr. Amer. ent. Soc. xx.
- L. maltenis*, *nebrascensis*, p. 161, *dorsospinorum*, *brunesi*, *sexdentatus*, Nebraska, p. 162, KENYAN, Canad. Ent. 1893, also Ent. News. Philad. 1893, p. 247; *L. stejnegeri*, Bering I., &c., p. 199, BOLLMAN, Bull. U. S. Mus. xlvii; *L. bermudensis*, Bermuda, p. 126, POCOCK, Ann. Nat. Hist. (6) xi; *L. parvicornis*, Syria, p. 65, *barbipes*, p. 66, fig. 1, PORAT, Rev. biol. Nord France, vi : n. spp.

SCOLOPENDRIDÆ.

- Arthrorhabdus interveniens*, Namaqua, p. 46, PORAT, Bih. Svenska Ak. xviii, No. 4, n. sp.
- Cormocephalus calcaratus*, Porat, from Cape Town, is synonymous with *C. violaceus* (Fabr.); POCOCK, Ann. Nat. Hist. (6) xi, p. 127. *C. mirabilis*, Porat, recorded from Syria, and described, p. 69, fig. 3; PORAT, Rev. biol. Nord France, vi. *C. acanthophorus*, Kohl., and *dispar*, Porat, Cape Colony, described, pp. 6 & 7; PORAT, Bih. Svenska Ak. xviii, No. 4. *C. purpureus*, n. n. for *C. violaceus*, Newp., preoccupied; POCOCK, Ann. Nat. Hist. (6) xi, p. 127.
- C. teretipes*, Jericho, p. 70, fig. 2, PORAT, Rev. biol. Nord France, vi; *C. parcespinatus*, Cape Colony, p. 7, *devylderi*, Namaqua, p. 9, *crassicornis*, Zanzibar, p. 9, PORAT, Bih. Svenska Ak. xviii, No. 4; *C. huttoni*, New Zealand, p. 128, POCOCK, Ann. Nat. Hist. (6) xi : n. spp.
- Cryptops bivittatus*, St. Vincent, p. 462, POCOCK, J. Linn. Soc. xxiv, n. sp.
- ⁴*Eremops*, n. n. for *Monops*, Gervais, preoccupied, p. 165; BOLLMAN, Bull. U. S. Mus. xlvii.
- Otocryptops ferrugineus* (Linn.), West Indies, with full synonymy, p. 463; *melanostoma*, Newp., syn. *megacephalus*, Kohl., and *longiceps*, Poc., St. Vincent, p. 464; POCOCK, J. Linn. Soc. xxiv, p. 464. *O. ferrugineus*, De Geer, described from the Cameroons, p. 12; PORAT, Bih. Svenska Ak. xviii, No. 4.
- Newportia longitarsis* (Newp.), St. Vincent, described, p. 466; POCOCK, J. Linn. Soc. xxiv.
- N. pusilla*, St. Vincent, p. 468, POCOCK, J. Linn. Soc. xxiv, n. sp.
- Olostigma spiculiferum*, St. Vincent, p. 461, POCOCK, J. Linn. Soc. xxiv; *O. cuneiventris*, p. 10, *inermipes*, p. 11, Cameroons, PORAT, Bih. Svenska Ak. xviii, No. 4 : n. spp.

- Scolopendra cingulata* (Latr.), n. var. *obscuriceps*, Syria, p. 67 ; PORAT, Rev. biol. Nord France, vi. *S. morsitans* (Linn.), n. var. *multispinosa*, Erivan (Caucasus), p. 5 ; DADAY, Math. term. Ertes. Magyar Ak. xii.
- S. nicaraguensis*, Nicaragua, p. 198, *sanatillæ*, Sanatilla Is. (Caribbean Sea), p. 199, BOLLMAN, Bull. U. S. Mus. xlvii ; *S. polyodonta*, New Guinea, p. 5, DADAY, Math. term. Ertes. Magyar Ak. xii : n. spp.
- Scolopocryptops miersii* (Newp.), Santa Lucia, described, p. 465 ; POCOCK, J. Linn. Soc. xxiv, p. 465.
- S. calcaratus*, Indiana, p. 133, BOLLMAN, Bull. U. S. Mus. xlvii, n. sp.

GEOPHILIDÆ.

- Agathothus*, n. g., for *Scolioptanes gracilis*, Bollm.; BOLLMAN, Bull. U. S. Mus. xlvii, p. 166.
- ♠ *Aspidopleres*, n. g., p. 14, *intercalatus*, Damaraland, p. 15, PORAT, Bih. Svenska Ak. xviii, No. 4, n. sp.
- Bothriogaster signatus*, *affinis*, and *meinerti* are in all probability identical ; PORAT, Rev. biol. Nord France, vi, pp. 71 & 72.
- Geophilus bipuncticeps*, Wood, *georgianus*, Mein., and *perforatus* (McNeill) are synonymous with *attenuatus*, Say ; BOLLMAN, Bull. U. S. Mus. xlvii, p. 148. *G. cephalicus*, Wood, is synonymous with *rubens*, Say ; BOLLMAN, *t. c.* p. 148.
- G. mustiquensis*, Mustique I., p. 470, with fig., POCOCK, J. Linn. Soc. xxiv ; *G. grandiceps*, Cape Town, p. 47, PORAT, Bih. Svenska Ak. xviii, No. 4 : n. spp.
- ♠ *Meinertia*, n. n. for *Scotophilus*, Mein., preoccupied ; BOLLMAN, Bull. U. S. Mus. xlvii, p. 142.
- Taniolinum*, n. g., p. 471, *setosum*, St. Vincent, p. 472, POCOCK, J. Linn. Soc. xxiv, n. sp.

DIPLOPODA.

GLOMERIDÆ.

- ♠ *Latzelia*, n. g. for *Glomeris minima*, Latz., p. 161 ; BOLLMAN, Bull. U. S. Mus. xlvii.
- Spherotherium walesianum*, Karsch, from Queensland, is synonymous with *S. angulatum*, Butler ; POCOCK, Ann. Nat. Hist. (6) xi, p. 130.

POLYZONIDÆ.

- Dolistenus*, Fanz., is synonymous with *Andrognathus*, Cope ; BOLLMAN, Bull. U. S. Mus. xlvii, p. 135.
- Siphonophora feæ*, Mount Mooleyit, p. 386, POCOCK, Ann. Mus. Genova, xxiii, n. sp.

POLYDESMIDÆ.

- Cryptodesmus gabonicus*, Lucas, Cameroons, p. 26 ; PORAT, Bih. Svenska Ak. p. xviii, No. 4.
- C. knutsoni*, Cameroons, p. 27, PORAT, Bih. Svenska Ak. xviii, No. 4, n. sp.
- Leptodesmus borealis*, Winona, p. 183, BOLLMAN, Bull. U. S. Mus. xlvi, n. sp.
- Orthomorpha*, n. n. for *Paradesmus*, Sauss., preoccupied, p. 159 ; BOLLMAN, Bull. U. S. Mus. xlvi ; *karschi*, n. n. for *Paradesmus gracilis*, Karsch ; BOLLMAN, t. c. p. 196.
- Oxydesmus valdani*, Cameroons, p. 24, *tuberculifrons*, Cameroons, p. 25, PORAT, Bih. Svenska Ak. xviii, No. 6, n. spp.
- O. erythropus*, Luc., and *granulosus*, Pal. Beauv., Cameroons, described, pp. 22-26 ; PORAT, Bih. Svenska Ak. xviii, No. 4.
- Paradesmus aubryi*, Luc., syn. *ornatus*, Pet., Cameroons, p. 20 ; PORAT, Bih. Svenska Ak. xviii, No. 4.
- P. thysanopus*, Congo, p. 25, pl. 1, figg. 1-6, COOK & COLLINS, Ann. N. York Ac. viii ; *P. sanguinicornis*, Cameroons, p. 21, PORAT, Bih. Svenska Ak. xviii, No. 4 : n. spp.
- Polydesmus canadensis*, Newp., *glaucescens*, and *pennsylvanicus*, Koch, are synonymous with *P. serratus*, Say ; BOLLMAN, Bull. U. S. Mus. xlvi, p. 146.
- P. pectiniger*, Portugal, p. 168, VERHOEFF, Zool. Anz. xvi ; *P. levigatus*, p. 17, *setiger*, p. 19, Cape Town, PORAT, Bih. Svenska Ak. xviii, No. 4 ; *P. gallicus*, S. France, p. 4, DADAY, Math. term. Ertes. Magyar Ak. xii : n. spp.
- Polylepsis*, n. n. for *Pachyurus*, Sauss., preoccupied, p. 168 ; BOLLMAN, Bull. U. S. Mus. xlvi.
- Scytonotus scabricollis* and *levicollis*, Koch, are synonymous with *S. granulatus*, Say ; BOLLMAN, Bull. U. S. Mus. xlvi, p. 146.
- Stenonia tuberosa*, Ki Is., p. 131, pl. ix, fig. 3, POCOCK, Ann. Nat. Hist. (6) ix, n. sp.
- Strongylosoma guérinii* (Gerv.), syn. *cylindraceutum* (Gerv.), Teneriffe and Bermuda, p. 130, figured, pl. ix, fig. 2 ; *gervaisii* (Lucas), syn. *trilineatum*, Newp., and *petersii*, L. Koch, Paramatta, p. 131, pl. ix, fig. 1 ; POCOCK, Ann. Nat. Hist. (6) xi. *S. syriacum*, Humb. & Sauss., Syria, described, p. 93 ; PORAT, Rev. biol. Nord France, vi.

CHORDEUMIDÆ.

- Branneria*, n. g., for *Craspedosoma carinatum*, Bollm., p. 158 ; BOLLMAN, Bull. U. S. Mus. xlvi.
- Haasia*, n. g., for *Craspedosoma mammillatum*, Haase, p. 158 ; BOLLMAN, Bull. U. S. Mus. xlvi.
- Heterochordeuma*, n. g., *dorice*, Thao (Burma), p. 387 ; POCOCK, Ann. Mus. Genova, xxiii, n. sp.

LYSIOPETALIDÆ.

- Lysiopetalum hardwickii*, Newp., is synonymous with *L. foetidissimum*, *richii* (Gray), with *anceps*, Latz.; *rugulosum* and *lineatum*, Newp., with *lactarium*, Say; POCOCK, Ann. Nat. Hist. (6) xi, p. 248. *L. rufolineatum*, C. Koch, Syria, described, p. 73; PORAT, Rev. biol. Nord France, vi.
- L. alternans*, Portugal, p. 167, VERHOEFF, Zool. Anz. xvi, n. sp.

IULIDÆ.

- Hemipodiulus*, Verhoeff, contains two new subgenera, *Megaiulus* and *Acanthoiulus*, p. 481; VERHOEFF, Zool. Anz. xvi.
- Iulus* (s. s.) contains the following new subgenera:—*Xestoiulus*, *Oncoiulus*, *Amploiulus*, *Cryptoiulus*, *Leptoiulus*, *Chromatoiulus*, *Cylindroiulus*, *Leucoiulus*, p. 480, VERHOEFF, Zool. Anz. xvi. *I. niger*, Leach, syn. *albipes*, C. Koch, *punctatus*, Leach, syn. *silvarum*, Mein., *pilosus*, Newp., syn. *fallax*, Mein., and *terrestris*, Leach, *pilipes*, Newp., syn. *varius* (Fabr.); POCOCK, Ann. Nat. Hist. (6) xi, p. 249.
- I. (Hemipodiulus) dorsovittatus*, Portugal, p. 157, VERHOEFF, Zool. Anz. xvi; *I. (s. s.) birmanicus*, Meteleo (Burma), p. 392, *fecæ*, Tenasserim, *septem-lineatus*, Meteleo, p. 393, POCOCK, Ann. Mus. Genova, xxiii; *I. microporus*, p. 75, *barroisi*, p. 76, Syria, PORAT, Rev. biol. Nord France, vi; *I. oliveira*, Portugal, p. 159, *occultus*, p. 165, *porathi*, p. 166, VERHOEFF, Zool. Anz. xvi; *I. canariensis*, Teneriffe, p. 132, *tristani*, Tristan d'Acunha, p. 132, pl. ix, fig. 5, *solitarius*, Tristan d'Acunha, p. 133, pl. ix, fig. 4, POCOCK, Ann. Nat. Hist. (6) xi: n. spp.
- Mesoiulus*, n. g., for *Iulus sabulosus*, and *porathi*; VERHOEFF, Zool. Anz. xvi, p. 480.
- Nemasoma sayanum*, n. n., for *Iulus punctatus*, Say; BOLLMAN, Bull. U. S. Mus. xlvi, p. 144.
- Micropodiulus*, n. g., for *Iulus ligulifer*, Latz., and *terrestris*, Linn., p. 480; VERHOEFF, Zool. Anz. xvi.
- Pseudoiulus* is synonymous with *Paraiulus*; BOLLMAN, Bull. U. S. Mus. xlvi, p. 138.
- Tachypodiulus*, n. g., for *Iulus albipes* (C. Koch); VERHOEFF, Zool. Anz. xvi, p. 480.

CAMBALIDÆ.

- Cambala*, Gray, syn. *Glyphiulus*, Gerv., and *Trachyiulus*, Peters, characterised, *doræ*, Palon (Pegu), p. 389, *fecæ*, Farm Caves (Moulmein), p. 390, *calva*, Reef Is., &c. (Burma), p. 391, POCOCK, Ann. Mus. Genova, xxiii, n. spp.
- Iulomorpha porathi*, Malamaui (Philippine I.), p. 134, POCOCK, Ann. Nat. Hist. (6) xi, n. sp.

SPIROBOLIDÆ.

- Acanthiulus*, Gerv., is allied to *Spirobotus*, *murrayi*, Aru Is., p. 136, pl. ix, fig. 7, Pocock, Ann. Nat. Hist. (6) xi, n. sp.
- Spirobotus spinigerus*, Wood, is a synonym of *S. marginatus*, Say; BOLLMAN, Bull. U. S. Mus. xlv, p. 145. *S. monilicornis*, Porat, syn. *heilprini*, Bollm., and probably *virescens*, Daday, recorded from Bermuda, p. 138, *dorsalis* (Le Guillou), Aru Is., described, p. 140, figured pl. ix, fig. 8; Pocock, Ann. Nat. Hist. (6) xi. *S. pulvillatus* and *simillimus*, Newp., are synonymous with each other, and with *giganteus* of Porat, and *ligulatus* of Voges, *caudatus*, Newp., syn. *latus*, Karsch, *roseus*, Gervais, syn. *costulatus*, Porat, and *S. hecate* of Butler is a *Spirostreptus*; Pocock, t. c. pp. 249 & 250.
- S. dentatus*, p. 3, *fenichelii*, p. 4, New Guinea, DADAY, Math. term. Ertes. Magyar Ak. xii; *S. erythrocephalus*, Madagascar, p. 250, pl. xvi, fig. 2, *urophorus*, Seychelles, p. 251, pl. xvi, fig. 3, *navesii*, Seychelles, p. 252, pl. xvi, fig. 4, *hoplurus*, N. W. Borneo, p. 252, pl. xvi, fig. 5, *caledonicus*, New Caledonia, p. 253, pl. xvi, fig. 6, Pocock, Ann. Nat. Hist. (6) xi; *S. digrammus*, Cape Town, p. 138, pl. ix, fig. 9, *challengeri*, Ki Is., p. 139, pl. ix, fig. 10, *flavo-collaris*, Aru Is., p. 140, pl. ix, fig. 11, *hemorrhantus*, Ki Is., p. 141, pl. ix, fig. 12, Pocock, t. c.; *S. gracilis*, Paramaribo, p. 190, *callipus*, Guanajuato, p. 191, *bahamensis*, Bahamas, p. 192, *surinamensis*, Paramaribo, p. 192, *zonipus*, Paramaribo, p. 194, *dugesii*, Guanajuato, p. 194, BOLLMAN, Bull. U. S. Mus. xlv; *S. moulmeinensis*, Moulmein, p. 395, *macrurus*, Tenasserim, p. 396, *dollfusii*, Cochin China, p. 397, *spiculifer*, S. Tenasserim, p. 397, *fea*, Carin Cheba, p. 398, *gestri*, Malewoon, p. 399, *elevatus*, Bhamo, p. 399, *maculifer*, Mt. Mooleyit, p. 401, Pocock, Ann. Mus. Genova, xxiii; *S. leviventris*, Cameroons, p. 29, *crassus*, Zanzibar, p. 31, *arcuosus*, Damara, p. 31, *pococki*, Cape Town, p. 32, *sabulosoides*, Cape Town, p. 33, PORAT, Bih. Svenska Ak. xviii, No. 4 : n. spp.

SPIROSTREPTIDÆ.

- Alloporus bipunctatus*, Free Town, Sierra Leone, p. 27, pl. ii, figg. 15 & 16, COOK & COLLINS, Ann. N. York Ac. viii, n. sp.
- Odontopyge furcata*, Karsch, Loanda, described, p. 36, fig., pl. iii, figg. 24-28; COOK & COLLINS, Ann. N. York Ac. viii.
- O. dimiatiiformis*, Delagoa Bay, p. 44, PORAT, Bih. Svenska Ak. xviii, No. 4, n. sp.
- Spirostreptus erythropsareius*, Brandt, and *rubripes*, Newp., are synonymous, p. 135; Pocock, Ann. Nat. Hist. (6) xi. *S. syriacus*, Sauss., described from Syria, p. 77, fig. 6; PORAT, Rev. biol. Nord France, vi. *S. attenuatus*, Brandt, Namaqua, p. 36, *pachysoma*, Brandt, Namaqua, p. 37, *hildebrandtianus*, Karsch, Madagascar, p. 40, *cameroonensis*,

- Voges, p. 41, *lævis*, Voges, p. 42, Cameroons, described; PORAT, Bih. Svenska Ak. xviii, No. 4. *S. cowani*, *avernus*, *sorornus*, *simulans*, *gulliveri*, of Butler, belong to the genus *Spirobolus*; *S. gracilipes*, Newp., is also a *Spirobolus*, and has been redescribed as *Spirobolus iuloides*, by Karsch; POCOCK, Ann. Nat. Hist. (6) xi, p. 249.
- S. stenorhynchus*, Ceylon, p. 250, pl. xvi, fig. 1, POCOCK, Ann. Nat. Hist. (6) xi; *S. gestri*, Plapoo, p. 402, *fea*, Rangoon, &c., p. 402, *oatesii*, Double I., p. 404, *tavoimensis*, Reef I., p. 405, *doriæ*, Bia-po, p. 405, POCOCK, Ann. Mus. Genova, xxiii; *S. moseleyi*, Malamaui (Philippine Is.), p. 135, pl. ix, fig. 6, POCOCK, Ann. Nat. Hist. (6) xi; *S. variabilis*, Loanda and Congo, p. 28, pl. ii, figg. 11-14, *tripartitus*, Congo, p. 31, pls. ii & iii, figg. 17-23, *anodontus*, Cape Town, p. 32, pl. iii, fig. 23, COOK & COLLINS, Ann. N. York Ac. viii; *S. rugistriatus*, Cameroons, p. 38, *damarensis*, Damara, p. 39, *carinatus*, Cameroons, p. 43, *propinquus*, Cameroons, p. 44, *flavicollis*, Congo, p. 49, *karschii*, Congo, p. 50, PORAT, Bih. Svenska Ak. xviii, No. 4 : n. spp.

PROTOTRACHEATA.

- COCKERELL, T. D. A. Notes on *Peripatus jamaicensis*, Grabh. & Kll. Zool. Anz. xvi, pp. 341-343.
- Proposes the names *gossei* and *swainsonæ* for the two colour-forms previously described.
- DENDY, A. (1) Further observations on the eggs of *Peripatus*. Abstr. Rep. Austral. Ass. 1893, pp. 375-380.
- (2) Further notes on the oviparity of the larger Victorian *Peripatus*, generally known as *P. leuckartii*. P. Soc. Vict. v, pp. 27-35.
- (3) The hatching of a *Peripatus* egg. Nature, xlvii, pp. 508 & 509. Also in P. Soc. Victoria, v, pp. 118 & 119.
- GRABHAM, M. *Peripatus*. J. Inst. Jamaica, i, No. 5, pp. 217-219.
- POLLARD, E. C. Notes on the *Peripatus* of Dominica. Quart. J. Micr. Sci. xxxv, pp. 285-294, 1 pl.
- P. dominicæ*, n. sp., p. 290.
- SEDGWICK, A. Note on a *Peripatus* from Natal. P. Cambridge Soc. vii, pp. 250 & 251.

XIII. INSECTA.

By D. SHARP.

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INTRODUCTION.

THE extent of Entomological work in 1893 appears to be quite as considerable as that of any previous year. The titles number 1069 against 1026 last year.

BRUNNER V. WATTENWYL has published a very useful work on the system of *Orthoptera* (116). He has been successful in obviating certain of the inconsistencies of Stål and others, so that some groups, whose classification was previously incomprehensible, are now brought into intelligible form. We are also indebted to FOREL for some improvements in the classification of ants (325).

Of systematic work we must also notice the first volume of RAGONOT'S work on *Pyralidæ* (745); it contains a very large number of genera in proportion to the species it deals with. WATSON has made a laudable effort (1033) to cope with the great difficulties presented by the classification of the *Hesperiidæ*, proceeding to a large extent on the lines previously traversed by Scudder.

LETHIERRY AND SEVERIN have published the first volume of a useful and much required general catalogue of *Hemiptera* (583); and DALLA-TORRE has been able to give us two volumes (212) of the general catalogue of *Hymenoptera*.

In faunistic work we have the pleasure of noticing ASHMEAD'S (21) monograph of the N. American *Proctotrupidæ*, SMITH'S list (917) of the *Noctuid* Moths of N. America, and CALVERT'S paper (135) on the Dragon-fly fauna of Philadelphia. These three works will no doubt prove most useful in advancing and diffusing a knowledge of the rich insect-fauna of North America. HAMPSON has given us another part of the Illustrations of *Lepidoptera* in the British Museum (423); it refers to the fauna of Ceylon.

The publication of Parts v-VII of the Manual of New Zealand *Coleoptera* by BROWN (112) is notable, as it brings the number of named New Zealand forms of this order up to about 2,600. Although some deduction will, no doubt, have to be made from this number, on account of synonymy and varietal forms, yet, on the other hand, there still remains the great family of *Staphylinidæ*, which has scarcely been touched. We shall be pardoned for expressing the hope that the *Diptera* and *Hymenoptera* may be collected before the extinction that is progressing so rapidly in New Zealand shall have further obscured the true nature of this very important fauna. Much suggestive matter will be found in WHEELER'S embryological treatise (1049); and very interesting entomological information is contained in MÖLLER'S memoir (641) on mushrooms cultivated by ants. BATAILLON'S enquiry (41) into the physiology of the metamorphosis of the silkworm is full of interest. The most important memoir of the year is, however, that by GRASSI & SANDIAS (393), giving an account of the habits and development of the two species of *Termitidæ* found in Sicily, a subject on which it is clear much more

work will have to be done. URECH has given, in tabular form (999), the results of an enquiry into the colour of the scales of *Lepidoptera* and *Coleoptera*, and into their behaviour with several reagents. KOLBE'S work on general entomology (538) has been completed.

The Recorder expresses his regret that he is unable to include even the titles of many articles—some at any rate being, in all probability, of value—of numerous agricultural and other experiment stations. Of some of the reports and bulletins of these institutions apparently no copy is sent to this country. He would also take the liberty of urging on entomologists the importance of indicating the species, genera, and synonyms contained in their work in such a manner that those purporting to be new can be detected without difficulty. Many authors make use of an abbreviation of their personal name, or "mihi," where they should put "n. gen." or "n. sp." New names proposed in this manner are liable to be overlooked; and synonyms that are not marked as new are still more likely to meet with this fate.

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Insects attacking man : Insects and flowers. [See Economic.]

III.—FAUNISTIC AND PALÆONTOLOGY.

The numbers in brackets refer to "Titles"; by their means it is intended to give a reference to every memoir containing a notice affecting the entomological fauna of each of the twelve regions here made use of. But synonymical notes and changes of systematic position are not included in these references.

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pp. 130-133, and NASII, Ent. Mag. xxix, p. 236.—Vale of Neath, BIRKENHEAD, Rep. Cardiff Soc. xxv, p. 82.—S. Wales, HOLLAND, Ent. Mag. xxix, p. 164.—Arran, WATSON, Entomologist, xxvi, p. 52.—Western Highlands, TUTT, Ent. Rec. iv, pp. 285-288.—Glasgow, KING, Ent. Mag. xxix, p. 140.—Forres, FLETCHER, t. c. p. 114.—N. Scotland, REID, Ent. Rec. iv, pp. 80-85.—Shetland Islands, SOUTH (929).—The *Crambi* of Scotland, REID, Ann. Scott. Nat. Hist. 1893, pp. 80-88.—Ireland, JOHNSON, Entomologist, xxvi, p. 318.—Ireland, KANE (503).—Ireland, KING, Ent. Mag. xxix, p. 140.—*Lepidoptera* of Enniskillen, PARTRIDGE, t. c. pp. 281-284.

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Rhynchota. Guernsey (*Heteroptera*), LUFF, Rep. Guernsey Soc. 1892, pp. 210 & 211; *Tettigide* of Guernsey, *id.* t. c. pp. 205-209.—Guernsey (*Coccide*), NEWSTEAD, Ent. Mag. xxix, p. 138; LUFF, t. c. p. 139.—Woking, SAUNDERS, t. c. p. 17.—Mold, NEWSTEAD, t. c. p. 115.—A list of the *Hemiptera Heteroptera* and *Homoptera* occurring in Perthshire, MCGREGOR, Ann. Scott. Nat. Hist. 1893, pp. 213-221.—Perth, MCGREGOR, Ent. Mag. xxix, p. 92.—N. Ireland, JOHNSON, t. c. pp. 35-37.

Neuroptera. Surrey (*Odonata*), BRIGGS, Ent. Mag. xxix, pp. 8 & 9.—Hut Pond, BRIGGS, t. c. p. 141.—Cambridgeshire (*Odonata*), MORTON, t. c. p. 215.—Chester (*Odonata*), ARKLE, Entomologist, xxvi, p. 35.—E. Yorkshire, PORRITT, Ent. Mag. xxix, p. 86.—Scotland, MORTON, t. c. p. 249.—Pitlochry, BEAUMONT, t. c. p. 263.—Ireland, JOHNSON, t. c. p. 287.—Wexford, BEAUMONT, t. c. p. 263.

Orthoptera. Istead, SHAW, Ent. Mag. xxix, p. 20.

(d.) *North Europe and Siberia* [see also (a.) and (b.).]

Insecta. Finland, Medd. Soc. Faun. Fenn. xviii, numerous notes in Protokoll, pp. 142-265.

Coleoptera. Finland, SAHLBERG (830, 833, 834).—Sweden, LAMPA Ent. Tidskr. xiv, p. 80; NORDIN, t. c. p. 96.—Siberia, FAUST (297), JACOBSON (480), JAKOWLEFF (492).—E. Siberia, Tschitscherine (991). Baikal, EPPELSHEIM (268).—S. West Siberia, HAMMARSTRÖM (422).

Hymenoptera. Norway, *Tenthredinidæ*, KLAER, Ent. Tidskr. 1893, pp. 225-234.—Finland, WESTERLUND Medd. Soc. Faun. Fenn. xvii, pp. 55-57.

Lepidoptera. North Finland, HOFFMANN (444).—Finland, POPPIUS (731).—Karelska, EHNBERG, pp. 58-82, Medd. Soc. Faun. Fenn. xvii.—Nykomlingar för Alands och Abo skärgårdars *Macrolepidopteren* fauna, REUTER, t. c. pp. 29-47.—Livland, TEICH (960).—Baltic, TEICH (961).—Siberia, CHRISTOPH (163).—Remarks on Staudinger's work on the Amurland *Macrolepidoptera* in vol. vi Romanoff Mem., SEITZ (870).

Diptera. Norway, STRÖRM (944).—Livland, SINTENIS (900).—Die livländischen *Thereviden*, *Leptiden*, *Dolichopiden*, *Platypzeiden*, und *Lonchopteriden*, SINTENIS, SB. Ges. Dorpat, ix, pp. 459-477.—Die livländ-

ischen: *Geomyzinen* und *Ochthiphilinen*, SINTENIS, *t. c.* pp. 477-481.—*Coccidæ*, DOUGLAS (245).

Rhynchota. Scandinavia, REUTER (772).—Siberia, JAKOWLEFF (490).

Neuroptera. Monograph of Scandinavian *Trichoptera*, WALLENGREN (1023).—Jenisei, &c., *Odonata*, TRYBOM (990).

(e.) *Central and Eastern Europe* [see also (a.) and (b.)].

Insecta. Additamenta ad faunam Hungariæ, BRANCSIK, Jahresh. Ver. Trencsin, xv, pp. 97-108.

Coleoptera. Denmark, LØVENDAL (596).—Supplement to Netherlands Catalogue, EVERTS, Tijdschr. ent. xxxvi, pp. 73-128.—Limburg, LEESBERG, *t. c.* p. 69.—Note sur les *Chrysomélides* de Belgique, MOFFARTS, pp. 88-91, Ann. Soc. ent. Belgique, xxxvii.—Les *Chrysomélides* de Belgique, MOFFARTS, *t. c.* pp. 179-229.—*Coleoptera* Helvetiæ cont., pp. 321-352; supp. to MT. Schweiz. ent. Ges. ix.—Käfer Graubündens concluded, pp. 145-275, KILLIAS, Beilage Jahresber. Ges. Graubund. xxxvi.—Nachtrag zur *Coleopteren*-Fauna der Kantone St. Gallen und Appenzell, TÄSCHLER, Ber. St. Gall. Ges. 1891-92, pp. 313-378.—Germany, REITTER (756), WEISE (1043), GERHARDT, Zeitschr. Ent. Breslau, xviii, pp. 9-21.—SCHILSKY, VIII Beitrag zur Kenntniss der deutschen Käferfauna; Deutsche ent. Zeitschr. 1893, pp. 353-357.—Gottingen, RADE, Ent. Nachr. xix, p. 357.—Posen, RIEDEL, Ent. Nachr. xix, pp. 345-349.—GERHARDT, Neue Käferarten der schlesischen Fauna aus dem Jahre 1892; Deutsche ent. Zeitschr. 1893, pp. 361-363.—Poland, Przyczynek do fauny chrzaszczów podolskich, HILDT, Pam. Fizyogr. xii, pp. 209-235.—Bohemia, WASMANN, p. 279, Wien. ent. Zeit. xii.—Styria, KRAUSS (557).—Trentina, BERTOLINI (62).—Galicia, LOMNICKI (595).—Das Hochgebirge der Bucovina in Coleopterologischer Beziehung, HORMUZAKI, Ent. Nachr. xix, pp. 97-108.—Astrachan, REITTER (759).

Hymenoptera. Switzerland, FREY-GESSNER, MT. Schweiz. ent. Ges. ix, p. 53; STECK, *t. c.* pp. 1-45.—Germany, FRIESE (342).—Iburg, SICKMANN (898).—Austria, KOHL (535).—LIEGEL, Ueber Kärntische *Hymenopteren*, 1 Nachtrag, Jahrb. Mus. Karnten, xxii, pp. 14-24.—Karelia, MORAWITZ (652).

Lépidoptera. Netherlands, SNELLEN (927).—Belgium, CROMBRUGGHE, pp. 557 & 558, Ann. Soc. ent. Belgique, xxxvii, HIPPERT, *t. c.* p. 502.—Holland, OUDEMANS (688).—Bern, BENTELI, MT. Schweiz. ent. Ges. ix, pp. 46-48.—Pomerania, HERING (438).—Rhine, FUCHS (352).—Die *Macrolepidopteren* der Dresdner Gegend, continuation, STEINERT, Deutsche ent. Zeitschr. Lep. vi, pp. 241-279.—Mecklenburg, SCHRÖDER-SCHWERIN, Arch. Ver. Mecklenb. xlvii, pp. 68-79.—Regensburg, SCHMID (848).—Verzeichnis der bisher in der Umgebung von Hermannstadt gefangenen *Macrolepidopteren*, CZEKELIUS, Verh. Siebenb. Ver. xlii, pp. 37-53.—Galicia, KLEMENSIEWICZ, Soc. ent. viii, p. 137.—Buda-Pest, NICHOLSON, Entomologist, xxvi, pp. 210-212.—Bukowina, HORMUZAKI (459).—Kazan, KRULIKOVSKAGHO, Bull. Soc. Moscou, 1893, pp. 43-105.

Diptera. POKORNY (728), STROBL (947), THOMAS (964).—Belgium, COUCKE (206, 207), and Ann. Soc. ent. Belgique, xxxvii, p. 572.—Germany, STEIN (938).—Steiermark, STROBL (946).—Bavaria, KOWARZ (545).—Austria, WASMANN (1030), MEUNIER (631).—Tyrol, MEUNIER (630). POKORNY (727).—VIII Beitrag zur *Dipteren*-Fauna Tirols, DALLA-TORRE, Zeitschr. Ferd. Tirol. xxxvi, pp. 513-531.

Rhynchota. Germany, HORVATH (473), HUEBER (476).—Material zu einer *Hemipteren*-fauna Thüringens von KELLNER, BREDDIN, Jahresber. Ver. Magdeburg, 1892, pp. 255-271.—Tyrol, FOKKER (329).—Bohemia, DUDA (249).

Neuroptera. Switzerland, RIS (801).

(f.) *France* [see also (a.) (b.) and (g.)].

Insecta. West of France, DOMINIQUE, Bull. Soc. ouest France, ii, pp. 247 & 248.—Bordeaux, BROWN, C.R. Soc. Bordeaux, xlv, pp. xxxii-xxxvii.

Coleoptera. BOURGEOIS (96), FAUVEL (306), REY (779), VUILLEFROY (1016).—Lardy, BEDEL, p. cccvi, Bull. Soc. ent. France, 1893.—Reims, BELLEVOYE, Bull. Soc. Reims, i, pp. 75-77.—Colmar, PIC, p. cclxxvii, Bull. Soc. ent. France, 1893.—Compiègne, LÉVIELLÉ, t. c. p. ccx.—La Brenne, CHAMPENOIS, t. c. p. clxxxix.—Orleans, CHAMPENOIS, t. c. pp. cxc & ccxxiii.—Catalogue des *Coléoptères* de Maine-et-Loire, cinquième et dernière partie, GALLOIS, Bull. Soc. Angers, xxii, pp. 101-163.—Digne, AZAM, Bull. Soc. ent. France, 1893, p. xi.—Bordeaux, EYQUEM, C.R. Soc. Bordeaux, xlv, pp. cxxix, clxxxv, & ccxcv; GOUIN, t. c. p. clxiii; BIAL, t. c. p. clxxi; GOUIN, *op. cit.* xlvi, pp. xlvi & lxxix.—Basses-Alpes, HONNORAT-BASTIDE, C.R. Ass. Franc. xxi, pt. 2, pp. 547-554.

Hymenoptera. DECAUX (221).—Bordeaux, BROWN, C.R. Soc. Bordeaux, xlv, p. clxxv.

Lepidoptera. CONSTANT (186), CHRÉTIEN, Bull. Soc. ent. France, 1893, p. cccxvi.—Les *Lépidoptères* du Nord, PAUX, Rev. biol. Nord France, v, pp. 269-284, &c.—CARADJA, Haute Garonne (147).—Bordeaux, BROWN, C.R. Soc. Bordeaux, xlv, pp. cxi, cxxviii, clxxiv, & cciii; BREIGNET, t. c. p. cxxxiii; GOUIN, t. c. p. ccii; BREIGNET, BROWN, *op. cit.* xlvi, pp. xvii, xix, & xx; BREIGNET, t. c. pp. xxv & xliv; BROWN, t. c. pp. xlii, lxxvi-lxxviii.

Diptera. GIARD (373, 375).

Rhynchota. Marmande, BREIGNET, p. clxxx, C.R. Soc. Bordeaux, xlv.

Neuroptera. L'Indre, MARTIN (618).—Vernet-les-bains, MACLACHLAN (610).—The *Phryganines* of France, MARTIN, Feuille Natural. xxii, pp. 80-83, *Limnophilines*, pp. 104-106, 156-161, and xxiii, pp. 24-28.

Orthoptera. AZAM (33), BLANCHARD, p. ccxcv, Bull. Soc. ent. France, 1893.—BREIGNET, C.R. Soc. Bordeaux, xlv, p. clxxix; BROWN, *op. cit.* xlvi, p. xlvi.—Basses Alpes, AZAM, p. cccxvi, Bull. Soc. ent. France, 1893.

Thysanura. MONIEZ (642).

(g.) *Southern Europe and Mediterranean Basin* [see also (a.), (b.) and (f.)].

Insecta. Island of Linosa, ESCHERICH, *Natural. Sicil.* xii, pp. 244, &c.—Algeria, OLIVIER, *Rev. Sci. Bourbonnais*, vi, pp. 1, &c.—Sardinia, EFISIO, *Boll. Soc. Rom. Zool.* pp. 259-272.—Spain, Cercedilla, NAVARRO, *Actas Soc. espan.* xxii, pp. 120-122.

Coleoptera. BEDEL (44), DESBROCHERS (227), PIC (716, 719, 720, 721, 722), RAFFRAY (742).—Spain, PIC (713), UHAGON (996).—Portugal, GUÉRIN, *Feuille Natural.* xxiii, p. 31.—Italy, BALBI (85, 86), BRENSKE (110), BUYSSON (132), VISART, *Atti Soc. Toscana, Pr.-V.* vii, p. 91.—Aniene, PAOLO, *Boll. Soc. Rom. Zool.* i, pp. 183-194.—Livorno, LOPEZ, *Atti Soc. Toscana, Pr.-V.* vii, pp. 236-246.—Sicily, SCHWARZ (857), ESCHERICH, *Natural. Sicil.* xii, pp. 307-309, SCHILSKY (844).—Catalogue of *Coleoptera* of Sicily continued, RAGUSA, *Natural. Sicil.* xii, pp. 201, &c., &c.—Catalogue of *Curculionidae* of Sicily continued, VITALE, *t. c.* pp. 82, &c.—Spalato, WEISE (1041, 1042).—Herzegovina, REITTER (763).—Greece, SCHWARZ (859).—N. Africa, CHABAUT (161), FAIRMAIRE (289), FAUST (301).—Algeria, ABEILLE (5), BEDEL (43), BONNAIRE (89), BOURGEOIS (95), BUYSSON (133), DESBROCHERS (225, 226), GUILLEBEAU (415, 416, 417, 418), PIC (708, 709, 711, 712, 717), and *Echange*, 1893, p. 87.—Tunis, ABEILLE (3).—Akbes, FAIRMAIRE (288).—Asia Minor, KRAATZ (548), WEISE (1039).—Armenia and Syria, SCHWARZ (858).—Syria, BOUCARD (94), RÉGIMBART, *Rev. biol. Nord France*, v, pp. 362-365, PIC (713).—Aden, FAUST (301), GUILLEBEAU (414), PIC (710).

Hymenoptera. FOREL (323).—Rome, *Tenthredinida*, MANZONE, *Boll. Soc. Rom. Zool.* ii, pp. 19-35.—Algeria, GRIBODO (394, 395), HANDELSIRSCH (425), VACHAL (1000).—Tunis, Malta, COSTA (199, 200).—Tunis, ANDRÉ (17).—Aden, EMERY (263).

Lepidoptera. Osimo (Italy), SPADA, *Natural. Sicil.* xii, pp. 90, &c.—Italy, CALBERLA, *Deutsche ent. Zeitschr. Lep.* vi, p. 153.—Sicily, RAGUSA, *Natural. Sicil.* xii, pp. 206 & 207, and xiii, pp. 17-21 & 47-51.—Corsica, STANDEN, *Entomologist*, xxvi, pp. 236-238; COLEBY, *t. c.* p. 298; STANDEN, *t. c.* p. 318; STANDFUSS (932).—Aufzählung der bisher aus dem Königreiche Rumänien bekannten Tagfalter (*Rhopalocera*), mit Berücksichtigung der Nachbarländer, HORMUZAKI, *Ent. Nachr.* xix, pp. 241-246 & 265-282.—Algeria, THIERRY-MIEG (963), VALLANTIN, *Naturaliste*; 1893, pp. 251 & 280.—Syria, STANDFUSS (932).

Diptera. Italy, BEZZI (66).—Aggiunte alla fauna *Ditterologica* della provincia di Pavia, CORTI, *Bull. Soc. ent. Ital.* xxv, pp. 33-41.—Valtravaglia, GRIFFINI, *Boll. Mus. Torino*, viii, No. 143.—Austrian Coast, STROBL (948).—Tunis, COSTA (199, 200).

Rhynchota. SAUNDERS (836).—Piedmont, GRIFFINI, *Boll. Mus. Torino*, viii, No. 150.—Revisione dei Rincoti Trentini, BEZZI, *Bull. Soc. ent. Ital.* xxv, pp. 81-116.—*Emitteri* del Vercellese, MELLA, *t. c.* pp. 346-355.—Modena, OLIVI, *Atti Soc. Modena* (3) xii, pp. 101-151.—Italy (*Coccidæ*), TARGIONI-TOZZETTI (956).

Neuroptera. Mesopotamia and Taurus, GERSTAECKER (368).—Portugal (*Odonata*), GIRARD (384).—Syria (*Odonata*), BOLIVAR (85).

Orthoptera. Piedmont, GRIFFINI (396, 400).—GRIFFINI, *Locustidi* raccolti nella Valtravaglia, Boll. Mus. Torino, vii, No. 133.—N. Africa, FINOT (313).—Algeria, FINOT (312), VOSSELER (1015), KRAUSS (556).—Syria, BOLIVAR (85).—Palestine, GIGLIO-TOS (381), GRIFFINI (399).

(h.) *Caucasus and West and Central Asia*

[see also (a.) and (b.).]

Insecta. LANSDELL, Chinese Central Asia, vol. ii, pp. 417–438.

Coleoptera. Circassia, REITTER (769).—Caucasus, ROST (819).—W. Asia, REITTER (762).—Turkestan, GLASOUNOW (387), KUWERT (564), PIC (711, 717), REITTER (756, 765).—West Turkestan, JACOBSON (481).—Kisil Arrat, KUWERT (565).—Centr. Asia, KOSHANTSCHIKOFF (544), REITTER (767, 768), SEMENOW (877, 879, 881, 882).

Hymenoptera. Centr. and W. Asia, RADOSZKOWSKI (741).—Transcaspian, RADOSZKOWSKI (738).—Centr. Asia, MORAWITZ (653, 654).

Lepidoptera. Persia, BETHUNE-BAKER (34).—Centr. Asia, ALPHÉRAKY (13), GRUM-GRSHIMAILO (409).

4. AFRICA (ETHIOPIAN REGION).

Insecta. KARSCH (508), SJÖSTEDT (901).—HÖRNEL, Discovery of Lakes Rudolf and Stephanie, vol. ii, pp. 329–349.

Coleoptera. AURIVILLIUS (29), FAIRMAIRE (275, 276, 277, 278, 290, 294, 301, 304), FLEUTIAUX (318), GAHAN (356), GESTRO (372), HORN (466), JACORY (482, 483, 485, 488), KERREMANS (520, 521, 523), KOLBE (540, 542), KUWERT (561, 564), LAMEERE (567), LEWIS (588), PÉRINGUEY (702), PIC (715, 718), ROELOFS (816, 817), SCHMIDT (851), THÉRY (962), THOMAS (967).—Casamance, W. Africa, BLEICHER, Bull. Soc. Nancy, (ii) xii, xxvii, pp. 87–92.

Hymenoptera. ANDRÉ, Abyssinia (15), BUYSSON (134), GRIBODO (395), KOHL (534, 537), MAYR (624), MOCSÁRY (639), SCHULTESS-RECHBERG (856), STADELMANN (931).

Lepidoptera. AURIVILLIUS (30, 31), BUTLER (124, 128), EHRMANN (257), ELWES & EDWARDS (259), HOLLAND (447–456), KARSCH (507, 509), MABILLE (605), OBERTHUR (676), PAGENSTECHER (698), RAGONOT (745), SCHAUS & CLEMENTS (843), SHARPE (894), TRIMEN (989).

Diptera. AUSTEN (32), RÖDER (811).

Rhynchota. BERGROTH (50, 52, 53, 54), DISTANT (229, 231, 235, 236, 237), HORVÁTH (471), KARSCH (506, 511), MONTANDON (645, 647), REUTER (774).

Neuroptera. GERSTAECKER (368), KARSCH (*Odonata*) (512), VAYS-SIÈRE (1001).

Orthoptera. BOLIVAR (84, 88), BRANCSIK (100), KARSCH (513, 514), SAUSSURE (837, 838).

5. MADAGASCAR.

Insecta. BRANCSIK (102), WASMANN (1031).—Seychelles, ALLUAUD, pp. xcvii-cvi.

Coleoptera. BRENSKE (108), FAIRMAIRE (281, 282, 292).—Seychelles, FAIRMAIRE (293).—Comoro Is, FAIRMAIRE (283), FAUST (301, 304), GAHAN (358), HORN (464, 466), KERREMANS (520, 521, 523).—Seychelles, KERREMANS (524), KRAATZ (551), KUWERT (566), LAMEERE (570), POUJADE (733), SCHAUFUSS (842), SCHMIDT (851, 853), SHARP (889), TSCHITSCHÉRINE (992), WASMANN (1026, 1028).

Hymenoptera. FOREL (324), GRIBODO (395).

Lepidoptera. Seychelles, JOANNIS (498).—Madagascar, Mauritius, and Mayotte, MABILLE (605), OBERTHUR (676), RAGONOT (745, 746).

Rhynchota. BERGROTH (59), DISTANT (232, 233), MONTANDON (647).—Seychelles, BERGROTH (58).

Orthoptera. BRANCSIK (100), GRIFFINI (397).

6. TROPICAL AND EASTERN ASIA WITH JAPAN.

For Aden (*Coleoptera* and *Hymenoptera*) see 3 (g.).

Insecta. India, COTES (203, 204).—Notes on Japanese insects, HARRINGTON, Rep. Ent. Soc. Ontario, xxiv, pp. 50-53.

Coleoptera. Insectes du Bengale, 26^e Mémoire, *Lucaniden*, ALBERS, pp. 69 & 70, Ann. Soc. ent., Belgique, xxxvii, 27^e Mémoire, *Passalides*, t. c. p. 71.—ALBERS, Japan, p. 71, *op. cit.* lxxi.—BLANDFORD, India (74, 75), *id.* Japan (74), BRENSKE, India (109), CANDÈZE, India (144), CHAMPION, Ceylon (153); FAIRMAIRE, Indo-China (274); *id.*, Upper Tonkin (279, 280); *id.*, Tonkin (287); *id.*, China (291); *id.*, East Thibet (290); FAUST (298); *id.*, Andaman Islands (302); FLEUTIAUX (317); *id.*, Ceylon (316); *id.*, India (319); FOWLER, India (330); GAHAN (359); *id.*, India (360); GESTRO, Birma (371); *id.*, Tonkin (372); GORHAM, India (391); GROUVELLE (407); *id.*, Ceylon (405); HORN, India (466, 469); *id.*, Birma (462, 470); JACOBSON, Japan (479); JACOBY (482, 483, 487); JANSON, India (497); KERREMANS (523); *id.*, India (522); KRAATZ, China (550); KUWERT (562); LAMEERE (569); LEFÈVRE, Indo China (576); LEWIS (588); *id.*, E. India (591); *id.*, Indo-China (589); *id.*, Siam (592); *id.*, Japan (584, 585, 586, 587, 590, 593); NONFRIED, India (674); PIC, China (712); RAFFRAY, Ceylon (744); RÉGIMBART, Ceylon (753); REITTER, China (754); *id.*, N. Mongolia (764); RITSEMA, India (805); ROELOFS (815); *id.*, Andaman Islands (818); ROTHSCHILD & JORDAN (823); SEIDLITZ, Japan (866); SENNA, Ceylon, Ann. Soc. ent. France, 1892, p. 523; *id.*, Birma (883); THOMAS, Siam (967); WASMANN, India (1027).

Hymenoptera. BUYSSON, India (134); *id.*, Mongolia (134); EMERY, Perak and Ceylon (263); *id.*, Singapore (264); FOREL, India (322, 324, 328); GRIBODO, Perak (394); KOHL (534); MOCSÁRY (639); RADOSKOWSKY (738).

Lepidoptera. The butterflies of the Central Provinces, BETHAM, pp. 424-429, *J. Bombay Soc.* vii; ELWES & EDWARDS (259); HAMPSON, Ceylon (423); LEECH (574), *id.*, China (575); MELVILL, Siam (627); MOORE, India (649, 650, 651); OBERTHUR, Tonkin (676); RAGONOT (745); SEITZ, Japan (871); SMITH, China (913); SNELLEN, Ceylon (925, 926); SWINHÖE (951, 952, 953), *id.*, Khasia Hills (955); WARREN, India (1025); WATSON, India (1033).

Diptera. AUSTEN (32).—Ceylon, RÖDER (812).

Rhynchota. BERGROTH (54); BUCKTON, India (123); *Aphididae*, *id.*, (121, 122); DISTANT (235, 236); *id.*, India (234); *id.*, China (229); JAKOWLEFF, China and Korea (491); LETHIERRY, India (582); MASKELL, India, *Coccidae* (619); MONTANDON (645, 646); *id.*, India (647); REUTER, India (778).

Neuroptera. GERSTAECKER, Ceylon, India, Japan (368); MACLACHLAN, Japan (610); WASMANN, Ceylon, *Termitidae* (1031).

Orthoptera. BRUNNER, Birma (116); COTES, India (202); SAUSSURE (838); *id.*, India (839).

Thysanura and *Collembola.* PARONA, Birma (699).

7. ASIATIC ARCHIPELAGO, INCLUDING PAPUA.

Insecta. WALKER (1021); WHITEHEAD, Borneo (1051).

Coleoptera. ALBERS, Manilla, *Ann. Soc. ent. Belgique*, xxxvii, p. 72; BRENSKE (107); CANDÈZE, Java (145); CHAMPION, Damma I. (154); FAIRMAIRE (285, 286); *id.*, Sumatra (274); *id.*, Celebes (279); FAUST (296); *id.*, Celebes (300); GAHAN, Borneo (360); GESTRO (369); *id.*, Sumatra (370); GORHAM, Borneo (391); GROUVELLE, Sumatra (407, 408); HELLER, Java (435); *id.*, Philippines (436); *id.*, Celebes (434); HORN (466); *id.*, Philippines (467); *id.*, Sumatra (463); JACOBY (482, 483, 487); KERREMANS (523); KRAATZ, Philippines (547); *id.*, Java (549); KUWERT (562, 564); LEFÈVRE, Philippines (577); LEWIS (588); POLL, Kei Is. (730); RAFFRAY, Sumatra (743); RÉGIMBART (752); RITSEMA (802); *id.*, Borneo (803); *id.*, Java (804); *id.*, Sumatra (806, 807); ROELOFS, Philippines (814); ROTHSCHILD & JORDAN, Borneo and Java (824); SCHMIDT (849); SENNA, Sumatra (886); *id.*, Engano (884); *id.*, New Guinea (883).

Hymenoptera. EMERY, Philippines (264); GRIBODO (394, 395); KOHL (534); MOCSÁRY, Philippines (639); RADOSZKOWSKY, Amboyna (738).

Lepidoptera. FRUHSTORFER, Java (348, 349); *id.*, New Guinea (350); *id.*, Nias (351); HOLLAND (454); MABILLE (605); MARTIN, Sumatra (617); MITIS (638); NICÉVILLE, Sumatra (670, 671); PAGENSTECHER, N. Guinea (696, 697); RIPPON, I. of Talaut (800); ROTHSCHILD (822); ROTHSCHILD & JORDAN, N. Guinea (825); SMITH, Borneo (914); SNELLEN (925, 926); STAUDINGER, New Guinea (935, 936); SWINHÖE (951, 953); THIERRY-MIEG, Java (963); VUILLOT (1017).

Diptera. AUSTEN (32); WULF, Java (1065).

Rhynchota. BERGROTH (57); DISTANT (235); *id.*, Java (231); *id.*,

N. Guinea, Duke of York I. (234); MONTANDON (646); *id.*, Engano (644); *id.*, Java (646).

Neuroptera. GERSTAECKER (368); KARSCH, Java (*Odonata*) p. 21, Berlin, ent. Zeitschr. xxxviii.

Orthoptera. BRUNNER (116); BRANCSIK, Sumatra (101).

Collembola. SCHÖTT (855).

8. AUSTRALIA AND TASMANIA.

Insecta. OLLIFF (678).

Coleoptera. AURIVILLIUS (28); BLACKBURN (69-72); CHAMPION (153); *id.*, Tasmania (152); GAHAN (355); GROUVELLE (406); HORN (466); JACOBY (483); KERREMANS (520); KUWERT (562); LEWIS (588); SHIPP (896); SLOANE (910-912).

Hymenoptera. BUYSSON (134); FOREL (326); FROGGATT (344); GRIBODO (395); KIRBY (529); KOHL (534, 536); MOCSÁRY (639); RADOSZKOWSKY (738).

Lepidoptera. KIRBY (530); LOWER (598, 599); *id.*, Victoria (597); *id.*, List of South Australian *Rhopalocera*, pp. 1-12, Tr. R. Soc. S. Austral. xvii; MEYRICK (633); RAGONOT (745); TEPPER, S. Australia butterflies, Tr. R. Soc. S. Austral. xvii, pp. 281-286.

Rhynchota. BERGROTH (55); DISTANT (231, 235); FRENCH (340); FROGGATT, *Coccidæ* (346); MASKELL, *Coccidæ* (619); REUTER, Tasmania (777); SKUSE (905); TEPPER, *Coccidæ* (959).

Diptera. SKUSE (904).

Orthoptera. GRIFFINI (398); TEPPER (958); *id.*, Tr. R. Soc. S. Austral. xvi, pp. 151-153.

9. NORTH AMERICA.

Eastern and Western faunas, TOWNSEND, Ent. News Philad. 1893, p. 69.

Insecta. BUTLER & KIRBY (130); COCKERELL, Colorado, Ent. News Philad. 1893, pp. 42-45, and (177); GODMAN & SALVIN (390); RILEY (789).—SLOSSON, Mt. Washington, Ent. News Philad. 1893, pp. 249-252 & 287-292. — TOWNSEND, New Mexico, Science, xxii, p. 315—Geographical distribution in Indiana, WEBSTER (1035).—Immigrants to Ohio, WEBSTER, Science, xxi, p. 57.

Coleoptera. BRENDL (106); CASEY (151); CHAGNON, Montreal, Ent. News Philad. 1893, p. 76; HAMILTON (421); *id.*, Ontario, Canad. Ent. xxv, pp. 272-279 & 324-327; HARRINGTON, Canada, Ottawa Natural. vi, p. 168, and vii, p. 97; HOPKINS (458); HORN (460, 461); KNAUS, Arkansas river, Ent. News Philad. 1893, pp. 293-295; KUWERT (564); LIEBECK, Ent. News Philad. 1893, p. 121; SNYDER, Wisconsin, *t. c.* p. 118; STROMBERG, Illinois, *t. c.* p. 149; *id.*, Arkansas, *t. c.* pp. 283-285; TOWNSEND, Michigan, Canad. Ent. xxv, pp. 201-204; WICKHAM, Texas and Louisiana, *t. c.* pp. 139-143; British Colombia, Amer. Natural. 1893, p. 164.

Hymenoptera. ASHMEAD (19, 20, 23); *id.*, monograph of *Proctotrupidae* (21); *id.*, Lower California (22); *id.*, in CHITTENDEN (159); DAVIS (219, 220); FOX (331-336); FYLES (353); GILLETTE (382, 383); HANDLIRSCH (424); HARRINGTON (428); *id.*, Ottawa phytophagous *Hymenoptera*, Ottawa Natural. vii, pp. 117-128; MACGILLIVRAY (608); ROBERTSON (809); SHIPP (897); WACHTL (1018); WEBSTER, Indiana (1036).

Lepidoptera. BEAN, Laggan, Canad. Ent. xxv, pp. 145-149; BEHR (45, 46); BETHUNE, Lake Simcoe, Canad. Ent. xxv, p. 260; BEUTENMÜLLER (64); *id.*, Descriptive list of New York butterflies (63); BUTLER (125); DYAR (252, 253); ELWES & EDWARDS (260); FERNALD (308); FOULKS, New York, Ent. News Philad. 1893, p. 261; GROTE (403); HOLLAND, Allegheny, Canad. Ent. xxv, p. 310; HUDSON (475); JONES, N. Carolina, Ent. News Philad. 1893, p. 189; KUNZE, New York, *t. c.* p. 109; LYMAN, Montreal, Canad. Ent. xxv, p. 297; MOFFAT, Canada, *t. c.* pp. 149-151; MURTFELDT & RILEY (659); NEUMOEGEN (662, 664, 665); NEUMOEGEN & DYAR (666-668); OSLAR, California, Ent. News Philad. 1893, p. 226; PACKARD (693, 694) and (691, p. 172); RAGONOT (745); SKINNER (902, 903); SLOSSON, Franconia Mts., Canad. Ent. xxv, p. 260; SMITH (918, 920, 921, 922); *id.*, Catalogue of *Noctuidæ* (917); STRECKER (945); WINKLE, Iowa, Canad. Ent. xxv, p. 296; WOLCOTT, Michigan, *t. c.* pp. 98-107.

Diptera. ALDRICH (9, 10, 11, 12); COQUILLET (187-194); KELLOGG (516); RÜBSAAMEN (828); SNOW (928); TOWNSEND (977, 978, 979, 984, 985, 986); WEBSTER, Indiana, P. Indiana Ac. 1891, pp. 155-159; WILLISTON (1057, 1060).

Rhynchota. BERGROTH (57); COCKERELL, *Coccidæ* (164, 170, 172, 180), and Science, xxii, p. 151; DUZEE (250); GODING (388); HORVÁTH (472); MONTANDON (643, 645); OSBORN & SIRRINE, *Aphididæ* (681); RILEY & HOWARD (794); *iid.*, *Aleurodidæ* (795); UHLER (998); WEED, *Aphididæ* (1037).

Odonata. CALVERT (135).

Orthoptera. BLATCHLEY (78, 79, 80); MORSE (656); RILEY (792); SAUSSURE (838); *Acridiidæ* of New Mexico and Arizona, TOWNSEND, Insect Life, vi, pp. 29-31.

Thysanura and *Collembola*. HARVEY (431, 432); MACGILLIVRAY (607); SCHÖTT (854).

10. CENTRAL AMERICA, INCLUDING MEXICO.

Insecta. GODMAN & SALVIN (390).

Coleoptera. FAUST (302, 305); G. H. HORN (461); KERREMANS (520, 523); KUWERT (563); LEWIS (588); NONFRIED (673); RAFFRAY (742); SCHMIDT (850, 851, 852).

Hymenoptera. ANDRÉ (16); GRIBODO (395); KOHL (534).

Lepidoptera. DRUCE (246); NEUMOEGEN (662, 663); RILEY (790, 791); RODRIGUEZ (813); SALVIN (835).

- Diptera.* GIGLIO-TOS (377, 380); TOWNSEND (987); WULP (1064).
Rhynchota. (*Coccidæ*) COCKERELL (169, 173, 174, 175, 180); MONTANDON (643, 645).
Neuroptera. GERSTAECKER (368).
Orthoptera. GRIFFINI (398); SAUSSURE (838, 839).

11. ANTILLES.

- Insecta.* COCKERELL, Jamaica, *J. Inst. Jamaica*, i, pp. 178, 256-259, 308, 309, 310, & 382; TOWNSEND, *t. c.* p. 379.
Coleoptera. COCKERELL, Jamaica, *t. c.* pp. 236 & 374; FAUST (299); KERREMANS, Guadeloupe (523).
Hymenoptera. ANDRÉ, Jamaica (16); ASHMEAD (21); COCKERELL, Jamaica, *Ent. News*, Philad. 1893, p. 188; FOREL, St. Vincent (321); *id.*, Barbadoes (327); GRIBODO (395).
Lepidoptera. COCKERELL, Jamaica, *J. Inst. Jamaica*, i, p. 282; FOX & JOHNSON, Jamaica, *Ent. News* Philad. 1893, p. 3; PACKARD, Cuba (694).
Diptera. ALDRICH, St. Vincent (11); AUSTEN (32); COQUILLET, Jamaica (193); SNOW, San Domingo (928); WILLISTON, San Domingo, pp. 170 & 171, *Canad. Ent.* xxv.
Rhynchota. COCKERELL, Jamaica, *Aleurodicus* (182); GODING, St. Vincent (389); UHLER, St. Vincent (997).—*Coccidæ*: BARBER, Leeward Islands, *Insect Life*, vi, p. 50; COCKERELL (176, 178, 179, 183), and *Ent. Mag.* xxix, p. 17, and *J. Inst. Jamaica*, i, p. 373; *id.*, Jamaica and Antigua (166); *id.*, Jamaica (165, 167, 168, 171, 181, 184), and *Ent. Mag.* xxix, p. 71.
Orthoptera. BRUNNER, Grenada (117).

12. SOUTH AMERICA.

- Insecta.* GODMAN & SALVIN (390).—Amateur Insect Collecting in British Guiana, SWANN, *Timehri*, vii, pp. 109-117.
Coleoptera. AURIVILLIUS (29); FAIRMAIRE (284); FAUST (299, 302, 305); FLEUTIAUX (319); GIGLIO-TOS (378, 379); GUILLEBEAU (413); W. HORN (465, 466, 470); JACOBY (482, 484); KERREMANS (523); KOLBE (540, 541); KUWERT (563, 564); LAMEERE (568); LEWIS (588); PIC (718); RAFFRAY (742); SCHMIDT (850, 851, 852); SENNA (887); WASMANN (1026); WEISE (1038, 1040).
Hymenoptera. ASHMEAD (21); FOREL (321, 327); GRIBODO (395); HANDLIRSCH (424); KOHL (534); REED, Chili (751); SCHLETTERER (847).
Lepidoptera. BUTLER, Chili (129); CALVERT, Chili (137); Preliminary list of Trinidad butterflies, CROWFOOT, *J. Trinidad Club*, i, pp. 173 & 174; DOGNIN (240, 241, 242, 243, 244); DRUCE (246); GROTE (404); KRETZSCHMAR (558); RAGONOT (745); SNELLEN (925, 926); THIERRY-MIEG (963); VUILLOT (1017); WEYMER (1048).

Diptera: AUSTEN (32); WILLISTON (1059); Catalogue of S. American *Calyptrate Muscidae*, TOWNSEND (971).

Rhynchota. BERGROTH (54, 57); DISTANT (228-230); MASKELL (619); MONTANDON (643, 645); NEWSTEAD, *Coccidæ* (669); *id.*, Trinidad, *Coccidæ* (669).

Neuroptera. GERSTAECKER (368).

PALÆO-ENTOMOLOGY.

[*Cf.* GADEAU (354), MEUNIER (632), SCHÄFF (840), SCHAUFUSS (841).]

COLEOPTERA.

SCHAUFUSS (841) describes numerous new species from Baltic amber, and establishes the following new genera of *Scydmanidæ*: *Cyptodiodon*, p. 564, *Semnodioceras*, p. 573, *Paleomastigus*, p. 575, *Heter euthia*, p. 579, *Paleothia*, p. 581, *Heuretus*, p. 583, *Electroscydmenus*, p. 584, *Nunquam* ot. iii.

DIPTERA.

Oppenheimiella baltica, n. g. & sp. *Platypezidæ* in amber; MEUNIER (632).

ORTHOPTERA.

Protophasma, proportions of thoracic segments; SCUDDER, *Psyche*, vi, p. 406.

Periplaneta orientalis in peat; SCHÄFF (840).

THYSANURA.

Machilis succinii in Baltic amber; GADEAU, p. 465, *Ann. Soc. ent. France*, 1893, n. sp.

IV.—ECONOMIC.

A large number of notes and queries in Insect-life, bearing on Economic Entomology, are not specially recorded.

Reports, &c.: ORMEROD (680).—Handbook of destructive insects of Victoria (Australia); FRENCH (338).—Injurious insects in Tasmania; THOMPSON (968).—Conspectus of injurious insects of East India; COTES (203); many miscellaneous notes; *id.* (204).—Injurious insects in N. America in 1893, WEBSTER, p. 186, *Ins. Life*, vi; SMITH, *t. c.* pp. 187-192; OSBORN, *t. c.* pp. 193 & 194.—Report on insects of the season in Iowa; OSBORN, *Bull. Dep. Agric. Ent.* xxx, pp. 42-48.—Report on insect injuries in Nebraska during the summer of 1892; BRUNER, *t. c.* pp. 34-41.—Report on some of the injurious and beneficial insects of California, chiefly *Coccinellidæ*; COQUILLET, *t. c.* pp. 9-33.—Report on experiments in Apiculture, 1892; LARRABEE, *t. c.* pp. 57-64.—Report on outbreaks of

the western cricket, and of certain locusts in Idaho ; MILLIKEN, *Insect Life*, vi, pp. 17-24.—Report on *Charæas graminis* and other insects injurious in Sweden ; LAMPA (571).—Report on infested sugar-canes ; COCKERELL, *Bull. Botan. Dept. Jamaica*, No. 40, p. 7.—Compilations of reports on plants visited by bees in Australia ; *Agric. Gaz. N.S.W.* iv, p. 90.—Insect foes of American cereal grains, with measures for their prevention or destruction ; WEBSTER, *Insect Life*, vi, pp. 146-158.—*Xyleborus perforans*, the cask-boring beetle ; BLANDFORD (76).—Household insects ; BUTLER (131).—Insects injurious to books ; GARMAN, *Science*, xxi, p. 158.—Insect foes of American cereal grains, with measures for their prevention or destruction ; WEBSTER, *Rep. ent. Soc. Ontario*, xxiv, pp. 88-93.—Enemies of the apple ; DECAUX, *Feuille Natural.* xxii, pp. 179-188, 200-209, 226-228.—Insect pests in Trinidad ; URICH, *Insect Life*, vi, pp. 196-198.—Entomological notes for the season of 1892 ; MURTFELDT, *Bull. Dep. Agric. Ent.* xxx, pp. 49-56.—Injurious insects in Canada in 1893 ; FLETCHER, *Rep. ent. Soc. Ontario*, xxiv, pp. 8-13.—Injurious insects, generally, in Kansas, and remedies ; KELLOGG (517).—Some injurious insects in Kansas [*Isosoma tritici*, *Bibio tristis*, *Piophilæ casei*, *Drosophila* sp., *Diabrotica longicornis*] ; KELLOGG, *Tr. Kansas Ac.* xiii, pp. 112-115.—Note on some injurious insects in Texas ; WEBSTER, *Canad. Ent.* xxv, pp. 35 & 36.—Notes on injurious insects in the Mesilla Valley ; COCKERELL, *Bull. N. Mexico, Stat. No.* 10.—Injurious fruit insects ; TOWNSEND, *op. cit.* No. 5.—Insects affecting sugar-cane in Australia ; OLLIFF (678).—Experiments against mosquitoes ; HOWARD, *Insect Life*, vi, p. 90.—Importation of *Orcus*, &c., to California ; COQUILLET (196).—The importation of Australian insects to California ; COQUILLET & KOEBEL (198).

General remarks on parasitic and predaceous insects ; RILEY (785, 786), SMITH (924).—Source of honey-dew ; BRANDES (103).—Source of the formic acid found in honey ; PLANTA (726).

List of Italian Memoirs on Economic Entomology ; *Bull. Soc. ent. Ital.* xxv, pp. 62-80.—Injuries of *Agrilus sinuatus* to apple-trees ; *Ent. Nachr.* xix, pp. 25-30.—*Bruchida* and *Rhynchophora* found in seeds ; BELLEVOYE, p. 99, *Bull. Soc. Reims*, i.—*Otiorhynchus sulcatus*, metamorphoses and habits ; XAMBEU, *Naturaliste*, 1893, p. 58 : ravages of ; FOWLER, *Ent. Mag.* xxix, p. 18.—Injuries of *Lasioderma* and *Sitodrepa* to cigars ; SMITH, pp. 325-327, *figg.*, *Ent. News Philad.* 1893.—*Niptus hololeucus*, abundance of ; MASON, *Ent. Mag.* xxix, p. 238 : destroying ginger ; LLOYD, *t. c.* p. 261.—Palm weevil (*Rhynchophorus*) in Brit. Honduras ; BLANDFORD (77).—Destructive Scolytids in N. America ; HOPKINS, *Insect Life*, vi, pp. 123-129, and *Rep. ent. Soc. Ontario*, xxiv, pp. 71-75.—*Scolytus carpini* destructive to hornbeam ; DECAUX (221).—Ravages of *Dendroctonus frontalis*, introduction of *Thanasimus formicarius* to N. America ; HOPKINS (458).—Ravages of *Cyllene robinæ* ; LAURENT, p. 285, *pl.* xiii, *Ent. News Philad.* 1893.—*Crepidodera rufipes* in America ; RILEY & HOWARD (798).—*Diabrotica longicornis*, injuries ; HUNTER, *Tr. Kansas Ac.* xiii, p. 131.—*Occinella* destroying Lepidopterous larvæ ;

PERRAUD, Bull. Soc. ent. France, 1893, p. ccxxxix.—Lady-birds and turnips ; TOD, J. Northampton Soc. vii, p. 290.—Injurious *Tenthredinidæ* and other insects in Canada ; HARRINGTON, pp. 17–31, Rep. ent. Soc. Ontario, xxiv.—*Hylotoma pagana*, life-history ; GUERCIO (411).—Destruction of hornet and of *Cossus ligniperda* ; HEIM, Bull. Soc. ent. France, 1893, pp. cvi–cx.—Ravages of *Orgyia pudibunda* ; CRAHAY (208).—*Liparis monacha*, note on its effects ; PROBST, Jahresh. Ver. Württemb. 1892, p. lxi.—*Liparis monacha* ; WAGNER (1020).—Gypsy moth (*Oceria*) in North America ; WEED, pp. 750–755, Amer. Natural. 1893.—*Heliothis armiger*, ravages ; SMITH, Ent. News Philad. 1893, p. 10, pl. v : its enemies, parasites, means of checking, &c. ; MALLY (612).—The boll-worm in Mississippi ; Insect Life, v, pp. 240–242.—Ver gris : *Agrotis segetum* ravages ; DECAUX, Feuille Natural. xxiii, pp. 177–186.—*Bupalus piniarius* and *Lophyrus rufus* injurious in Sweden ; NILSSON, p. 77, Ent. Tidskr. 1893.—*Ephestia kuehniella* and its destruction ; DANYSZ (216) : notes on ; Bull. Soc. ent. France, 1893, p. xii : date of appearance of, in France ; DANYSZ (217).—*Loxostege sticticalis*, attacks on beet ; RILEY & HOWARD, Insect Life, v, pp. 320–322.

Tmetocera ocellana, habits and ravages ; SLINGERLAND (908).—*Plutella cruciferarum* at Berwick-on-Tweed ; BOLAM, Hist. Berwick Club, 1890–91, pp. 379–385 ; AMORY, t. c. p. 385.—*Lita solanella*, in New Zealand ; WIGHT, Insect Life, v, p. 163.—*Gelechia cerealella*, prevention of its ravages ; HOWARD, t. c. pp. 325–327.—*Lepidoptera* injurious to teak tree ; BINGHAM, Indian Mus. Notes, iii, pp. 93–95.—*Lepidopterous* larvæ injuring alfalfa ; TOWNSEND, p. 229, Canad. Ent. xxv.—Ravages of *Lepidoptera* in N. America ; FERNALD (309).—Two Coccid-eating Moths (*Thalpochares*) ; OLLIFF (679).—Remedies for *Cheimatobia brumata* ; DECAUX, p. ccxiii, Bull. Soc. ent. France, 1893.—Experiments on the pear-midge ; SMITH, pp. 297–299, Ent. News Philad. 1893.—*Cecidomyia strobi*, injurious ; SAHLBERG, p. 14, Medd. Soc. Faun. Fenn. xvii.—*Cecidomyia destructor* in England in 1893 ; ENOCK, Entomologist, xxvi, pp. 311–313.—Hessian fly in S. Devon ; THEOBALD, Ent. Mag. xxix, p. 285.—*Dipteron* injurious to wheat ; LUGGER (604).—The cheese or meat-skipper ; MURTFELDT (660), and Rep. ent. Soc. Ontario, xxiv, p. 98.—*Hylemyia pullula*, life-history ; GUERCIO (410).—*Dipterous* parasites ; TOWNSEND (982).—Parasitism of *Doria mediatubunda* on silkworm ; BOUVIER & DELACROIX (98, 99).—*Tachinid* parasite of silkworm ; BOUVIER & DELACROIX (98, 99).—*Pocilocapsus lineatus* and its injuries ; SLINGERLAND (909).—*Aphididæ*, habits and migrations ; OSBORN & SIRRINE (681).—*Phorodon humuli*, remedies ; KOEBELE (533).—Attacks of *Aleurodicus cocois* on cocoa-nut ; RILEY & HOWARD (797).—*Aleurodes citri*, habits and life-history ; RILEY & HOWARD (795).—*Phylloxera*, notes on ; TARGIONI-TOZZETTI (957).—Scale insects destroyed by fungus ; COCKERELL, J. Trinidad Club, i, p. 177.—Descrizione e proposte per combattere la *Diaspis pentagona* ; CANESTRINI, Atti Ist. Veneto, li, pp. 1011–1030.—*Coccidæ* in New Mexico ; TOWNSEND (988).—Locusts of India ; COTES (202, 205).—Cha-

acters of the destructive locusts of N. America; BRUNER (115).—Ravages of *Melanoplus* spp. in Missouri; OSBORN, *Insect Life*, v, pp. 323-325.—*Orthoptera* injurious to cranberry; SMITH (923).—Fowls killed by mole-crickets; SMITH, *Insect Life*, v, p. 265.—Account of fungus destroying *Melolontha*; GIARD (376).—Destruction of *Lamellicornis* by Bacteria; KRASSILTSCHIK (552).—*Isaria densa*, entomophyte of *Agrotis segetum*; KEHLER, *Naturaliste*, 1893, p. 213.—Methods of attacking parasites of domestic animals; OSBORN, *Insect Life*, vi, pp. 163-166, and *Rep. ent. Soc. Ontario*, xxiv, pp. 96 & 97.—Methods of treating insects affecting grasses and forage plants; OSBORN, *Insect Life*, vi, p. 71.—Remedies for insects injurious to cotton; WEED, *t. c.* p. 167.—Employment of various inorganic products for the destruction of injurious insects; BERGÉ, *Ann. Soc. ent. Belgique*, xxxvii, pp. 362-365.—Fumigation with bisulphide of carbon for the complete and rapid destruction of insects which attack herbaria, furs, and woollens; H. DU BUYSSON, *Insect Life*, vi, p. 159.—Fumigation with bisulphide of carbon for destruction of insects attacking furs, &c.; BUYSSON, *Rep. ent. Soc. Ontario*, xxiv, p. 94.—Arsenites and arsenical mixtures as insecticides; GILLETTE, *Insect Life*, vi, pp. 115-122.—On arsenical spraying of fruit trees while in blossom; LINTNER, *t. c.* pp. 181-185.—On arsenical spraying of fruit-trees while in blossom; LINTNER, *Rep. ent. Soc. Ontario*, xxiv, pp. 102-104.—Hydrocyanic gas as an insecticide; COQUILLETT, *Insect Life*, vi, pp. 176-180.—Results of trap-lantern experiment; SLINGERLAND (906).

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- Rhytisternus erythrognathus*, New Zealand, BROWN, p. 986, Manual, n. sp.
- Scarites subterraneus*, metamorphoses ; WICKHAM, p. 332, pl. ix, figg. 3 & 4, Bull. Lab. Iowa, ii.
- S. inaequalis*, Comoro Isles, FAIRMAIRE, p. 526, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Scopodes basalis*, *speciosus*, New Zealand, BROWN, p. 1012, Manual, n. spp.
- Silphomorpha rufoguttata*, Queensland, BLACKBURN, p. 295, Tr. R. Soc. S. Austral. xvii, n. sp.
- Stenolophus humidus*, Allegheny, HAMILTON, p. 306, Canad. Ent. xxv, n. sp.
- Stomis* : pubescence of tarsi, note on ; DANIEL, p. 60, Col.-Studien, i.
- Sympiestus fallax*, p. 1007, *oculator*, p. 1398, New Zealand, BROWN, Manual, n. spp.
- Synuchus latus*, E. Siberia, TSCHITSCHÉRINE, p. 361, Horæ Soc. ent. Ross. xxvii, n. sp.
- Tachys tetradymus*, Comoro Is., FAIRMAIRE, p. 526, Ann. Soc. ent. Belgique, xxxvii ; *T. ? oreobius*, p. 1399, *cavelli*, p. 1400, New Zealand, BROWN, Manual : n. spp.
- Tarastethus alpinalis*, *cinctus*, New Zealand, BROWN, Manual, p. 1005, n. spp.
- Teratotarsa*, n. g., ? near *Abax*, p. 452, for *T. schouberti*, n. sp. (locality not stated), p. 454 ; TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxvii.
- Trichosternus polychætus*, p. 987, *smithii*, p. 1322, *hampdenensis*, *haplopus*, p. 1323, *crassalis*, p. 1395, New Zealand, BROWN, Manual, n. spp.

- Xanthophœa satellites, filiformis*, S. Australia, BLACKBURN, p. 294, Tr. R. Soc. S. Austral. xvii, n. spp.
Zabronothus, n. g., *Anisodactylides*, for *Z. striatulus*, p. 1327, *rufipes*, p. 1328, New Zealand, BROUN, Manual, n. spp.
Zabrus dispar, Algeria, BONNAIRE, p. 316, Rev. Ent. franc. xi, n. sp.
Zolus atratus, New Zealand, BROUN, p. 1002, Manual, n. sp.

HALIPLIDÆ, DYTISCIDÆ.

- [Cf. BROUN (112), MEINERT (626), RÉGIMBART (752, 753), WICKHAM (1053).]
 Male tarsi of various species described and figured; WICKHAM, Bull. Lab. Iowa, ii, p. 322-329, pls. v-viii.
Acilius sulcatus, fasciatus, larvæ described and figured; MEINERT, Ov. Danske Selsk. 1893, pp. 167-190, pl. i.
Bidessus griseoguttatus, Ceylon, RÉGIMBART, p. 101, Ann. Soc. ent. France, 1893; *B. divisus*, Borneo, RÉGIMBART, p. 105, Notes Leyden Mus. xv : n. spp.
Dytiscus sp., metamorphosis; PLANET, Naturaliste, 1893, p. 42.
Exocelina advena, renamed *Copelatus sharpi*; BROUN, p. 1014, Manual.
Haliphus variegatus, n. var. *syriacus*; RÉGIMBART, p. 362, Rev. biol. Nord France.
Huxelhydrus virgatus, New Zealand, BROUN, p. 1014, Manual, n. sp.
Hypophorus pugnator, note on; RÉGIMBART, p. 101, Ann. Soc. ent. France, 1893.
Lacconectes simoni, Ceylon, RÉGIMBART, p. 102, Ann. Soc. ent. France, 1893, n. sp.
Laccophilus ellipticus and *rufulus*, note on; RÉGIMBART, p. 99, Ann. Soc. ent. France, 1893.
L. guttalis, Ceylon, RÉGIMBART, p. 100, Ann. Soc. ent. France, 1893;
L. lucasseni, Java, RÉGIMBART, p. 106, Notes Leyd. Mus. xv : n. spp.

GYRINIDÆ.

- [Cf. GLASOUNOW (387), RÉGIMBART (753), WICKHAM (1054).]
Dineutes assimilis, metamorphoses; WICKHAM, p. 335, pl. ix, figg. 8-12, Bull. Lab. Iowa, ii.
Gyrinus picipes, larva; WICKHAM, p. 333, pl. ix, fig. 6, Bull. Lab. Iowa, ii.
Orectochilus zeravschanicus, Turkestan, GLASOUNOW, Horæ Soc. ent. Ross. xxvii, n. sp.

HYDROPHILIDÆ.

- [Cf. BRANCSIK (102), BROUN (112), FAIRMAIRE (278, 283), GUILLEBEAU (415, 418), KUWERT (564, 565), REY (779).]
Adolopus montanus, p. 1336, *convexus*, p. 1404, New Zealand, BROUN, Manual, n. spp.

- Cercyon rufocaudatum*, Comoro Is., FAIRMAIRE, p. 526, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Helochares nigrifrons*, Madagascar, BRANCSIK, p. 219, Jahresh. Ver. Trencsen. xv, n. sp.
- Helophorus brevipilis*, *pici*, p. xxxiv, *cincticollis*, p. xxxv, Algeria, GUILLEBEAU, Bull. Soc. ent. France, 1893, and Échange, 1893, p. 17, n. spp.
- Hydræna sternalis*, France, REY, Bull. Soc. ent. France, 1893, p. ix, n. sp.
- Hydrophilus*: KOLBE points out this name should be applied as in the Munich Cat. of *Coleoptera*, and not in the manner adopted by Kuwert and others; Stettin. ent. Zeit. liv, pp. 204 & 205.
- Hydrostygnum minor*, p. 1020, *bifoveatus*, p. 1021, New Zealand, BROUN, Manual, n. spp.
- Hydrous*: table of the species with notes and synonymy; KUWERT, pp. 81-93, Deutsche ent. Zeitschr. 1893.
- H. turkestanicus*, Turkestan, *sumatrarum*, Sumatra, p. 85, *africanus*, Congo, p. 86, *behrensi*, California, p. 88, *cavicus*, Madagascar, p. 88 (*Pagipherus*, n. subg.), *columbinus*, Columbia, *brunnipalpis*, Java, p. 90, KUWERT, Deutsche ent. Zeitschr. 1893, n. spp.
- Limnobius coxalis*, p. xxxvi, *maurilii*, p. xxxvii, Algeria, GUILLEBEAU, Bull. Soc. ent. France, 1893, and Échange, 1893, p. 17, n. spp.
- Ochtebius cuprescens*, Algeria, GUILLEBEAU, p. xxxv, Bull. Soc. ent. France, 1893, and Échange, 1893, p. 17, n. sp.
- ↳ *Pagipherus*, n. subg. of *Hydrous*; KUWERT, p. 88, Deutsche ent. Zeitschr. 1893.
- ↳ *Psephoboragus*, n. g., near *Cyloma*, p. 1402, for *P. signatus*, p. 1403, *lineatus*, p. 1404, n. spp., New Zealand, BROUN, Manual.
- Philodrus asiaticus*, Kissil Arrat, KUWERT, p. 17, Soc. ent. viii, n. sp.
- Rygmodes tibialis*, New Zealand, p. 1017, *limbatus*, p. 1333, *alienus*, p. 1401; BROUN, Manual, n. spp.
- Saphydrus monticola*, New Zealand, BROUN, p. 1401, Manual, n. sp.
- Spercheus crenulatus*, Somaliland, *distinguendus*, Bagamoyo, FAIRMAIRE, pp. 146 & 147, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- ↳ *Stygnohydrus*, n. g., near *Tormus* for *S. nitidus*, n. sp., New Zealand, BROUN, p. 1336, Manual.
- ↳ *Tormissus*, n. g., near *Hydrostygnum*, for *T. marginatus*, *magnulus*, n. spp., New Zealand; BROUN, p. 1021, Manual.
- Tormus nitidus*, New Zealand, BROUN, p. 1042, Manual, n. sp.
- Tropisternus glaber*, metamorphoses; WICKHAM, p. 338, pl. ix, figg. 13-15, Bull. Lab. Iowa, ii.

STAPHYLINIDÆ.

- [*Of*. BRANCSIK (102), BROUN (112), CASEY (151), EPPELSHEIM (268, 269), FAIRMAIRE (283, 291), GAHAN (356), GERHARDT (366, 367), LEWIS (587, 592), SAHLBERG (830), WASMANN (1026, 1027, 1031).]
- Variation of length of elytra in various forms noticed; EPPELSHEIM, Soc. ent. viii, pp. 33 & 42.

- ¹*Achromota*, n. g., near *Thiasophila*, p. 300, for *A. fusiformis*, n. sp., New York, p. 301; CASEY, Ann. N. York Ac. vii
- Actosus balticus*, generic position queried; CASEY, p. 371, Ann. N. York Ac. vii.
- Aleuonota punctipennis*, p. 23, *exigua*, p. 24, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893, n. spp.
- ¹*Amblopusa*, n. g., p. 355, near *Liparocephalus*, for *A. brevipes*, n. sp., Alaska, p. 356; CASEY, Ann. N. York Ac. vii.
- Ancyrophorus curtipennis*, Baikal, EPPELSHEIM, p. 65, Deutsche ent. Zeitschr. 1893, n. sp.
- ¹*Anepsiota*, n. g., near *Myrmedonia*, p. 329, for *A. quadricollis*, p. 330, *wickhami*, p. 331, n. spp., N. America and including *Orypoda insignis*, Casey; CASEY, Ann. N. York Ac. vii.
- ¹*Anewota*, n. g., p. 347, near *Cardiola*, for *A. sulcifrons*, n. sp., Florida, p. 348; CASEY, Ann. N. York Ac. vii.
- Anthobium nigerrimum*, p. 427, *diversicolle*, *gilvipenne*, p. 428, *punctatum*, *tibiale*, p. 429, *subangulatum*, p. 430, *atriventre*, p. 431, *fraternum*, p. 432, N. America, CASEY, Ann. N. York Ac. vii : n. spp.
- Apatetica siamensis*, Siam, LEWIS, p. 246, Notes Leyden Mus. xv, n. sp.
- ¹*Apheloglossa*, n. g., near *Diestota*, p. 348, for *A. rufipennis*, n. sp., Arizona, p. 349, and including probably *Diestota funebris*, Shp.; CASEY, Ann. N. York Ac. vii.
- ¹*Artochia*, n. g., near *Jesteva*, p. 400, for *A. productifrons*, n. sp., California, p. 401; CASEY, Ann. N. York Ac. vii.
- ¹*Asthenesita*, n. g., near *Leptusa*, p. 365, for *A. pallens*, n. sp., Florida, p. 366; CASEY, Ann. N. York Ac. vii.
- Atemeles pubicollis*, relations with Ants; RUPERTSBERGER, Wien. ent. Zeit. xii, p. 248. *A. cavus*, n. var., *hirsutus*; WASMANN, p. 102, Deutsche ent. Zeitschr. 1893.
- Atheta (Dimetrota) cribripennis*, Finland, SAHLBERG, p. 10, Medd. Soc. Faun. Fenn. xvii; *A. (Metaxya) homoöpyga*, p. 30, *insecuta*, p. 31, *sahlbergi*, p. 32, *turbida*, p. 33, *A. (Dimetrota) allocera*, p. 34, *A. (Anopleta) virilis*, p. 35, *A. (Microdota) asperiventris*, p. 36, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893 : n. spp.
- Bamona falliana*, California, CASEY, p. 378, Ann. N. York Ac. vii, n. sp.
- Baryodma sculptiventris*, p. 235, *thoracica*, p. 286, *bipartita*, p. 287, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Bledius arcticus*, Finland, SAHLBERG, p. 12, Medd. Soc. Faun. Fenn. xvii; *B. opacicollis*, p. 59, *clavatus*, p. 60, *rugosulus*, *rectangulus*, p. 61, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893 : n. spp.
- Bolitochara blanchardi*, p. 369, *marginella*, p. 370, New York, CASEY, Ann. N. York Ac. vii, n. spp.
- ¹*Bryobiota*, n. g., for *Phytosus bicolor*, Cas.; CASEY, p. 367, Ann. N. York Ac. vii.
- Bryocharis (Bryoporus) plagiata*, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893, p. 47, n. sp.

- Callicerus puberulus*, New York, CASEY, p. 310, Ann. N. York Ac. vii, n. sp.
- ¹ *Camioleum*, n. g., *Omaliiidae*, p. 394, for *C. loripes*, n. sp., Japan, p. 395; LEWIS, Ann. Nat. Hist. (6) xi.
- Chilopora rugipennis*, Finland, SAHLBERG, p. 9, Medd. Soc. Faun. Fenn. xvii; *C. baicalensis*, E. Siberia, EPELSHEIM, Deutsche ent. Zeitschr. 1893; n. spp.
- ⁴ *Colposura*, n. g., near *Amischa*, p. 336, for *C. praelonga*, p. 337, *parviceps*, p. 338, *angusta*, p. 339, n. spp., N. America; CASEY, Ann. N. York Ac. vii.
- Conurus maorinus*, p. 1025, *brevicornis*, p. 1405, *niticollis*, p. 1406, New Zealand, BROUN, Manual, n. spp.
- Coprostygus optandus*, New Zealand, BROUN, p. 1409, Manual, n. sp.
- Cryptobium bicolor*, pupa; WICKHAM, p. 341, pl. ix, fig. 16, Bull. Lab. Iowa, ii.
- Deleaster pekinensis*, China, FAIRMAIRE, p. cexii, Bull. Soc. ent. France, 1893, n. sp.
- Deliphrum aequicolle*, p. 419, *occiduun*, p. 420, California, CASEY, Ann. N. York Ac. vii, n. spp.
- ¹ *Diaulota*, n. g., near *Liparocephalus* for *D. densissima*, Alaska, p. 354, *insolita*, Queen Charlotte I., p. 355, n. spp.; CASEY, Ann. N. York Ac. vii.
- Dinaraea distincta*, Baikal, EPELSHEIM, p. 25, Deutsche ent. Zeitschr. 1893, n. sp.
- ¹ *Dinocoryna*, n. g., near *Myrmedonia*, p. 319, for *D. bisinuata*, n. sp., Florida, p. 320; CASEY, Ann. N. York Ac. vii.
- ⁴ *Doratoporus*, n. g., near *Porus*, for *D. menulax*, n. sp., Sikkim; WASMANN, Deutsche ent. Zeitschr. 1893, p. 207, pl. v, fig. 4.
- Echidnoglossa*: tabulation of the N. American species; CASEY, p. 312, Ann. N. York Ac. vii.
- E. brevicornis*, *lacustris*, p. 313, *brendeli*, p. 314, *monticola*, *lativentris*, p. 315, N. America; CASEY, Ann. N. York Ac. vii, n. spp.
- Encephalus torosus*, Baikal, EPELSHEIM, p. 39, Deutsche ent. Zeitschr. 1893, n. sp.
- ¹ *Eurypronota*, n. g., near *Colpodota*, p. 334, for *E. discreta*, *scopula*, n. spp., N. America; CASEY, Ann. N. York Ac. v.
- Falagria subopaca*, New Zealand, BROUN, p. 1405, Manual, n. sp.
- Geodromicus fauveli*, *nubilatus*, p. 408, *debilis*, p. 409, *temporalis*, p. 410, *humboldtianus*, p. 411, *integer*, p. 412, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Gnypeta atrolucens*, New York, CASEY, p. 346, Ann. N. York Ac. vii, n. sp.
- ¹ *Gyronycha*, n. g., near *Bamona*, p. 372, for *G. valens*, p. 373, *texana*, p. 374, *obscura*, p. 375, *fusciceps*, *lineata*, p. 376, *pertenuis*, p. 377, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Holotrochus ferrugineus*, *brevipennis*, New Zealand, p. 1034, BROUN, Manual, n. sp.
- Homalium tenellum*, New Zealand, BROUN, p. 1410, Manual, n. sp.

- Hyperomma dispersum*, p. 1408, *mandibulare, duplicatum*, p. 1409, New Zealand, BROUN, Manual, n. spp.
- Ilyobates baicalicus*, E. Siberia, EPPELSHEIM, p. 20, Deutsche ent. Zeitschr. 1893, n. sp.
- Ischnoderus pictulus*, p. 1040, *morosus, fulloni*, p. 1041, New Zealand, BROUN, Manual, n. spp.
- ¹*Isoglossa*, n. g., near *Thiasophila*, for *I. arcuata*, n. sp., California; CASEY, p. 304, Ann. N. York Ac. vii.
- Lathrimæum atrocephalum*, n. var. *fauveli*; PIC, p. 88, Échange, 1893.
- L. nigropiceum, reflexicolle*, p. 417, *spretum*, p. 418, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Lathrobium viduum*, p. 51, *L. (Lobathrium) indubium*, p. 52, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893, n. spp.
- Leptusa brevicollis*, p. 363, *opaca, seminitens*, p. 364, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Liogluta infans*, p. 26, *diabolica*, p. 27, *lata*, p. 28, *pachycera*, p. 29, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893, n. spp.
- Maseochara puberula*, Arizona, CASEY, Ann. N. York Ac. vii, p. 284, n. sp.
- Megarthus impressicollis*, Baikal, EPPELSHEIM, p. 67, Deutsche ent. Zeitschr. 1893, n. sp.
- ⁴*Microdonia*, n. g., p. 318, *Myrmedoniates*, for *M. occipitalis*, n. sp., Texas, p. 319; CASEY, Ann. N. York Ac. vii.
- ⁴*Mimeciton*, n. g., *Aleocharides*, p. 97, for *M. pulex*, n. sp., Rio de Janeiro; WASMANN, p. 98, pl. i, fig. 5, Deutsche ent. Zeitschr. 1893.
- Myrmecochara crinita*, Colorado, CASEY, p. 596, Ann. N. York Ac. vii; *M. (Euthorax) longicornis*, Rio de Janeiro, WASMANN, p. 102, Deutsche ent. Zeitschr. 1893 : n. spp.
- Myrmedonia caliginosa, angustula*, p. 323, *loricata*, p. 324, *obliqua*, p. 325, *planifer*, p. 326, N. America, CASEY, Ann. N. York Ac. vii; *M. (Ecitopora) hetschkoi*, Blumenau, WASMANN, p. 110, Deutsche ent. Zeitschr. 1893 : n. spp.
- ¹*Myrmobiota*, n. g., near *Homœusa*, p. 594, for *M. crassicornis*, n. sp., Iowa, p. 595; CASEY, Ann. N. York Ac. vii.
- ⁴*Nasirema*, n. g., p. 307, near *Phlæopora*, for *N. humilis*, p. 308, *parviceps*, p. 309, n. spp., N. America; CASEY, Ann. N. York Ac. vii.
- ¹*Nototaphra*, n. g., near *Myrmedonia*, for *N. lauta*, p. 327, *lugubris*, p. 328, n. spp., N. America; CASEY, Ann. N. York Ac. vii.
- Ocaleu badia*, n. var. *persimilis*; EPPELSHEIM, p. 19, Deutsche ent. Zeitschr. 1893.
- O. canaliculata*, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893, p. 18; *O. vancouveri*, N. America, CASEY, p. 309, Ann. N. York Ac. vii : n. spp.
- Ocyusa asperula*, Iowa, CASEY, p. 305, Ann. N. York Ac. vii, n. sp.
- ¹*Oligurota*, n. g., near *Thectura*, p. 361, for *O. pusio*, n. sp., Indiana, p. 362; CASEY, Ann. N. York Ac. vii.
- ¹*Omalius*, n. g., near *Omalius*, for *O. castaneus*, n. sp., New Zealand; BROUN, p. 1042, Manual.

- On. alium ater*, p. 420, *pacificum*, p. 421, *lacustre*, p. 422, *capito*, p. 423, *suffusum*, p. 424, *quadripenne*, p. 425, N. America, CASEY, Ann. N. York Ac. vii; *O. actobium*, p. 1035, *carinigerum*, *antipodum*, p. 1036, *chalméri*, *micrarthrum*, p. 1037, *cognatum*, *monilifer*, p. 1038, *debile*, *prolixum*, p. 1039, *stenosoma*, p. 1040, New Zealand, BROUN, Manual : n. spp.
- Othius angustus*. New Zealand, BROUN, p. 1026, Manual, n. sp.
- Oxypoda gracilicornis*, p. 21, *improba*, p. 22, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893; *O. congruens*, p. 292, *convergens*, *impressa*, p. 293, *nubifer*, p. 294, *saxatilis*, *glenoræ*, p. 295, *nigriceps*, p. 296, *lineata*, p. 297, *hudsonica*, *fustiger*, p. 298, *californica*, p. 299, N. America, CASEY, Ann. N. York Ac. vii : n. spp.
- Oxytelus laxipennis*, Comoro Is., FAIRMAIRE, p. 528, Ann. Soc. ent. Belgique, xxxvii; *O. munitus*, *breviceps*, p. 385, *nimius*, *montanus*, p. 388, *invenustus*, p. 389, *densus*, p. 393, *alpicola*, p. 394, *suspectus*, p. 395, *vegrandis*, p. 396, N. America, CASEY, Ann. N. York Ac. vii : n. spp.
- Pachycorinus sparsipennis*, *inflatipes*, Comoro Is., FAIRMAIRE, p. 527, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Pelecomalium* represented by the male of *Amphichroum*, and therefore to be suppressed; SCHWARZ, p. 396, P. ent. Soc. Washington, ii.
- P. flavescens*, p. 414, *gallidum*, p. 415, California, CASEY, Ann. N. York Ac. vii, n. spp.
- Philonthus lederi*, p. 49, *septentrionum*, p. 50, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893; *P. hæmorrhoidalis*, Nossi-bé, BRANCSIK, p. 220, Jahresh. Ver. Trencsen. xv : n. spp.
- ¹*Philusina*, n. g., near *Euryusa*, for *P. cremastogastris*, n. sp., Madagascar; WASMANN, Deutsche ent. Zeitschr. 1893, p. 101, pl. v, fig. 2.
- Phlæopora ferruginea*, Pennsylvania, CASEY, p. 366, Ann. N. York Ac. vii, n. sp.
- Placusa tucomæ*, Washington, CASEY, p. 350, Ann. N. York Ac. vii, n. sp.
- ²*Platandria*, n. g., near *Hoplandria*, p. 345, for *P. mormonica*, n. sp., Utah, p. 346; CASEY, Ann. N. York Ac. vii.
- Platysthetus cornutus* and *alutaceus*, distinctions; GERHARDT, Zeitschr. Ent. Breslau, xviii, p. 4.
- P. prætermisus*, Baikal, EPPELSHEIM, p. 58, Deutsche ent. Zeitschr. 1893, n. sp.
- Polistoma arenaria*, p. 289, *pacifica*, p. 290, California, CASEY, Ann. N. York Ac. vii, n. spp.
- ³*Pseudolesteva*, n. g., for *Lesteva pallipes*, Lec.; CASEY, p. 399, Ann. N. York Ac. vii.
- ⁴*Pseudoporus*, n. g., near *Porus*, for *P. furcifer*, n. sp., Sikkim; WASMANN, Deutsche ent. Zeitschr. 1893, p. 206, pl. v, fig. 3.
- Quedius fuscatus*, p. 1027, *discrepans*, p. 1030, *latimanus*, *collinus*, p. 1031, *cavelli*, p. 1032, *agathis*, p. 1407, New Zealand, BROUN, Manual, n. spp.

- Rheochara lucifuga*, Kentucky, CASEY, p. 288, Ann. N. York Ac. vii, n. sp.
- Siagonium vittatum*, Fauv., = (*haroldi*, W.) ; LEWIS, p. 150, Entomologist, xxvi.
- Silusa vesperis*, p. 351, *nanula*, p. 352, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Sipalia difformis* and allies, note on ; FAUVEL, p. 255, Rev. Ent. franc. xii.
- S. frontalis*, California, CASEY, p. 366, Ann. N. York Ac. vii, n. sp.
- Somatium nugator*, p. 379, *claviger*, p. 380, *oviforme*, p. 331, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Staphylinus procerus*, Centr. Africa, GAHAN, p. 739, P. Zool. Soc. London, 1893, n. sp.
- Stenus ampliventris*, Finland, SAHLBERG, p. 7, Medd. Soc. Faun. Fenn. xvii ; *S. kolbei*, Europe, GERHARDT, p. 359, Deutsche ent. Zeitschr. 1893, and p. 6, Zeitschr. Ent. Breslau, xviii ; *S. subnudus*, p. 53, *dissociatus*, p. 54, *innuptus*, p. 55, *imitator*, p. 56, *auriger*, p. 57, EPPELSHEIM, Deutsche ent. Zeitschr. 1893 : n. spp.
- Tachinus gelidus*, p. 41, *multistriolatus*, p. 42, *nigrobadius*, p. 43, *elegans*, p. 45, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893, n. spp.
- Tachyporus chrysomelinus*, n. var. *congruens* ; EPPELSHEIM, p. 40, Deutsche ent. Zeitschr. 1893.
- Tachyusa sulciventris*, Baikal, EPPELSHEIM, p. 37, Deutsche ent. Zeitschr. 1893, n. sp.
- Tarphiota*, n. g., near *Alianta*, p. 332, for *T. pallidipes*, n. sp., p. 333, W. Coast N. America ; CASEY, Ann. N. York Ac. vii.
- Termitochara*, n. g., for *T. kraatzi*, n. sp., Madagascar ; WASMANN, p. 247, Wien. ent. Zeit. xii.
- Tevales*, n. g., near *Lesteva*, for *T. cribratulus*, n. sp., California ; CASEY, p. 399, Ann. N. York Ac. vii.
- Thectura* : systematic position is near *Homalota*, Mann. ; CASEY, p. 360, Ann. N. York Ac. vii.
- T. americana*, New York, CASEY, p. 361, Ann. N. York Ac. vii, n. sp.
- Thecturota*, n. g., near *Hydrosmecta*, p. 357, for *T. tenuissima*, *capito*, p. 358, *demissa*, p. 359, *exigua*, p. 360, n. spp., N. America ; CASEY, Ann. N. York Ac. vii.
- Thiasophila laticollis*, p. 302, *angustiventris*, *asperata*, p. 303, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Thinobius (Thinophilus) procerus*, p. 63, *allocerus*, p. 64, Baikal, EPPELSHEIM, Deutsche ent. Zeitschr. 1893, n. spp.
- Thinusa*, n. g., for *Phytosus maritimus*, Cas. ; CASEY, p. 371, Ann. N. York Ac. vii.
- Tilea ruflarsis*, p. 403, *brevipennis*, *castanea*, p. 404, N. America ; CASEY, Ann. N. York Ac. vii, n. spp.
- Tinotus caviceps*, p. 316, *imbricatus*, p. 317, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Trichiusa*, n. g., near *Hoplandria*, p. 339, for *T. compacta*, p. 341, *setigera*, p. 342, *pilosa*, *robustula*, p. 343, *parvicollis*, p. 344, and including perhaps some S. American species of *Brachida* ; CASEY, Ann. N. York Ac. vii.

- ¹ *Unamis*, n. g., for *Lesteva truncata*, Cas.; CASEY, p. 400, Ann. N. York Ac. vii.
Xantholinus coloratus, Nossibé, BRANCSIK, p. 220, Jahresh. Ver. Trencsen. xv; *X. cecus*, New Zealand, BROUN, p. 1406, Manual: n. spp.

PSELAPHIDÆ.

[*Cf.* BRENDÉL (106), BROUN (112, 113), CASEY (151), GUILLEBEAU (416), RAFFRAY (742, 743, 744), REITTER (760, 761), WASMANN (1026, 1028).]

Monographic revision of the *Faronini*; RAFFRAY, Rev. Ent. franc. xii, p. 7, &c.

² *Acolonia*, n. g., for *Euplectus cavicollis*, Lec.; CASEY, p. 454, Ann. N. York Ac. vii.

³ *Acrocomus*, n. g., near *Dalmodes*, for *A. cribratus*, n. sp., Ceylon; RAFFRAY, p. 460, Ann. Soc. ent. France, 1893.

Amana cephalotes, Sumatra, RAFFRAY, p. 474, Ann. Soc. ent. France, 1892, n. sp.

Amauronyx abeillei, Madagascar, GUILLEBEAU, p. cccxii, Bull. Soc. ent. France, 1893, n. sp.

⁴ *Ancystrocerus*, n. g. *Tyrini*, p. 500, for *A. sumatrensis*, n. sp., Sumatra, RAFFRAY, p. 501, pl. x, fig. 17, Ann. Soc. ent. France, 1892.

⁵ *Anitra*, n. g. *Ctenistini*, p. 499, for *A. glaberula*, n. sp., Arizona, p. 500; CASEY, Ann. N. York Ac. vii.

Aphilia sumatrensis, Sumatra, RAFFRAY, p. 472, Ann. Soc. ent. France, 1892, n. sp.

Articeropsis sikora, Madagascar, WASMANN, p. 257, Wien. ent. Zeit. xii, n. sp.

Arctium candidum, *marinicum*, p. 465, *pacificum*, p. 466, *brevipenne*, p. 467, California, CASEY, Ann. N. York Ac. vii, n. spp.

⁶ *Arianops*, n. n. for *Eusanops*, Cas.; BRENDÉL, p. 278, Tr. Amer. ent. Soc. xx.

Arnyllium longipilis, Sumatra, RAFFRAY, p. 490, Ann. Soc. ent. France, 1892, n. sp.

Arthmius bulbifer, *involutus*, N. America, CASEY, p. 474, Ann. N. York Ac. vii, n. sp.

⁷ *Articeropsis*, n. g. for a nondescript species; WASMANN, p. 111, Deutsche ent. Zeitschr. 1893.

Articerus quadriscopulatus, Schf., referred to *Articerodes*, and figured, pl. x, fig. 13; RAFFRAY, p. 502, Ann. Soc. ent. France, 1892.

Atinus brevicornis, Texas, CASEY, p. 498, Ann. N. York Ac. vii, n. sp.

Batraxis curvispina, p. 491, *brevicollis*, *parallela*, p. 492, Sumatra, RAFFRAY, Ann. Soc. ent. France, 1892; *B. singhalensis*, p. 453, Ceylon, RAFFRAY, t. c.: n. spp.

⁸ *Batrisinus*, n. g. of *Batrisus* for *B. bouchardi*, n. sp., Sumatra, p. 10, fig. 5; RAFFRAY, p. 476, Ann. Soc. ent. France, 1892.

- Batrisus spinicollis*, Motsch., redescribed; RAFFRAY, p. 446, Ann. Soc. ent. France, 1893.
- B. moreanus*, Morea, REITTER, p. 174, Wien. ent. Zeit. xii; *B. dispar*, *cavifrons*, p. 478, *muticus*, p. 479, *clavicornis*, pl. 10, fig. 6, p. 480, *B. (Batrisodes) nodicornis*, fig. 7, *bisulcatus*, p. 481, *sulcipes*, *decipiens*, p. 483, *semipunctatus*, *cribraticollis*, p. 484, *schaufussi*, fig. 8, p. 485, *excavatus*, fig. 12, *caviventris*, fig. 9, p. 486, *stigmatosus*, fig. 10, *angulatus*, fig. 11, p. 487, *monoceros*, fig. 13, p. 488, *torticornis*, fig. 14, p. 489, Sumatra, RAFFRAY, Ann. Soc. ent. France, 1892; *B. armatus*, p. 447, *microphthalmus*, *depressus*, p. 448, *hemipterus*, p. 449, Ceylon, RAFFRAY, op. cit. 1893; *B. sinuatifrons*, *clypeonotus*, N. America, BRENDÉL, p. 280, Tr. Amer. ent. Soc. xx; *B. cavicrus*, *carolineæ*, p. 468, *pygidialis*, p. 470, *denticauda*, p. 471, N. America, CASEY, Ann. N. York Ac. vii : n. spp.
- Bibleptectus*: N. American species noticed; CASEY, p. 458, Ann. N. York Ac. vii.
- Brabaxis* merged in *Eupines*; RAFFRAY, p. 457, Ann. Soc. ent. France, 1893.
- Bryaxis compar*, Lec., = (*franciscana*, Cas.); BRENDÉL, p. 279, Tr. Amer. ent. Soc. xx. *B. nasina*, n. n. for *nasuta*; REITTER, p. 261, Wien. ent. Zeit. xii.
- B. areolata*, p. 493, *articularis*, p. 494, Sumatra, RAFFRAY, Ann. Soc. ent. France, 1892; *B. (Anasis) singhalensis*, Ceylon, RAFFRAY, p. 459, op. cit. 1893; *B. foveata*, p. 278, *cylindrartus*, *depressifrons*, p. 279, *wickhami*, p. 280, N. America, BRENDÉL, Tr. Amer. ent. Soc. xx; *B. labyrinthea*, p. 477, *utricata*, p. 479, *loripes*, p. 480, *terebrata* (= *perforata*, Brend.), p. 481, N. America, CASEY, Ann. N. York Ac. vii; *B. euplectoides*, p. 1045, *decens*, *munroi*, p. 1046, *forficulida*, *foveatissima*, p. 1047, *platynota*, p. 1338, *conspicua*, p. 1415, *costata*, p. 1416, *platyarthra*, *mundulus*, p. 1417, *fulvitaris*, p. 1418, New Zealand, BROUN, Manual; *B. sternalis*, p. 171, *allocera*, p. 172, *setifer*, p. 173, *diversa*, p. 174, New Zealand, BROUN, Ann. Nat. Hist. (6) xii : n. spp.
- Clavigerides*: table of the genera; WASMANN, Deutsche ent. Zeitschr. 1893, pp. 109-112.
- Claviger antoniae*, p. 220, *raffrayi*, p. 221, Ordubad, REITTER, Wien. ent. Zeit. xii, n. spp.
- Ctenisis raffrayi*, Arizona, CASEY, p. 503, Ann. N. York Ac. vii, n. sp.
- Ctenistes alternans*, Sumatra, RAFFRAY, p. 498, Ann. Soc. ent. France, 1892, n. sp.
- Cyathiger pallidus*, Sumatra, p. 496, pl. x, fig. 15, RAFFRAY, Ann. Soc. ent. France, 1892, n. sp.
- Cylindrarctus comes*, Florida, *crinifer*, Iowa, CASEY, p. 489, Ann. N. York Ac. vii, n. spp.
- Decarthron marinum*, *scarificatum*, *seriepunctatum*, N. America, BRENDÉL, p. 278, Tr. Amer. ent. Soc. xx, n. spp.

- ¹*Delenda*, n. g., for *D. carthago*, n. sp., CROISSANDEAU, *Coleopterologiste*, 1891, p. 152, = (*Eusonoma*, Reitter, *infra*); REITTER, p. 261, *Wien. ent. Zeit.* xii.
- Dioptrus ceylonicus*, Motsch., gen. and sp. redescribed; RAFFRAY, p. 455, *Ann. Soc. ent. France*, 1893.
- D. monoceros*, Ceylon, RAFFRAY, *Ann. Soc. ent. France*, p. 456, n. sp.
- Enoptostomus squamosus*, Sumatra, RAFFRAY, p. 499, *Ann. Soc. ent. France*, 1892, n. sp.
- Eubatriscus dentipes*, p. 450, *palpator*, *pubescens*, p. 451, *caviventris*, p. 452, Ceylon, RAFFRAY, *Ann. Soc. ent. France*, 1893, n. spp.
- ¹*Euglyptus*, n. g., p. 1411, near *Tyrus*, for *E. elegans*, n. sp., p. 1412, *New Zealand*; BROWN, *Manual*.
- E. costifer*, *New Zealand*, BROWN, p. 166, *Ann. Nat. Hist.* (6) xii, n. sp.
- Euplectini*: table of the N. American genera; CASEY, p. 442, *Ann. N. York Ac.* vii.
- Euplectus piceus*, Motsch., characters; SAHLBERG, p. 9, *Act. Soc. Faun. Fenn.* vi. *E. rufipes*, Lec., figured, pl. iv, fig. 9, generic position queried, p. 282; BRENDÉL, *Tr. Amer. ent. Soc.* xx.
- E. theryi*, Madagascar, GUILLEBEAU, p. ccxci, *Bull. Soc. ent. France*, 1893; *E. elongatus*, Pennsylvania, BRENDÉL, p. 281, *Tr. Amer. ent. Soc.* xx; *E. hulsonicus*, p. 455, *iowensis*, p. 456, N. America, CASEY, *Ann. N. York Ac.* vii; *E. mærens*, p. 1055, *lepiphorus*, *validus*, p. 1056, *scruposus*, *allocephalus*, p. 1057, *acuminatus*, *clevedonensis*, p. 1058, *sandageri*, *personatus*, p. 1059, *unicus*, *patronus*, p. 1060, *verticalis*, *antiquus*, p. 1061, *levifrons*, p. 1425, *spinifer*, *munroi*, p. 1426, *obscurus*, p. 1427, *cozalis*, *inscitus*, p. 1428, *iracundus*, *caudatus*, p. 1429, *claviger*, 1430, *New Zealand*, BROWN, *Manual*: n. spp.
- ¹*Eusonoma*, n. g., *Faroniides*, p. 172, for *E. frivaldszkyi*, n. sp., *Constantinople*, p. 173; REITTER, *Wien. ent. Zeit.* xii. [*Cf. Delenda, supra.*]
- Eutyphlus prominens*, Virginia, CASEY, p. 460, *Ann. N. York Ac.* vii, n. sp.
- ¹*Exeirarthra*, n. g., near *Sagola*, for *E. enigma*, p. 1054, *pallida*, p. 1424, n. spp., *New Zealand*, BROWN, *Manual*.
- Faronini*: monograph of; RAFFRAY, pp. 1-53, *Rev. Ent. franc.* xii: critical notes on and characters of the genera; CASEY, pp. 433-441, *Ann. N. York Ac.* vii.
- ¹*Faronoma*, n. g., for *Ryxabis cavangula*, Reitt.; RAFFRAY, p. 259, *Rev. Ent. franc.* xii.
- Faronus grouvellei*, Nice, RAFFRAY, p. 8, pl. i, fig. 19, *Rev. Ent. franc.* xii; *F. simpliciceps*, Algeria, REITTER, p. 173, *Wien. ent. Zeit.* xii: n. spp.
- Füstiger reitteri*, Blumenau, WASMANN, p. 104, *Deutsche ent. Zeitschr.* 1893, n. sp.
- Jubus laticeps*, p. 161, pl. ii, fig. 31, *vulpinus*, fig. 21, *liliputanus*, fig. 32, p. 162, Blumenau, *decipiens*, N. Grenada, p. 164, fig. 28, *argus*, fig. 29, *lativentris*, fig. 26, p. 165, *longicornis*, p. 166, fig. 10, *hetschkoi*, p. 168, fig. 33, Blumenau, *pallidus*, fig. 25, p. 172, *New Grenada*, *intermedius*, p. 175, fig. 20, *grouvellei*, p. 176, *dominulus*, fig. 6, *gracilis*, fig. 19

- p. 177, *brasiliensis*, p. 178, *quadratus*, p. 179, fig. 18, *bifossulatus*, fig. 30, *microcephalus*, fig. 12, p. 180, *sinuatus*, fig. 5, p. 181, *subrectus*, fig. 4, *microphthalmus*, figg. 8 & 9, p. 182, *convexusculus*, p. 184, fig. 14, Brazil, RAFFRAY, Rev. Ent. franc. xii, n. spp.
- Machærites theryi*, Algeria, GUILLEBEAU, p. ccxcii, Bull. Soc. ent. France, 1893, n. sp.
- Mechanicus* and *Phthartomicrus*, differential characters; RAFFRAY, pp. 467 & 468, Ann. Soc. ent. France, 1892.
- † *Microtyrus*, n. g., near *Tyrus*, for *M. punctatus*, n. sp., New Zealand; BROWN, p. 1413, Manual.
- † *Miroclaviger*, n. g., for *M. cervicornis*, n. sp., Madagascar; WASMANN, p. 108, pl. v, fig. 9, Deutsche ent. Zeitschr. 1893.
- † *Morius*, n. g., near *Oropus*, p. 445, for *M. occidens*, n. sp., California; CASEY, Ann. N. York Ac. vii.
- † *Neocerus*, n. g., near *Commatocerus*, for *N. compressicornis*, n. sp., Madagascar; WASMANN, p. 105, pl. v, fig. 6, Deutsche ent. Zeitschr. 1893.
- † *Novofustiger*, n. g., for *N. raffrayi*, n. sp., Madagascar, WASMANN, p. 106, pl. v, fig. 7, Deutsche ent. Zeitschr. 1893, n. sp.
- Octomicrus punctipennis*, Ceylon, RAFFRAY, p. 445, Ann. Soc. ent. France, 1893, n. sp.
- † *Oropodes*, n. g., *Euplectini*, for *O. orbiceps*, n. sp., California; CASEY, p. 453, Ann. N. York Ac. vii.
- Oropus cavicauda*, California, CASEY, p. 448, Ann. N. York Ac. vii, n. sp.
- Oxyomera coxalis*, Sumatra, RAFFRAY, p. 473, pl. x, fig. 4, Ann. Soc. ent. France, 1892, n. sp.
- † *Paussiger*, n. g. for a nondescript species; WASMANN, p. 110, Deutsche ent. Zeitschr. 1893.
- P. limicornis*, Madagascar, WASMANN, p. 257, Wien. ent. Zeit. xii, n. sp.
- † *Philipsis*, n. g., near *Aphiliops*, for *P. exigua*, n. sp., Sumatra, pl. x, fig. 3, RAFFRAY, p. 471, Ann. Soc. ent. France, 1892.
- † *Placodium*, n. g., near *Euplectus*, for *P. zenarthrum*, n. sp., New Zealand; BROWN, p. 1431, Manual.
- Poroderus biarmatus*, Sumatra, RAFFRAY, p. 498, Ann. Soc. ent. France, 1892, n. sp.
- Pselaphodes simoni*, Ceylon, RAFFRAY, p. 462, Ann. Soc. ent. France, 1893, n. sp.
- Pselaphomorphus microphthalmus*, = (*muticus*, Raf.); RAFFRAY, p. 44, Rev. Ent. franc. xii.
- Pselaphus banghaasi*, Margelan, REITTER, p. 220, Wien. ent. Zeit. xii; *P. reitteri*, Sumatra, RAFFRAY, p. 497, Ann. Soc. ent. France, 1892; *P. fustifer*, p. 495, *bellax*, p. 496, N. America, CASEY, Ann. N. York Ac. vii; *P. citimus*, p. 1043, *meliusculus*, p. 1044, *cavelli*, p. 1414, *sulcicollis*, p. 1415, New Zealand, BROWN, Manual: n. spp.
- † *Pseudoterus*, n. g., near *Euplectus*, for *P. crassicornis*, n. sp., Sumatra, pl. x, fig. 2; RAFFRAY, p. 469, Ann. Soc. ent. France, 1892.
- Radama fimbriatus*, n. sp., Madagascar, WASMANN, p. 107, pl. v, fig. 8, Deutsche ent. Zeitschr. 1893, n. sp.

- \ *Rafonus*, n. g., for *Faronus tolulæ*, Lec. ; CASEY, p. 441, Ann. N. York Ac. vii.
 \ *Ramecia*, n. g., *Euplectini*, p. 450, for *R. discreta*, p. 451, *dentiventris*, p. 452, n. spp., N. America ; CASEY, Ann. N. York Ac. vii.
Reichenbachia furtiva, p. 483, *inepta*, p. 484, *demissa*, p. 485, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
Rhexidius asperulus, California, CASEY, p. 449, Ann. N. York Ac. vii, n. sp.
Rhexius schmitti, N. America, BRENDEL, p. 281, Tr. Amer. ent. Soc. xx, n. sp.
Rybaxis mystica, Rhode I., CASEY, p. 476, Ann. N. York Ac. vii, n. sp.
Sagola punctulata, p. 21, pl. i, fig. 9, *frontalis*, p. 23, fig. 14, *sharpi*, p. 26, fig. 11, *brevicornis*, p. 27, fig. 13, New Zealand, RAFFRAY, Rev. Ent. franc. xii ; *S. insignis*, p. 1049, *hirtalis*, *sobrina*, p. 1050, *rectipes*, *insolens*, p. 1051, *punctata*, *fulva*, p. 1052, *ruficeps*, *parallela*, *anisartha*, p. 1053, *macronyx*, p. 1418, *mimica*, p. 1419, *robusta*, p. 1420, *laminata*, p. 1421, *immota*, *flavipes*, p. 1422, *elongata*, p. 1423, *gracilis*, p. 1424, New Zealand, BROWN, Manual ; *S. lineata*, p. 175, *pertinax*, p. 176, *citima*, p. 177, New Zealand, BROWN, Ann. Nat. Hist. (6) xii : n. spp.
Sebaga lamellata, Mexico, pl. ii, fig. 37, *dilatata*, Blumenau, fig. 36, p. 51, RAFFRAY, Rev. Ent. franc. xii, n. spp.
 \ *Semilaviger*, n. g., p. 102, for *S. sikoræ*, n. sp., Madagascar, p. 103, pl. v, fig. 5, WASMANN, Deutsche ent. Zeitschr. 1893.
Sognorus ocularis, *abruptus*, Arizona, CASEY, p. 502, Ann. N. York Ac. vii, n. spp.
Sonoma grandiceps, p. 437, *longicollis*, p. 438, *subsimilis*, *rubida*, p. 439, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
Startes foveata, New Zealand, BROWN, p. 170, Ann. Nat. Hist. (6) xii, n. sp.
 \ *Thesiastes*, n. g., near *Euplectus*, for *T. atratus*, n. sp., Rhode I. ; CASEY, p. 457, Ann. N. York Ac. vii.
Trimiopectus ? *parabolicus*, N. America, BRENDEL, p. 281, pl. iv, fig. 7, Tr. Amer. ent. Soc. xx, n. sp.
 \ *Tychotyrus*, n. g., for *T. sternalis*, n. sp., New Zealand, and including *Tyrus mutandus*, *armatus*, *spinipes* ; BROWN, Ann. Nat. Hist. (6) xii.
Tychus bryazoides, *algericus*, Algeria, GUILLEBEAU, p. cccxciii, Bull. Soc. ent. France, 1893 ; *T. ludovicianus*, *microphthalmus*, N. America, BRENDEL, p. 27, Tr. Amer. ent. Soc. xx ; *T. spiculifer*, p. 491, *verticalis*, p. 492, N. America, CASEY, Ann. N. York Ac. vii : n. spp.
 \ *Tyrogetus*, n. g., p. 164, for *T. optandus*, n. sp., New Zealand ; BROWN, Ann. Nat. Hist. (6) xii.
Tyrus armatus, p. 1043, *crassipes*, p. 1337, *spinipes*, p. 1411, New Zealand, BROWN, Manual, n. spp.
 \ *Valda*, n. g., near *Tychus*, for *V. frontalis*, n. sp., California ; CASEY, p. 493, Ann. N. York. Ac. vii.

Zethopsus laevipennis, p. 466, *sublevis*, p. 467, Sumatra, RAFFRAY, Ann. Soc. ent. France, 1892; *Z. furcifer*, Ceylon, RAFFRAY, p. 444, *op. cit.* 1893, n. spp.

SCYDMENIDÆ.

[*Cf.* BRENDÉL (106), BROUN (112, 113), CROISSANDEAU (209, 210), SCHAUFUSS (841, 842).]

Commencement of monograph of the European and Mediterranean species, with figures; CROISSANDEAU, Ann. Soc. ent. France, 1893, pp. 199, &c., pls. ii-v.

New genera and species of *Scydmenidæ* in amber. [*Cf.* Palæo-entomology, p. 87.]

Cephennium: the European species described and figured; CROISSANDEAU, pp. 409-442, pls. xii-xvi, Ann. Soc. ent. France, 1893.

C. atlanticum, Madeira, CROISSANDEAU, p. 433, *t. c.*, n. sp.

Cyrtoscydmus fairmairei, *sauleyi*, Syria, p. lxxiii, *mesmini*, Madeira, p. lxxiv, CROISSANDEAU, Bull. Soc. ent. France, 1893; *C. madagascariensis*, p. 587, *validus*, p. 588, *vulgaris*, p. 589, *kolbei*, p. 590, Madagascar, SCHAUFUSS, Nunquam ot. iii: n. spp.

Eucomnus leveillei, p. lxxv, *fauveli*, p. lxxvi, *guillebeaudi*, *argodi*, p. lxxvii, Syria, *eppelshemi*, Spain?, p. lxxviii, *growelli*, E. Pyrenees, *regimbarti*, Corsica, p. lxxix, CROISSANDEAU, Bull. Soc. ent. France, 1893, n. spp.

Euthiodes lata, pl. iv, fig. 15, *cristata*, fig. 16, N. America, BRENDÉL, p. 284, Tr. Amer. ent. Soc. xx, n. spp.

Napochus saulcyanus, Syria, CROISSANDEAU, p. lxxiv, Bull. Soc. ent. France, 1893, n. sp.

Neuraphes reitteri, Syria, CROISSANDEAU, p. lxxii, Bull. Soc. ent. France, 1893, n. sp.

Phaganophana planiceps, *munroi*, p. 1063, *antennale*, *stenocera*, *latiuscula*, p. 1064, *sanguinea*, *erythronota*, p. 1065, *ovipenne*, p. 1339, *russata*, *monilifer*, p. 1432, *angulata*, p. 1433, New Zealand, BROUN, Manual, n. spp.

Sciacharis, n. g., for *S. fulva*, n. sp., New Zealand; BROUN, Manual, p. 1062.

Scydmenus gracilis, Lec., generic position queried; BRENDÉL, p. 282, Tr. Amer. ent. Soc. xx.

S. giganteus, p. 591, *raptax*, p. 592, Madagascar, SCHAUFUSS, Nunquam ot. iii; *S. caseyi*, p. 282, *S. ? ovithorax*, p. 28, pl. iv, fig. 12, N. America, BRENDÉL, Tr. Amer. ent. Soc. xx; *S. elongellus*, New Zealand, BROUN, p. 1338, Manual; *S. cilipes*, p. 178, *cedius*, *allocerus*, p. 179, *brachycerus*, p. 180, *xanthopus*, *heterarthrus*, p. 181, *relatus*, *insignis*, p. 182, New Zealand, BROUN, Ann. Nat. Hist. (6) xii: n. spp.

PAUSSIDÆ.

Paussus grandidieri, Madagascar, POUJADE, p. 14, Naturaliste, 1893, n. sp.

SILPHIDÆ.

- [*Cf.* BROUN (112), GROUVELLE (408), GUILLEBEAU (417), LEWIS (586), REITTER (759, 761), SAHLBERG (834), SEMENOW (880).]
Aclypea biseriata, Turkestan, REITTER, p. 221, Wien. ent. Zeit. xii, n. sp.
Agathidium australe, Algeria, GUILLEBEAU, p. cccxxvi, Bull. Soc. ent. France, 1893, n. sp.
¹*Allocatops*, n. g., for *A. ovalis*, n. sp., New Zealand; BROUN, p. 1435, Manual.
Anisotoma insularis, Finland, SAHLBERG, p. 34, Act. Soc. Faun. Fenn. vi, n. sp.
Apatetica (referred to *Staphylinidæ*), n. sp.; *cf.* *Staphylinidæ*.
¹*Aspherites*, n. g., near *Catopsolius*, p. 1067, for *A. nitidus*, n. sp., New Zealand, p. 1068; BROUN, Manual.
Bathyscia tropica, note on; UHAGON, Act. Soc. espan. xxii, p. 124.
Catops lapponicus, p. 45, *laticollis*, p. 46, Finland, SAHLBERG, Act. Soc. Faun. Fenn. vi, n. spp.
Choleva relata, p. 1339, *phyllobia*, p. 1433, *monticola*, *hunuense*, p. 1434, New Zealand, BROUN, Manual, n. spp.
¹*Inocatops*, n. g., near *Camiarus*, for *I. compactus*, p. 1066, *flectipes*, p. 1067, *nigrescens*, p. 1339, n. spp., New Zealand; BROUN, Manual.
¹*Isocolon*, n. g., for *I. hilaris*, n. sp., New Zealand; BROUN, p. 1070, Manual.
Lyrosoma: the species; SEMENOW, p. 345, Horæ Soc. ent. Ross. xxvii.
L. tripartitum, p. 354, *snowi*, *suturale*, *ovipenne*, p. 355, Kurile Is., LEWIS, Ann. Nat. Hist. (6) xi, n. spp.
Necrophilus subterraneus, habits; RADE, pp. 357-359, Ent. Nachr. xix.
Necrophorus morio, Gebl., = (*funeris*, Jakl.); REITTER, p. 147, Wien. ent. Zeit. xii. *N. vespillo*, n. var. *fauveli*; FAUCONNET, p. 255, Rev. Ent. franc. xii.
N. satanas, Astrachan, REITTER, p. 147, Wien. ent. Zeit. xii; *N. insularis*, Sumatra, GROUVELLE, p. 161, Notes Leyden Mus. xv : n. spp.
Pelates striatipennis, Japan, LEWIS, p. 356, Ann. Nat. Hist. (6) xi, n. sp.
Pteroloma: genus and species characterised; SEMENOW, pp. 335-344, Horæ Soc. ent. Ross. xxvii.
P. discicolle, Japan, LEWIS, p. 356, Ann. Nat. Hist. (6) xi; *P. potanini*, N. China, p. 338, *turkestanicum*, Centr. Asia, p. 340, SEMENOW, Horæ Soc. ent. Ross. xxvii : n. spp.
Silpha atrata, variation; SHARP, Ent. Mag. xxix, p. 144. *S. subrotundata*, note on; JOHNSON, p. xxi, Tr. City London Soc. 1893.

TRICHOPTERYGIDÆ.

- [*Cf.* BROUN (112), SCHAUFUSS (842).]
Ptenidium posticale, p. 1437, *proprium*, *cavelli*, p. 1438, New Zealand, BROUN, n. spp.
Trichopteryx madagascariensis, Madagascar, SCHAUFUSS, p. 596, Nunquam ot. iii, n. sp.

SCAPHIDIIDÆ.

[Cf. BRANCSIK (102), CASEY (151), GUILLEBEAU (417), LEWIS (585).]

Affinities of the fam. noticed, with monograph of the N. American species; CASEY, pp. 510-533, Ann. N. York Ac. vii.

⁴ *Ascaphium*, n. g., p. 288, for *A. sulcipenne*, *tibiale*, p. 289, *apicale*, p. 290, n. spp., Japan; LEWIS, Ann. Nat. Hist. (6) xi.

Baocera congener, *deflexa*, p. 517, *speculifer*, *apicalis*, p. 518, *robustula*, p. 519, *texana*, *picea*, p. 520, *nana*, p. 521, North America, CASEY, Ann. N. York Ac. vii, n. spp.

⁴ *Episcaphium*, n. g., p. 290, for *E. semirufum*, n. sp., with var. *ruficollis*, Japan, p. 291; LEWIS, Ann. Nat. Hist. (6) xi.

Scaphidium emarginatum, p. 291, *longipes*, *femorale*, p. 292, *rufopygum*, p. 293, *incisum*, p. 294, Japan, LEWIS, Ann. Nat. Hist. (6) xi; *S. rufum*, Nossibé, BRANCSIK, p. 220, Jahresh. Ver. Trencsen. xv : n. spp.

Scaphisoma leve, Algeria, GUILLEBEAU, p. cccxxvii, Bull. Soc. ent. France; *S. madecassa*, Nossibé, BRANCSIK, p. 221, Jahresh. Ver. Trencsen. xv; *S. repanda*, p. 525, *evanescens*, p. 528, *rubens*, p. 529, *desertorum*, *inconspicua*, p. 530, *obesula*, *carolinæ*, p. 531, *arkansana*, p. 532, N. America, CASEY, Ann. N. York Ac. vii : n. spp.

Scaphium optabile, Japan, LEWIS, p. 290, Ann. Nat. Hist. (6) xi, n. sp.

HISTERIDÆ.

[Cf. CASEY (151), FAUVEL (306), LEWIS (588, 589, 591), SCHMIDT (849-853).]

Acritus lightfooti, Cape Town, LEWIS, p. 429, Ann. Nat. Hist. (6) xi; *A. indignus*, p. 239, *subtilissimus*, p. 240, New Guinea, SCHMIDT, Ann. Mus. Genova, xxxiii; *A. cælatus*, N. America, CASEY, p. 574, Ann. N. York Ac. vii : n. spp.

Anapleus compactus, California, CASEY, p. 558, Ann. N. York Ac. vii, n. sp.

Apobletes (sub. *Platysoma*) *difficilis*, Schm., = (*semperi*, Lew.); LEWIS, p. 418, Ann. Nat. Hist. (6) xi.

A. serratipes, *pauperatus*, Gaboon, p. 7, *latusculus*, p. 8, *incognitus*, *exhaustus*, p. 9, Madagascar, SCHMIDT, Ent. Nachr. xix; *A. appendiculatus*, *affinis*, New Guinea, SCHMIDT, p. 233, Ann. Mus. Genova, xxxiii : n. spp.

Bacanius ambiguus, p. ci, *inopinatus*, p. cii, Seychelles, SCHMIDT, Bull. Soc. ent. France, 1893; *B. gestroi*, New Guinea, SCHMIDT, p. 238, Ann. Mus. Genova, xxxiii; *B. globulinus*, *debilitans*, p. 560, *acuminatus*, p. 561, California, CASEY, Ann. N. York Ac. vii : n. spp.

Baconia angusta, S. America, SCHMIDT, p. 11, Ent. Nachr. xix, n. sp.

Carcinops papagoana, California, CASEY, p. 554, Ann. N. York Ac. vii, n. sp.

- ⁴*Chelycephalus*, n. g., p. 182, for *C. varicolor*, n. sp., Bahia, p. 183; SCHMIDT, Deutsche ent. Zeitschr. 1893.
- Contipus piraticus*, Dutch Timor, LEWIS, p. 420, Ann. Nat. Hist. (6) xi, n. sp.
- Coryphaeus*: position discussed; LEWIS, p. 423, Ann. Nat. Hist. (6) xi.
- C. pilosus*, Teuimber, LEWIS, p. 423, Ann. Nat. Hist. (6) xi, n. sp.
- Epiurus cornutus*, p. 552, New Mexico, *subtropicus*, p. 553, Florida, CASEY, Ann. N. York Ac. vii, n. spp.
- Euclasea pauperella*, p. 424, *tuberculata*, Bahia, *obliqua*, Mexico, p. 425, LEWIS, Ann. Nat. Hist. (6) xi, n. spp.
- ¹*Halacritus*, n. g., for *Acrilus punctum* and allies, with *A. algarum*, n. sp., Seychelles; SCHMIDT, Bull. Soc. ent. France, 1893.
- ⁴*Heteriodes*, n. g., for *H. fraudulentus*, n. sp.; SCHMIDT, p. 188, Deutsche ent. Zeitschr. 1893.
- ⁴*Heteriomorphus*, n. g., for *H. perplexus*, n. sp., Mexico; SCHMIDT, Deutsche ent. Zeitschr. 1893, p. 186.
- ¹*Heteriosoma*, n. g., p. 184, for *H. sahlbergi*, n. sp., Petropolis, p. 185; SCHMIDT, Deutsche ent. Zeitschr. 1893.
- Hister succicola* and *cadaverinus*, characters of; SCHMIDT, p. 190, Deutsche ent. Zeitschr. 1893. *H. rugistrius*, variation noticed; LEWIS, p. 185, Ent. Mag. xxix.
- H. semiruber*, p. 539, *sculpticauda*, p. 540, *virginiae*, p. 541, *pluto*, p. 542, *fractifrons*, *mormon*, p. 543, *umbilicatus*, p. 545, *hudsonicus*, p. 546, *umbrosus*, *unicus*, p. 547, *electus*, p. 548, *oregonus*, p. 549, N. America, CASEY, Ann. N. York Ac. vii; *H. latimargo*, Mexico, SCHMIDT, p. 14, Ent. Nachr. xix: n. spp.
- Hololepta sidnensis* = (*mastersii*, Macl.); LEWIS, p. 418, Ann. Nat. Hist. (6) xi.
- H. vernici*, Arizona, CASEY, p. 534, Ann. N. York Ac. vii; *H. andicola*, Peru, SCHMIDT, p. 5, Ent. Nachr. xix: n. spp.
- Homalopygus cavernosus*, referred to *Reninus*; SCHMIDT, p. 175, Deutsche ent. Zeitschr. 1893.
- H. cavifrons*, Rio Janeiro, LEWIS, p. 421, Ann. Nat. Hist. (6) xi, n. sp.
- Lioderma fumebris*, = (*Hololepta chilensis*, Reed); SCHMIDT, p. 6, Ent. Nachr. xix.
- Macrosternus* (?) *minusculus*, Gaboon, SCHMIDT, p. 6, Ent. Nachr. xix, n. sp.
- Niponius andrewesi*, p. 183, *parvulus*, p. 184, E. India, LEWIS, Ent. Mag. xxix, n. spp.
- Omalodes lubricans*, p. 535, *vitreolucens*, p. 536, N. America, CASEY, Ann. N. York Ac. vii; *O. brevisternus*, Bolivia, p. 10, *perpolitus*, Guatemala, p. 11, SCHMIDT, Ent. Nachr. xix: n. spp.
- Onthophilus soltani*, Colorado, CASEY, p. 557, Ann. N. York Ac. vii, n. sp.
- Paromalus alluaudi*, Seychelles, SCHMIDT, p. ci, Bull. Soc. ent. France, 1893; *P. lenticula*, New Guinea, SCHMIDT, p. 236, Ann. Mus. Genov. xxxiii; *P. mancus*, p. 556, *complexus*, p. 557, N. America, CASEY, Ann. N. York Ac. vii: n. spp.

- Phelister rouzeti* and *hæmorrhous*, note on; SCHMIDT, p. 189, Deutsche ent. Zeitschr. 1893.
- P. geometricus*, Texas, CASEY, p. 550, Ann. N. York Ac. vii; *P. insolitus*, *sculpturatus*, p. 12, *hamistrius*, p. 13, Mexico, SCHMIDT, Ent. Nachr. xix; *P. completus*, Mexico, p. 81, *notandus*, p. 82, *viridimicans*, p. 83, *amplistrius*, p. 84, Brazil, *ruptistrius*, *omissus*, p. 85, Paraguay, *parallelistermus*, Mexico, p. 86, *carinifrons*, Brazil, *plicicollis*, Mexico, p. 87, *subplicatus*, Bahia, p. 88, *aduncus*, Mexico, p. 89, *alticola*, Bogota, p. 90, SCHMIDT, Ent. Nachr. xix : n. spp.
- Phylloscelis nigrella*, Gaboon, SCHMIDT, p. 14, Ent. Nachr. xix, n. sp.
- Platylister nemoralis*, Borneo, p. 418, *andamonensis*, Andaman Is., p. 419, LEWIS, Ann. Nat. Hist. (6) xi, n. spp.
- Platysoma gorhami*, Lew., false habitat corrected; LEWIS, p. 418, Ann. Nat. Hist. (6) xi.
- P. tenuimargo*, Seychelles, SCHMIDT, p. c, Bull. Soc. ent. France, 1893; *P. persimile*, Buru, LEWIS, p. 419, Ann. Nat. Hist. (6) xi; *P. lorice*, p. 234, *mutilatum*, p. 235, New Guinea, SCHMIDT, Ann. Mus. Genova, xxxiii; *P. tabella*, N. America, CASEY, p. 551, Ann. N. York Ac. vii : n. spp.
- Plegaderus rigidus*, p. 576, *cribratus*, *molestus*, p. 577, N. America, CASEY, Ann. N. York Ac. vii, n. spp.
- Psiloscelis carinicollis*, Borneo, LEWIS, p. 420, Ann. Nat. Hist. (6) xi; *P. corrosa*, Wyoming, CASEY, p. 537, Ann. N. York. Ac. vii : n. spp.
- Reninus seminitens*, Bolivia, SCHMIDT, p. 174, Deutsche ent. Zeitschr. 1893, n. sp.
- Saprinus metallicus* and *rugifrons*, characters; SCHMIDT, p. 190, Deutsche ent. Zeitschr. 1893. *S. scissus*, Lec., = (*sulcatulus*, Schmidt); CASEY, p. 604, Ann. N. York Ac. vii.
- S. meridianus*, France, FAUVEL, p. 314, Rev. Ent. franc. xi; *S. obsidianus*, p. 563, *subætatus*, *laramiensis*, p. 564, *audax*, p. 565, *profusus*, *socius*, p. 566, *lentus*, *opacellus*, p. 567, *cribrum*, p. 568, *detractus*, p. 569, *contractus*, *intritus*, p. 570, *impunctellus*, p. 571, *laxatus*, *propensus*, p. 572, *servilis*, p. 573, N. America, CASEY, Ann. N. York Ac. vii : n. spp.
- Synodites*, n. g., p. 175, for *S. schuppii*, Brazil, p. 177, *drakei*, Bolivia, p. 178, *aciculatus*, Brazil, p. 179, *gibbidorsum*, *detritus*, p. 180, *graniformis*, p. 181, n. spp., Mexico; SCHMIDT, Deutsche ent. Zeitschr. 1893.
- Syoditus schmidti*, Bahia, LEWIS, p. 423, Ann. Nat. Hist. (6) xi, n. sp.
- Teretriosoma afrum*, Centr. Africa, LEWIS, p. 428, Ann. Nat. Hist. (6) xi, n. sp.
- Teretrius australis*, Queensland, LEWIS, p. 428, Ann. Nat. Hist. (6) xi, n. sp.
- Trichoreninus imbricatus*, Bahia, LEWIS, p. 422, Ann. Nat. Hist. (6) xi, n. sp.

- Trypeticus indicus*, KANAIA, LEWIS, p. 185, Ent. Mag. xxix; *T. rhinocerus*, N. Guinea, p. 426, *bifoveolatus*, p. 427, Borneo, LEWIS, Ann. Nat. Hist. (6) xi : n. spp.
- ^v *Trypobius*, n. g., near *Trypaneus*, p. 15, for *T. paradoxus*, n. sp., Gaboon, p. 16; SCHMIDT, Ent. Nachr. xix.
- Tylois mirabilis*, Bolivia, SCHMIDT, p. 172, Deutsche. ent. Zeitschr. 1893, n. sp.

PHALACRIDÆ.

[Cf. BLACKBURN (71), GUILLEBEAU (413, 414, 589).]

- ¹ *Cœlocelius*, n. g., p. 290, for *C. simoni*, n. sp., Venezuela, p. 291; GUILLEBEAU, Ann. Soc. ent. France, 1893.
- Eustilbus pubicoxis*, p. 376, *brevisternus*, p. 377, Tonkin, *semirufus*, p. 294, Venezuela, GUILLEBEAU, Ann. Soc. ent. France, 1893, n. spp.
- Grouvelles prosternalis*, Saigon, GUILLEBEAU, Ann. Soc. ent. France, 1893, p. 378, n. sp.
- ¹ *Heterolitus*, n. g., for *H. humilis*, n. sp., Hué, and *Olibrus thoracicus*, Fleut.; GUILLEBEAU, p. 375, Ann. Soc. ent. France, 1893.
- ^v *Megapalpus*, n. g., for *M. simoni*, n. sp., Aden; GUILLEBEAU, Ann. Soc. ent. France, 1893, p. 297.
- Lithocrus consors*, Queensland, BLACKBURN, p. 295, Tr. R. Soc. S. Austral. xvii, n. sp.
- Litochrus? latisternus*, Hué, GUILLEBEAU, p. 374, Ann. Soc. ent. France, 1893, n. sp.
- ^v *Ochrodemus*, n. g., for *O. brevitarsis*, n. sp., Venezuela; GUILLEBEAU, p. 293, Ann. Soc. ent. France, 1893.
- Phalacrus lateralis*, Aden, GUILLEBEAU, p. 298, Ann. Soc. ent. France, 1893; *P. simoni*, p. 287, *misellus*, *micans*, p. 288, Venezuela, GUILLEBEAU, t. c. : n. spp.
- ^v *Pycinus*, n. g., for *P. politus*, p. 289, *subrotundatus*, *hemisphaericus*, p. 290, Venezuela, GUILLEBEAU, Ann. Soc. ent. France, 1893, n. spp.
- ¹ *Spharopsis*, n. g., p. 295, for *S. simoni*, n. sp., Venezuela, p. 296; GUILLEBEAU, Ann. Soc. ent. France, 1893.
- ¹ *Radinus*, n. g., for *R. latus*, n. sp., Venezuela, GUILLEBEAU, p. 295, Ann. Soc. ent. Fr. 1893.
- ¹ *Xanthoconus*, n. g., for *X. striatus*, p. 291, *vicinus*, *bulius*, p. 292, *rufus*, p. 293, n. spp., Venezuela; GUILLEBEAU, Ann. Soc. ent. France, 1893.

NITIDULIDÆ.

- [Cf. BRANCSIK (102), BRÖUN (112), GROUVELLE (405, 406), GUILLEBEAU (417), HAMILTON (421), LEWIS (590), PIC (714), SAHLBERG (834), SCHILSKY (845).]
- Æthina pubescens*, n. var. *limbalis*; BRANCSIK, p. 221, Jahresh. Ver. Trencsen. xv.

- Brachypeplus binotatus*, habits; OLLIFF, p. 377, Agric. Gaz. N.S.W. iv, p. 377.
- Cilleus simoni*, Ceylon, GROUVELLE, p. 383, Ann. Soc. ent. France, 1893, n. sp.
- Cryptarcha depressa*, S. Australia, GROUVELLE, p. 142, Tr. R. Soc. S. Austral. xvii, n. sp.
- Cychramus montandoni*, Wallachia, PIC, p. cclxxviii, Bull. Soc. ent. France, 1893, n. sp.
- ↓ *Cyclaxyra*, n. n. for *Cyclomorpha*, Broun, *olim*, with amended description; BROUN, p. 1076, Manual.
- Epurca opalizaus*, p. 104, *palustris*, *rugulosa*, p. 105, *abietina*, p. 108, Finland, SAHLBERG, Act. Soc. Faun. Fenn. vi, n. spp.
- Ericmodes australis*, S. Australia, GROUVELLE, p. 141, Tr. R. Soc. S. Austral. xvii, n. sp.
- ↓ *Homepurca*, n. g., for *Nitidula amœnum*, Broun; BROUN, p. 1073, Manual.
- Meligethes*: sectional characters; SCHILSKY, Deutsche ent. Zeitschr. 1893, pp. 357-358.
- M. theryi*, Algeria, GUILLEBEAU, p. cccxxvii, Bull. Soc. ent. France, 1893, n. sp.
- ♂ *Platipidia*, n. g., near *Soronia* for *P. asperella*, n. sp., New Zealand; BROUN, p. 1075, Manual.
- ♂ *Priasilpha*, n. g., p. 1077, for *P. obscura*, n. sp., New Zealand, p. 1078; BROUN, Manual.
- Rhizophagus nobilis*, Japan, LEWIS, p. 83, Ent. Mag. xxix, n. sp.
- Soronia substriata*, Allegheny, HAMILTON, p. 306, Canad. Ent. xxv; *S. morosa*, *micans*, New Zealand, BROUN, p. 1074, Manual: n. spp.

TROGOSITIDÆ.

- Grynomia varians*, p. 1340, *rugosa*, p. 1341, New Zealand, BROUN, Manual, n. spp.
- Ostoma gigantea*, R., is distinct from *grossa*, L.; LEWIS, p. 150, Entomologist, xxvi.
- Promanus auripilus*, New Zealand, BROUN, Manual, p. 1079, n. sp.
- Shoguna*, Lew., = (*Pachycephala*, Fairm.); LEWIS, p. 150, Entomologist, xxvi.

COLYDIIDÆ.

- [Cf. BROUN (112, 113), FAIRMAIRE (283), FRIVALDSZKY (343), GROUVELLE (405, 406), SCHAUFUSS (842), SHARP (889).]
- ♂ *Archæoglenes*, n. g., near *Chorasus*, p. 188, for *A. costipennis*, n. sp., New Zealand, p. 189; BROUN, Ann. Nat. Hist. (6) xii.
- ♂ *Ciconissus*, n. g., near *Coxelus*, p. 185, for *C. granifer*, n. sp., New Zealand, p. 186; BROUN, Ann. Nat. Hist. (6) xii.
- Coxelus rufus*, *posticalis*, *ovicollis*, p. 1084, *longulus*, p. 1085, *oculator*, *pivicornis*, p. 1342, *graniceps*, p. 1343, *regularis*, p. 1440, New Zealand, BROUN, Manual, n. spp.

- Diodesma bituberculata*, Constantinople, FRIVALDSZKY, Termes. Fuzetek, xvi, p. 85, n. sp.
- Enarsus probus*, New Zealand, BROUN, p. 1088, Manual, n. sp.
- Epistranus optabilis*, New Zealand, BROUN, p. 1343, Manual; *E. hirtalis*, New Zealand, BROUN, Ann. Nat. Hist. (6) xii, p. 187 : n. spp.
- Guthoicles*, n. g., near *Coxelus*, for *G. nodosus*, n. sp., New Zealand, BROUN, p. 1086, Manual.
- Gempylodini*, n. subfam.; SHARP, Ent. Mag. xxix, p. 256.
- Glenentela*, n. g., p. 1089, near *Epistranus*, for *G. serrata*, n. sp., New Zealand, p. 1090; BROUN, Manual.
- Heterargus serricollis*, New Zealand, BROUN, p. 1441, Manual, n. sp.
- Lithostygnus minor*, New Zealand, BROUN, p. 1344, Manual, n. sp.
- Mecedanum erichsoni*, Madagascar, SHARP, Ent. Mag. xxix, p. 257, n. sp.
- Norix*, n. g., near *Enarsus*, p. 1090, for *N. crassus*, n. sp., New Zealand, p. 1091; BROUN, Manual.
- Notoulus facetus*, New Zealand, BROUN, p. 1341, Manual, n. sp.
- Ocholissa bicolor*, Ceylon, GROUVELLE, p. 384, Ann. Soc. ent. France, 1893, n. sp.
- Protarphius*, n. g., p. 183, for *P. ruficornis*, p. 184, *indentatus*, p. 185, n. spp., New Zealand; BROUN, Ann. Nat. Hist. (6) xii.
- Pycnomerus marginalis*, p. 1093, *sinuatus*, *impressus*, p. 1094, *angulatus*, *frontalis*, p. 1443, *elongellus*, *longipes*, p. 1444, New Zealand, BROUN, Manual, n. spp.
- Rechodes humblotii*, Comoro Is., FAIRMAIRE, p. 528, Ann. Soc. ent. Belgique, xxxvii; *R. tuberosus*, p. 593, *variegatus*, p. 596, Madagascar, SCHAUFUSS, Nunquam ot. iii : n. spp.
- Sympanotus australis*, Victoria, GROUVELLE, p. 144, Tr. R. Soc. S. Austral. xvii, n. sp.
- Syncalus piciceps*, p. 1092, *munroi*, p. 1442, New Zealand, BROUN, Manual, n. spp.
- Todima*, n. g., for *T. fusca*, p. 143, *rufula*, p. 144, n. spp., W. Australia; GROUVELLE, Tr. R. Soc. S. Austral. xvii.
- Ulonotus fulvus*, New Zealand, BROUN, p. 1080, Manual, n. sp.
- Vitiacus*, n. g., near *Coxelus*, for *V. costatus*, p. 1087, *costicollis*, p. 1442, n. spp., New Zealand, BROUN, Manual.

CUCUJIDÆ, RHYSODIDÆ.

- [Cf. BROUN (112), GROUVELLE (405, 407, 589), LEWIS (590), SCHAUFUSS (842), SEMENOW (882).]
- Ætraphilus chotanicus*, Turkestan, SEMENOW, p. 494, Horæ Soc. ent. Ross. xxvii, n. sp.
- Ancistria reitteri*, Japan, LEWIS, p. 83, Ent. Mag. xxix, n. sp.
- Bessaphilus simoni*, Ceylon, GROUVELLE, p. 385, Ann. Soc. ent. France, 1893, n. sp.
- Cryptomorpha desjardinsi*, habits; OLLIFF, p. 378, Agric. Gaz. N.S.W. iv, p. 378.

- Cucujus cinnabarinus*, n. var. *geniculatus*; REITTER, p. 110, Wien. ent. Zeit. xii.
- Ino breviscula*, Madagascar, SCHAUFUSS, p. 604, Nunquam ot. iii, n. sp.
- Læmophlaus speciosus*, Annam, GROUVELLE, p. 380, Ann. Soc. ent. France, 1893; *L. coloratus*, p. 386, *orientalis*, p. 387, *insinuans*, p. 388, *hypocrita*, *divaricatus*, p. 389, Ceylon, GROUVELLE, Ann. Soc. ent. France, 1893; *L. visendus*, Pulo-Penang, *fuscus*, p. cccxlix, *atratus*, p. cccl, *omissus*, p. cccli, Sumatra, GROUVELLE, Bull. Soc. ent. France, 1893 : n. spp.
- Picrotus sanguineus*, New Zealand, BROUN, p. 1093, Manual, n. sp.
- Pseudino fragilis*, Madagascar, SCHAUFUSS, p. 602, Nunquam ot. iii, n. sp.
- Saphophagus ferrugineus*, New Zealand, BROUN, p. 1102, Manual, n. sp.
- Telephanus armatus* (Grouv.), p. 598, *spinosus*, p. 599, *gracilis*, p. 600, *cedius*, p. 601, Madagascar, SCHAUFUSS, Nunquam ot. iii, n. sp.
- Thortus*, n. g., near *Picrotus*, for *T. ovalis*, n. sp., New Zealand, BROUN, p. 1345, Manual.
- Tularthrum*, n. g., p. 1102, for *T. lineatum*, n. sp., New Zealand, p. 1103, BROUN, Manual.
- Rhizodes planifrons*, Comoro Is., FAIRMAIRE, p. 528, Ann. Soc. ent. Belgique, xxxvii, n. sp.

CRYPTOPHAGIDÆ.

- [Cf. BROUN (112), GROUVELLE (589), LOVENDAL (596).]
- Atomaria reitteri*, Denmark, LØVENDAL, p. 252, Ent. Meddel. iii, n. sp.
- Cryptophagus discoideus*, p. 1345, *distinctus*, p. 1346, *tumidus*, p. 1445, *obscurus*, *anthracinus*, p. 1446, New Zealand, BROUN, Manual, n. spp.
- Cryptophilus integer*, larva described; REY, p. cccxxix, Bull. Soc. ent. France, 1893.
- Loberus*: to this is referred *Crotchia minuta*, Fleut.; GROUVELLE, p. 381, Ann. Soc. ent. France, 1893.
- L. dubius*, Hué, GROUVELLE, Ann. Soc. ent. France, 1893, p. 381, n. sp.
- Salltus*, n. g., for *Cryptophagus ruficeps*; BROUN, p. 1347, Manual.
- Telmatophilus olivascens*, New Zealand, BROUN, p. 1104, Manual, n. sp.

LATHRIDIIDÆ.

- [Cf. BROUN (112, 113), LOVENDAL (596).]
- Corticaria curtipes*, Denmark, LØVENDAL, p. 273, Ent. Meddel. iii; *C. amplipenne*, New Zealand, BROUN, p. 1104, Manual; *C. terricola*, New Zealand, BROUN, p. 190, Ann. Nat. Hist. (6) xii : n. spp.
- Diarthroceras*, n. g., p. 1347, for *D. formicaphila*, n. sp., New Zealand, p. 1348, BROUN, Manual.
- Holoparamecus castaneus*, New Zealand, BROUN, p. 1448, Manual, n. sp.
- Lathridius caviceps*, New Zealand, BROUN, p. 1447, Manual, n. sp.

MYCETOPHAGIDÆ, DERMESTIDÆ.

- Triphyllus integritus*, New Zealand, BROUN, p. 1105, Manual, n. sp.
Trogoderma quadrifasciata, p. 1105, *antennale*, p. 1106, New Zealand,
 BROUN, Manual, n. spp.

BYRRHIDÆ.

- [*Cf.* BROUN (112, 113), SAHLBERG (834).]
Byrrhus ruficornis, Finland, SAHLBERG, p. 122, Acta Soc. Faun. Fenn
 vi, n. sp.
Curimus squamifer, New Zealand, BROUN, p. 1448, Manual, n. sp.
¹*Cytilissus*, n. g., for *C. claviger*, n. sp., New Zealand; BROUN, p. 195,
 Ann. Nat. Hist. (6) xii.
Limnichus nigripes, New Zealand, BROUN, p. 1449, Manual, n. sp.
Liochoria sternalis, New Zealand, BROUN, p. 194, Ann. Nat. Hist. (6) xii,
 n. sp.
Morychus granulatus, New Zealand, BROUN, p. 193, Ann. Nat. Hist. (6)
 xii; *M. nigralis*, p. 1348, *lætus*, p. 1349, New Zealand, BROUN,
 Manual : n. spp.
Peditophorus levipennis, p. 190, *tibialis*, *puncticeps*, *picipes*, p. 191, *creperus*,
probus, p. 192, New Zealand, BROUN, Ann. Nat. Hist. (6) xii, n. spp.

PARNIDÆ.

- [*Cf.* BROUN (112), CASEY (151).]
¹*Alloparnus*, n. n., for *Parnid*, with redescription; BROUN, p. 1107,
 Manual.
Lutochrus laticeps, Michigan, CASEY, p. 580, Ann. N. York Ac. vii, n. sp.
²*Narpus*, n. g., near *Dryops*, p. 582, for *N. angustus*, n. sp., N. America,
 p. 583; CASEY, Ann. N. York Ac. vii.
³*Oberonus*, n. g., near *Pelonomus*, for *O. obesus*, n. sp., Tennessee; CASEY,
 p. 581, Ann. N. York Ac. vii.
Parnus auriculatus, metamorphoses; XAMBEU, Naturaliste, 1893, p. 121.
Pelonomus rufescens, Florida, CASEY, p. 581, Ann. N. York Ac. vii, n. sp.
Psephenus falli, *veluticollis*, California, CASEY, Ann. N. York Ac. vii,
 p. 579, n. spp.

HETERO CERIDÆ.

- [*Cf.* FAIRMAIRE (278), GUILLEBEAU (417), KUWERT (565).]
Heterocerus pallidivestis, Algeria, GUILLEBEAU, p. cccxxvi, Bull. Soc.
 ent. France, 1893; *H. hauseri*, Kisil Arrat, KUWERT, p. 17, Soc. ent.
 viii; *H. cribratellus*, Somaliland, FAIRMAIRE, p. 147, Ann. Soc. ent.
 Belgique, xxxvii : n. spp.

LUCANIDÆ, PASSALIDÆ.

- [Cf. Broun (112), Escherich (270), Fairmaire (283), Reitter (754), Shipp (896).]
 Structure of male sexual organs, and affinity of *Lucanidæ* and *Scarabæidæ*;
 Escherich, Wien. ent. Zeit. xii, p. 265.
Ægus leeuweni, figured, pl. ii, fig. 6, Notes Leyden Mus. xv.
Aulacocyclus kaupii, larva described; Froggatt, p. 41, P. Linn. Soc. N.S.
 Wales (2) viii.
Oladognathus punctatissimus, Comoro Is., Fairmaire, p. 529, Ann. Soc.
 ent. Belgique, xxxvii, n. sp.
Cyclommatus canaliculatus, figured, pl. ii, fig. 3, Notes Leyden Mus. xv.
Eurytrachelus hansteini, figured, pl. ii, fig. 4, Notes Leyden Mus. xv. *E.*
titan, note on; Albers, p. 72, Ann. Soc. ent. Belgique, xxxvii.
Gnaphaloryx tricuspis, figured, pl. ii, fig. 5, Notes Leyden Mus. xv.
Lissoles ithaginis, p. 1108, *amulus*, p. 1109, *elegans*, p. 1110, New Zealand,
 Broun, Manual, n. spp.
Macrodorcus rubrofemoratus, note on; Albers, p. 72, Ann. Soc. ent.
 Belgique, xxxvii.
Mitophyllus tuberculatus, New Zealand, Broun, p. 1111, Manual, n. sp.
Phalacrognathus westwoodi, N. Australia, Shipp, p. 223, Tr. ent. Soc.
 London, 1893, n. sp.
Prosopocelus buddha, note on; Albers, p. 69, Ann. Soc. ent. Belgique,
 xxxvii. *P. pastewri*, fig. 1, *tarsalis*, fig. 2, figured, pl. ii, Notes
 Leyden Mus. xv.
Serrogathus, Motsch., = (*Eurytrachelus*, Th.); Lewis, p. 150, Entomolo-
 gist, xxvi.

SCARABÆIDÆ.

- [Cf. Boas (81), Brancsik (102), Brenske (107, 108, 109, 110), Broun
 (112), Fairmaire (275, 277, 278, 279, 280, 283, 284, 285, 286, 289,
 292), Gestro (370), Heller (436), Jacobsohn (479), Kolbe (539,
 540), Kosantschikoff (544), Nonfried (673, 674), Raspail (748),
 Reitter (754, 760, 761), Ritsema (807), Rothschild & Jordan
 (823), Schaufuss (842), Semenow (881, 882); also *Cetoniini*, p. 128.]

Coprini.

- Ægialia (Dimalia) hybrida*, E. Siberia, Reitter, p. 251, Verh. Ver.
 Brunn. xxx, n. sp.
Aganhyboma, n. subg. of *Deltochilun*; Kolbe, p. 192, Stettin. Ent. Zeit.
 liv.
Ammœcius crassulus, Upper Tonkin, Fairmaire, p. 305, Ann. Soc. ent.
 Belgique, xxxvii, n. sp.
Aphodius discus, larva described; Xambeu, Échange, 1893, Append. p. 53.
A. rectus, Motsch., = (*solskyi*, Har., and *diversus*, Wat.); Lewis,
 p. 151, Entomologist, xxvi.

- A. (Megatelus) scolytiformis*, Syria, p. 179, *A. (Mendidius) auriculatus*, Margelan, p. 181, *rutilinus*, Bou-Saada, *diffidens*, Araxes Valley, p. 182, *atricolor*, S. Turkestan, p. 183, *A. cardinalis*, Andalusia, &c., *swaneticus*, Caucasus, p. 186, *emerichi*, Siberia, p. 187, *A. (Loraphodius) latusculus*, Circassia, p. 188, *A. (Erytus) opacus*, Algeria, *pruinosis*, Turkestan, p. 191, *A. (Bodilus) beduinus*, Marocco, p. 193, *nigri-ventris*, Kuldscha, p. 194, *A. (Agrilinus) punctator*, Chinese Turkestan, p. 196, *satyrus*, Europe, *rufo-plagiatus*, Kan-ssu, p. 198, *obliviosus*, Chinese Turkestan, *mundus*, Caucasus, p. 199, *A. (Pheaphodius) albociliatus*, *acutangulus*, Transcaspian, *fuscus*, Taurus, p. 206, *A. (Esimus) trochalis*, *sculpturatus*, Syria, *fumigatulus*, Ordubad, p. 208, *A. (Esimaphodius) mendidioides*, p. 209, *A. (Orodulus) quadricevulus*, p. 212, Ordubad, *A. (Amidorus) carinifrons*, Tangier, p. 214, *circassicus*, Caucasus, p. 215, *raguse*, Sicily, p. 216, *A. (Pseudacrossus) caminarius*, Transbaikal, p. 219, *A. (Volinus) clathratus*, Ordubad, p. 223, *obliquatus*, Tashkent, p. 226, *comma*, Transbaikal, p. 227, *pustulifer*, Sarepta, p. 228, *A. (Calaphodius) koltzei*, E. Siberia, p. 229, *fundator*, Chinese Turkestan, p. 230, *A. (Melinopterus) reyi*, S. France, p. 233, *bonnairei*, Algeria, p. 234, *inclusum*, Ordubad, *esignum*, Irkutsk, p. 235, *strigimargo*, Turkestan, p. 238, *A. (Melaphodius) irritans*, Algeria, p. 238, *A. (Agolius) abchasicus*, Caucasus, p. 241, *limbolaris*, Bosnia, p. 242, REITTER, Verh. Ver. Brunn. xxx; *A. (Bodilus) digitatus*, Turkestan, *A. (Amidorus) consors*, Shanghai, p. 104, *A. (Platygonus) esimoides*, Tunis, *A. (Esimus) alaiensis*, Alai Mts., *sicardi*, Tunis, p. 105, *A. (Melinopterus) hastatus*, Turkestan, *lineimargo*, Syria, p. 106, REITTER, Verh. Ver. Brunn. xxxi; *A. armatulus*, *minusculus*, Somaliland, FAIRMAIRE, p. 148, Ann. Soc. ent. Belgique, xxxvii; *A. rugulicollis*, Choa, FAIRMAIRE, p. 17, t. c. : n. spp.
- Ateuchus laticollis*, habits and var.; XAMBEU, p. ccxxvi, Bull. Soc. ent. France, 1893.
- Aulonocnemis laevis*, p. 610, *nitida*, p. 613, *basalis*, p. 615, *valida*, p. 616, *tenuis*, p. 617, *sellata*, p. 618, *thoracica*, p. 619, Madagascar, SCHAU-FUSS, Nunquam ot. iii, n. spp.
- Caccobius koltzei*, E. Siberia, REITTER, p. 92, Verh. Ver. Brunn. xxxi, n. sp.
- † *Calaphodius*, n. subg. of *Aphodius*; REITTER, pp. 176 & 228, Verh. Ver. Brunn. xxx.
- † *Calhyboma*, n. subg. of *Deltochilum*; KOLBE, p. 191, Stettin. Ent. Zeit. liv.
- Catharsius minutus*, *umbonatus*, *opacus*, characters; KOLBE, pp. 199 & 200, Stettin. Ent. Zeit. liv. *C. ochus*, referred to *Copris*; LEWIS, p. 150, Entomologist, xxvi.
- Catharsius polymices*, p. 135, *princeps*, p. 136, *satyrus*, p. 137, *cassius*, p. 138, *bicornutus*, p. 139, *neptunus*, p. 140, *stuhlmanni*, p. 141, *marcellus*, *calaharicus*, p. 142, *philus*, p. 143, *approximans*, p. 144, *lycaon*, p. 145, *balubanus*, *togoensis*, p. 146, *useramus*, p. 147, Tropical Africa, KOLBE, SB. Ges. naturf. Berlin, 1893, n. spp.

- Ceratophyus momus*, n. var. *momoides*; REITTER, p. 9, Verh. Ver. Brunn. xxi.
- Chiron kelleri*, Somaliland, FAIRMAIRE, p. 148, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Chironitis rotundicoxis*, Tashkent, p. 98, *hauseri*, Turkestan, p. 100, *phæbus*, N.E. Asia, p. 101, REITTER, Verh. Ver. Brunn. xxxi, n. spp.
- Copris felschei*, Armenia, REITTER, Verh. Ver. Brunn. xxxi, p. 95;
C. bidens, Cameroons, KOLBE, p. 200, Stettin Ent. Zeit. liv : n. spp.
- Coptorhina seminitida*, Choa, FAIRMAIRE, p. 14, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Deltochilum*, n. subgg., cf. *Paedhyboma*, *Culhyboma*, *Euhyboma*, *Aganhyboma*, *Meghyboma*, *Telhyboma*.
- D. (Meghyboma) enceladus*, Brazil, KOLBE, p. 192, Stettin. Ent. Zeit. liv, n. sp.
- Diastelopalpus nigerrimus*, p. 147, *balubanus*, p. 148, *bidentulus*, p. 149, *sulciger*, p. 150, Trop. Africa, KOLBE, SB. Ges. naturf. Berlin, 1893, n. spp.
- Enoplotrupes sharpi*, Siam, p. 36, *splendens*, Assam, p. 37, ROTHSCHILD & JORDAN, Ann. Nat. Hist. (6) xii, n. spp.
- ⁴*Ephillopus*, n. g., for *Onthophagus iphis*; REITTER, p. 47, Verh. Ver. Brunn, xxxi.
- Epilissus cyanescens*, Nossibé, BRANCSIK, p. 222, Jahresh. Ver. Trencsen. xv, n. sp.
- Eremazus cribratus*, Heptapotamea, SEMENOW, p. 451, Horæ Soc. ent. Ross. xxvii, n. sp.
- ⁴*Esimaphodius*, n. subg. of *Aphodius*; REITTER, pp. 175 & 208, Verh. Ver. Brunn, xxx.
- ⁴*Eubolbitus*, n. g., for *Bolboceras radoszkovskii*; REITTER, p. 4, Verh. Ver. Brunn, xxxi.
- Eucranium simplicifrons*, Argentine Rep., FAIRMAIRE, p. 608, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ⁴*Euhyboma*, n. subg. of *Deltochilum*; KOLBE, p. 191, Stettin Ent. Zeit. liv.
- Geotrupes hypocrita*, larva described; XAMBEU, Echange, 1893, App. p. 47.
G. auratus = (*purpurascens*, Wat.); LEWIS, p. 150, Entomologist, xxvi.
- G. baicalicus*, Irkutsk, REITTER, p. 14, Verh. Ver. Brunn, xxxi; *G. (Anoplotrupes) semicupreus*, Thibet, p. 15, *G. (Trypocopris) manifestus*, S. France, p. 20, *G. (Thorectes) inflatus*, Algeria, p. 23, *bankhaasi*, Turkestan, p. 25, *truncaticornis*, p. 27, *armifrons*, *trituberculatus*, p. 29, Marocco, *heydeni*, p. 31, *opaculus*, p. 33, Portugal, REITTER, *t. c.*; *G. amœnus*, Japan, JACOBSON, p. 120, Horæ Soc. ent. Ross. xxvii : n. spp.
- Glaresis handlirschi*, Algeria, REITTER, p. 102, Verh. Ver. Brunn, xxxi, n. sp.
- Glyphoderus centralis*, redescribed; FAIRMAIRE, p. 609, Ann. Soc. ent. Belgique, xxxvii.

- ¹ *Gonaphodius*, n. subg. of *Aphodius*; REITTER, pp. 176 & 240, Verh. Ver. Brunn, xxx.
Gymnopleurus ceneipes, Somaliland, FAIRMAIRE, p. 147, Ann. Soc. ent. Belgique, xxxvii, n. sp.
Heliocopris haroldi, p. 194, *mutabilis*, p. 195, *trilobus*, p. 196, *solitarius*, p. 197, *bimpressus*, *myrmidon*, p. 198, *staudingeri*, p. 199, Trop. Africa, KOLBE, Stettin Ent. Zeit. liv, n. spp.
Hybalus tuberculicornis, Algeria, p. 259, *bigibber*, Sicily, p. 260, *ramicornis*, Algeria, p. 261, REITTER, Verh. Ver. Brunn, xxx, n. spp.
Hybosorus baliensis, Madagascar, BRANCSIK, p. 225, pl. xii, fig. 14, Jahresh. Ver. Trencsen. xv; *H. laviceps*, Comoro Isles, FAIRMAIRE, p. 529, Ann. Soc. ent. Belgique, xxxvii : n. spp.
¹ *Hypseloderus*, n. g., near *Liparochrous*, for *H. denticollis*, n. sp., Upper Tonkin; FAIRMAIRE, p. 306, Ann. Soc. ent. Belgique, xxxvii.
¹ *Isochirus*, n. g., pp. 158 & 171, for *Aphodius latevittis*; REITTER, Verh. Ver. Brunn, xxx.
Lethrus semenowi, Turkestan, KOSIANTSCHIKOFF, p. 137, Horæ Soc. ent. Ross. xxvii; *L. (Heteroplistodus) banghaasi*, *staudingeri*, Turkestan, REITTER, p. 222, Wien. ent. Zeit. xii : n. spp.
¹ *Liatongus*, n. g., p. 45, for *Oniticellus phanocoides*, Westw., and *L. scutellaris*, n. sp., China, p. 46, REITTER, Verh. Ver. Brunn, xxxi.
¹ *Loraphodius*, n. subg. of *Aphodius*; REITTER, pp. 173 & 187, Verh. Ver. Brunn, xxx.
² *Megatelus*, n. subg. of *Aphodius*; REITTER, pp. 172 & 179, Verh. Ver. Brunn, xxx.
¹ *Meghyboma*, n. subg. of *Deltochilum*; KOLBE, p. 192, Stettin. Ent. Zeit. liv.
¹ *Melaphodius*, n. subg. of *Aphodius*; REITTER, pp. 176 & 238, Verh. Ver. Brunn, xxx.
Mendidius biangulatus, Choa, FAIRMAIRE, p. 18, Ann. Soc. ent. Belgique, xxxvii, n. sp.
Ochodæus cychramoides, Piedmont, p. 255, *thalycroides*, Morea, *inermis*, Arragonia, p. 256, REITTER, Verh. Ver. Brunn, xxx, n. spp.
Onitis spinicrus, Oubanghi, FAIRMAIRE, p. 137, Ann. Soc. ent. France, 1893; *O. ragazzii*, p. 15, *bidentulus*, *obscuratus*, p. 16, Choà, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii : n. spp.
Oniticellus immaturus, Choa, FAIRMAIRE, p. 17, Ann. Soc. ent. Belgique, xxxvii; *O. splendidicollis*, Madagascar, FAIRMAIRE, p. cxcxi, Bull. Soc. ent. France, 1893; *O. tonkineus*, Upper Tonkin, FAIRMAIRE, p. 305, Ann. Soc. ent. Belgique, xxxvii : n. spp.
Onthopagus simplicifrons, E. Siberia, p. 48, *curvispina*, Pekin, p. 52, *furcatoides*, China, *simius*, Syria, p. 55, *sparsulus*, Egypt, p. 56, *laevicollis*, Caucasus, *punctator*, *necessarius*, Korea, p. 58, *strabo*, Syria, *parmatus*, Armenia, p. 60, *viriditinctus*, Persia, p. 62, *conspersus*, Lenkoran, p. 74, *pictus*, Egypt, p. 75, *flagrans*, Transcaspien, p. 78, *kolenatii*, Caucasus, p. 79, *furcicornis*, Syria, p. 81, *granulifer* Algeria, *nocturnus*, Alai Mts., p. 83, *ararius*, p. 84, *trigibber*, p. 85,

- Algeria, REITTER, Verh. Ver. Brunn, xxxi ; *O. luridipennis*, p. 303, *dorsofasciatus*, *nitidiceps*, p. 304, Upper Tonkin, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii ; *O. eximius*, Brazil, KOLBE, Stettin Ent. Zeit. liv : n. spp.
- Orphnus obsoletus*, p. 223, *nigrita*, p. 224, Nossibé, BRANCSIK, Jahresh. Ver. Trencsen. xv, n. spp.
- ⁴ *Paedhyboma*, n. subg. of *Deltochilum* ; KOLBE, p. 191, Stettin Ent. Zeit. liv.
- Phæaphodius*, n. subg. of *Aphodius* ; REITTER, pp. 174 & 205, Verh. Ver. Brunn, xxx.
- Phæochrous ruficollis*, Upper Tonkin, FAIRMAIRE, p. 306, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹ *Pharaphodius*, n. subg. of *Aphodius*, REITTER, p. 172, Verh. Ver. Brunn, xxx.
- Phycochus lobatus*, New Zealand, BROUN, p. 1114, Manual, n. sp.
- Pleurophorus apicipennis*, Tashkent, REITTER, p. 167, Verh. Ver. Brunn, xxx ; *P. opacus*, Tunis, REITTER, p. 103, *op. cit.* xxxi : n. spp.
- Psammodius rotundipennis*, Andalusia, p. 159, *nocturnus*, p. 160, *pallidus*, Syria, *generosus*, Araxes Valley, p. 161, REITTER, Verh. Ver. Brunn, xxx ; *P. planipennis*, S. Europe, REITTER, p. 103, *op. cit.* xxxi : n. spp.
- ⁴ *Pseudacrossus*, n. subg. of *Aphodius* ; REITTER, pp. 175 & 218, Verh. Ver. Brunn, xxx.
- Rhyparus sumatrensis*, Sumatra, FAIRMAIRE, p. 17, Notes Leyden Mus. xv ; *R. denticollis*, Java, p. 144, *approximans*, *helophororoides*, Borneo, *obsoletus*, Sumatra, p. 145, FAIRMAIRE, *t. c.* : n. spp.
- ¹ *Rhyssmodes*, n. g., pp. 156 & 161, for *R. alutaceus*, *tenuisculptus*, *transversus*, n. spp., Margelan, REITTER, Verh. Ver. Brunn, xxx.
- R. opacus*, Turkestan, REITTER, p. 102, Ver. Ver. Brunn, xxxi, n. sp.
- Rhyssenus setulosus*, Sicily, p. 163, *corrugatulus*, p. 164, Marocco, *interruptus*, Araxes Valley, p. 165, *parallelus*, p. 166, *hybridus*, p. 167, Marocco, REITTER, Verh. Ver. Brunn, xxx, n. spp.
- Saphobius inflatipes*, p. 1112, *fuscus*, p. 1113, *fulvipes*, p. 1114, *curvipes*, p. 1349, New Zealand, BROUN, Manual, n. spp.
- Scarabeus ganglbaueri*, Persia, REITTER, p. 41, Verh. Ver. Brunn, xxxi ; *S. lavistriatus*, Somaliland, FAIRMAIRE, p. 147, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Synarmostes humilis*, Comoro Is., FAIRMAIRE, p. 530, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ⁴ *Telhyboma*, n. subg. of *Deltochilum*, KOLBE, p. 192, Stettin. Ent. Zeit. liv.

Glaphyrini.

- Toxocerus florentini*, Upper Tonkin, FAIRMAIRE, p. 287, Ann. Soc. ent. Belgique, xxxvii, n. sp.

Melolonthini.

- Apogonia cinerascens*, Upper Tonkin, p. 288, *celebiana*, Celebes, *rufocenesens*, Tonkin, p. 289, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii; *A. insignis*, Borneo, p. 353, *minutissima*, Perak, p. 354, BRENSKE, Berlin. ent. Zeitschr. xxxviii : n. spp.
- ¹*Asaphomorpha*, n. g., p. 226, pl. x, fig. 14, for *Encya nigra*, Nonf.; BRANCSIK, Jahresh. Ver. Trencsen. xv.
- ¹*Bilga*, n. g., near *Trochalus*, for *B. pictipennis*, n. sp., Oubanghi; FAIRMAIRE, p. 137, Ann. Soc. ent. France, 1893.
- Brahmina* and *Cryphaeobius*, discussion on; BRENSKE, Ent. Nachr. xix, pp. 91, &c.
- ¹*Costleya*, n. g., near *Stethaspis*, p. 1115, for *C. discoidea*, n. sp., New Zealand, p. 1116, BROUN, Manual.
- Cyphochilus manipurensis*, p. 331, *pygidialis*, p. 332, with var. *angeri*, p. 333, Manipur, NONFRIED, Berlin. ent. Zeitschr. xxxviii, n. spp.
- Dejeania nigra*, Borneo, BRENSKE, p. 352, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Ecopholis borneensis*, Kina-Balu, BRENSKE, p. 354, Berlin. ent. Zeitschr. xxxviii, n. sp.
- ¹*Gyproliu*, n. g., near *Hoplia*, p. 349, for *G. bimaculata*, n. sp., Borneo, p. 350; BRENSKE, Berlin. ent. Zeitschr. xxxviii.
- Hetamius*, n. g., near *Lasiopsis*, for *H. demaizoni*, n. sp., Algeria; FAIRMAIRE, p. cxlvii, Bull. Soc. ent. France, 1893.
- Hilyotrogus cribratulus*, Upper Tonkin, FAIRMAIRE, p. 308, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Holotrichia serrulata*, Borneo, p. 357, *barda*, *mindanaona*, Philippines, *barbigera*, Celebes, p. 358, BRENSKE, Berlin. ent. Zeitschr. xxxviii, n. spp.
- Homaloplia rufo-plagiata*, Upper Tonkin, FAIRMAIRE, p. 305, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Hoplia karamani*, Dalmatia, REITTER, p. 175, Wien. ent. Zeit. xii; *H. acutespina*, Macedonia, REITTER, p. 175, t. c.; *H. opalescens*, Upper Tonkin, FAIRMAIRE, p. 307, Ann. Soc. ent. Belgique, xxxvii; *H. aurifera*, p. 348, *auromicans*, *setosella*, p. 349, *ventricosa*, p. 351, Borneo, BRENSKE, Berlin. ent. Zeitschr. xxxviii : n. spp.
- Leucopholis niasiana*, Nias I., BRENSKE, p. 356, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Melolontha vulgaris*, habits of insect and larva; RASPAIL, Mem. Soc. zool. France, vi, pp. 202-213: structure of stigmata in larva; BOAS, Zool. Anz. xvi, p. 389, woodcut: destruction by *Bacteria*; KRASILSHTSNIK, Mem. Soc. zool. France, vi, pp. 245-285.
- Odontria albonotatus*, p. 1118, *smithii*, *piceiceps*, p. 1450, *occiputale*, *marmorata*, p. 1451, *fusca*, *glabrata*, p. 1452, New Zealand, BROUN, Manual, n. spp.
- Phytalus capucinus*, Upper Tonkin, FAIRMAIRE, p. 289, Ann. Soc. ent. Belgique, xxxvii, n. sp.

- Pleophylla brenskei*, Nossibé, BRANCSIK, p. 225, Jahresh. Ver. Trencsen. xv, n. sp.
- Pyronota electa, regalis*, p. 1116, *dives, aurata, purpurata, cœrulea*, p. 1117, *pallida*, p. 1118, New Zealand, BROUN, Manual, n. spp.
- Rhizotrogus vicinus*, and allies, characters; BRENSKE, p. 188, Ent. Nachr. xix.
- R. fiorii*, Italy, BRENSKE, p. 190, Ent. Nachr. xix, n. sp.
- Schizonycha integra*, Choa, FAIRMAIRE, p. 18, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Serica iris*, Buchara, SEMENOW, p. 495, Horæ Soc. ent. Ross. xxvii ; *S. clypeata*, Upper Tonkin, FAIRMAIRE, p. 288, Ann. Soc. ent. Belgique, xxxvii ; *S. iridicauda*, Upper Tonkin, FAIRMAIRE, p. 307, t. c. ; *S. (Microserica) malaccensis*, Malacca, BRENSKE, p. 352, Berlin. ent. Zeitschr. xxxviii : n. spp.
- Stethaspis prasinus*, New Zealand, BROUN, p. 1115, Manual, n. sp.

Rutelini.

- Adoretus fulvus*, p. 2, *setifer, niger*, p. 9, *aneus*, p. 10, Madagascar, BRENSKE, Soc. ent. viii ; *A. griseescens, convexicollis*, Choa, FAIRMAIRE, p. 19, Ann. Soc. ent. Belgique, xxxvii ; *A. renardi*, p. 140, *cardoni*, p. 141, *bengalensis, bicolor*, p. 142, *minutus*, p. 143, Bengal, BRENSKE, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Adorodocia*, n. g., near *Adoretus*, for *A. maxima*, n. sp., Madagascar, and including also *Adoretus latissimus*, Bl. ; BRENSKE, p. 1, Soc. ent. viii.
- Adoroleptus*, n. g., for *Adoretus lanatus*, F. ; BRENSKE, p. 1, Soc. ent. viii.
- Anomala brevior*, Choa, FAIRMAIRE, p. 18, Ann. Soc. ent. Belgique, xxxvii ; *A. signaticollis*, p. 334, *centralis*, p. 335, Manipur, NONFRIED, Berlin. ent. Zeitschr. xxxviii ; *A. cinobarina*, p. 308, *platypygæ, scintillans*, p. 309, *bivirgulata*, p. 310, *punctulicollis*, p. 311, Upper Tonkin, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii ; *A. russiventris, irideorufa*, Upper Tonkin, FAIRMAIRE, p. 290, t. c. ; *A. andradei*, Philippines, HELLER, p. 323, Ent. Nachr. xix : n. spp.
- Ceroprophana*, n. g., p. 299, for *C. modiglianii*, n. sp., Sumatra, p. 301 ; GESTRO, Ann. Mus. Genova, xxxiii.
- Epectinaspis boucardi*, Mexico, NONFRIED, p. 280, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Phyllopertha caucasica* and *lederi*, note on ; REITTER, p. 73, Wien. ent. Zeit. xii.
- Popilia angulicollis*, Upper Tonkin, FAIRMAIRE, p. 311, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Prodoretus*, n. g., p. 1, near *Adoretus*, for *P. vittatus*, n. sp., Madagascar, p. 10, BRENSKE, Soc. ent. viii.
- Spilote keili*, Sumatra, RITSEMA, p. 171, Notes Leyden Mus. xv, n. sp.
- Strigoderma pallidipennis*, Centr. America, p. 285, *costulata*, Mexico, *elegans*, Panama, p. 286, *ornata*, Honduras, p. 288, *pilicollis*, p. 290, *hirsuta, rothschildi*, p. 291, Mexico, *heraldica*, no locality, *micans*, Honduras, p. 292, *gracilis*, Chiriqui, *subœnea*, Mexico, p. 296, NONFRIED, Berlin. ent. Zeitschr. xxxviii : n. spp.

Dynastini.

- Cyphonistes bicornis, fissicollis*, Oubanghi, FAIRMAIRE, p. 138, Ann. Soc. ent. France, 1893, n. spp.
- ¹*Dimyxus*, n. g., near *Oryctes*, for *D. crampeli*, n. sp., Oubanghi; FAIRMAIRE, p. 139, Ann. Soc. ent. France, 1893.
- Heteronychus plebeius*, n. var. *lucubensis*; BRANCSIK, p. 229, Jahresh. Ver. Trencsen. xv.
- H. cribratellus*, Upper Egypt, FAIRMAIRE, p. cxlvi, Bull. Soc. ent. Franco, 1893; *H. obtusifrons*, p. 19, *densatifrons, rudestriatus, tenuestriatus*, p. 20, Choa, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii; *H. adolescens*, pl. x, fig. 9d, *digitatus*, fig. 9e, p. 230, *nanus*, p. 231, Nossibé, BRANCSIK, Jahresh. Ver. Trencsen. xv; *H. clypealis*, Comoro Is., FAIRMAIRE, p. 530, Ann. Soc. ent. Belgique, xxxvii; *H. interruptus*, Tonkin, p. 312, *punctolineatus, monodon*, Cochinchina, *cribratellus*, Cambodia, FAIRMAIRE, t. c. p. 313 : n. spp.
- Oryctes comoriensis*, Comoro Is., FAIRMAIRE, p. 531, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ²*Parisomorphus*, n. g., *Pimelopodes*, p. 605, for *P. hilaris*, n. sp., Madagascar, p. 607; SCHAUFUSS, Nunquam ot. iii.
- Phyllognathus stricticeps*, Choa, FAIRMAIRE, p. 21, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Trichogomphus tonkinens*, Upper Tonkin, FAIRMAIRE, p. 313, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Trionychus foveiceps*, Comoro Is., FAIRMAIRE, p. 530, Ann. Soc. ent. Belgique, xxxvii, n. sp.

Cetoniini.

- [Cf. BOUCARD (94), BRANCSIK (102), FAIRMAIRE (275, 277, 279, 280, 283, 287, 290), FROGGATT (347), GESTRO (369), KOLBE (541), KRAATZ (547, 550, 551), NONFRIED (674), REITTER (761), RITSEMA (806), ROTHSCHILD & JORDAN (824), WHITEHEAD (1051).]
- Translation into French of Reitter's table of the palæarctic *Cetoniidae*; Abeille, xxviii, pp. 109-136.
- Anochilia bifida* = (*punctatissima*, Waterh.); KRAATZ, p. 238, Wien. ent. Zeit. xii.
- A. flavipennis*, p. 148, *rufipes*, p. 149, Madagascar, KRAATZ, Wien. ent. Zeit. xii, n. spp.
- Anthracophora choana*, Choa, FAIRMAIRE, p. 22, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Cetonia (Æthiessa) floralis*, habits; KÜNCKEL, p. cclxxxix, Bull. Soc. ent. France, 1893. *C. floricola*, oviposition in ants nest; RUPERTSBERGER, p. 249, Wien. ent. Zeit. xii. *C. hungarica*, n. var. *tristicula*; REITTER, p. 73, t. c.
- C. delagrangei*, Syria, BOUCARD, Humming Bird, iii, p. 40; *C. ventralis*, Upper Tonkin, FAIRMAIRE, p. 296, Ann. Soc. ent. Belgique, xxxvii : n. spp.

- Chalcothea planiuscula*, figured ; WHITEHEAD, Kina Balu, pl., p. 184.
Chordodera, referred to *Diplognathini* ; KOLBE, p. 210, Stettin Ent. Zeit. liv.
- Clinteria biguttata*, 6-pustulata, note on ; KRAATZ, p. 77, Deutsche ent. Zeitschr. 1893.
- Cenochilus bicolor*, Manipur, NONFRIED, p. 336, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Coptomia opalina*, type specimen, distinctive characters ; WATERHOUSE, P. ent. Soc. London, 1893, p. xxxviii.
- Cyclidius acherontius*, Colombia, p. 211, *rohdei*, Matto Grosso, p. 212, KOLBE, Stettin Ent. Zeit. liv, n. spp.
- Diplognatha crampeli*, Oubanghi, FAIRMAIRE, p. 141, Ann. Soc. ent. France, 1893, n. sp.
- Dædycorhina truncaticornis*, Cameroons, FAIRMAIRE, p. clxxv, Bull. Soc. ent. France, 1893, n. sp.
- Epixanthis nigripes*, Madagascar, KRAATZ, p. 155, Wien. ent. Zeit. xii, n. sp.
- Eupcecila australasiae*, larva described ; FROGGATT, p. 35, P. Linn. Soc. N.S. Wales (2) viii.
- Euryomia oberturii*, Comoro Is., FAIRMAIRE, p. 531, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Euselates schoenfeldti*, p. 72, *furcata*, p. 73, Hainan I., KRAATZ, Deutsche ent. Zeitschr. 1893, n. spp.
- Fornasinius*, male characters noticed, p. 205, *F. aureosparsus*, ♂ described at length, p. 203 ; KOLBE, Stettin Ent. Zeit. liv.
- Gametis viridiobscura*, varietal note ; KRAATZ, p. 74, Deutsche ent. Zeitschr. 1893.
- Glyptothea whiteheadi*, figured ; WHITEHEAD, Kina Balu, pl., p. 184.
- Gnathocera submarginata*, Oubanghi, FAIRMAIRE, p. 140, Ann. Soc. ent. France, 1893, n. sp.
- Goliathinus higginsii*, ♂ noticed ; KOLBE, p. 206, Stettin Ent. Zeit. liv.
- Goliathopsis lameyi*, Tonkin, FAIRMAIRE, Bull. Soc. ent. France, 1893, p. vii, and description, p. 315, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Ingrisma rasuta*, p. 292, *cupreola*, p. 293, Upper Tonkin, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Liostraca bina*, n. var. *concolor* ; KRAATZ, p. 156, Wien. ent. Zeit. xii.
- L. flavomaculata*, Madagascar, KRAATZ, t. c., n. sp.
- Lomaptera albertisii*, n. var. *maculata* ; GESTRO, p. 291, Ann. Mus. Genova, xxxiii.
- L. loricæ*, p. 288, *lineæ*, p. 289, GESTRO, Ann. Mus. Genova, xxxiii, n. spp.
- Mesorrhopa fasciata*, Madagascar, KRAATZ, p. 154, Wien. ent. Zeit. xii, n. sp.
- Mycteristes telifer*, ♂ ♀ figured ; WHITEHEAD, Kina Balu, pl., p. 184.
- Myoderma dichroa*, Oubanghi, FAIRMAIRE, p. 141, Ann. Soc. ent. France, 1893, n. sp.
- Oxythyrea maculosa*, Comoro Is., FAIRMAIRE, p. 532, Ann. Soc. ent. Belgique, xxxvii, n. sp.

- Pantolia anthracina*, p. 232, pl. xii, fig. 15, *elongata*, fig. 16, p. 233, Nossibé, BRANCSIK, Jahresh. Ver. Trencsen, xv, n. spp.
- ⁴ *Parepizanthus*, n. g., p. 233, for *P. 8-punctata*, n. sp., Madagascar; KRAATZ, Wien. ent. Zeit. xii.
- Phædinus mohnikei*, *wittei*, Philippines, KRAATZ, p. 76, Deutsche ent. Zeitschr. 1893, n. spp.
- Plasiorrhina mhondana*, = (*scularis*, Qued., *triplagiata*, Kolbe, *vacua*, Gerst.); KOLBE, p. 213, Stettin Ent. Zeit. liv.
- Plectrone viridipes*, figured; WHITEHEAD, Kina Balu, pl., p. 184.
- ¹ *Pacilophila*, n. g. for *Diplognatha maculatissima* and *hebraei*; KOLBE, p. 210, Stettin Ent. Zeit. liv.
- Potosia kulabensis*, Turkestan, REITTER, p. 223, Wien. ent. Zeit. xii, n. sp.
- Prigenia viridiaurata*, figured; WHITEHEAD, Kina Balu, pl., p. 184.
- Pseudochalcothea planiuscula* and *pomacea*, males described, p. 453, *staudingeri*, note on, p. 454, ROTHSCILD & JORDAN, Ann. Nat. Hist. (6) xii.
- Pygora 14-guttata*, p. 150, *albomaculata*, p. 151, Madagascar, KRAATZ, Wien. ent. Zeit. xii, n. spp.
- Pyrrhopoda modesta*, Waterh., note on, with many named varieties; KRAATZ, p. 235, Wien. ent. Zeit. xii.
- P. murginicornis*, p. 152, *sellata*, p. 153, Madagascar, KRAATZ, Wien. ent. Zeit. xii, n. spp.
- Rhomborhina fuscipes*, Upper Tonkin, FAIRMAIRE, p. 315, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Somalibia* and *Dolichostethus* distinguished; KOLBE, p. 212, Stettin Ent. Zeit. liv.
- Teniodes quadrilineata*, Hope, = (*quadririgata*, Kr.); KRAATZ, p. 208, Deutsche ent. Zeitschr. 1893. *T. dilissima*, figured; WHITEHEAD, Kina Balu, pl., p. 184.
- T. rufo-squamosa*, p. 293, *perraudierii*, *zebraea*, p. 294, Upper Tonkin, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii; *T. furcata*, Upper Tonkin, FAIRMAIRE, p. 312, *t. c.* : n. spp.
- Thaumastopeus westwoodi*, Sumatra, RITSEMA, p. 141, Notes Leyden Mus. xv, n. sp.
- Theodosia magnifica*, Kina Balu, ROTHSCILD & JORDAN, Ann. Nat. Hist. (6) xii, p. 453, n. sp.
- Tmesorhina prasinella*, Oubanghi, FAIRMAIRE, p. 140, Ann. Soc. ent. France, 1893, n. sp.
- Xenoloba speciosa*, figured; WHITEHEAD, Kina Bula, pl., p. 184.

BUPRESTIDÆ.

[*Cf.* ABEILLE (1, 2), BLACKBURN (70, 71), BONNAIRE (89), FAIRMAIRE (275, 283), FROGGATT (345, 347), GAHAN (358), HELLER (434), HORN (461), JAKOWLEFF (489), KERREMANS (520-524), LEWIS (584), NONFRIED (674), REITTER (760), SEMENOW (878, 882), XAMBEU (1067).]

- Classification of the family with tabular characters of the subdivisions and genera; KERREMANS, pp. 94-122, Ann. Soc. ent. Belgique, xxxvii.
- Description of metamorphoses continued; XAMBEU, Rev. d'Ent. xii, pp. 54, &c., concluding with a list, pp. 118-124.
- Acmaodera sexpunctata, senex, vaillanti*, distinctive characters; ABEILLE, p. cccliv, Bull. Soc. ent. France, 1893. *A. adspersula*, metamorphoses; XAMBEU, p. 5, Ann. Soc. Linn. Lyon, xi.
- A. necatrix*, Lenkoran, *vaulogeri*, p. 133, *semiopaca*, p. 134, Algeria, ABEILLE, Rev. Ent. franc. xii; *A. regularis*, p. cccliv, *henoni*, p. ccclv, Algeria, ABEILLE, Bull. Soc. ent. France, 1893; *A. cincticollis*, p. 337, *belli*, p. 338, India, KERREMANS, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Actenodes ornaticollis*, Madagascar, KERREMANS, p. 243, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Agrilus angustulus*, n. var. *bicoloratus*; ABEILLE, p. ccclv, Bull. Soc. ent. France, 1893. *A. sinuatus*, habits, larva noticed as injurious to young apple-trees, Ent. Nachr. xix, pp. 25-30.
- A. proteus*, p. 137, *hypericicola*, p. 138, Algeria, ABEILLE, Rev. Ent. franc. xii; *A. spinipennis, imitans*, p. 332, *alazon, fortunatus*, p. 333, *sospes, tempestivus*, p. 334, *tibialis, gracilipes*, p. 335, *cupes, brevitarsis*, p. 336, Japan, LEWIS, J. Linn. Soc. xxiv; *A. amabilis, grisator*, p. 343, *fragilis*, p. 344, *ventralis*, p. 345, *repercussus, viridifrons*, p. 346, *verecundus*, p. 347, *modicus*, p. 348, India, KERREMANS, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Ancylochira flavomaculata*, p. 54, *8-guttata*, p. 56, *rustica*, p. 57, larvæ described; XAMBEU, Rev. Ent. franc. xii.
- Anthaxia*: descriptions of larvæ of palæarctic species; XAMBEU, pp. 57-67, Rev. Ent. franc. xii. *A. pleuralis*, distinctive characters; ABEILLE, p. ccclii, Bull. Soc. ent. France, 1893.
- A. canifrons*, p. ccclii, *heydeni, hemichrysis*, p. cccliii, Turkestan, ABEILLE, Bull. Soc. ent. France, 1893; *A. malachitica, sedilloti*, p. 129, Tunisia, *pulex*, Cairo, p. 130, *hirticollis*, Cyprus, p. 131, *bedeli*, Algeria, p. 132, ABEILLE, Rev. Ent. franc. xii; *A. collaris*, p. 334, *subviolacea, virescens*, p. 335, *rudis*, p. 336, India, KERREMANS, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Aphanisticus*: synonymy and characters of the European species; ABEILLE, pp. 139 & 140, Rev. Ent. franc. xii.
- A. bedeli*, Algeria, ABEILLE, p. 140, Rev. Ent. franc. xii, n. sp.
- Astræus badeni* = (*meyricki*), *jansonii* = (*tepperi*); POLL, p. 67, Tijdschr. ent. xxxvi.
- ⁴*Asymades*, n. g. *Agrilini*, p. 118, for *A. transvaalensis*, n. sp., S. Africa; KERREMANS, Ann. Soc. ent. Belgique, xxxvii.
- A. capucinea*, India, KERREMANS, p. 342, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Belionota colossa*, E. Africa, KERREMANS, p. 234, Ann. Soc. ent. Belgique, xxxvii, n. sp.

- Brachys salicis*, Japan, LEWIS, p. 337, J. Linn. Soc. xxiv, n. sp.
- † *Briseis*, n. g., for *Melobasis conica*, C. G. ; KERREMANS, p. 110, Ann. Soc. ent. Belgique, xxxvii.
- Chalcophoropsis rothschildi*, Madagascar, GAHAN, p. 224, Ann. Nat. Hist. (6) xi, n. sp.
- † *Chloricalla*, n. g. *Agrilini*, p. 119, for *C. gratiosa*, n. sp., Madagascar, p. 120 ; KERREMANS, Ann. Soc. ent. Belgique, xxxvii.
- † *Chryaspis*, n. g. for a part of *Steraspis* ; KERREMANS, p. 103, Ann. Soc. ent. Belgique, xxxvii.
- C. marginata*, *vitigera*, *kassaiensis*, W. Africa, KERREMANS, p. 503, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Chrysobothrini* : critical revision of the African forms ; KERREMANS, pp. 232-260, Ann. Soc. ent. Belgique, xxxvii.
- *C. quadraticollis*, Transbaikal, *heliophilus*, Algeria, ABEILLE, p. cccii, Bull. Soc. ent. France, 1893 ; *C. parallela*, Gaboon, p. 248, *infima*, Delagoa Bay, p. 250, *smaragdinea*, p. 251, *capensis*, p. 252, Cape Good Hope, *salebrosa*, Niam-Niam, *pilifrons*, Gaboon, p. 253, *howas*, Madagascar, p. 255, *rugifrons*, *rotundicollis*, Mozambique, p. 256, *foveicollis*, Réunion, *cincta*, Gaboon, p. 258, *indigacea*, *curta*, E. Africa, p. 258, *picipes*, *nigrita*, W. Africa, p. 259, KERREMANS, Ann. Soc. ent. Belgique, xxxvii ; *C. rutilicuspis*, Celebes, HELLER, p. 177, Notes Leyden Mus. xv : n. spp.
- Chrysochroa levior*, India, KERREMANS, p. 328, Ann. Soc. ent. Belgique, xxxvii ; *C. suturalis*, Annam, KERREMANS, p. 504, *t. c.* : n. spp.
- † *Cisseoides*, n. g. *Agrilini*, for *C. murina*, n. sp., Australia ; KERREMANS, p. 118, Ann. Soc. ent. Belgique, xxxvii.
- Corabus amethystinus*, metamorphoses ; XAMBEU, p. 10, Ann. Soc. Linn. Lyon, xl.
- C. repletus*, Taurus, *theryi*, p. 135, *aureolus*, p. 136, Algeria, ABEILLE, Rev. Ent. franc. xii ; *C. rusticanus*, Japan, LEWIS, p. 331, J. Linn. Soc. xxiv ; *C. pictus*, p. 339, *suturalis*, p. 340, India, KERREMANS, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Cryptodactylus auriceps* = (*gracilis*, Sch.) ; LEWIS, p. 151, Entomologist, xxvi.
- Cylindromorphus sefrensis*, Algeria, BONNAIRE, p. 317, Rev. Ent. franc. xl, n. sp.
- Cyria tridens*, figured ; SKUSE, pl. xi, figg. 5-10, p. 45, Rec. Austral. Mus. ii.
- Demochroua corbetti*, Burma, KERREMANS, p. 326, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Dicerca aino*, *tibialis*, Japan, LEWIS, J. Linn. Soc. xxiv, p. 328, n. spp.
- Diceromorpha alluaudi*, Seychelles, KERREMANS, Bull. Soc. ent. France, 1893, n. sp.
- Endelus œneus*, India, KERREMANS, p. 349, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Ethon affine*, *corpulentum*, *marmoreum*, larvæ noticed as gall-formers ; FROGGATT, P. Linn. Soc. N. S. Wales (2) vii, pp. 323-326.

- Eurythyrea tenuistriata*, Japan, LEWIS, p. 330, J. Linn. Soc. xxiv, n. sp.
- ¹*Glyptoscelimorpha*, n. g., near *Schizopus*, for *G. marmorata*, n. sp., California; HORN, p. 137, Tr. Amer. ent. Soc. xx.
- Halecia pyropus*, Guadeloupe, p. 504, *chevrolati*, Cayenne, p. 505, KERREMANS, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Iridotenia andamana*, Andaman Is., KERREMANS, p. 505, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹*Julodella*, n. subg. of *Julodis*, for *J. globithorax* and allies, and including *J. futura*, W. Turkestan, p. 315, *impluviata*, N. Persia, p. 316, *brevilata*, Transcaspian region, p. 317, n. spp.; SEMENOW, Horæ Soc. ent. Ross. xxxvii.
- Julodis onopordi*, young larva described and figured; KÜNCKEL, pp. cxii-cxv, Bull. Soc. ent. France, 1893. *J. faldermanni*, n. var. *araratica*; SEMENOW, p. 497, Horæ Soc. ent. Ross. xxvii.
- J. bucharica*, Kabadian, SEMENOW, p. 496, Horæ Soc. ent. Ross. xxvii, n. sp.
- ⁴*Megactenodes*, n. g. for a part of *Actenodes*; KERREMANS, p. 111, Ann. Soc. ent. Belgique, xxxvii.
- M. rudis*, Gaboon, KERREMANS, p. 509, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Melanophila obscurata*, Japan, LEWIS, p. 331, J. Linn. Soc. xxiv, n. sp.
- Melibæus multicolor*, Oubanghi, FAIRMAIRE, p. 142, Ann. Soc. ent. France, 1893; *M. minutus*, India, KERREMANS, p. 339, Ann. Soc. ent. Belgique, xxxvii : n. sp.
- ⁴*Micrasta*, n. g. facies of *Meligethes*, for *M. typica*, *cyanipennis*, *amplithorax*, p. 115, *meligethoides*, p. 116, n. spp., Mexico; KERREMANS, Ann. Soc. ent. Belgique, xxxvii.
- Paracephala cyaneipennis*, Sydney, BLACKBURN, p. 130, Tr. R. Soc. S. Austral. xvii, n. sp.
- ¹*Paraphrixia*, n. g., for *Buprestis purpureus*, Ol.; KERREMANS, p. 113, Ann. Soc. ent. Belgique, xxxvii.
- Philocteanus capitatus*, Borneo, KERREMANS, p. 504, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹*Phlocteis*, n. g., for *Disc. exasperatus*, Sch.; KERREMANS, p. 118, Ann. Soc. ent. Belgique, xxxvii.
- Pæcilonota bellula*, *vivata*, Japan, LEWIS, p. 329, J. Linn. Soc. xxiv, n. spp.
- Polybothris humblotii*, Comoro Is., FAIRMAIRE, p. 533, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Psiloptera (Lampetis) fugax*, *æneopicea*, p. 505, Amazons, *callimicra*, *infra-viridis*, *marginella*, Brazil, *purpureomicans*, p. 506, *phalerata*, no locality, *auropunctata*, Mexico, *P. (Damarisila) quadrioculata*, Natal, p. 507, *P. (Polybothris) muhlbergi*, *P. (Icaria) elongata*, Madagascar, p. 508, KERREMANS, Ann. Soc. ent. Belgique, xxxvii; *P. oberthurii*, Comoro Is., FAIRMAIRE, p. 533, t. c.; *P. viridans*, India, KERREMANS, p. 329, t. c.; *P. manipurensis*, India, NONFRIED, p. 337, Berlin. ent. Zeitschr. xxxviii : n. spp.

- Ptosima flavoguttata*, metamorphoses ; XAMBEU, p. 1, Ann. Soc. Linn. Lyon, xl.
- Sambus zonalis*, Rangoon, KERREMANS, p. 342, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- † *Scaptelytra*, n. g., near *Halecia*, for *sulphureovittata*, Fahr. ; KERREMANS, p. 105, Ann. Soc. ent. Belgique, xxxvii.
- S. oculicollis*, Delagoa Bay, KERREMANS, p. 504, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Sphenoptera geminata*, metamorphoses ; XAMBEU, p. 7, Ann. Soc. Linn. Lyon, xl. *S. scovitzii*, Fald. = (*latesulcata*, Fairm.) ; JAKOWLEFF, p. 448, Horæ Soc. ent. Ross. xxvii.
- S. simplex*, Asia Minor, p. 130, *confinis*, Syria, p. 131, *alaiensis*, Alaï, p. 132, *dolens*, Caucasus, p. 133, *inconspicua*, Syria, p. 134, JAKOWLEFF, Horæ Soc. ent. Ross. xxvii ; *S. mediocris*, *cincticollis*, p. 330, *nigerrima*, *andrewesi*, p. 332, India, KERREMANS, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Stigmodera rufipennis*, larva noticed ; FROGGATT, p. 36, P. Linn. Soc. N.S. Wales (2) viii.
- S. terræ-réginae*, Queensland, BLACKBURN, p. 295, Tr. R. Soc. S. Austral. xvii, n. sp.
- † *Strigulia*, n. g., *Agilini*, for *S. lacerta*, n. sp., Congo ; KERREMANS, p. 117, Ann. Soc. ent. Belgique, xxxvii.
- Trachys opulenta*, Tashkent, *nuda*, Black Sea, ABEILLE, p. ccclv, Bull. Soc. ent. France, 1893 ; *T. turanica*, Turkestan, SEMENOW, p. 497, Horæ Soc. ent. Ross. xxvii ; *T. eximia*, *saundersi*, Japan, LEWIS, p. 337, J. Linn. Soc. xxiv ; *T. simulans*, p. 349, *fallax*, *divergens*, p. 350, *nitida*, p. 351, *parvula*, *rotundata*, p. 352, *andrewesi*, p. 353, *pilosula*, *atra*, p. 354, *violascens*, *excavata*, p. 355, *morosa*, *sparsa*, p. 356, *acuta*, p. 357, India, KERREMANS, Ann. Soc. ent. Belgique, xxxvii : n. spp.

THROSCIDÆ, MONOMMIDÆ, EUCNEMIDÆ.

[Cf. BROUN (112), CASEY (151), FAIRMAIRE (283).]

- Pactopus fuchsi*, California, CASEY, p. 585, Ann. N. York Ac. vii, n. sp.
- Throscus carinifrons*, specific distinctions ; CHAMPION, Ent. Mag. xxix, p. 18.
- Hyporhagus æneus* referred to *Aspathines* ; CHAMPION, p. 571, Biol. Centr.-Amer. Col. iv (1).
- H. nitidus*, Nicaragua, p. 570, *suturalis*, pl. xxiii, fig. 22, *ferrugineus*, fig. 25, Panama, p. 571, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Monomma rubiginosum*, *seriepunctatum*, Comoro Is., FAIRMAIRE, p. 535, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- † *Agalba*, n. g., near *Talerax*, for *A. ruficorne*, *nigrescens*, n. spp., New Zealand, BROUN, p. 1120, Manual
- Talerax nicans*, New Zealand, BROUN, p. 1350, Manual, n. sp.

ELATERIDÆ.

[Cf. BLACKBURN (71), BROUN (112, 113), BUYSSON (132, 133), CANDÈZE (143, 144, 145), CASEY (151), FAIRMAIRE (283, 288), FLEUTIAUX (316), HAMILTON (421), SCHWARZ (857, 858, 859), XAMBEU (1067).]

Catalogue of the family, with brief characters for the divisions and genera ; CANDÈZE (143).

The *Elateridæ* of the Faune Gallo-rhénane, by H. DU BUYSSON : pp. 9-72 have been published in connection with Rev. Ent. franc. xii.

Adelocera kraatzi, Jerusalem, SCHWARZ, p. 192, Deutsche ent. Zeitschr. 1893, n. sp.

Adrastus limbatus of British authors is really *pallens*, Fab. ; GORHAM, p. 14, Entomologist, xxiv.

Agonischius belli, *salebrosus*, *pumilus*, India, CANDÈZE, p. 178, Ann. Soc. ent. Belgique, xxxvii ; *A. submetallicus*, Java, CANDÈZE, p. 127, Notes Leyden Mus. xv, n. sp.

Agræus lucasseni, *maculosus*, Java, CANDÈZE, p. 125, Notes Leyden Mus. xv, n. spp.

Agriotès sordidus, metamorphoses ; XAMBEU, p. 18, Ann. Soc. Linn. Lyon, xl.

Agrypnus andreweesi, India, CANDÈZE, p. 169, Ann. Soc. ent. Belgique, xxxvii, n. sp.

Alaus zunianus, Arizona, CASEY, p. 584, Ann. N. York Ac. vii, n. sp.

Anchastus simoni, Ceylon, FLEUTIAUX, p. 271, Ann. Soc. ent. France, 1893, n. sp.

Arraphes confusus, Ceylon, FLEUTIAUX, p. 272, Ann. Soc. ent. France, 1893, n. sp.

Betarmon quadrivittatus, Sicily, RAGUSA, Natural. Sicil. xii, p. 305 ; *B. flavipilus*, New Zealand, BROUN, p. 1350, Manual : n. spp.

Campsosternus corbetti, India, CANDÈZE, p. 172, Ann. Soc. ent. Belgique, xxxvii, n. sp.

Cardiophorus barrosi, n. n., to replace *reitteri* ; GUÉRIN, p. 63, Feuille Natural. xxiii. *C. hipponensis*, distinctive characters ; DESBROCHERS, p. 67, Frelon, iii.

C. albo-fasciatus, Sicily, SCHWARZ, Natural. Sicil. xiii, p. 1 ; *C. reitteri*, North Portugal, GUÉRIN, p. 31, Feuille Natural. xxiii ; *C. bonnairei*, Algeria, BUYSSON, p. vii, Bull. Soc. ent. France, 1893 ; *C. lepidus*, *bigeminatus*, *spadiceus*, p. 176, *nuntius*, *erinaceus*, p. 177, E. India, CANDÈZE, Ann. Soc. ent. Belgique, xxxvii : *C. holosericeus*, Ceylon, FLEUTIAUX, Ann. Soc. ent. France, 1893, p. 272 : n. spp.

Cardiotarsus luridipes, Comoro Is., FAIRMAIRE, p. 534, Ann. Soc. ent. Belgique, xxxvii, n. sp.

Chrosis impressa, New Zealand, BROUN, p. 1133, Manual ; *C. eximia*, New Zealand, BROUN, p. 288, Ann. Nat. Hist. (6) xii : n. spp.

- Corymbites elongaticollis*, N. America, HAMILTON, p. 307, *Canad. Ent.* xxv ; *C. canaliculatus*, p. 1129, *munroi*, p. 1130, New Zealand, BROWN, *Manual* : n. spp.
- Cryptohypnus* and *Hypnoidus*, distinguished ; BERGROTH, *Ent. Nachr.* xix, p. 308. *C. riparius*, larva and metamorphoses, XAMBEU, *Bull. Soc. ent. France*, 1893, p. ccliii.
- C. picticornis*, p. 1123, *monticola*, *sternalis*, p. 1124, *basalis*, *fuscipennis*, p. 1125, *attenuatus*, p. 1453, *deterius*, p. 1454, BROWN, *Manual*, n. spp.
- Ectamenogonus*, n. subg., for *Ludius montandoni*, BUYSSON, p. cccxiv, *Bull. Soc. ent. France*, 1893.
- Elatер sanguinolentus*, n. var. *paleatus* ; CANDÈZE, p. 286, *Ann. Soc. ent. Belgique*, xxxvii.
- E. punctatus*, Armenia, SCHWARZ, *Deutsche ent. Zeitschr.* 1893, p. 192, n. sp.
- Elathous emgei*, Greece, SCHWARZ, p. 191, *Deutsche ent. Zeitschr.* 1893, n. sp.
- Elius birmanicus*, *sericeus*, E. India, CANDÈZE, p. 173, *Ann. Soc. ent. Belgique*, xxxvii, n. spp.
- Exæolus*, n. g., p. 1133, for *E. rufescens*, *punctatus*, p. 1134, *obsoletus*, p. 1135, n. spp., New Zealand ; BROWN, *Manual*.
- Hemiptops nigripennis*, India, CANDÈZE, p. 178, *Ann. Soc. ent. Belgique*, xxxvii, n. sp.
- Heterocrepidius indicus*, Belgaum, CANDÈZE, p. 173, *Ann. Soc. ent. Belgique*, xxxvii, n. sp.
- Heteroderes cairnsensis*, Queensland, BLACKBURN, p. 296, *Tr. R. Soc. S. Austral.* xvii, n. sp.
- Idolus gestroi*, Italy, BUYSSON, p. 417, *Ann. Mus. Genova*, xxxiii, n. sp.
- Lacon turbatus*, p. 169, *abreptus*, *muscosus*, *holosericeus*, *libellus*, p. 170, *sulcifrons*, *madurensis*, *luctuosus*, *pistorius*, p. 171, India, CANDÈZE, *Ann. Soc. ent. Belgique*, xxxvii, n. spp.
- Lomenus fulvipennis*, *fuscicornis*, p. 1126, *maurus*, *sculpturatus*, p. 1127, *frontalis*, p. 1128, *fuscipes*, p. 1454, New Zealand, BROWN, *Manual*, n. spp.
- Ludioctenus*, n. g., p. lxviii, for *L. akbesianus*, n. sp., Akbès, r. lxix ; FAIRMAIRE, *Bull. Soc. ent. France*, 1893 [but, p. cccxvi, *t. c.*, this is said to *Tetrigus cyprius*, Baudi, BUYSSON].
- Ludius* : cf. *Ectamenogonus*, *suprà*.
- Mecastrus intermedius*, New Zealand, BROWN, p. 1128, *Manual*, n. sp.
- Megapenthes carnifrons*, Desb. (= *volxemi*, Cand.) ; BUYSSON, p. cccxiv, *Bull. Soc. ent. France*, 1893.
- Melanotus niger*, metamorphoses ; XAMBEU, p. 13, *Ann. Soc. Linn. Lyon*, xi.
- M. rufinus*, India, CANDÈZE, p. 177, *Ann. Soc. ent. Belgique*, xxxvii, n. sp.
- Melanoxanthus pyronothus*, *aurantiacus*, *carinifrons*, *pusillimus*, E. India, CANDÈZE, p. 175, *Ann. Soc. ent. Belgique*, xxxvii ; *M. tricolor*, *cinnamomeus*, Java, CANDÈZE, p. 126, *Notes Leyden Mus.* xv : n. spp.

- Melanthoides suturalis, tristis*, Burma, CANDÈZE, p. 174, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Monocrepidius captiosus*, Pêgu, CANDÈZE, p. 174, Ann. Soc. ent. Belgique, xxxvii; *M. maritimus*, New Zealand, BROUN, p. 1135, Manual : n. spp.
- Oxylasma carinalis*, New Zealand, BROUN, Manual, p. 1130; *O. vittiger*, New Zealand, BROUN, p. 1452, Manual : n. spp.
- Pericus sanguinolentus*, India, CANDÈZE, p. 172, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Protelater urquharti, costiceps*, p. 1121, *pubescens*, p. 1122, New Zealand, BROUN, Manual, n. spp.
- Silene*, n. g., p. 1135, near *Monocrepidius*, for *S. brunnea*, n. sp., New Zealand, p. 1136; BROUN, Manual.

CEBRIONIDÆ, RHIPIDOPHORIDÆ.

- Cebrio fabricii*, larva described; XAMBEU, p. 21, Ann. Soc. Linn. Lyon, xi.
- Arrhaphipterus schelkownikoffi*, Transcaucasus, REITTER, p. 111, Wien. ent. Zeit. xii, n. sp.
- Callirhipis philiberti*, ♀ described; FAIRMAIRE, p. cccxxiii, Bull. Soc. ent. France, 1893.
- Evaniocera minuta*, Australia, BLACKBURN, p. 178, Tr. R. Soc. S. Austral. xvi, n. sp.

DASCILIDÆ and FAM. DUB.

[Cf. BROUN (112).]

- ✓ *Byrrhocryptus*, n. g., p. 1136, family doubtful, for *B. urquharti*, n. sp., New Zealand, p. 1137; BROUN, Manual.
- Amplectopus latulus, fuscus*, p. 1351, *pallicornis*, p. 1456, New Zealand, BROUN, Manual, n. spp.
- Atopida dorsale*, p. 1141, *sinuata*, p. 1455, New Zealand, BROUN, Manual, n. spp.
- ✓ *Cyphanodes*, n. g., for *C. vestitus*, n. sp., New Zealand, BROUN, p. 1140, Manual.
- Cyphanus dubius, scaber*, New Zealand, BROUN, p. 1139, Manual, n. spp.
- Mesocyphon pallidus*, p. 1141, *laticeps*, p. 1142, New Zealand, BROUN, Manual, n. spp.
- Cyphon pauper, discedens, flavescens*, p. 1143, *nigritulus, fuscifrons, fulvicornis*, p. 1144, *ornatus*, p. 1145, New Zealand, BROUN, Manual, n. spp.
- Veronatus nubilus*, New Zealand, BROUN, p. 1455, Manual, n. sp.

MALACODERMIDÆ.

[Cf. ABEILLE (3, 4), BOURGEOIS (95, 96), BROUN (112), FAIRMAIRE (277, 278, 283), GESTRO (372), PIC (713), REITTER (758), SCHILSKY (844), WEISE (1042), XAMBEU (1067).]

- First supplement to the *Malacoderms* of the faune gallo-rhenane ;
BOURGEAIS (96).
- Anthocomus flaveolus*, Dobrubja, ABEILLE, p. clxv, Bull. Soc. ent. France,
1893, n. sp.
- † *Asilis*, n. n. for *Aclytia*, Broun, with *A. colorata*, n. sp., New Zealand ;
BROUN, Manual, p. 1147.
- Attalus cerastes*, Tunis, ABEILLE, p. clxxvi, Bull. Soc. ent. France, 1893 ;
A. decolor, Choa, FAIRMAIRE, p. 25, Ann. Soc. ent. Belgique, xxxvii,
n. sp.
- Cautires dichrous*, Comoro Is., FAIRMAIRE, p. 535, Ann. Soc. ent. Belgique,
xxxvii, n. sp.
- Chauliognathus profundus*, metamorphoses ; WICKHAM, p. 342, pl. lx,
fig. 17, Bull. Lab. Iowa, ii.
- Dasytes obscurus*, metamorphoses ; XAMBEU, p. 23, Ann. Soc. Linn. Lyon,
xl.
- D. (Mesodasytes) ragusæ*, Sicily, SCHILSKY, p. 15, Natural. Sicil. xiii ;
D. delagrangi, Syria, PIC, p. clxi, Bull. Soc. ent. France, 1893 ; *D.*
parniformis, apicatus, Choa, FAIRMAIRE, p. 25, Ann. Soc. ent.
Belgique, xxxvii ; *D. oreocharis*, p. 1148, New Zealand, *littoralis*,
p. 1351, *æthiops*, p. 1352, BROUN, Manual : n. spp.
- Ichthyurus tenuipes*, W. Africa, p. 383, *henrici*, Toukin, p. 384, GESTRO,
Ann. Mus. Genova, xxxiii, n. spp.
- † *Idgia henonii*, Choa, FAIRMAIRE, p. 26, Ann. Soc. ent. Belgique, xxxvii,
n. sp.
- Laius kiesewetteri*, n. n. for *flavicornis*, Kies. ; LEWIS, p. 151, Entomolo-
gist, xxvi.
- Lamprorhiza paulinoi*, ♀ described ; OLIVIER, p. lxx, Bull. Soc. ent.
France, 1893.
- Malachius diversipes*, p. clxii, *guttifer*, p. clxiii, Persia, *danieli*, Amasia,
p. clxiv, ABEILLE, Bull. Soc. ent. France, 1893, n. sp.
- Malthinus deceptor*, Sicily, BAUDI, p. 43, Natural. Sicil. xii, n. sp.
- Malthodes spalatrensis*, Spalato, WEISE, p. 365, Deutsche ent. Zeitschr.
1893, n. sp.
- Melyris pleuralis*, Somaliland, FAIRMAIRE, p. 149, Ann. Soc. ent. Belgique,
xxxvii, n. sp.
- Metriorhynchus erraticus*, New Zealand, BROUN, p. 1146, Manual, n. sp.
- Nastonycha alagoesa*, Caucasus, REITTER, p. 111, Wien. ent. Zeit. xii, n. sp.
- † *Paramalthodes*, n. g., for *Malthodes nigricollis*, Baudi ; WEISE, p. 364,
Deutsche ent. Zeitschr. 1893.
- Phlæophilus gracilicornis*, Comoro Is., FAIRMAIRE, p. 539, Ann. Soc. ent.
Belgique, xxxvii, n. sp.
- Phosphænus hemipterus*, ♀ at Lewes noticed ; MORRIS, Ent. Mag. xxix,
p. 162.
- Podabrus heydeni*, = (*reinii*, Heyd.) ; LEWIS, p. 151, Entomologist, xxvi.
- Podistrina villardi*, French Alps, BOURGEOIS, p. 32, 1^{er} Supp. Mala-
codermes Faune gallo-rhenane ; *P. (Podistrella) abeillei*, Algeria,
BOURGEOIS, p. cclxxxix, Bull. Soc. ent. France, 1893 : n. spp.

- Rhagonycha rufo-testacea* and *angularis*, distinctive characters; BOURGEOIS, p. x, Faune gallo-rhenane.
- Selasia asperulipennis*, Choa, FAIRMAIRE, p. 23, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Silis erythrodera*, Choa, FAIRMAIRE, p. 24, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Telephorus figuratus*, n. var., *cruachanus*; CHITTY, Ent. Mag. xxix, p. 143.

CLERIDÆ.

- [Cf. BLACKBURN (70), BROUN (112), ESCHERICH (271), FAIRMAIRE (277, 281, 283), GORHAM (391), KRAATZ (548), KUWERT (561, 562, 563, 566), REITTER (762, 765), ROST (819), XAMBEU (1067).]
- List of the species found in Madagascar; FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii, pp. 375-398.
- Aptinoclerus*, n. g., for *A. dezocolletoides*, n. sp., Madagascar; KUWERT, p. 66, Soc. ent. viii.
- Aulicus parvulus*, Victoria, BLACKBURN, p. 131, Tr. R. Soc. S. Austral. xvii, n. sp.
- Callimerus decoratus*, Assam, p. 570, *mysticus*, *bellus*, Borneo, p. 571, *niveus*, *dohertyanus*, Perak, *pictus*, Assam, *albosparsus*, Manipur, p. 572, *benedictus*, p. 573, Assam, *arcuatus*, *hydnoceroideus*, Birma, p. 574, GORHAM, P. Zool. Soc. London, 1893, n. spp.
- Caloclerus*, n. g., near *Stenocylidrus*, p. 480, for *C. mirabilis*, Celebes, p. 481, *13-punctatus*, Sikkim, *albosuturatus*, Burmah, p. 482, *nigromarginatus*, Sumbawa, *albotessellatus*, p. 483, *quadriarcuatus*, Perak, n. spp.; KUWERT, Ann. Soc. ent. Belgique, xxxvii.
- Cephaloclerus*, n. g., near *Alleleidea*, p. 486, for *C. corynetoides*, n. sp., Sierra Leone, p. 487, KUWERT, Ann. Soc. ent. Belgique, xxxvii.
- Cladiscus pretiosus*, Congo, FAIRMAIRE, p. 490, Ann. Soc. ent. Belgique, xxxvii; *C. distortus*, *attenuatus*, p. 569, *ruficornis*, p. 570, E. India, GORHAM, P. Zool. Soc. London, 1893 : n. spp.
- Clerus rufipes*, metamorphoses; XAMBEU, p. 26, Ann. Soc. Linn. Lyon, xl.
- Cymatodera aschantina*, *orangica*, *nubica*, p. 468, *hottentotta*, *blunfonteina*, p. 469, Africa, KUWERT, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Eburifera longipennis*, *suturalis*, p. 393, *russata*, *apicalis*, *tetrasticta*, p. 394, *basicrus*, p. 395, *semivirens*, *semiaurantiaca*, p. 396, *zonata*, *quadribullata*, p. 397, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii; *E. cærulea*, *analis*, *klugei*, *variegata*, *obscuripes*, *4-punctata*, *impunctata*, *unifasciata*, Madagascar, KUWERT, p. 66, Soc. ent. viii : n. spp.
- Enoplium cærulans*, Madagascar, FAIRMAIRE, p. 398, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Epiphilus ruficeps*, p. 492, *debilis*, *tricolor*, p. 493, *sexplagiatus*, Amazons, *obscurus*, Mexico, p. 494, *14-maculatus*, Rio Janeiro, *tibialis*, Amazons, p. 495, KUWERT, Ann. Soc. ent. Belgique, xxxvii, n. spp.

- Erymanthus melanurus*, W. Africa, KUWERT, p. 479, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Lacordarius*, n. g., near *Placocerus*, p. 488, for *L. erythrus*, n. sp., W. Africa, p. 489, KUWERT, Ann. Soc. ent. Belgique, xxxvii.
- Laricobius caucasicus*, W. Caucasus, ROST, p. 341, Ent. Nachr. xix, n. sp.
- Lemidia bipunctata*, Celebes, KUWERT, p. 485, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Lissaulicus ruber*, Delagoa Bay, p. 471, *testaceus*, Lindi, p. 472, KUWERT, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Myrmecoma latesellata*, Madagascar, FAIRMAIRE, p. 377, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Natalis alternicostatus*, N. Australia, KUWERT, p. 484, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Neohydnius basalis*, Assam, *relucens*, Siam, p. 578, *cinerascens*, *sordidus*, Tenasserim, *lugubris*, Manipur, p. 579, GORHAM, P. Zool. Soc. London, 1893, n. spp.
- Opilo barbarus*, n. n. for *foveicollis*; ABEILLE, p. clxxvii, Bull. Soc. ent. France, 1893.
- O. densatus*, Soudan, FAIRMAIRE, p. 27, Ann. Soc. ent. Belgique, xxxvii; *O. nigropiceus*, Bagamoyo, KUWERT, p. 472, *t. c.*; *O. callosus*, p. 390, *fastuosus*, p. 392, Madagascar, FAIRMAIRE, *t. c.*: n. spp.
- Orthopleuroides*, n. g., *Enopliini*, p. 489, for *O. nigerrimus*, n. sp., Congo, p. 490; KUWERT, Ann. Soc. ent. Belgique, xxxvii.
- Orthrius brachialis*, Assam, GORHAM, p. 577, P. Zool. Soc. London, 1893, n. sp.
- Pallenis nigricollis*, *unicolor*, *4-signatus*, Madagascar, KUWERT, p. 66, Soc. ent. viii; *P. tenuipicta*, *semisuturata*, *maculicollis*, p. 378, *semirufa*, *pictidorsis*, p. 380, *gibberosa*, *cribellata*, *scabricollis*, p. 381, *ebenina*, *araneipes*, p. 382, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii; *P. nitidipes*, *cineritius*, Comoro Isles, FAIRMAIRE, p. 536, *t. c.*; *P. ruficollis*, Timor, KUWERT, p. 479, *t. c.*: n. spp.
- Parmius rugosus*, New Zealand, BROUN, p. 1148, Manual, n. sp.
- Pelonium* ? *nigro-aneum*, Assam, GORHAM, p. 580, P. Zool. Soc. London, 1893, n. sp.
- Phlüocopus nigricornis*, Congo, KUWERT, p. 489, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Phymatophæa opacula*, New Zealand, BROUN, p. 1352, Manual, n. sp.
- Placocerus alboscutellatus*, p. 469, *vitticeps*, *nigrogeniculatus*, p. 470, W. Africa, KUWERT, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Platyclerus pallidopictus*, Madagascar, FAIRMAIRE, p. 393, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Plocamocerus confrater*, with varr. *similis*, *sericelloides*, Amazons; KUWERT, p. 496, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Pseudopallenis*, n. g., for *P. humeralcollosus*, n. sp., Madagascar; KUWERT, p. 66, Soc. ent. viii.
- Sikorius*, n. g., for *S. sikoræ*, n. sp., Madagascar; KUWERT, Soc. ent. viii, p. 67.

Sisyrophorus birmanicus, p. 580, *fryi*, p. 581, Birma, GORHAM, P. Zool. Soc. London, 1893, n. spp.

Spinolarius, n. g., for *S. bizonatus*, n. sp., Madagascar; KUWERT, p. 67, Soc. ent. viii.

Stenocylidrus 7-punctatus, flavilabris, Madagascar, KUWERT, p. 66, Soc. ent. viii; *S. semiopacus, stricticollis*, p. 383, *serricornis*, p. 384, *geniculatus, rugicollis, tenuestrigatus*, p. 385, *fasciicollis, notaticollis*, p. 386, *atrocyaneus, acuteserratus, simulator*, p. 387, *truncatulus, gracilentus, dispar*, p. 388, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii; *S. consobrinus, impressipennis*, p. 537, *pedator, rufo-caudatus, impressus, licidipes*, p. 538, Comoro Is., FAIRMAIRE, *t. c.* : n. spp.

Stigmatium rufo-villosum, Gaboon, KUWERT, p. 491, Ann. Soc. ent. Belgique, xxxvii; *S. dorsale, gabonis*, p. 473, *oblongum, verrucosum*, p. 474, *atrogeniculatum, crinitifasciatum*, p. 475, *griseo-fasciatum, griseo-plagiatum, albo-plagiatum*, p. 476, *nigro-fasciatum, irroratum*, p. 477, W. Africa, KUWERT, Ann. Soc. ent. Belgique, xxxvii : n. spp.

Tenerus nigrocinclus, nigriceps, W. Africa, KUWERT, p. 478, Ann. Soc. ent. Belgique, xxxvii; *T. dohertyanus*, Perak, GORHAM, p. 581, P. Zool. Soc. London, 1893; *T. vitticollis*, Batchian, *dispar*, p. 485, *signiceps*, p. 486, Malay Arch., KUWERT, Ann. Soc. ent. Belgique, xxxvii : n. spp.

Thanasimus jordani, W. Africa, KUWERT, p. 487, Ann. Soc. ent. Belgique, xxxvii; *T. rufigaster*, Zulu, KUWERT, p. 491, *t. c.*; *T. carbonarius*, Manipur, GORHAM, p. 577, P. Zool. Soc. London, 1893 : n. spp.

Tilloclerus aurosus, Madagascar, FAIRMAIRE, p. 389, Ann. Soc. ent. Belgique, xxxvii, n. sp.

Trichodes: monograph of the palæarctic species; ESCHERICH, Verh. Ges. Wien, xliii, pp. 149-203. *T. sipylus, flavicornis, syriacus, frater*, notes on; ESCHERICH, Soc. ent. viii, p. 25. *Trichodes*, synonymical notes in reference to Escherich's observations; KRAATZ, *t. c.* p. 50. *T. spectabilis*, n. var. *kuverti*; REITTER, p. 303, Wien. ent. Zeit. xii. *T. sipylus*, p. 78, *flavicornis, syriacus*, p. 79, notes on; KRAATZ, Deutsche ent. Zeitschr. 1893.

T. frater, Asia Minor, KRAATZ, p. 80, Deutsche ent. Zeitschr. 1893; *T. ganglbaueri*, p. 166, *alberi*, p. 198, Asia Minor, *difficilis*, p. 199, Beirut, ESCHERICH, Verh. Ges. Wien, xliii; *T. suturangulus*, Ordubad, *guttifer*, Turkestan, REITTER, p. 258, Wien. ent. Zeit. xii; *T. escherichi*, Turkestan, REITTER, p. 303, *t. c.* : n. spp.

Xenorthrus ephippiatus, Assam, *geniculatus*, Manipur, p. 575, *wallacei*, Borneo, *truncatus*, Assam, p. 576, GORHAM, P. Zool. Soc. London, 1893, n. spp.

LYMEXYLONIDÆ.

Melittomma insulare, Seychelles, FAIRMAIRE, p. cccxxiii, Bull. Soc. ent. France, 1893, n. sp.

PTINIDÆ.

- [*Cf.* BROUN (112), HAMILTON (421), PIC (712, 716), XAMBEU (1067).]
Oyphanobium, n. g., for *Dorcatoma illustris*; BROUN, p. 1149, Manual.
Hedobia imperialis and *regalis*, intermediate var.; PIC, p. 111, Feuille
 Natural. xxiii.
Hemiptychus castaneus, Allegheny, HAMILTON, p. 307, Canad. Ent. xxv,
 n. sp.
Lasioderma fulvescens, larva described; XAMBEU, p. 62, Appendix,
 Echange, 1893.
Niptus submetallicus, metamorphoses; XAMBEU, p. 64, Appendix,
 Echange, 1893.
Ptinodes cristatus, Cas., referred to *Trichodesma*; CASEY, p. 597, Ann.
 N. York Ac. vii.
Ptinus latro, metamorphoses; XAMBEU, p. 56, Echange, 1893. *P. sex-*
punctatus, metamorphoses; NICOLAS, Echange, 1893, p. 8, pl.
P. (Bruchus) theryi, Algeria, PIC, p. cccxlviii, Bull. Soc. ent. France, 1893;
P. (Pseudoptinus) martini, Algeria, PIC, p. lxxxvii, t. c.; *P. littoralis*,
 New Zealand, BROUN, p. 1353, Manual : n. spp.
Sphindoteles ruficornis, p. 1353, *dorsalis*, *nigricornis*, p. 1354, *rufescens*,
 p. 1355.

BOSTRYCHIDÆ.

- [*Cf.* BLACKBURN (70), BRANCSIK (102), FAIRMAIRE (277).]
Apate affinis, Nossibé, BRANCSIK, p. 235, Jahresh. Ver. Trencsen, xv,
 n. sp.
Sinoxylon discicolle, Choa, FAIRMAIRE, p. 27, Ann. Soc. ent. Belgique,
 xxxvii, n. sp.
Xylopertha pustulata, metamorphoses; XAMBEU, p. 34, Ann. Soc. Linn.
 Lyon, xl.
X. canina, N. S. Wales, BLACKBURN, p. 131, Tr. R. Soc. S. Austral.
 xvii, n. sp.

TENEBRIONIDÆ.

- [*Cf.* BEDEL (43), BLACKBURN (70, 71, 72), BRANCSIK (102), BROUN (112,
 113), CHAMPION (153, 154, 390), FAIRMAIRE (274, 275, 276, 277, 278,
 279, 280, 283, 285, 288, 289, 293, 730), FRIVALDSZKY (343), GAHAN
 (356), HORN (461), REITTER (758, 766, 767, 768, 770), SEIDLITZ
 (866, 867), SEMENOW (876, 877, 882), UHAGON (996), XAMBEU (1067),
 ZOUFAL (1069).]
Adelium urquharti, *miniatum*, p. 1157, *gratiosum*, *turgidulum*, p. 1158, New
 Zealand, BROUN, Manual, n. spp.
Adelostoma angustius, Senegal, FAIRMAIRE, p. 149, Ann. Soc. ent. France,
 1893, n. sp.
Ægialites fuchsii, California, HORN, p. 143, Tr. Amer. ent. Soc. xx, n. sp.

- Emymone crenata*, Mexico, CHAMPION, p. 542, pl. xxiii, fig. 5, Biol. Centr.-Amer. Col. iv (1), n. sp.
- Agnaptoria seidlitzii*, Chinese Turkestan, REITTER, p. 315, Deutsche ent. Zeitschr., n. sp.
- Alphitobius rufotinctus*, Indo-China, FAIRMAIRE, p. 29, Ann. Soc. ent. France, 1893, n. sp.
- Amarygmides*, revision of the Australian, accepting only two genera, *Amarygmus* and *Chalcopterus*; BLACKBURN, pp. 411-470, P. Linn. Soc. N. S. Wales (2) vii.
- Amarygmus*: table of characters of the species; BLACKBURN, pp. 89-93, P. Linn. Soc. N. S. Wales (2) viii.
- A. alienus*, p. 93, *æger*, p. 94, *suavis*, p. 95, *ruficornis*, *pectoralis*, p. 96, *frenchi*, p. 97, *porosus*, p. 98, *stolidus*, p. 99, *liliputanus*, *rutilipes*, p. 100, *queenslandicus*, p. 101, *pinguis*, *perplexus*, p. 102, *rimosus*, p. 103, *lindensis*, *rugaticollis*, p. 104, Australia, *tasmanicus*, Tasmania, p. 105, BLACKBURN, P. Linn. Soc. N. S. Wales (2) viii; *A. pulchridorsis*, Borneo, p. 57, *iridipennis*, *aneolus*, Sumatra, p. 58, *varicolor*, Borneo, p. 59, *sanguinans*, Java, p. 60, FAIRMAIRE, Notes Leyden Mus. xv: n. spp.
- Amblycara*, n. g., p. cxlvii, near *Oxycara*, for *A. biskrensis*, n. sp., Algeria, p. cxlviii, FAIRMAIRE, Bull. Soc. ent. France, 1893.
- Ammobius insularis*, Corsica, *dilatatus*, Astrachan, REITTER, p. 315, Wien. ent. Zeit. xii, n. spp.
- Anædus aneotinctus*, Mexico, *villosus*, Guatemala, pl. xxiii, fig. 6, p. 543, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Argoporis nitida* and *rufipes*, distinctive characters; CASEY, p. 597, Ann. N. York Ac. vii.
- Arrhenoplita punctatissima*, *occidentalis*, Mexico, CHAMPION, p. 537, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Artactes nitidiceps*, Upper Tonkin, FAIRMAIRE, p. 297, Ann. Soc. ent. Belgique, xxxvii; *A. marginicollis*, Sumatra, p. 29, *cyaneus*, Borneo, *cyaneolimbatus*, Hong Kong, p. 30, *lavicollis*, p. 31, *cyaneicollis*, Sumatra, *rutilans*, Borneo, p. 32, FAIRMAIRE, Notes Leyden Mus. xv: n. spp.
- Asbolodes*, n. g., near *Cyrtosoma*, p. 55, for *A. humerosus*, n. sp., Borneo, p. 56; FAIRMAIRE, Notes Leyden Mus. xv.
- Ascalabus*, n. g., near *Nyctobates*, for *A. pedinooides*, n. sp., Indo-China; FAIRMAIRE, p. 30, Ann. Soc. ent. France, 1893.
- Asida jurinei*, metamorphoses; XAMBEU, p. 28, Ann. Soc. Linn. Lyon, xl. *A. muricatula*, = (*angustula*, Cas.), *A. (Pelecyporus) connivens* and *bifurca* are one species; HORN, p. 142, Tr. Amer. ent. Soc. xx.
- Blaps*: examination and determination of the types of Fischer; SEIDLITZ, Wien. ent. Zeit. xii, p. 271. *B. plana*, larva described; XAMBEU, p. 49, Echange, 1893, Appendix.
- B. quedenfeldti*, *ovipennis* Marocco, *lugens*, Portugal, *waltlii*, Spain, *approximans*, *nefravensis*, Tunis, *maroccana*, Marocco, p. 304, *rukmeri*, Cyrenia, *fascinosa*, Mesopotamia, *schweinfurthii*, *kollarii*, *pharao*,

- Egypt, *sulcifera*, Cyrenia, *kaifensis*, Syria, *faustii*, *turcomanorum*, Turcomania, *persica*, p. 305, *persicola*, Persia, *anura*, no locality, *ecaudata*, *tibiella*, Asia Minor, *milleri*, Austria, *araxicola*, Caucasus, *pallasii*, Armenia, *carinula*, Siberia, *subcordata*, Turkestan, p. 306, *virgo*, Songaria, *sagitta*, Turkestan, *konigii*, *affinis*, *acuta*, Caucasus, *brevicornis*, Caspian region, *angusta*, Sars, *tenuicauda*, Turkestan, p. 307, *varicosa*, Central Asia, *dispar*, *haberhaueri*, *licinoides*, Turkestan, *regia*, Turcomania, *conradtii*, *bucharensis*, Buchara, p. 308, *elliptica*, *turkestanica*, Turkestan, *oertzenii*, Greece, *lata*, Asia Minor, *helopoides*, Central Asia, *alaiensis*, Alai, *socia*, p. 309, *tentyrioides*, Himalaya, *umbilicata*, Central Asia, *brevipes*, Himalaya, *glabrata*, p. 310, China, SEIDLITZ, *Ins. Deutschlands*, v, n. spp.
- Blupstinus fortis*, Lec., = (*interstitialis*, Ch.) ; CHAMPION, pp. 526 & 527, *Biol. Centr.-Amer. Col. iv* (1).
- B. yucatanus*, p. 526, *angustatus*, p. 528, *puncticollis*, *exiguus*, p. 529, Mexico, CHAMPION, *Biol. Centr.-Amer. Col. iv* (1), n. spp.
- Boromorphus lineellus*, Senegal, FAIRMAIRE, p. 152, *Ann. Soc. ent. France*, 1893, n. sp.
- Bradymerus alaticollis*, *rugatulus*, Indo-China, FAIRMAIRE, p. 24, *Ann. Soc. ent. France*, 1893 ; *B. grandis*, Java, p. 19, *granulipennis*, *aquecostatus*, Borneo, p. 20, FAIRMAIRE, *Notes Leyden Mus. xv* : n. spp.
- Calcar humerale*, = (*truncaticolle*, Zouf.) ; CHAMPION, *Bull. Soc. ent. France*, 1893, p. clxxxix, and REITTER, p. 261, *Wien. ent. Zeit.* xii.
- C. aegyptiacum*, Egypt, *heydeni*, Bagdad, *syriacum*, Syria, *truncaticolle*, Marocco, ZOUFAL, pp. 116 & 117, *Wien. ent. Zeit.* xii, n. spp.
- Camaria malayana*, Borneo, FAIRMAIRE, p. 56, *Notes Leyden Mus. xv*, n. sp.
- Camarimena cupreostriata*, *nitidipes*, Upper Tonkin, FAIRMAIRE, p. 298, *Ann. Soc. ent. Belgique*, xxxvii, n. spp.
- Oatmerus rugosus*, Centr. Africa, p. 741, *intermedius*, Zambesi, p. 742, GAHAN, *P. Z. S.* 1893, n. spp.
- Oatapiestus similimus*, Sumatra, p. 28, *piceiventris*, Andaman Is., p. 29, FAIRMAIRE, *Notes Leyden Mus. xv*, n. spp.
- Centorus tibialis*, Caucasus, *reitteri*, Morea, ZOUFAL, p. 118, *Wien. ent. Zeit.* xi, n. spp.
- Centrioptera infausta*, Lec. = (*spiculosa*, Ch.) ; CHAMPION, p. 572, *Biol. Centr.-Amer. Col. iv* (1).
- Cerodolus genialis*, *aneus*, New Zealand, p. 1162, BROUN, *Manual*, n. spp.
- Ceropria bifoveata*, p. 22, *rufo-fusciata*, p. 22, Borneo, FAIRMAIRE, *Notes Leyden Mus. xv*, n. spp.
- Chalcopterus* : revised table ; BLACKBURN, pp. 56-69, *P. Linn. Soc. N. S. Wales* (2) viii.
- C. clypealis*, p. 420, *simius*, p. 421, *versicolor*, p. 424, *tinctus*, p. 425, *difficilis*, p. 426, *letus*, p. 428, *juvenis*, p. 429, *curus*, p. 430, *sparsus*, p. 431, *modestus*, *vigilans*, p. 432, *bellus*, p. 433, *brevipes*, p. 434, *placidus*, p. 435, *froggatti*, p. 436, *vividus*, p. 438, *intermedius*, p. 439, *confluens*, p. 440, *nicans*, p. 441, *eyrensis*, p. 442, *palmerstoni*, p. 443,

- perlongus*, p. 444, *obscurus*, p. 445, *neglectus*, p. 446, *minor*, p. 448, *major*, *mercurius*, p. 449, *mimus*, p. 450, *similis*, p. 451, *cylindricus*, p. 452, *bovilli*, p. 453, *colossus*, p. 454, *imperialis*, *longulus*, p. 455, *iridiventris*, p. 458, *setosus*, p. 459, *semiseriatus*, p. 460, *plutus*, p. 461, *murrayensis*, p. 462, *punctulatus*, p. 463, *macer*, *oblongus*, p. 464, *lepidus*, p. 465, *inconspicuus*, p. 466, *yorkensis*, p. 467, *carinaticeps*, p. 468, *catenulatus*, p. 469, Australia, BLACKBURN, P. Linn. Soc. N. S. Wales (2) vii; *C. exoletus*, p. 70, *proximus*, p. 71, *cairnsi*, p. 72, *mastersi*, p. 73, *prospiciens*, p. 74, *rusticus*, *nobilis*, p. 76, *hunterensis*, p. 77, *pulcher*, p. 78, *ocularis*, *leai*, p. 79, *palmerensis*, p. 80, *laticollis*, *gracilior*, p. 81, *seguis*, p. 85, Australia, BLACKBURN, *op. cit.* viii: n. spp.
- Cilibe marginalis*, New Zealand, BROUN, p. 1155, Manual, n. sp.
- Cleomis*, n. g., near *Cnodalon* for *C. violaceipennis*, Borneo, p. 54, *opaculus*, Singapore, p. 55, n. spp.; FAIRMAIRE, Notes Leyden Mus. xv.
- Ceolophus opacus*, Indo-China, FAIRMAIRE, p. 33, Ann. Soc. ent. France, 1893, n. sp.
- Conibius troglodytes*, Mexico, CHAMPION, p. 530, Biol. Centr.-Amer. Col. iv (1), n. sp.
- Coniontellus obesus*, Lec. = (*subglaber*, Cas.); CASEY, p. 597, Ann. N. York Ac. vii.
- Cosmonota cribrellata*, Upper Tonkin, FAIRMAIRE, p. 314, Ann. Soc. ent. Belgique, xxxvii [*Cosmonota* is probably in error for some genus of *Scarabæidæ*], n. sp.
- Cotulades montanus*, N. S. Wales, BLACKBURN, p. 132, Tr. R. Soc. S. Austral. xvii, n. sp.
- Crypticus tonsilis*, Algeria, Abeille, xxviii, p. 103, n. sp.
- Cyptus nodieri*, Senegal, FAIRMAIRE, p. 151, Ann. Soc. ent. France, 1893; *C. orientalis*, Cochin China, FAIRMAIRE, p. 316, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Dacoderus lavipennis*, Texas, HORN, p. 139, Tr. Amer. ent. Soc. xx, n. sp.
- Dendarus (Dichromma) tibialis*, Greece, *D. (Rhizalus) reitteri*, Syria, *oertzenii*, Palestine, p. 398, *vagans*, Syria, *D. (Pandarinus) alleonis*, Constantinople, *foveolatus*, *scrobiculatus*, Asia Minor, *orientalis*, *simplex*, Syria, p. 399, SEIDLITZ, Ins. Deutschlands, v : n. spp.
- Derosphærus grandipes*, Upper Tonkin, FAIRMAIRE, p. 297, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Dietytus anthracinus*, Borneo, FAIRMAIRE, p. 60, Notes Leyden Mus. xv; *D. picipes*, *subcostatus*, Kei Is., FAIRMAIRE, p. 26, Tijdschr. Ent. xxxvi : n. spp.
- Docalis maculatus*, N. S. Wales, BLACKBURN, p. 132, Tr. R. Soc. S. Austral. xvii, n. sp.
- Dysgena cærulescens*, *aneipennis*, Senegal, FAIRMAIRE, p. 153, Ann. Soc. ent. France, 1893, n. spp.
- Echocerus curvicornis*, Mexico, CHAMPION, p. 533, Biol. Centr.-Amer. Col. iv (1), n. sp.
- Edalus*, n. g., near *Seirotiana*, with *E. opacus*, n. sp., New Zealand; BROUN, Manual, p. 1160.

- E. pleuralis*, New Zealand, BROUN, p. 289, Ann. Nat. Hist. (6) xii, n. sp.
Eledona agaricola ♀, = (*turcica*, Seidl.); GUILLEBEAU, p. cccxxv, Bull. Soc. ent. France, 1893.
- Eleodes quadricollis*, Man., = (*tarsalis*, Cas.); CASEY, p. 597, Ann. N. York Ac. vii.
- Encyalesthus viridistriatus*, Upper Tonkin, FAIRMAIRE, p. 319, Ann. Soc. ent. Belgique, xxxvii; *E. tenuistriatus*, Indo-China, FAIRMAIRE, p. 31, Ann. Soc. ent. France, 1893; *E. fuscatus*, Sumatra, p. 25, *andamanus*, Andaman Is., p. 26, *transversicollis*, Borneo, *metallescens*, Sumatra, p. 27, FAIRMAIRE, Notes Leyden Mus. xv : n. spp.
- Ennebaeus unifornis*, Panama, pl. xxiii, fig. 4, *marmoratus*, Mexico, *seriatus*, Bogota, p. 540, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Epitragodes*: note on the genus; CASEY, p. 598, Ann. N. York Ac. vii.
- Eucyrtus (Platycrepis) giganteus*, p. 34, *alternicolor*, p. 35, Sumatra, *E. trapezicollis*, *purpurinus*, Java, p. 36, *laticollis*, Malasia, p. 37, *subvittatus*, *purpureotinctus*, p. 38, *pilipes*, p. 39, *multicolor*, Borneo, *truncaticeps*, Singapore, p. 40, *gibbosulus*, Borneo, *aurobasalis*, N. Guinea, p. 41, *fasciolatus*, *semipunctatus*, p. 42, Java, *oblongulus*, Singapore, p. 43, *subcostatus*, Borneo, *protensus*, Singapore, p. 44, *vittulatus*, Sumatra, p. 45, *immarginatus*, *picicornis*, p. 46, *neomidulus*, p. 47, Borneo, FAIRMAIRE, Notes Leyden Mus. xv, n. spp.
- Eurycaulus levassorii*, Comoro Is., FAIRMAIRE, p. 539, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹*Euryostola*, n. g., p. 207, for *Pachyscelis minor*, Baudi; REITTER, Verh. Ver. Brunn, xxxi.
- ²*Euthripta*, n. g., for *Thripta grisea*, Fairm.; REITTER, p. 229, Verh. Ver. Brunn, xxxi.
- ¹*Exohadrus*, n. g., for *Paraphylax volutithorax*; BROUN, p. 1153, Manual. *Gauromaia femoralis*, Singapore, *semicyanea*, Sumatra, p. 33, *janthina*, Singapore, p. 34, FAIRMAIRE, Notes Leyden Mus. xv, n. spp.
- Gonocnemis nodieri*, p. 152, *quadricollis*, p. 153, Senegal, FAIRMAIRE, Ann. Soc. ent. France, 1893, n. spp.
- Hegemona refulgens*, Guatemala, CHAMPION, p. 549, Biol. Centr.-Amer. Col. iv (1), n. sp.
- Helops pyrenaicus*, metamorphoses; XAMBEU, p. 30, Ann. Soc. Linn. Lyon, xi. *H. cerberus*, metamorphoses; XAMBEU, p. 73, Appendix, 1893.
- H. (Stenomax) gratus*, p. 85, *serbicus*, p. 86, Servia, FRIVALDSZKY, Termes. Fuzetek, xvi; *H. enitescens*, Guatemala, pl. xxiii, fig. 13, *rustratus*, p. 557, *spissicornis*, *seriatoporus*, p. 558, Mexico, CHAMPION, Biol. Centr.-Amer. Col. iv (1) : n. spp.
- Hesiodus egaensis*, Brazil, *ellipticus*, Nicaragua, p. 525, CHAMPION, Biol. Centr. Amer. Col. iv (1), n. spp.
- Heterophyllus minutus*, Nossibé, BRANCSIK, p. 236, Jahresh. Ver. Trencsen. xv, n. sp.
- Histeropsis (Alphitobius?) dermestoides*, note on; FAIRMAIRE, p. 28, Ann. Soc. ent. France, 1893.

- Holaniara* (sub. *Heterophaga*) *lateralis*, Boh., = (*picescens*, Fairm.); FAIRMAIRE, p. 23, Notes Leyden Mus. xv.
- H. distincta*, Nossibé, BRANCSIK, p. 237, Jahresh. Ver. Trencsen. xv; *H. angulatipes*, p. 316, *phylacoides*, p. 317, Upper Tonkin, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Hoplarion melambioide*, Oran, FAIRMAIRE, p. cxlviii, Bull. Soc. ent. France, 1893, n. sp.
- Homala cyclodera*, Somaliland, FAIRMAIRE, p. 149, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹*Homopsis*, n. g., near *Platyope*, for *H. grumi*, n. sp., E. Centr. Asia; SEMENOW, p. 258, Horæ Soc. ent. Ross. xxvii.
- Hopatrum micantipenne*, Seychelles, FAIRMAIRE, p. cccxxiv, Bull. Soc. ent. France, 1893, n. sp.
- Hoplocephala diversidens*, Indo-China, FAIRMAIRE, p. 24, Ann. Soc. ent. France, 1893, n. sp.
- Hoplonyx protensus*, Choa, FAIRMAIRE, p. 30, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Hypophlæus læsicollis*, Choa, FAIRMAIRE, p. 28, Ann. Soc. ent. Belgique, xxxvii; *H. filum*, Indo-China, FAIRMAIRE, p. 29, Ann. Soc. ent. France, 1893; *H. validus*, *ebeninus*, p. 541, *longevittatus*, p. 542, Comoro Is., FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- ²*Idiesa*, n. g., for *Diesia fischeri*, Mén., and *eversmanni*, Kr.; REITTER, p. 245, Verh. Ver. Brunn, xxxi.
- Lasiostola plustschevskyi*, Astrachan, REITTER, p. 113, Wien. ent. Zeit. xii; *L. nigrohirta*, Samarcand, p. 222, *nephelidis*, Tekke-Turcomania, p. 223, *pulla*, Transcaspian region, REITTER, Verh. Ver. Brunn. xxxi : n. spp.
- ³*Leiopeplus*, n. g., near *Metisopus*, for *Helops expolitus*; BROUN, Manual, p. 1160.
- ⁴*Leipopleura*, n. subg. of *Platyscelis*, *q.v.*; SEIDLITZ, p. 342, Ins. Deutsch. v.
- Leptodes*: table of the species; SEMENOW, Horæ Soc. ent. Ross. xxvii, pp. 226-229.
- L. tjanschanicus*, p. 232, *fedtschenkoi*, p. 233, Centr. Asia, SEMENOW, Horæ Soc. ent. Ross. xxvii : n. spp.
- Liochrinus*, = (*Ades*, Guér., *Hades*, Thoms., and *Pimplema*, Pasc.); FAIRMAIRE, p. 26, Ann. Soc. ent. France, 1893.
- L. obscuricornis*, p. 25, *ruficollis* (Guérin), p. 26, Indo-China, FAIRMAIRE, Ann. Soc. ent. France, 1893, n. spp.
- Lyphia abyssinica*, Choa, FAIRMAIRE, p. 29, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Lypros striolatus*, Indo-China, FAIRMAIRE, p. 31, Ann. Soc. ent. France, 1893, n. sp.
- Mantichorula grandis*, E. Centr. Asia; SEMENOW, p. 263, Horæ Soc. ent. Ross. xxvii, n. sp.
- ⁵*Martianus*, n. g., near *Hoplocephala*, p. 540, for *M. castaneus*, n. sp., Comoro I., p. 541; FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii.

- Menophilus tetrastictus*, Upper Tonkin, FAIRMAIRE, p. 318, Ann. Soc. ent. Belgique, xxxvii; *M. sydneyanus*, N. S. Wales, BLACKBURN, p. 132, Tr. R. Soc. S. Austral. xvii; *M. cribratellus*, no locality, FAIRMAIRE, Bull. Soc. ent. France, 1893 : n. spp.
- Menimus vicinus*, New Zealand, BROUN, p. 288, Ann. Nat. Hist. (6) xii, n. sp.
- ✓ *Mentes*, n. g., near *Helops*, for *M. ruficollis*, Panama, pl. xxiii, fig. 14, p. 559, *fusiformis*, fig. 15, *setipennis*, Guatemala, p. 560, n. spp.; CHAMPION, Biol. Centr.-Amer. Col. iv (1).
- ✓ *Mesopatrum*, n. g., near *Pseudopatrum*, for *M. granulosum*, n. sp., New Zealand; BROUN, p. 1355, Manual.
- Micrantereus timarchoides*, *asidoides*, Somaliland, FAIRMAIRE, p. 152, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Microschatia championi*, Lower California, p. 140, *polita*, Arizona, p. 141, *robusta*, Mexico, p. 142, HORN, Tr. Amer. ent. Soc. xx, n. sp.
- Nautes stabilis*, Mexico, *alternans*, Guatemala, p. 550, *tricolor*, Mexico, p. 551, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Necrobioides sulcaticollis*, *bicolor*, Borneo, FAIRMAIRE, p. 28, Notes Leyden Mus. xv, n. spp.
- Nycteropus aneo-virens*, Comoro Is., FAIRMAIRE, p. 542, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Nyctobates blapoides*, Oubanghi, FAIRMAIRE, p. 143, Ann. Soc. ent. France, 1893; *N. indosinicus*, p. 296, *quadricollis*, p. 297, Upper Tonkin, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii; *N. flavo-arcuata*, Upper Tonkin, FAIRMAIRE, p. 318, *t. c.*; *N. foveicollis*, Indo-China, FAIRMAIRE, p. 29, Ann. Soc. ent. France, 1893; *N. sanguinigerus*, Sumatra, FAIRMAIRE, p. 25, Notes Leyden Mus. xv : n. spp.
- Opatrum sabulosum*, larva and habits; WASMANN, p. 247, Wien. ent. Zeit. xii.
- O. sexcostulatum*, Somaliland, FAIRMAIRE, p. 152, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Oncosoma mucrosum*, p. 148, *delicatulum*, p. 149, Senegal, FAIRMAIRE, Ann. Soc. ent. France, 1893, n. spp.
- Oxidates gibbus*, pl. xxiii, fig. 10, *elongatus*, Mexico, p. 548, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Pachypterus cognatus*, *infimus*, p. 150, *crenulatus*, p. 151, Senegal, FAIRMAIRE, Ann. Soc. ent. France, 1893, n. spp.
- Pachyscelis musiva*, n. var. *divisia*, Mesopotamia (? sp. pr.), REITTER, p. 210, Verh. Ver. Brunn. xxxi.
- P. banghaasi*, p. 208, *levicollis*, p. 211, Turkestan, *thessalica*, Thessaly, p. 212, REITTER, Verh. Ver. Brunn. xxxi, n. spp.
- Paramarygnus byrrhinus*, Choa, *tibialis*, Zanzibar, FAIRMAIRE, p. 29, Ann. Soc. ent. Belgique. xxxvii, n. sp.
- Paratenetus*, = (*Stortheophora*, Mäkl.); CHAMPION, p. 47, Ent. Mag. xxix.
- P. nigricornis*, p. 544, pl. xxiii, fig. 7, *inermis*, *punctulatus*, p. 545, *constrictus*, fig. 8, *sexdentatus*, fig. 9, p. 546, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. spp.

- ⁴*Pedinulus*, n. subg. of *Pedinus*; SEIDLITZ, p. 373, Ins. Deutschlands, v.
Pedinus reitteri, *kruperi*, Greece, *intermedius*, *podager*, *kiesenwetteri*, Syria, *strabonis*, Amasia, *ulrichii*, Transsylvania, p. 375, *simplex*, Greece, *hungaricus*, Hungaria, *P. (Blindus) japonicus*, Japan, p. 376, SEIDLITZ, Ins. Deutschlands, v, n. spp.
- Periatrum tumipes*, New Zealand, BROUN, p. 1456, Manual, n. sp.
- Phaleria riederi*, = (*Emypsara adamsi*, *flexuosa*, Pasc., and *P. hilgendorfi*, Har.); LEWIS, p. 151, Entomologist, xxvi.
- Phthora armata*, pl. xxiii, fig. 2, Guatemala, *elongata*, Mexico, p. 532, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Pimelia perezii* and other Spanish species, note on characters of; UHAGON, pp. 72-76, Act. Soc. Espan. xxii.
- P. densegranata*, Somaliland, FAIRMAIRE, p. 149, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Platydemia nigrocaenum* = (*musiva*, Har.); LEWIS, p. 151, Entomologist, xxvi. *P. concolor*, n. n. for *unicolor*, Champ., nec Chev.; CHAMPION, p. 539, Biol. Centr.-Amer. Col. iv (1).
- P. annamita*, Indo-China, FAIRMAIRE, p. 24, Ann. Soc. ent. France, 1893; *P. asymmetricum*, Damma I., CHAMPION, p. 274, Ent. Mag. xxix; *P. victoriense*, Australia, BLACKBURN, p. 297, Tr. R. Soc. S. Austral. xvii : n. spp.
- Platyope*: tabulation of species; SEMENOW, pp. 248-253, Horæ Soc. ent. Ross. xxvii.
- P. serrata*, p. 254, *tomentosa*, p. 246, Central Asia, SEMENOW, Horæ Soc. ent. Ross. xxvii, n. spp.
- Platyscelis*, n. subgg. *Leipopleura*, *Pleiopleura*, cf. *suprà* et *infra*.
- Platyscelis ganglbaueri*, *subcordata*, *sinuata*, Turkestan, *P. (Leipopleura) reitteri*, Siberia, *P. (Platynoscelis) haberhaueri*, *globulus*, *faldermannii*, *conradtii*, p. 354, *gracilis*, *lederi*, *psalidium*, Turkestan, *constricta*, Margelan, *P. (Oodescelis) heydenii*, *affinis*, *hirta*, *turkestanica*, *ovulum*, Turkestan, *globosa*, Siberia, p. 355, *somocœloides*, Turkestan, p. 356, SEIDLITZ, Ins. Deutschlands, v, n. spp.
- ⁴*Pleiopleura*, n. subg. of *Platyscelis*, q.v.; SEIDLITZ, p. 342, Ins. Deutschlands, v.
- Pœcilesthus cupripennis*, Panama, pl. xxiii, fig. 17, p. 562, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. sp.
- Praogenea cœrulans*, Somaliland, FAIRMAIRE, p. 152, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Prosodes*: revision of the genus; REITTER, Deutsche ent. Zeitschr. 1893, p. 261, &c. : distinctive characters of the genus and allies; t. c. p. 313.
- P. pleuralis*, Namangan, p. 266, *areolata*, *brevipes*, p. 269, *semenovi*, p. 273, *aciculata*, p. 274, Külab, *amathia*, Turkestan, p. 275, *lateralis*, p. 276, *strigiventris*, p. 277, *quadricostata*, p. 278, *triangulipes*, p. 282, *divergens*, *convergens*, p. 283, *punctimana*, *prosternalis*, p. 284, *prælonga*, p. 286, *spectabilis*, p. 287, *striata*, p. 289, *reflexicollis*, *sulcicauda*, p. 290, *mucronata*, p. 291, *blapoides*, *angustipleuris*, p. 292, Turkestan,

- banghaasi*, Amasia, p. 293, *obliquesulcata*, p. 294, *ypsilon*, p. 296, *nalepoides*, p. 299, *hauseri*, p. 300, *fulminans*, p. 303, *valida*, *transfuga*, p. 304, *strigiventris*, p. 305, *pubistriato*, p. 307, *calcarata*, Turkestan, *krautzi*, Persia?, *asperipennis*, Turkestan, p. 311, REITTER, Deutsche ent. Zeitschr. 1893, n. spp.
- ↳ *Przewalskia*, n. g., for *Platyope dilatata*, Reitt.; SEMENOW, p. 262, Horæ Soc. ent. Ross. xxvii.
- Psammodus nanus*, Choa, FAIRMAIRE, p. 28, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Pseudotamus amplicollis*, Senegal, FAIRMAIRE, p. 152, Ann. Soc. ent. France, 1893, n. sp.
- Pseudeumolpus simulator*, Borneo, p. 47, *picticollis*, *decretus*, Singapore, p. 48, *purpuricollis*, Sumatra, *polychromus*, p. 49, *raffrayi*, *rotundicollis*, p. 50, Singapore, *semiarmatus*, Sumatra, *castaneipes*, Borneo, p. 51, FAIRMAIRE, Notes Leyden Mus. xv; *P. florentini*, Upper Tonkin, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii: n. spp.
- ↳ *Pseudonautes*, n. g., near *Eucyrtus*, for *P. vagevittatus*, Borneo, p. 52, *helopinus*, Singapore, p. 53, n. spp.; FAIRMAIRE, Notes Leyden Mus. xv.
- Pseudonosoderma*, placed by error in Zool. Rec. xxii [1885], p. 82, in *Byrrhida*, belongs to *Tenebrionide*.
- Pseudonosoderma chinense*, Gans-su, SEMENOW, p. 499, Horæ Soc. ent. Ross. xxvii, n. sp.
- ↳ *Pseuduloma*, n. g., near *Uloma*, for *P. cribricollis*, n. sp., Indo-China, FAIRMAIRE, p. 27, Ann. Soc. ent. France, 1893.
- Pterolasia granocostata*, Senegal, FAIRMAIRE, p. 148, Ann. Soc. ent. France, 1893, n. sp.
- Pyansia levis*, Mexico, CHAMPION, p. 561, Biol. Centr.-Amer. Col. iv (1), n. sp.
- Pycna cavifrons*, Comoro Is., FAIRMAIRE, p. 540, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ↳ *Rehumius*, n. g., near *Cyrtosoma*, for *R. amplithorax*, p. 32, *lavior*, *testaceipes*, *longulus*, p. 33, n. spp., Indo-China, FAIRMAIRE, Ann. Soc. ent. France, 1893.
- Scaptus* (sub *Asida*) *tropica*, Kirsch., = (*squamulatus*, Ch.); CHAMPION, p. 542, Biol. Centr.-Amer. Col. iv (1).
- Scelosodis ustus*, referred to *Phæotribon*; FAIRMAIRE, p. cxlviii, Bull. Soc. ent. France, 1893.
- Selinus curtulus*, Oubanghi, FAIRMAIRE, p. 143, Ann. Soc. ent. France, 1893, n. sp.
- Sepidium ruspolii*, p. 150, *kelleri*, p. 151, Somaliland, FAIRMAIRE, Ann. Soc. ent. Belgique, xxvii, n. spp.
- Sitophagus spinicollis*, p. 27, with var *suturalis*, Indo China, *tenuicornis*, Sumatra, p. 28, FAIRMAIRE, Ann. Soc. ent. France, 1893, n. spp.
- Stalagmoptera pterocomoides*, Alexander Mts., p. 225, *tomentosa*, Taschkent, p. 226, *staudingeri*, Turkestan, p. 227, REITTER, Verh. Ver. Brunn, xxxi, n. spp.

- Stenosis seriepilosa*, Senegal, FAIRMAIRE, p. 149, Ann. Soc. ent. France, 1893, n. sp.
- ¹ *Stierlinius*, n. n. for *Dolichoderus*, Klug nec Lund; FOREL, p. 167, Ann. Soc. ent. Belgique, xxxvii.
- Strongylium convexipenne*, Upper Tonkin, FAIRMAIRE, p. 299, Ann. Soc. ent. Belgique, xxxvii; *S. clavicorne*, p. 319, *crurale*, *holcopterum*, p. 320, *taciturnum*, p. 321, Upper Tonkin, FAIRMAIRE, t. c.; *truncatipenne*, p. 60, *lanigerum*, p. 61, *gibbicolle*, p. 62, *tenuipes*, p. 63, Borneo, FAIRMAIRE, Notes Leyden Mus. xv; *S. clavicorne*, Mexico, p. 562, pl. xxiii, fig. 16, *conradti*, Guatemala, p. 563, CHAMPION, Biol. Centr.-Amer. Col. iv (1) : n. spp.
- Syrphetodes sylvius*, p. 1150, *cordipennis*, p. 1457, *dorsalis*, *punctatus*, p. 1458, New Zealand, BROWN, Manual, n. spp.
- Tarpela pulchra*, pl. xxiii, fig. 12, p. 551, *catenulata*, fig. 11, p. 552, *incilis*, *stohri*, p. 553, *foveolata*, p. 554, *nigerrima*, *guerrevoensis*, p. 555, *teapensis*, p. 556, Mexico, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Thriptera delicata*, Algeria, BEDEL, p. 102, Abeille, xxviii; *T. heydeni*, Upper Egypt, p. 214, *pastor*, Turkestan, p. 216, REITTER, Verh. Ver. Brunn, xxxi, n. spp.
- Toxicum tricornutum*, Wat., = (*umbratum*, Har.); LEWIS, p. 151, Entomologist, xxvi.
- Trachyscelis ciliaris*, *lavis*, W. Australia, p. 254, *pallens*, Ceylon, p. 255, CHAMPION, Ent. Mag. xxix, n. spp.
- ¹ *Trigonocneta*, n. g., for *Trigonoscelis pseudopimelia*, Reitt.; REITTER, p. 213, Verh. Ver. Brunn, xxxi.
- ¹ *Trigonopilus*, n. g., position dubious, ? *Opatrides*, p. 22, for *T. laticeps*, n. sp., Indo-China, p. 23; FAIRMAIRE, Ann. Soc. ent. France, 1893.
- Trigonoscelis gigas*, Turcomania, p. 231, *punctipleuris*, Transcaspian Region, p. 235, *sublevicollis*, Taschkent, *fasciculitarsis*, p. 236, *zoufali*, p. 237, *juvencus*, p. 241, Turkestan, *impressicollis*, Samarcand, p. 242, REITTER, Verh. Ver. Brunn, xxxi, n. spp.
- Uloma demersicollis*, Upper Tonkin, FAIRMAIRE, p. 317, Ann. Soc. ent. Belgique, xxxvii; *U. angustula*, Indo-China, FAIRMAIRE, p. 26, Ann. Soc. ent. France, 1893; *U. compacta*, p. 23, *hæmorrhœa*, *truncata*, p. 24, Borneo, FAIRMAIRE, Notes Leyden Mus. xv : n. spp.
- Ulus comatus*, Mexico, CHAMPION, p. 530, Biol. Centr.-Amer. Col. iv (1), n. sp.
- Usechus lacerta*, = (*nucleatus*, Cas.); HORN, p. 142, Tr. Amer. ent. Soc. xx.
- ¹ *Xanthia*, n. g., near *Lypros*, p. 31, for *X. curticollis*, n. sp., Indo-China, p. 32, FAIRMAIRE, Ann. Soc. ent. France, 1893.
- Zophosis longula*, Senegal, FAIRMAIRE, p. 148, Ann. Soc. ent. France, 1893, n. sp.
- ¹ *Zypates*, n. g., *Ulomides*, p. 532, for *Z. epiroides*, n. sp., Centr. America, p. 533, pl. xxiii, fig. 3; CHAMPION, Biol. Centr.-Amer. Col. iv (1).

CISTELIDÆ.

- [Cf. BLACKBURN (70), BROUN (112), CHAMPION (390), FAIRMAIRE (274, 276, 277, 279, 280, 283), HAMILTON (421).]
- Æanes*, n. g., near *Hymenorus*, p. 566, for *Æ. angusticollis*, n. sp., Mexico, p. 567, pl. xxiii, fig. 20; CHAMPION, Biol. Centr.-Amer. Col. iv (1).
- Alcmæonis punctulaticollis*, Victoria, BLACKBURN, p. 133, Tr. R. Soc. S. Austral. xvii, n. sp.
- Alethia nitidipennis*, Mexico, CHAMPION, p. 565, Biol. Centr.-Amer. Col. iv (1), n. sp.
- Allecula hypuloides*, Senegal, FAIRMAIRE, p. 154, Ann. Soc. ent. France, 1893; *A. maculicornis*, p. 542, *comorana*, p. 543, Comoro Isles, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii; *A. arcuatipes*, p. 34, *brachydera*, p. 35, Indo-China, FAIRMAIRE, Ann. Soc. ent. France, 1893; *A. luridipes*, Upper Tonkin, FAIRMAIRE, p. 300, Ann. Soc. ent. Belgique, xxxvii; *A. navicularis*, p. 321, *nuceipennis*, p. 322, Upper Tonkin, FAIRMAIRE, t. c. : n. spp.
- Amaropsis*, n. g., near *Pitholaus*, p. 567, for *A. annulicornis*, n. sp., Mexico, p. 568; CHAMPION, Biol. Centr.-Amer. Col. iv (1).
- Anaxo sylneyanus* (? *areus*, var.), Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvii, n. sp.
- Charisius picturatus*, Mexico, CHAMPION, p. 565, pl. xxiii, fig. 21, Biol. Centr.-Amer. Col. iv (1), n. sp.
- Cistela davidis*, *simillima*, *apicipalpis*, referred to *Cistelomorpha*; FAIRMAIRE, p. 323, Ann. Soc. ent. Belgique, xxxvii.
- C. piceocastanea*, Choa, FAIRMAIRE, p. 30, Ann. Soc. ent. Belgique, xxxvii; *C. orchesioides*, Indo-China, FAIRMAIRE, p. 35, Ann. Soc. ent. France, 1893; *C. ovipennis*, Mexico, CHAMPION, p. 569, pl. xxiii, fig. 19, Biol. Centr.-Amer. Col. iv (1) : n. spp.
- Cistelomorpha nigrotibialis*, *piceiventris*, Upper Tonkin, FAIRMAIRE, p. 301, Ann. Soc. ent. Belgique, xxxvii; *C. rufina*, *sanguinosa*, *melanopyga*, Upper Tonkin, FAIRMAIRE, p. 322, t. c. : n. spp.
- Hymenorus pilosus* = (*obesus*, Cas.); CASEY, p. 598, Ann. N. York Ac. vii.
- Isomira ruficollis*, Allegheny, HAMILTON, p. 308, Canad. Ent. xxv, n. sp.
- Licymnius bicolor*, S. Australia, BLACKBURN, p. 133, Tr. R. Soc. S. Austral. xvii, n. sp.
- Lobopoda calcarata*, pl. xxiii, fig. 23, p. 563, *teapensis*, fig. 24, p. 564, Mexico, CHAMPION, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Netopha*, n. g., p. 299, near *Atractus*, for *N. pallidipes*, n. sp., Upper Tonkin, p. 300; FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii.
- Omedes*, n. g., for *O. nitidus*, p. 1169, *fuscatus*, p. 1170, n. spp., New Zealand; BROUN, Manual.
- Omoplus betule*, oviposition; RUPERTSBERGER, p. 289, Wien. ent. Zeit. xii.
- Phedius lapidicola*, *hirtus*, pl. xxiii, fig. 26, Mexico, CHAMPION, p. 568, Biol. Centr.-Amer. Col. iv (1), n. spp.
- Xylochus spinifer*, New Zealand, BROUN, p. 1168, Manual, n. sp.

PYTHIDÆ.

[*Cf.* BLACKBURN (70), BROUN (112), CHAMPION (390).]

Doliema pallida, Say, = (*Schedarosus cucujiformis*, Reitt.), CHAMPION, p. 535, Biol. Centr.-Amer. Col. iv (1); *D. bifurcata*, *quadridentata*, Mexico, CHAMPION, *t. c.* : n. spp.

✓ *Lecontia*, n. n. to replace *Crymodes*, Lec.; CHAMPION, p. 453, Biol. Centr.-Amer. Col. iv (2).

Salpingus fossulatus, New Zealand, BROUN, p. 1459, Manual, n. sp.

Trichosalpingus obscurus, N. S. Wales, BLACKBURN, p. 134, Tr. R. Soc. S. Austral. xvii, n. sp.

MELANDRYIDÆ.

[*Cf.* BROUN (112), CHAMPION (390), FAIRMAIRE (274), HORN (461), XAMBEU (1067).]

Allopterus cavelli, New Zealand, BROUN, p. 1356, Manual, n. sp.

Anisoxya vagans, Mexico, CHAMPION, p. 452, Biol. Centr.-Amer. Col. iv (2), n. sp.

Eustrophus dermestoides, Fab., = (*Tritoma sicula*, Baudi); BAUDI, Natural. Sicil. xii.

Microscapha arctica, Alaska, HORN, p. 144, Tr. Amer. ent. Soc. xx, n. sp.

Onysius pulcher, New Zealand, BROUN, p. 1357, Manual, n. sp.

Orchesia abellei, metamorphoses; XAMBEU, p. 39, Ann. Soc. Linn. Lyon, xl.

✓ *Rushia*, n. n. for *Curebara*, Lec., *nec* Westw.; FOREL, p. 167, Ann. Soc. ent. Belgique, xxxvii.

LAGRIIDÆ.

[*Cf.* BRANCSIK (102), CHAMPION (152, 390), FAIRMAIRE (275, 276, 279, 280).]

Casnonidea uniformis, Indo-China, FAIRMAIRE, p. 35, Ann. Soc. ent. France, 1893; *C. tibialis*, Upper Tonkin, FAIRMAIRE, p. 301, Ann. Soc. ent. Belgique, xxxvii : n. spp.

Lagria grandis, larva described; FROGGATT, p. 41, P. Linn. Soc. N.S. Wales (2) viii. *L. decora*, Mars., referred to *Eutrapela*; LEWIS, p. 152, Entomologist, xxvi.

L. senicula, Senegal, FAIRMAIRE, p. 155, Ann. Soc. ent. France, 1893; *L. pygmaea*, Nossibé, BRANCSIK, p. 238, Jahresh. Ver. Trencsen. xv; *L. subcostulata*, Oubanghi, FAIRMAIRE, p. 144, Ann. Soc. ent. France, 1893; *L. canescens*, *externa*, p. 323, *parvicollis*, *crassicornis*, p. 324, *tigrina*, *lameyi*, p. 325, Upper Tonkin, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii : n. spp.

✓ *Sirrhias*, n. g., p. 367, for *S. limbatus*, n. sp., Tasmania, p. 368; CHAMPION, Ann. Nat. Hist. (6) xii.

Statira pilifera, *spiculifera*, pl. xxi, fig. 3, p. 451, *Stohri*, p. 452, Mexico, CHAMPION, Biol. Centr.-Amer. Col. iv (2), n. spp.

ANTHICIDÆ and PEDILIDÆ.

- [*Cf.* BROUN (112), CHAMPION (390), FAIRMAIRE (276), PIC (709-725), SEMENOW (879).]
- Amblyderus brunneus*, Calabria, PIC, p. 15, Échange, 1893, n. sp.
- Anthicus* spp., synonymy : new names proposed ; PIC, p. cclxxvii, Bull. Soc. ent. France, 1893.
- A. bicarinifrons*, Algeria, PIC, p. 33, Échange, 1892 ; *A. escorialensis*, Spain, PIC, p. clxi, Bull. Soc. ent. France, 1893 ; *A. edmondi*, Turkestan, PIC, p. 16, Échange, 1893 ; *A. biskrensis*, Algeria, *revelierei*, Corsica, PIC, p. 26, *t. c.* ; *A. hipponensis*, Algeria, PIC, p. 38, *t. c.* ; *A. (Stenidius) aristidis*, *A. argenteovestitus*, Egypt, p. 51, *veris*, p. 52, *semidepressus*, p. 64, Algeria, PIC, *t. c.* ; *A. latithorax*, *rufescens*, Asia Minor, PIC, p. 74, *t. c.* ; *A. viturati*, p. 160, *chardoni*, p. 161, Algeria, PIC, Rev. Sci. Bourbon, vi ; *A. leseleuci*, p. 78, *tangerianus*, *agriliformis*, Marocco, *bilunulatus*, Syria, p. 79, PIC, Feuille Natural. xxiii ; *A. ludovici*, Algeria, PIC, p. 111, *t. c.* ; *A. caucasicus*, *verticalis*, Caucasus, PIC, p. 175, *t. c.* ; *A. latipennis*, Syria, PIC, p. 313, Rev. Ent. franc. xi ; *A. turkestanicus*, Turkestan, p. 155, *maculicollis*, Algeria, p. 156, PIC, Rev. Ent. franc. xii ; *A. baudii*, Algeria, PIC, p. lxxxvii, Bull. Soc. ent. France, 1893 ; *A. staudingeri*, Turkestan, *fusco-maculatus*, *sulcifer*, Algeria, PIC, p. liv, *t. c.* ; *A. rugithorax*, Guinea, PIC, p. cccxiii, *t. c.* ; *A. punctatissimus*, Senegal, FAIRMAIRE, p. 157, Ann. Soc. ent. France, 1893 ; *A. subcruciatum*, *nitidifrons*, Indo-China, FAIRMAIRE, p. 37, *t. c.* ; *A. microcephalus*, Amazons, PIC, p. 254, Rev. Ent. franc. xii ; *A. anthracinus*, *fallax*, New Zealand, BROUN, p. 1168, Manual : n. spp.
- Canifa brevicollis*, Mexico, CHAMPION, p. 453, Biol. Centr.-Amer. Col. iv (2), n. sp.
- ⁴ *Cnopus*, n. g., near *Xylophilus*, for *C. flohri*, n. sp., Mexico, pl. xxi, fig. 14 ; CHAMPION, p. 460, Biol. Centr.-Amer. Col. iv (2).
- Cotes optima*, *punctata*, p. 1165, *dorsale*, *distincta*, p. 1166, *proxima*, *rufa*, p. 1167, New Zealand, BROUN, Manual, n. spp.
- Euglenes pruinus*, var. ? *semiobscurus*, Turkestan ; PIC, p. 26, Échange, 1893.
- Formicomus brisouti* Biskra, PIC, Échange, 1892, p. 33 ; *F. nadari*, Asia Minor, PIC, p. 175, Feuille Natural. xxiii ; *F. simoni*, Aden, PIC, p. xxxiii, Bull. Soc. ent. France, 1893 ; *F. niveipilosus*, *angustiformis*, Senegal, FAIRMAIRE, p. 155, Ann. Soc. ent. France, 1893 ; *F. albo-lineatus*, Gaboon, PIC, p. 254, Rev. Ent. franc. xii : n. spp.
- ⁴ *Hypsogenia*, n. g., p. 332, for *H. centroasiatica*, n. sp., Turkestan, p. 333, SEMENOW, Horæ Soc. ent. Ross. xxvii.
- Leptaleus maximicollis*, Biskra, PIC, p. 111, Feuille Natural. xxiii ; *L. scabrinodis*, p. 156, *punctatissimus*, *rugulipennis*, p. 157, Senegal, FAIRMAIRE, Ann. Soc. ent. France, 1893 : n. spp.

- Macratia griseosellata*, Indo-China, FAIRMAIRE, p. 36, Ann. Soc. ent. France, 1893; *M. flavipes*, New Zealand, BROUN, p. 1162, Manual: n. spp.
- Mecynotarsus vagepictus*, Indo-China, FAIRMAIRE, p. 37, Ann. Soc. ent. France, 1893, n. sp.
- Notoxus aristidis* (var. ? of *syriacus*); PIC, p. 88, Echange, 1893.
- N. sexmaculatus*, Algeria, PIC, p. 16, Echange, 1893; *N. histria*, Naxos, PIC, p. 175, Feuille Natural, xxiii; *N. distigma*, Senegal, FAIRMAIRE, p. 156; Ann. Soc. ent. France, 1893: n. spp.
- Pedilus pallidipennis*, Turkestan, *tibialis*, Heptapomania, p. 329, *tristis*, p. 330, *constricticollis*, p. 331, Turkestan, SEMENOW, Horæ Soc. ent. Ross. xxvii, n. spp.
- ¹ *Scraptogetus*, n. g., p. 1357, for *S. anthracinus*, n. sp., New Zealand, p. 1358; BROUN, Manual.
- Steropes hungaricus*, Hampe, referred to *Macratia*; PIC, p. lxxxv, Bull. Soc. ent. France, 1893.
- Tomoderus ovipennis*, Senegal, FAIRMAIRE, p. 155, Ann. Soc. ent. France, 1893, n. sp.
- Xylophilus testaceipes*, ♀ described; PIC, p. 74, Echange, 1893.
- X. benimoræ*, *monstrosipes*, Algeria, PIC, p. 158, Rev. Sci. Bourbon. vi; *X. aristidis*, Egypt, PIC, p. 75, Echange, 1893; *X. picinus*, Indo-China, FAIRMAIRE, p. 36, Ann. Soc. ent. France, 1893; *X. mexicanus*, pl. xxi, fig. 6, *flavipalpis*, fig. 7, p. 456, *geniculatus*, fig. 8, p. 457, *appendiculatus*, fig. 9, *obliquus*, fig. 10, p. 458, *canescens*, fig. 11, *lactineus*, fig. 12, p. 459, *silaceus*, fig. 13, p. 460, Mexico, CHAMPION, Biol. Centr.-Amer. Col. iv (2); *X. nitidus*, *antennalis*, p. 1163, *coloratus*, *pictipes*, *obscurus*, p. 1164, New Zealand, BROUN, Manual: n. spp.

MORDELLIDÆ.

- [Cf. BLACKBURN (70), BROUN (112), CHAMPION (390), CHOBAUT (161), FAIRMAIRE (279).]
- Anaspis (Silaria) abderoides*, Algeria, CHOBAUT, p. 97, Abeille, xxviii, n. sp.
- ¹ *Cryptomera*, n. g., position doubtful, p. 1358, for *C. nigra*, n. sp., New Zealand, p. 1359, BROUN, Manual.
- Mordella cinereo-nigra*, Upper Tonkin, FAIRMAIRE, p. 302, Ann. Soc. ent. Belgique, xxxvii; *M. inusitata*, *maculatissima* p. 136, *cara*, *sydneyana*, p. 137, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvii; *M. leucographa*, = (*leucosticta*, Champ. olim), CHAMPION, p. 462, Biol. Centr.-Amer. Col. iv (2): n. spp.
- Mordellistena pumila*, pupa; XAMBEU, p. 42, Ann. Soc. Linn. Lyon, xi.
- M. tenuipalpis* = (*longipalpis*, Champ. olim), CHAMPION, p. 462, Biol. Centr.-Amer. Col. iv (2), n. sp.
- Pentaria defarguesi*, Ab. (sub. *Anaspis*) = (*oberthuri*, Champ.); CHOBAUT, p. 101, Abeille, xxviii.

RHIPIDOPHORIDÆ.

[*Cf.* CHOBAUT (161), FAIRMAIRE (274, 285).]

Emenadia fortieri, Algeria, CHOBAUT, Abeille, xxviii, p. 97, n. sp.

Homæorhipis bicolor, Nias I., FAIRMAIRE, p. 18, Notes Leyden Mus. xv, n. sp.

Rhipidius vaulogeri, Algeria, CHOBAUT, p. 99, Abeille, xxviii, n. sp.

Rhipiphorus spinicollis, Indo-China, FAIRMAIRE, p. 38, Ann. Soc. ent. France, 1893, n. sp.

Simianus cribripennis, Borneo, FAIRMAIRE, p. 18, Notes Leyden Mus. xv, n. sp.

STYLOPIDÆ.

Xenos rossii, habits; NASONOFF (661).

CANTHARIDÆ.

[*Cf.* CHAMPION (390), FAIRMAIRE (276, 277, 278), SEMENOW (875), THOMAS (967).]

Cantharis sanguineoguttata, figured, pl. xx, figg. 26 & 27, described, p. 449, *mutilata*, fig. 21, *subviolacea*, fig. 22, *biguttata*, figg. 23 & 24, *gentilis*, fig. 25, figured, pl. xxi; CHAMPION, Biol. Centr.-Amer. Col. iv (2).

C. seminitens, Senegal, FAIRMAIRE, p. 158, Ann. Soc. ent. France, 1893; *C. leucophthalma*, p. 153, *cribricollis*, p. 154, Somaliland, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii : n. spp.

Epicauta politicollis, p. 31, *hydrocephala*, p. 32, Choa, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii, n. spp.

^ *Euzonitis*, n. subg. of *Zonitis*, for Div. II, Escherich; SEMENOW, p. 276, Horæ Soc. ent. Ross. xxvii.

Hapalus (Stenoria) fulcipennis, p. 277, Bucharâ, *nigricollis*, Ordubad, *erythromelas*, Bucharâ, p. 278, *grandiceps*, N. Persia, p. 280, SEMENOW, Horæ Soc. ent. Ross. xxvii, n. spp.

Iletica waterhousei, Sierra Leone, p. 138, pl. vi B, fig. 2, *gahani*, E. Africa, fig. 1, *castanea*, Siam, fig. 3, p. 139, THOMAS, Ann. Nat. Hist. (6) xii, n. spp.

^ *Lydulus*, n. g., near *Lydus*, p. 265, for *Lydus pygmaeus*, Dokht, and *L. albopilosus*, n. sp., Transcaspian Region, p. 267; SEMENOW, Horæ Soc. ent. Ross. xxvii.

Lytta grumi, Turkestan, p. 268, *pæcilopectera*, Pamir, p. 270, SEMENOW, Horæ Soc. ent. Ross. xxvii, n. spp.

Mylabris rutilicollis, Somaliland, FAIRMAIRE, p. 153, Ann. Soc. ent. Belgique, xxxvii, n. sp.

Pyrota divirgata, figg. 16 & 17, *akhurstiana*, fig. 18, *insulata*, fig. 19, *mariarum*, fig. 20, figured, pl. xxi; CHAMPION, Biol. Centr.-Amer. Col. iv (2).

- P. palpalis*, Mexico, CHAMPION, Biol. Centr.-Amer. Col. iv (2), n. sp.
Zonitis, n. subg., *Euzonitis*, cf. *suprà*.
Z. glasunowi, p. 271, *escherichi*, p. 273, *sogdiana*, p. 275, W. Turkestan,
 SEMENOW, Horæ Soc. ent. Ross. xxvii; *Z. henonii*, Choa, FAIRMAIRE,
 p. 32, Ann. Soc. ent. Belgique, xxxvii : n. spp.

CEDEMERIDÆ.

- [Cf. BLACKBURN (70), BRANCSIK (102), BROUN (112, 113), CHAMPION
 (390), FAIRMAIRE (285), REITTER (758).]
Ananca impressiuscula, Borneo, FAIRMAIRE, p. 64, Notes Leyden Mus.
 xv, n. sp.
¹*Exocalopus*, n. g., near *Techmessa*, for *E. pectinatus*, n. sp., New Zealand;
 BROUN, p. 1170, Manual.
Microtonus sticticopterus, p. xxi, fig. 4, p. 453, *trifasciatus*, fig. 2, p. 454,
 Mexico, CHAMPION, Biol. Centr.-Amer. Col. iv (2), n. spp.
Mycterus pulverulentus, n. var. *subtruncatus*; GUILLEBEAU, p. 90, Echange,
 1893.
¹*Nacerdochroa*, n. g., p. 113, for *N. plustschenskyi*, n. sp., Astrachan, p. 114;
 REITTER, Wien. ent. Zeit. xii.
Oxaxis constricticollis, pl. xxi, fig. 1, p. 454, *carulea*, fig. 5, p. 455, Mexico,
 CHAMPION, Biol. Centr.-Amer. Col. iv (2), n. spp.
¹*Phytileu*, n. g., p. 1171, for *P. propera*, n. sp., p. 1172, New Zealand;
 BROUN, Manual.
¹*Pseudananca*, n. g., for *P. ruficollis*, n. sp., N. S. Wales; BLACKBURN,
 p. 135, Tr. R. Soc. S. Austral. xvii.
Pseudolycus antennatus (Gory), BRANCSIK, p. 238, pl. xii, fig. 11, Jahresh.
 Ver. Trencsen. xv, n. sp.
Sessinia longicornis, New Zealand, BROUN, p. 1459, Manual; *S. thoracica*,
 p. 290, *reversa*, p. 291, New Zealand, BROUN, Ann. Nat. Hist. (6)
 xii : n. spp.
Techmessa attenuata, p. 1172, *varians*, p. 1173, New Zealand, BROUN,
 Manual, n. spp.
¹*Techmessodes*, n. g., for *T. versicolor*, n. sp., New Zealand; BROUN,
 p. 1173, Manual.

CURCULIONIDÆ.

- [Cf. BEDEL (43), BERTOLINI (62), BLACKBURN (69, 71), BLANDFORD (77),
 BONNAIRE (89), BRANCSIK (102), BROUN (112, 113), CASEY (151),
 CHITTENDEN (159), DANIEL (215), DESBROCHERS (222, 223, 224, 226,
 227), FAIRMAIRE (277, 278, 283, 293), FAUST (296-305), FRIVALDSZKY
 (343), FROGGATT (347), HAMILTON (421), HELLER (435), KRAATZ
 (549), KRAUSS (557), REY (779), ROELOFS (814-818), ROST (819),
 SLOANE (911), STIERLIN (941), WEISE (1039, 1043), XAMBEU (1067).]
 Value of open and closed corbels in Otiorthynchids; FAUST, p. 145,
 Stettin. Ent. Zeit. liv.

For numerous synonyms in reference to Desbrocher's descriptions in C.R. Soc. ent. Belgique, 1891, see FAUST, Stettin. Ent. Zeit. liv, pp. 149 & 150.

- Acalles curtus*, Allegheny, HAMILTON, p. 308, Canad. Ent. xxv; *A. veratus*, p. 1235, *maritimus*, *cryptobius*, *ingens*, p. 1236, *xanthostictus*, *adamsi*, p. 1237, *concinus*, p. 1238, *australis*, p. 1239, *minus*, *lepirhinus*, p. 1385, *sympedioides*, p. 1386, *dolosus*, p. 1484, *comptus*, *facilis*, p. 1486, *quietus*, p. 1487, *alpestris*, *picatus*, p. 1488, *aulacus*, p. 1489, *allostethus*, *incultus*, p. 1490, New Zealand, BROUN, Manual; *A. integer*, p. 374, *formosus*, p. 375, *ruficollis*, p. 376, *porcatus*, p. 377, *puncticollis*, *farinosus*, p. 378, New Zealand, BROUN, Ann. Nat. Hist. (6) xii : n. spp.
- † *Acallophilus*, n. g., *Tylodinarum*, for *A. scrobicollis*, n. sp., Indo-China; FAUST, p. 517, Ann. Soc. ent. France, 1892.
- Acantholophus granulatus*, Australia, SLOANE, p. 231, Tr. R. Soc. S. Austral. xvi, n. sp.
- Actees juvenicus*, Indo-China, FAUST, p. 512, Ann. Soc. ent. France, n. sp.
- † *Aganeuma*, n. sp., near *Erirhinus*, p. 1483, for *A. rufula*, n. sp., New Zealand, p. 1484; BROUN, Manual.
- Agastegnus nitidirostris*, p. 1250, *distinctus*, p. 1388, New Zealand, BROUN, Manual, n. spp.
- Agathorhinus vittulatus*, Comoro Is., FAIRMAIRE, p. 515, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Alcides elegans*, Guét., variation and synonymy; FAUST, p. 146, Stettin Ent. Zeit. liv.
- A. ocellatus*, p. 35, *septemdecimnotatus*, p. 36, *decoratus*, p. 37, *rutilans*, p. 38, *smaragdinus*, p. 39, Philippines, ROELOFS, Tijdschr. Ent. xxxvi, n. spp.
- † *Allaorus*, n. g., *Cossonides*, p. 1494, for *A. urquharti*, p. 1495, *pedatus*, *sternalis*, p. 1496, *ovatus*, p. 1497, n. spp., New Zealand; BROUN, Manual.
- † *Alloprocas*, n. g., near *Erirhinus*, p. 1373, for *A. rufus*, *niger*, p. 1374, n. spp., New Zealand; BROUN, Manual.
- † *Amblyochetus*, n. g., p. 234, *Ithyporides*, for *A. turbatus*, n. sp., Madagascar, p. 236; FAUST, Stettin Ent. Zeit. liv.
- Amblyrhinus psittacinus*, Saïgon, FAUST, p. 511, Ann. Soc. ent. France, 1892; *A. simoni*, Aden, FAUST, p. 300, Wien. ent. Zeit. : n. spp.
- † *Amercedes*, n. g., near *Eunyssobia*, p. 602, for *A. subulirostris*, n. sp., Texas, p. 603; CASEY, Ann. N. York Ac. vii.
- Amorbaius*? *pedicularis* (sic), p. 238, *gabonicus*, p. 239, W. Africa, FAUST, Stettin. Ent. Zeit. liv, n. spp.
- Amorphoidea*, Motsch., characters and position; FAUST, p. 151, Stettin Ent. Zeit. liv.
- Anapygus* = (*Pleurothorax*, Chev.); FAUST, p. 151, Stettin Ent. Zeit. liv.
- Anchonus lineatus*, Kirsch, is truly an *Anchonus*; FAUST, p. 148, Stettin Ent. Zeit. liv.

- A. dejeani*, p. 414, *madidus*, p. 415, Columbia, *magister*, Antigua, p. 416, *psittacus*, *asperatus*, p. 417, Cayenne, *agrotus*, Columbia, p. 418, *echinatus*, Cayenne, p. 419, *immundus*, Carthage, p. 420, FAUST, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- ¹*Anomonychus*, n. g., *Cneorhinorum*, for *A. heroni*, n. sp., N. Africa; FAUST, p. 298, Wien. ent. Zeit. xii.
- Anthonomorphus soleatus*, Venezuela, FAUST, p. 334, Stettin Ent. Zeit, liv, n. sp.
- Anthonomus signatus*, habits and metamorphoses; CHITTENDEN, pp. 167-185, cuts, Insect Life, v.
- A. faille*, Sicily, DESBROCHERS, p. 137, Frelon, ii; *A. pustulatus*, p. 326, *instabilis*, p. 327, *sobrinus*, p. 328, Venezuela, FAUST, Stettin Ent. Zeit. liv : n. spp.
- ¹*Aochetus*, n. g., p. 232, *Ithyporides*, for *A. gladiator*, n. sp., Gaboon, p. 234; FAUST, Stettin Ent. Zeit. liv.
- Aoplocnemis tasmanicus*, Tasmania, BLACKBURN, p. 301, Tr. R. Soc. S. Austral. xvii, n. sp.
- Aparete nodosa*, Australia, BLACKBURN, p. 179, Tr. R. Soc. S. Austral. xvi, n. sp.
- Aphanasium variegatum*, Australia, BLACKBURN, p. 196, Tr. R. Soc. S. Austral. xvi, n. sp.
- Apion*: revision of the European and Mediterranean species; DESBROCHERS (223). *A. sanguineum*, de G., = (*miniatum*, Germ.), *rubiginosum*, Dej., = (*sanguineum*, Redt.); GRILL, p. 253, Ent. Tidskr. 1893. *A. detritum*, = (*viridicæruleum*, *ragusæ*), *seniculus*, = (*murinum*); DESBROCHERS, Natural. Sicil. xii, p. 81, but cf. EVERTS, t. c. p. 153. *A. gemulum*, = (*soricinum*, Desb.); FAUST, p. 147, Stettin Ent. Zeit. liv. *A. pubescens* and *vicinum*, their galls; KIEFFER, Feuille Natural. xxxiii, p. 45. *A. lævigatum*, *buddebergi*, habits of male; BUDDEBERG, Jahrb. Nassau. Ver. xlvi, p. 105. *A. variegatum*, habits; GUERPEL, p. 257, Rev. Ent. franc. xii. *A. tubiferum*, metamorphoses; XAMBEU, p. 50, Ann. Soc. Linn. Lyon, xi.
- A. sicardi*, Tunis, p. 9, *sejugum*, Syria, *adjectum*, Algeria, p. 10, *doriae*, *persicum*, p. 11, Persia, DESBROCHERS, Frelon, iii; *A. distinctirostre*, Corsica, p. 40, DESBROCHERS, Frelon, iii, Supp.; *A. versutum*, *inscriptum*, p. 514, *jekeli*, p. 515, Indo-China, FAUST, Ann. Soc. ent. France, 1892; *A. motabile*, *spissum*, p. 317, *ærolescens*, p. 318, *colonus*, *columbianum*, p. 319, *semicastaneum*, p. 320, *mansuetum*, *sagax*, p. 321, *necopinum*, *recidivum*, p. 322, Venezuela, FAUST, Stettin Ent. Zeit. liv : n. spp.
- Aporolobus pallidus*, New Zealand, BROWN, p. 1365, Manual, n. sp.
- Apoderus peringueyi*, n. n. for *miniatum*, Pering.; FAUST, p. 148, Stettin Ent. Zeit. liv.
- A. enoplus*, Nossibé, BRANCSIK, p. 239, pl. xii, fig. 12, Jahresh. Ver. Trencsen. xv, n. sp.

- Aræoscapus*, n. g., p. 299, for *A. ovipennis*, n. sp., New Zealand, p. 300, BROUN, Ann. Nat. Hist. (6) xii.
- Archarias simoni*, p. 342, *iniquus*, p. 343, *conspersus*, p. 344, *angustus*, p. 345, Venezuela, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Arhines hirtus*, SAIGON, FAUST, p. 506, Ann. Soc. ent. France, 1892, n. sp.
- Astyplus*, n. g., p. 1209, *Ithyparosomides*, for *A. conicus*, n. sp., p. 1210, BROUN, Manual.
- Auletobius irkutensis*, Siberia, FAUST, p. 201, Deutsche ent. Zeitschr. 1893, n. sp.
- Balaninus chevrolati*, = (*interruptus*, Chev.), FAUST, p. 146, Stettin Ent. Zeit. liv; *B. confusor*, Allegheny, HAMILTON, p. 309, Canad. Ent. xxv : n. spp.
- Bantiades*, n. g., near *Phrynixus*, for *B. fuscatus*, p. 1371, *valgus*, p. 1472, n. spp., New Zealand; BROUN, Manual.
- Baris melas*, = (*B. litigiosus*, Desb.); FAUST, p. 147, Stettin Ent. Zeit. liv. *B. nana*, = (*rugicollis*, Kirsch); FAUST, p. 148, t. e.
- B. singularis*, Hué; FAUST, p. 519, Ann. Soc. ent. France, 1892, n. sp.
- Barypeithes companyoi*, metamorphoses; XAMBEU, Naturaliste, 1893, p. 168.
- B. claviger*, France, REY, Bull. Soc. ent. France, 1893, p. x, n. sp.
- Belus difficilis*, p. 181, *helmsi*, *ventralis*, p. 182, *frater*, p. 183, *bison*, *perplexus*, p. 184, *flindersi*, p. 185, *mundus*, p. 186, *abdominalis*, *elegans*, p. 187, *regalis*, p. 188, *adelaidæ*, p. 189, *distinctus*, *tibialis*, p. 190, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvi, n. spp.
- Bercthia fairmairei*, Hué, FAUST, p. 516, Ann. Soc. ent. France, 1892, n. sp.
- Botanebius gibbosus*, Venezuela, FAUST, p. 325, Stettin Ent. Zeit. liv, n. sp.
- Brachycerus longulus*, Choa, *maculipes*, p. 34, *ruffrayi*, p. 35, Abyssinia, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Brachyderes lusitanicus*, larva; XAMBEU, p. 78, Appendix, Echange, 1893.
- B. somalius*, Somaliland, FAIRMAIRE, p. 154, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Brachyolus elegans*, p. 1194, *viridescens*, p. 1363, *posticalis*, p. 1364, New Zealand, BROUN, Manual, n. spp.
- Bradybatu tomentosus*, Hungary, DESBROCHERS, p. 150, Frelon, ii, n. sp.
- Bradybatæ*, n. g., for *Phrynixus capitatis*; BROUN, p. 1206, Manual.
- Bradybatæ armiger*, New Zealand, BROUN, p. 296, Ann. Nat. Hist. (6) xii, n. sp.
- Camptoscapus*, n. g., near *Pentarthrum*, p. 384, for *C. sanguineus*, n. sp., New Zealand, p. 385, BROUN, Ann. Nat. Hist. (6) xii.
- Cataponus* and *Grypnus*, Desb., invalidity of; FAUST, p. 146, Stettin Ent. Zeit. liv.
- Catolethrus humilis*, Comoro Is., FAIRMAIRE, p. 549, Ann. Soc. ent. Belgique, xxxvii, n. sp.

- Catoptes caliginosus, posticalis*, p. 1189, *humeralis, chalmeri*, p. 1190, *asperellus, cheesemanni*, p. 1191, *decorus*, p. 1192, *æmulator*, p. 1193, *tenebricus*, p. 1194, *latipennis, furvus*, p. 1362, *vastator*, p. 1463, New Zealand, BROWN, Manual, n. spp.
- Caulostrophus laticollis*, Algeria, BONNAIRE, p. 317, Rev. Ent. franc. xi, n. sp.
- Cecyropa fumosa*, New Zealand, BROWN, p. 1175, Manual, n. sp.
- Celebia modesta*, Celebes, FAUST, p. 421, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ⁴*Celetotelus*, n. g., near *Erirhinus*, p. 1374, for *C. fulvus*, n. sp., New Zealand, p. 1375, BROWN, Manual.
- Centrinus*: notes on characters and synonymy of some N. American species; CASEY, p. 599, Ann. N. York Ac. vii.
- Cercidocerus*: synonymical remarks on the Javanese species; KRAATZ, Deutsche ent. Zeitschr. 1893, pp. 317-320. *C. albicollis*, variation; FAUST, p. 151, Stettin Ent. Zeit. liv.
- Cestophorus rælfsi*, Venezuela, p. 410, *castelnaui*, N. Granada, p. 411, FAUST, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Ceuthorhynchus aper*, Algeria, BEDEL, p. 104, Abeille, xxviii; *C. cinapis*, Tunis, DESBROCHERS, p. 5, Frelon, iii: n. spp.
- Chalcodermus humeridens*, Venezuela, *dentiferus*, Mexico, FAUST, p. 365, Stettin Ent. Zeit. liv, n. spp.
- ⁴*Chamæsephis*, n. g., near *Phrynixus*, p. 1206, for *C. aurisetifer*, p. 1207, *flavipes*, p. 1473, *thoracicus*, p. 1474, *obscurus*, p. 1475, n. spp., New Zealand; BROWN, Manual.
- Chaunoderus foveolatus*, S. Africa, p. 217, *ancora*, Loango, p. 218, *transversalis*, Gaboon, p. 219, *semipolitus*, Old Calabar, p. 220, *setiger*, Gaboon, p. 221, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Cherrus ocularis*, p. 298, *ruficornis*, p. 299, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvii, n. spp.
- Chiloneus brevipilis*, Algeria, DESBROCHERS, p. 13, Frelon, iii, n. sp.
- Chrysolophus spectabilis*, larva described; FROGGATT, p. 37, P. Linn. Soc. N.S. Wales (2) viii.
- Cionus scrophulariæ*, its destruction by parasites; RUPERTSBERGER, Wien. ent. Zeit. xii, p. 291.
- Cleonus (Plagiographus) obesulus*, Spain, DESBROCHERS, p. 6, Frelon, iii; *C. (Eututomatus) bigibbosus*, Algeria, DESBROCHERS, p. 12, t. c.: n. spp.
- Clypeorhynchus thoracicus*, p. 1211, *brevicornis, impressus*, p. 1212, *ovipennis*, p. 1213, *cordipennis, cristatus*, p. 1370, New Zealand, BROWN, Manual, n. spp.
- Caliodes (Cidnorhinus) asperulus*, Irkutsk, FAUST, p. 204, Deutsche ent. Zeitschr. 1893, n. sp.
- Conotrachelus tardus*, p. 346, *sollicitus*, p. 347, *inexplicatus*, Venezuela, *chevrolati*, Brazil, p. 348, *cayennensis*, Guiana, p. 349, *obediens, corticalis*, p. 350, *turbatus*, p. 351, *mimicus*, Venezuela, *disparilis*, Amazonas, p. 352, *raucus*, p. 353, *ochreateus*, p. 354, *clivosus*, Venezuela, *hæmorrhoidicus, germari*, Brazil, p. 355, *rabilus*, p. 357, *seorsus, cestrotus*, 1893. [VOL. XXX.]

- p. 358, *raptor*, p. 359, *salebrosus*, p. 360, *ambiguus*, Venezuela, *pallidus*, New Grenada, p. 361, *nivifer*, Brazil, *fronto*, Venezuela, p. 363, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Corigetus dejeani*, *fleutiaui*, p. 508, *nebulosus*, *figulus*, p. 509, Indo-China, FAUST, Ann. Soc. ent. France, 1892, n. spp.
- Cossonus canaliculatus* = (*incisus*, Pasc.); FAUST, p. 150, Stettin Ent. Zeit. liv.
- C. impressicollis*, Comoro Is., FAIRMAIRE, p. 549, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Cryptorhynchus stigma*, habits; Timehri, vi, p. 181.
- C. olivieri*, Saïgon, FAUST, p. 518, Ann. Soc. ent. France, 1892, n. sp.
- Cubicorhynchus occultus*, p. 232, *modestus*, p. 233, Australia, SLOANE, Tr. R. Soc. S. Austral. xvi, n. spp.
- Cratopus parcesquamosus*, Seychelles, FAIRMAIRE, p. cccxxiv, Bull. Soc. ent. France, 1893, n. sp.
- Cratosomus consularis* = (*dohrni*, Faust); FAUST, p. 146, Stettin Ent. Zeit. liv.
- Crisius picicollis*, p. 1241, *signatus*, *ornatus*, p. 1242, *fasciculatus*, p. 1492, New Zealand, BROWN, Manual, n. spp.
- Cuneopterus tenuicornis*, New Zealand, BROWN, p. 297, Ann. Nat. Hist. (6) xii, n. sp.
- Cylas rufipes*, Cochin China, FAUST, p. 513, Ann. Soc. ent. France, 1892, n. sp.
- Cylindrocephalus*, n. g., *Ommatolampinorum*, for *C. helleri*, n. sp., Madagascar, FAUST, p. 300, Wien. ent. Zeit. xii.
- Cyphicerus farinosus*, Indo-China, FAUST, p. 510, Ann. Soc. ent. France, 1892, n. sp.
- Cyrtotrachelus dichrous*, Fairm., discussed; FAUST, p. 149, Stettin Ent. Zeit. liv.
- Dacnophylla*, n. g., p. 1471, near *Clypeorhynchus*, for *D. setosa*, n. sp., New Zealand, p. 1472; BROWN, Manual.
- D. variegata*, New Zealand, BROWN, p. 301, Ann. Nat. Hist. (6) xii, n. sp.
- Demimæa*, Pasc., = (*Lychnuchus*, Roel.); FAUST, p. 146, Stettin Ent. Zeit. liv.
- Dereodus marginellus*, = (*Cimbus limbalis*, Fairm.); FAUST, p. 147, Stettin Ent. Zeit. liv.
- Desiantha vittata*, p. 304, *pusilla*, p. 305, Victoria, BLACKBURN, Tr. R. Soc. S. Austral. xvii, n. spp.
- Diatmetus gerstaeckeri*, p. 222, *tuberculatus*, p. 223, *vittaticollis*, p. 224, Usambara, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Dinorhopala cardoni*, Bengal, ROELOFS, p. 497, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Diacoderus fortipes*, Choa, FAIRMAIRE, p. 39, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Doliocenthus*, n. g., p. 1207, *Rhyparosomides*, for *D. dumetosus*, p. 1208, *vestitus*, p. 1209, n. spp., New Zealand, BROWN, Manual.
- Dorytomus grossus*, New Zealand, BROWN, p. 1224, Manual, n. sp.

- Dryophthorus atomus*, Comoro Isles, FAIRMAIRE, p. 550, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Dyspeithes nechyroides*, New Guinea, Sumatra, p. 7, *fairmairei*, Fiji, p. 8, FAUST, Deutsche ent. Zeitschr. 1893, n. spp.
- Ectopsis simplex*, New Zealand, BROUN, p. 383, Ann. Nat. Hist. (6) xii, n. sp.
- Eiralus pyriformis, rugosus*, New Zealand, BROUN, p. 1223, Manual, n. spp.
- Elytrodon*: monograph; DESBROCHERS, pp. 15-28, Frelon, iii.
- E. henqni*, Algeria, DESBROCHERS, Frelon, iii, p. 21; *E. maroccanus*, Tangier, p. 12, *id. t. c.*: n. spp.
- Emplesis majuscula*, N. S. Wales, BLACKBURN, p. 311, Tr. R. Soc. S. Austral. xvii, n. sp.
- Empolis longipes*, p. 310, *leai*, p. 311, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvii, n. spp.
- ⁴*Encosmia*, n. g., *Erirehinarum* for *E. adelaidæ*, p. 307, *infusata*, p. 308, n. spp., Australia; BLACKBURN, Tr. R. Soc. S. Austral. xvii.
- Eniopea posticalis, tenebricosa*, p. 309, *sydneyensis*, p. 310, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvii, n. spp.
- ⁴*Epacticus*, n. g., *Erirehinarum*, p. 305, for *E. ruber, nigrirostris*, n. spp., S. Australia, p. 306; BLACKBURN, Tr. R. Soc. S. Austral. xvii.
- ⁴*Epamebus*, n. g., *Erirehinarum* for *E. scutellaris*, n. sp., S. Australia; BLACKBURN, p. 312, Tr. R. Soc. S. Austral. xvii.
- Epistrophus columbianus*, Columbia, p. 4, *signatus*, Ecuador, p. 5, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Erirehinus anxius*, p. 1372, *fuscipes*, p. 1373, New Zealand, BROUN, Manual, n. spp.
- Erodiscus castaneus, globulicollis*, p. 323, *longirostris, scolopax*, p. 324, Venezuela, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Erymnus ferrugatus*, p. 1203, *irregularis*, p. 1367, *crassipes*, p. 1469, *firmus*, p. 1470, New Zealand, BROUN, Manual; *E. probus*, New Zealand, BROUN, p. 299, Ann. Nat. Hist. (6) xii: n. spp.
- ⁴*Etheophanus*, n. g., *Erirehinides*, p. 1232, for *E. pinguis*, n. sp., New Zealand, p. 1233; BROUN, Manual.
- Eucossonus elegans*, p. 1386, *gracilis*, p. 1387, New Zealand, BROUN, Manual, n. spp.
- Eugithopus plagiatus*, p. 29, *ornatus*, p. 30, Philippines, ROELOFS, Tijdschr. Ent. xxxvi, n. spp.
- Eugnomus nobilis*, p. 1225, *ænescens*, p. 1226, *cyaneus, tarsalis, lituratus*, p. 1227, *aspersus*, p. 1376, *squamifer, maurus*, p. 1377, New Zealand, BROUN, Manual, n. spp.
- Eugnoristatus latevittatus*, Comoro Is., FAIRMAIRE, p. 548, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ⁴*Eumononycha*, n. g., near *Eisonyx*, for *E. opaca*, n. sp., Missouri; CASEY, p. 601, Ann. N. York Ak. vii.
- Eupiona tripartita*, p. 225, *vetula*, p. 226, Gaboon, FAUST, Stettin Ent. Zeit. liv, n. spp.
- ⁵*Euprocas*, n. g., near *Erirehinus*, for *E. scitulus*, n. sp., New Zealand, BROUN, p. 1375, Manual.

- Euthycus*, Pasc., generic characters amended; FAUST, Stettin Ent. Zeit. liv, p. 13.
- E. torosus*, Andaman Is., FAUST, p. 13, Stettin Ent. Zeit. liv, n. sp.
- Eutornus cylindricus*, p. 1252, *parvulus*, p. 1253, New Zealand, BROWN, Manual, n. spp.
- Gasterocercus cristulatus*, Indo-China, FAUST, p. 518, Ann. Soc. ent. France, 1892, n. sp.
- Geochus similis*, *nodosus*, p. 1221, *plagiatus*, p. 1365, *puncticollis*, p. 1367, *squamosus*, *tibialis*, p. 1465, *marginatus*, *frontalis*, p. 1466, *nigripes*, p. 1467, New Zealand, BROWN, Manual; *G. setiger*, New Zealand, BROWN, p. 295, Ann. Nat. Hist. (6) xii : n. spp.
- Gerynassa andersoni*, *picticornis*, p. 313, *simplex*, p. 314, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvii, n. spp.
- ¹*Getacalles*, n. g., near *Tychanus*, for *G. rostralis*, p. 1380, *minor*, *humeralatus*, p. 1381, *inaequalis*, p. 1493, n. spp., New Zealand; BROWN, Manual.
- Gymnetridis*, revision of European; DESBROCHERS (222).
- Gymnetron cuneipes*, p. 25 [*uncipes*, pp. 7 & 26], Corsica, *hipponense*, p. 29, Algeria, *sanctum*, Syria, p. 40, *longulum*, Algeria, p. 42, DESBROCHERS, Frelon, Supp., n. spp.
- ¹*Haltracalles*, n. g., for *H. fuliginosus*, n. sp., New Zealand, BROWN, p. 1384, Manual.
- Haplocorynus apicalis*, Madagascar, p. 230, *ochreatus*, W. Africa, p. 231, FAUST, Stettin Ent. Zeit. liv, n. spp.
- ¹*Haplolobus*, n. g. (*Otiorhynchides*), p. 1198, for *H. sœvus*, *athiops*, p. 1199, *gregalis*, p. 1200, n. spp., New Zealand; BROWN, Manual.
- Herpes porcellus*, Lac., = (*Pterothorax korbi*, Weise); AURIVILLIUS, Ent. Tidskr. 1893, p. 130.
- ¹*Heteraomus*, n. g., *Cylindrorhinides*, p. 1217, for *H. longipes*, n. sp., New Zealand, p. 1218: BROWN, Manual.
- Heteroptochus globulus*, Cochin China, FAUST, p. 511, Ann. Soc. ent. France, 1892, n. sp.
- Hipporhinus tenuegranosus*, Abyssinia, FAIRMAIRE, p. 35, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹*Homoreda*, n. g., near *Oreda*, for *H. punctata*, n. sp., New Zealand; BROWN, p. 1383, Manual.
- ¹*Homorosoma*, n. subg. of *Ceuthorhynchus*, for *H. speiseri*, n. sp., Hungary; FRIVALDSZKY, p. 87, Termes. Fuzetek, xvi.
- Hoplitopales? melaspis*, Usambara, FAUST, p. 228, Stettin Ent. Zeit. liv, n. sp.
- Hoplocneme inaequale*, p. 1229, *cyanea*, p. 1230, New Zealand, BROWN, Manual, n. spp.
- Hygrochus verrucosus*, *illepidus*, New Zealand, BROWN, p. 1220, Manual; *H. oculatus*, New Zealand, BROWN, p. 292, Ann. Nat. Hist. (6) xii : n. spp.
- Hyphaeria beltanensis*, p. 179, *parallela*, p. 180, *variabilis*, p. 181, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvi, n. spp.

- Hypocolobus choensis*, Africa, FAIRMAIRE, p. 33, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Hypomeces fabricii*, *auricephalus*, Indo-China, FAUST, p. 506, Ann. Soc. ent. France, 1892, n. spp.
- Hypotagea tibialis*, New Zealand, BROWN, p. 1376, Manual, n. sp.
- Icmalius*, n. g., for *Scolopterus abnormis*, BROWN, p. 1234, Manual.
- ⁴*Idus*, n. g., *Cossonides*, p. 1493, for *I. cæcus*, n. sp., New Zealand; BROWN, p. 1494, Manual.
- Inophlæus nodifer*, *alacer*, p. 1200, *albonotata*, p. 1201, *vestitus*, p. 1202, *suturalis*, p. 1464, New Zealand, BROWN, Manual; *I. medius*, New Zealand, BROWN, p. 294, Ann. Nat. Hist. (6) xii : n. spp.
- Iphthimorhinus australasiæ*, ♂ described; ROELOFS, p. 244, Notes Leyden Mus. xv.
- Ischiomastus*: generic characters; FAUST, p. 6, Stettin Ent. Zeit. liv.
- I. torulosus*, p. 6, *kirschi*, p. 7, *petulans*, p. 9, Colombia, *marginatus*, Costa Rica and Colombia, p. 10, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Ithyporides*: tabulation of the African genera; FAUST, p. 232, Stettin Ent. Zeit. liv.
- Larinus*: synonymical and varietal notes; DESBROCHERS, pp. 71-73, Frelon, iii. *L. ursus*, metamorphoses; XAMBEU, p. 46, Ann. Soc. Linn. Lyon, xl.
- Leprosomus guerini*, *lacerta*, p. 408, *humeralis*, p. 409, Columbia, FAUST, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Leptarthrus libertinus*, p. 328, *callosus*, p. 329, *tuberculosis*, p. 330, *caracasius*, p. 332, *strangulatus*, *avidus*, p. 333, Venezuela, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Lepyryrus armatus*, Alps of East Europe, WEISE, p. 270, Deutsche ent. Zeitschr. 1892, n. sp.
- Leucomigus candidus*, variation and synonymy; DESBROCHERS, p. 69, Frelon, iii.
- Lignyodes apicalis*, p. 339, *rufescens*, p. 340, Venezuela, FAUST, Stettin Ent. Zeit. liv, n. spp.
- ⁴*Lithocia*, n. g., near *Phrynixus*, for *L. fimbriata*, n. sp., New Zealand; BROWN, p. 1470, Manual.
- Lixus*: synonymical and varietal notes; DESBROCHERS, pp. 73-78, Frelon, iii. *L. myagri*, Oliv., = (*Oleonus labronicus*, Lopez); BAUDI, p. 155, Natural. Sicil. xii. *L. myagri*, Ol., = (*Oleonus labronicus*, Lopez); REITTER, p. 260, Wien. ent. Zeit. xii. *L. auriculatus* and *binodulus*, distinctions; FAUST, p. 147, Stettin Ent. Zeit. liv.
- L. subfarinosus*, Egypt, *nigricornis*, Sicily, DESBROCHERS, p. 8, Frelon, iii; *L. curvinasus*, Syria, *atticus*, Greece, p. 79, *distinguendus*, Egypt, p. 80, DESBROCHERS, t. c. : n. spp.
- ⁴*Lyperobates*, n. g., near *Platyomida*, p. 1461, for *L. asper*, n. sp., New Zealand, p. 1462; BROWN, Manual.
- ⁴*Lyperopais*, n. g., near *Lyperobius*, for *L. myrus*, n. sp., New Zealand; BROWN, Manual, p. 1222.

- ²*Machodon*, n. n. for *Odontomachus*, Schönh. nec Latr.; FOREL, p. 167, Ann. Soc. ent. Belgique, xxxvii.
- ¹*Mucraulacus*, n. g., near *Ædemonus*, p. 546, for *M. subcucullatus*, n. sp., Comoro Isles, p. 547; FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii.
- ²*Macrocordylus*, n. g., *Cossinorum*, for *M. wollastoni*, n. sp., Hué; FAUST, p. 522, Ann. Soc. ent. France, 1892.
- Macroscytalus frontalis*, New Zealand, BROWN, p. 386, Ann. Nat. Hist. (6) xii, n. sp.
- Madarellus cumeatus*, Texas, CASEY, p. 603, Ann. N. York Ac. vii, n. sp.
- Magdalinus crenatocollis*, Caucasus, p. 3, *distinguendus*, Syria, p. 4, *kiesenwetteri*, Greece, p. 5, DESBROCHERS, Frelon, iii, n. spp.
- Mecaspis angustulus*, Kustendjé, DESBROCHERS, p. 7, Frelon, iii, n. sp.
- Mecinus echinatus*, p. 56, *aubei*, p. 58, Algeria, *horridulus*, Dalmatia, *brevithorax*, Greece, p. 60, *angustulus*, Algeria, p. 61, DESBROCHERS, Frelon, ii, Supp., n. spp.
- Mecopus aculeatus*, Usambara, FAUST, p. 238, Stettin Ent. Zeit. liv, n. sp.
- Mecysmoderes euglyptus* = (*carinifer*, Kirsch); FAUST, p. 148, Stettin Ent. Zeit. liv.
- M. stigma*, Indo-China, FAUST, p. 519, Ann. Soc. ent. France, 1892, n. sp.
- ¹*Megacolabus*, n. g., *Erirehinides*, ? p. 1377, for *M. sculpturatus*, n. sp., New Zealand, p. 1378; BROWN, Manual.
- ¹*Mesoreda*, n. g., for *Oreda setigera* and *orthorhina*; BROWN, p. 1235, Manual.
- ¹*Metacalles*, n. g., near *Acalles*, p. 381, for *M. aspersus*, p. 382, *rugicollis*, p. 383, n. spp., New Zealand; BROWN, Ann. Nat. Hist. (6) xii.
- Miarus medius*, Syria, p. 51, *abeillei*, Fribourg, p. 52, *rotundicollis*, Attica, p. 53, *balcanicus*, Balkans, p. 55, DESBROCHERS, Frelon, ii, Supp., n. spp.
- Microcerus tuberifrons*, Somaliland, FAIRMAIRE, p. 154, Ann. Soc. ent. Belgique, xxxvii; *M. abyssinicus*, Choa, FAIRMAIRE, p. 33, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Molochthus tibialis*, Australia, SLOANE, Tr. R. Soc. S. Austral. xvi, p. 229, n. sp.
- Molytes coronatus*, habits, metamorphoses; FALLOU, Bull. Soc. ent. France, 1893, p. cx.
- Myllocerus fleutiauxi*, with var. *æmulus*, Indo-China, FAUST, p. 507, Ann. Soc. ent. France, 1892, n. sp.
- Nanophyes maculipes*, *fallax*, France, REY, p. 85, Echange, 1893 [? n. spp.]; *N. longirostris*, Indo-China, FAUST, p. 515, Ann. Soc. ent. France, 1892 : n. spp.
- Neiphagus*, Pasc., and *Tetracyphus*, Chev., note on; FAUST, p. 148, Stettin Ent. Zeit. liv.
- N. biscutellatus*, Angola, FAUST, p. 230, Stettin Ent. Zeit. liv, n. sp.
- ¹*Neolybæba*, n. g., *Cryptorhynchides* for *N. remota*, n. sp., Australia; BLACKBURN, Tr. R. Soc. S. Austral. xvi.
- ¹*Nestrius*, n. g., position doubtful, for *N. serripes*, n. sp., New Zealand; BROWN, p. 1480, Manual.

- N. serripes*, sexes described, BROWN, p. 302, Ann. Nat. Hist. (6) xii.
- Niccana cervina*, p. 1360, *tarsalis*, p. 1460, New Zealand, BROWN, Manual, n. spp.
- Nicentrus grossulus* = (*nanus*, Cas. nec Lec.) ; CASEY, Ann. N. York Ac. vii, p. 599, n. sp.
- ¹ *Niphobolus*, n. g., *Erirehinarum*, p. 314, for *N. deceptor*, n. sp., N. S. Wales, p. 315 ; BLACKBURN, Tr. R. Soc. S. Austral. xvii.
- Nonnotus eclectus*, p. 1177, *pallescens*, p. 1178, New Zealand, BROWN, Manual, n. spp.
- ⁴ *Nothaldonus*, n. g., for *Aldonus peacei* ; BROWN, p. 1235, Manual.
- ³ *Notiopata*, n. g., near *Aporolobus* for *N. setifer*, p. 1186, *sternalis*, p. 1462, n. spp., New Zealand ; BROWN, Manual.
- ⁴ *Notonophes*, n. g., *Amycterini* for *Cubicorhynchus cichlodes*, Pasc. ; SLOANE, p. 234, Tr. R. Soc. S. Austral. xvi.
- Novitas nigrans*, ♂ described ; BROWN, p. 385, Ann. Nat. Hist. (6) xii.
- N. dispar*, New Zealand, BROWN, p. 1251, Manual, n. sp.
- ³ *Olbidorus*, n. g., *Erirehinarum*, p. 302, for *O. hirsutus*, n. sp., S. Australia ; BLACKBURN, Tr. R. Soc. S. Austral. xvii.
- Omotemnus fleutiauxi*, Saïgon, FAUST, p. 520, Ann. Soc. ent. France, 1892, n. sp.
- Omotrachelus kolbei*, Gaboon, p. 297, *puncticollis*, Stanley Pool, p. 298, FAUST, Wien. ent. Zeit. xii, n. spp.
- Oreocharis vittata*, *dealbata*, New Zealand, BROWN, p. 1228, Manual, n. spp.
- Otiorhynchus griseopunctatus*, de Geer, synonymical note ; GRILL, p. 255, Ent. Tidskr. 1893.
- O. ambrosii*, Valsugana, BERTOLINI, p. 221, Bull. Soc. ent. Ital. xxv ; *O. velebiticus*, Croatia, p. 56, *luridus*, Caucasus, p. 57, STIERLIN, MT. Schweiz. ent. Ges. ix ; *O. validicornis*, p. 56, *cadoricus*, p. 57, *tridentinus*, p. 59, Alps of Trient, DANIEL, Col.-Studien, i : n. spp.
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- O. depressum*, Gaboon, ROELOFS, Notes Leyden Mus. xv, n. sp.
- Pachybaris strigapunctus*, Allegheny, HAMILTON, p. 309, Canad. Ent. xxv, n. sp.
- Pachyura albocoma*, p. 1233, *stictica*, p. 1379, New Zealand, BROWN, Manual, n. sp.
- ¹ *Palocharis*, n. g., near *Aporolobus*, p. 1187, for *P. inflata*, p. 1188, *vestita*, p. 1463, n. spp., New Zealand ; BROWN, Manual.
- ⁴ *Palæocorynus*, n. g., p. 233, *Ithyporides*, for *P. thomsoni*, n. sp., Ashantee, p. 235 ; FAUST, Stettin Ent. Zeit. liv.
- Parameira gebleri*, Irkutsk, FAUST, Deutsche ent. Zeitschr. 1893, p. 202, n. sp.
- Paratasis fausti*, Java, HELLER, p. 168, Ent. Nachr. xix, n. sp.
- Parendymia*, Kirsch, characters and affinities ; FAUST, p. 148, Stettin Ent. Zeit. liv.
- ⁴ *Pedetes*, n. g., *Orchestinorum*, for *P. flavipes*, n. sp., Venezuela, FAUST, p. 337, Stettin Ent. Zeit. liv.

- Penestes simulans*, Venezuela, FAUST, p. 313, Stettin Ent. Zeit. liv, n. sp.
- Pentarthrum fulvum, fulloni*, p. 1243, *diversum, nubilum*, p. 1244, *aurantiacum, exilis*, p. 1245, *punctatissimum*, p. 1246, *amicum*, p. 1247, New Zealand, BROUN, Manual, n. spp.
- Phænomerus*, Sch., systematic position and characters; FAUST, p. 151, Stettin Ent. Zeit. liv.
- Phæophanus similis, lituratus*, New Zealand, BROUN, p. 1216, Manual, n. spp.
- ↳ *Phenus*, n. g., near *Olyporhynchus*, for *P. scabralis*, p. 1214, *rufipes*, p. 1482, n. spp., New Zealand; BROUN, Manual.
- Phlecephugosoma serenum*, New Zealand, BROUN, p. 1251, Manual, n. sp.
- ↳ *Phoxoteles*, n. g., for *Phæophanus graniger*; BROUN, Manual, p. 1218.
- ↳ *Phronira*, n. g., near *Bantiades*, p. 1475, for *P. nodosa*, n. sp., New Zealand; BROUN, Manual.
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- Phyllobius urticæ*, note on type; GRILL, p. 252, Ent. Tidskr. 1893.
- P. jakolevi*, Irkutsk, FAUST, p. 201, Deutsche ent. Zeitschr. 1893, n. sp.
- ↳ *Phyllodytes*, n. g., position doubtful, for *P. foveatus*, n. sp., New Zealand; BROUN, p. 1479, Manual.
- Phyllotrox marginellus, sericeus*, p. 314, *rubiginosus, rufipes*, p. 315, *dimidiatus, mundus*, p. 316, Venezuela, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Phytoscapus annamensis*, Hué, FAUST, p. 512, Ann. Soc. ent. France, 1892, n. sp.
- Piazorhinus splendens*, Venezuela, FAUST, p. 339, Stettin Ent. Zeit. liv, n. sp.
- ↳ *Plæsiorhinus*, n. g., *Erirhininarum*, p. 303, for *P. notatus*, n. sp., S. Australia, p. 304; BLACKBURN, Tr. R. Soc. S. Austral. xvii.
- Platyomida depressa*, New Zealand, BROUN, Manual, p. 1185, n. sp.
- Platyopisthen albopectorale*, Gaboon, ROELOFS, p. 242, Notes Leyden Mus. xv, n. sp.
- Platytarsus bensaë*, Italy, STIERLIN, p. 57, MT. Schweiz. ent. Ges. ix, n. sp.
- Plinthus merklîi*, Constantinople, FRIVALDSZKY, p. 86, Termes. Fuzetek, xvi, n. sp.
- ↳ *Plotnus*, n. g., *Rhyparosomides*, for *P. ovithorax*, n. sp., New Zealand; BROUN, p. 1481, Manual.
- Polydrosus tereticollis*, note on type; GRILL, p. 253, Ent. Tidskr. 1893.
- Poteriophorus, sexes distinguished*; ROELOFS, p. 246, Notes Leyden Mus. xv.
- P. andamanensis*, Andaman Is., ROELOFS, p. 247, Notes Leyden Mus. xv, n. sp.
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- Prionomerus sexspinosus*, Venezuela, FAUST, Stettin Ent. Zeit. liv p. 338, n. sp.
- Procas minutus*, Spain, DESBROCHERS, p. 9, Frelon, iii, n. sp.
- Prodioces*, Pasc., = (*Meroplus*, Chev.); FAUST, p. 151, Stettin Ent. Zeit. liv.
- Psepholax brevicornis*, New Zealand, BROUN, p. 1382, Manual, n. sp.
- Pseudanchonus triglyphus*, Colombia, FAUST, p. 14, Stettin Ent. Zeit. liv, n. sp.
- Pseudanthonomus canescens*, *indignus*, p. 335, *carinulatus*, *tomentosus*, p. 336, Venezuela, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Pseudoreda*, n. g., for *Psepholax tibialis*, BROUN, p. 1383, Manual.
- Pterothorax*, n. g., near *Rhytirrhinus*, for *P. korbi*, n. sp., Amasia; WEISE, Deutsche ent. Zeitschr. 1893, p. 68.
- Rabdotorhinus*, n. g., near *Procas*, for *Pachytychius hircus*, Db.; DESBROCHERS, p. 82, Frelon, iii.
- Rachidiscus*, n. g., p. 1477, for *R. granicollis*, n. sp., New Zealand, p. 1478; BROUN, Manual.
- Rhinanusus cheesemani*, New Zealand, BROUN, p. 1249, Manual, n. sp.
- Rhinogryphus*, n. g., near *Phacecorynes*, p. 32, for *R. velulinus*, n. sp., Philippines, p. 33; ROELOFS, Tijdschr. Ent. xxxvi.
- Rhinoncus jakolevi*, *sibiricus*, Amurland, FAUST, p. 205, Deutsche ent. Zeitschr. 1893, n. spp.
- Rhinotia hæmoptera*, larva described; FROGGATT, p. 37, P. Linn. Soc. N. S. Wales (2) viii.
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- Rhynchophorus palmarum*, habits, larva described; BLANDFORD, Kew Bull. 1893, pp. 27-60, pl. i.
- Rhyparonotus penicularius*, N. Granada, p. 412, *scapha*, Venezuela, p. 413, *gryphus*, Bogota, p. 414, FAUST, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Rhysomatus subfasciatus*, *spectatus*, p. 363, *angustulus*, p. 364, Venezuela, FAUST, Stettin Ent. Zeit. liv, n. spp.
- Rhytiphlæus parcegranatus*, Comoro Is., FAIRMAIRE, p. 543, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Roelofsia*, Rits., is not valid; FAUST, p. 150, Stettin Ent. Zeit. liv.
- Rystheus*, n. g., *Cylindrorhinides*? for *R. ocularius*, n. sp., New Zealand; BROUN, p. 1219, Manual.
- Scelodolichus juncobius*, p. 1239, *hilaris*, p. 1491, New Zealand, BROUN, Manual, n. spp.
- Sclerorhinus elderi*, p. 225, *occidentalis*, p. 226, *angustipennis*, p. 228, Australia, SLOANE, Tr. R. Soc. S. Austral. xvi, n. spp.
- Sericopholus*, n. g., near *Caulostrophus*, for *S. sicardi*, n. sp., Tunis; DESBROCHERS, p. 2, Frelon, iii.
- Sibinia melina*, p. 340, *valenciana*, p. 341, Venezuela, FAUST, Stettin Ent. Zeit. liv, n. spp.

- Sosgenes*, n. g., position doubtful, for *S. carinatus*, n. sp., New Zealand ;
 BROUN, p. 1477, Manual.
- Sphadasmus granocostatus*, Seychelles, FAIRMAIRE, p. cccxxv, Bull. Soc.
 ent. France, 1893, n. sp.
- Sphenophorus cruciger*, Motsch., and *stigmaticollis*, Gyll., note on ; FAUST,
 p. 148, Stettin Ent. Zeit. liv. *S. subulirostris*, Kolbe, referred to
Temnoschoita ; FAUST, p. 150, Stettin Ent. Zeit. liv.
- S. argillaceus*, Saigon, FAUST, p. 521, Ann. Soc. ent. France, 1892,
 n. sp.
- Stenophida rufipes*, Matabeleland, ROELOFS, p. 129, Notes Leyden Mus.
 xv, n. sp.
- Stephanocleonus jakolevi*, Irkutsk, FAUST, p. 202, Deutsche ent. Zeitschr.
 1893, n. sp.
- Stephanorhynchus nigrosparsus*, p. 1230, *insolitus*, *costifer*, p. 1231, New
 Zealand, BROUN, Manual, n. spp.
- Stethobaris cicatricosa*, Texas, CASEY, p. 600, Ann. N. York Ac. vii, n. sp.
- Stiamus brachyurus*, Comoro Is., FAIRMAIRE, p. 544, Ann. Soc. ent.
 Belgique, xxxvii, n. sp.
- Stilbocara*, n. g., *Cossonides*, for *S. nitida*, n. sp., New Zealand ; BROUN,
 p. 387, Ann. Nat. Hist. (6) xii.
- Stilbopsis*, n. g., *Eriirhinides*, p. 1482, for *S. politus*, n. sp., p. 1483, New
 Zealand, BROUN, Manual.
- Strophosomus (Neliocar) alpicola*, Styria, KRAUS, p. 137, Wien. ent.
 Zeit. xii, n. sp.
- Stygeopetes*, n. g., near *Oecyropa*, for *S. littoralis*, n. sp., New Zealand ;
 BROUN, Manual, p. 1176.
- Styphlotelus*, n. g., *Rhyparosomides*, for *S. foveatus*, p. 1368, *fuscularis*,
 p. 1369, n. spp., New Zealand ; BROUN, Manual.
- Symbothinus puer*, N.S. Wales, BLACKBURN, p. 302, Tr. R. Soc. S. Austral.
 xvii, n. sp.
- Sympiezopus rufovittatus*, Comoro Is., FAIRMAIRE, p. 546, Ann. Soc. ent.
 Belgique, xxxvii, n. sp.
- Systates irregularis*, Usambara, FAUST, p. 227, Stettin Ent. Zeit. liv, n. sp.
- Talaurinus regularis*, p. 215, *solidus*, *helmsi*, p. 217, *aqualis*, p. 218, *crassi-*
ceps, p. 219, *obscurus*, p. 220, *noctis*, p. 221, *insignis*, p. 222, *convexus*,
 p. 224, Australia, SLOANE, Tr. R. Soc. S. Austral. xvi, n. spp.
- Taphrorhynchus (Brachyaspistes) subfusciatus*, Desb., = (*assamensis*,
 Faust) ; FAUST, p. 149, Stettin Ent. Zeit. liv.
- Telephæe* : the species described by Motschousky under *Elattocherus* belong
 to this ; FAUST, p. 146, Stettin Ent. Zeit. liv.
- Thylacites galæcianus*, Gallicia, p. 1, *costulatus*, Tunis, p. 2, DESBROCHERS,
 Frelon, iii, n. spp.
- Thysanocnemis fraxini*, = (*horridula*, Cas.) ; CASEY, p. 598, Ann. N.
 York Ac. vii.
- Tigones aulica*, p. 1180, *variegata*, *scutellaris*, p. 1181, *cruda*, *antennalis*,
 p. 1182, *diversa*, *rufula*, p. 1183, *cavelli*, *obscura*, p. 1361, New Zea-
 land, BROUN, Manual, n. spp.

- ^S *Tormeuphorus*, n. g., near *Ischiomastus*, for *T. discolobus*, n. sp., Columbia ; FAUST, p. 11, Stettin Ent. Zeit. liv.
- Trachyphlæus scaber*, metamorphoses ; XAMBEU, p. 43, Ann. Soc. Linn. Lyon, xl.
- T. (Lacordairius) muralis*, Algeria, BEDEL, p. 103, Abeille, xxviii, n. sp.
- Traphecorynus dorsopictus*, Comoro I., FAIRMAIRE, p. 547, Ann. Soc. ent. Belgique, xxxvii ; *T. senectus*, Zanzibar, FAUST, p. 236, Stettin Ent. Zeit. liv : n. spp.
- Trigonops biramosa*, Motsch. = (*jekeli*, Pasc.) ; FAUST, p. 149, Stettin Ent. Zeit. liv.
- Troglorhynchus inaliparum*, Caucasus, ROST, p. 342, Ent. Nachr. xix, n. sp.
- ⁽ *Tychanopais*, n. g., near *Tychanus*, p. 1379, for *T. pictulus*, n. sp., New Zealand, p. 1380 ; BROUN, Manual.
- Tychanus dux*, New Zealand, BROUN, p. 1240, Manual, n. sp.
- Tychius irkutensis*, p. 203, *semisquamosus*, p. 204, Siberia, FAUST, Deutsche ent. Zeitschr. 1893, n. spp.
- Tyloderma contusa*, note on ; CASEY, p. 598, Ann. N. York Ac. vii.
- Typacrus ruhli*, Ecuador, FAUST, p. 3, Stettin Ent. Zeit. liv, n. sp.
- Tysius purus*, New Zealand, BROUN, p. 1224, Manual, n. sp.
- ¹ *Ubychia*, n. g., near *Torneuma*, for *U. stygia*, n. sp., Caucasus ; ROST, p. 343, Ent. Nachr. xix.
- ² *Zeacalles*, n. g., near *Acalles*, p. 379, for *Z. flavescens*, p. 380, *varius*, p. 381, n. spp., New Zealand ; BROUN, Ann. Nat. Hist. (6) xii.

SCOLYTIDÆ.

- [Of. BLANDFORD (74, 75, 76), CHITTENDEN (158), GUILLEBEAU (412), HOPKINS (458), JANSON (497), SCHAUFUSS (842), XAMBEU (1067).]
- Affinities and characters of *Scolytides* and *Platypides* discussed ; BLANDFORD, Tr. ent. Soc. London, 1893, pp. 425 & 441.
- Notes on the habits of various N. American species ; CHITTENDEN, P. ent. Soc. Washington, ii, pp. 391-394.
- Diapus impressus*, E. India, JANSON, p. 74, Indian Mus. Notes, iii, n. sp.
- ¹ *Elzearius*, n. g., near *Phlæophthorus*, for *E. crenatus*, n. sp., Hungary ; GUILLEBEAU, p. 64, Ann. Soc. ent. France, 1893.
- Hylurgus piniperda*, biological notes on ; RUPERTSBERGER, p. 290, Wien. ent. Zeit. xii.
- Hypoborus ficus*, metamorphoses, XAMBEU, p. 104, Ann. Soc. Linn. Lyon, xi.
- Hypothenemus dissimilis*, sexual differences and variation ; CHITTENDEN, p. 393, P. ent. Soc. Washington, ii.
- Mitosoma nigra*, p. 621, *robusta*, p. 623, Madagascar, SCHAUFUSS, Nunquam ot. iii, n. spp.
- Phlæophthorus* : revision of the species ; GUILLEBEAU, Ann. Soc. ent. France, 1893, pp. 57, &c.

- P. abeillei*, Corsica, p. 58, *pubifrons*, Mediterranean, p. 59, *helveticus*, Switzerland, *corsicus*, Corsica, *lineigera*, France, p. 60, *mayeti*, *sharpi*, Algeria, *perrisi*, Prussia, p. 62, GUILLEBEAU, Ann. Soc. ent. France, 1893, n. spp.
- Phlæosinus thuyæ*, habits ; DECAUX, Naturaliste, 1893, p. 267.
- Phlæotribus oleæ*, metamorphoses ; XAMBEU, p. 101, Ann. Soc. Linn. Lyon, xi. *P. liminaris*, habits ; WEBSTER, p. 111, Canad. Ent. xxv.
- Pityogenes scitus*, E. India, BLANDFORD, Indian Mus. Notes, iii, p. 63, n. sp.
- Platydictylus sexspinosus*, descriptive note ; BLANDFORD, p. 64, Indian Mus. Notes, iii.
- Platypus lobatus*, p. 1253, *gracilis*, p. 1254, New Zealand, BROUN, Manual, n. spp.
- Scolytoplatypus*, referred to *Scolytiodes* as a new subfamily *Scolytoplatypidae* ; BLANDFORD, p. 427, Tr. ent. Soc. London, 1893.
- S. (Spongocerus) tycon*, p. 432, *daimio*, p. 433, *siomio*, p. 436, *S. (Tanio-cerus) mikado*, p. 437, Japan, *raja*, India, p. 440, BLANDFORD, Tr. ent. Soc. London, 1893, n. spp.
- Scolytus carpini*, habits ; DECAUX, p. 92, Naturaliste, 1893.
- Spongocerus*, n. subg. of *Scolytoplatypus* ; BLANDFORD, p. 431, Tr. ent. Soc. London, 1893.
- Tanio-cerus*, n. subg. of *Scolytoplatypus* ; BLANDFORD, p. 437, Tr. ent. Soc. London, 1893.
- Xyleborus perforans*, *kraatzi*, and *affinis*, characters, p. 46, pl., habits, &c., pp. 1-45 ; BLANDFORD (76).

BRENTHIDÆ.

- [*Cf.* ROTHSCHILD & JORDAN (824), SENNA (883-887).]
- ¹*Araiorrhinus*, n. g., *Trachelizinae*, p. 325, *A. exportatus*, p. 327, fig. 5, *sondaicus*, fig. 6, p. 329, n. spp., Sumatra ; SENNA, Bull. Soc. ent. Ital. xxv.
- Baryrrhynchus rudis*, Engano, SENNA, p. 280, Ann. Mus. Genova, xxxiii, n. sp.
- Cerobates sumatranus*, p. 306, pl. iii, fig. 1, *grouvellei*, pl. ii, fig. 6, p. 307, Sumatra, SENNA, Bull. Soc. ent. Ital. xxv, n. spp.
- Cyphagogus modiglianii*, Engano, SENNA, p. 258, Ann. Mus. Genova, xxxiii ; *C. tabacicola*, p. 294, pl. ii, figg. 1 & 1b, *angusticeps*, p. 296, fig. 2, Sumatra, SENNA, Bull. Soc. ent. Ital. xxv : n. spp.
- Episphales pictus*, variation ; SENNA, p. 53, Ann. Soc. ent. France, 1893.
- Eutrachelus borneensis*, Kina Balu, *achilles*, Java, ROTHSCHILD & JORDAN, Ann. Nat. Hist. (6) xii, p. 454, n. spp.
- ¹*Fonteboanuis*, n. g., near *Nematocephalus* for *F. lamellipes*, n. sp., Amazons, pl. i, fig. 3 ; SENNA, p. 125, Bull. Soc. ent. Ital. xxv.
- Higonius hirsutus*, Perak, SENNA, p. 117, pl. 1, fig. 1, Bull. Soc. ent. Ital. xxv ; *H. grouvellei*, Sumatra, SENNA, p. 311, pl. iv, fig. 3, *t. c.* : n. spp.

- Hoploplasthius trichimerus* = (*javanus*, Kolbe), figure pl. ii, fig. 3 ;
 SENNA, p. 299, Bull. Soc. ent. Ital. xxv.
- H. doriae*, p. 254, *kolbei*, New Guinea, *oberthuri*, Burma, p. 255, SENNA,
 Bull. Soc. ent. Ital. xxiv, n. spp.
- Ionthocerus foveolatus*, p. 300, pl. ii, fig. 4, *sondaicus*, p. 302, fig. 5,
 Sumatra, SENNA, Bull. Soc. ent. Ital. xxv, n. spp.
- ¹ *Microtrachelizus*, n. g., p. 315, for part of *Trachelizus* with *M. pubescens*,
 p. 320, pl. iii, fig. 6, *turgionii*, fig. 5, p. 322, *tubaci*, p. 323, pl. iv, fig. 4,
 n. spp., Sumatra ; SENNA, Bull. Soc. ent. Ital. xxv.
- Miolispa enganica*, p. 267, *sycophanta*, p. 270, *dubia*, p. 273, Engano,
 SENNA, Ann. Mus. Genova, xxxiii, n. spp.
- Nematocephalus guatemalensis*, Guatemala, SENNA, p. 128, pl. i, fig. 4,
 Bull. Soc. ent. Ital. xxv, n. sp.
- Ozodeocerus pygmaeus*, Madagascar, SENNA, p. 132, pl. i, fig. 5, Bull. Soc.
 ent. Ital. xxv, n. sp.
- Prophthalmus mutabilis*, Engano, SENNA, p. 274, Ann. Mus. Genova,
 xxxiii, n. sp.
- ¹ *Schoenfeldtia*, n. g., *Arrhenodini*, p. 120, for *S. impressicollis*, n. sp., Santa
 Rita, p. 121, pl. i, fig. 2 ; SENNA, Bull. Soc. ent. Ital. xxv.
- Stereodermus gestroi*, Engano, SENNA, p. 261, Ann. Mus. Genova, xxxiii,
 n. sp.
- Trachelizus contiguus*, Engano, SENNA, p. 266, Ann. Mus. Genova, xxxiii,
 n. sp.

ANTHRIBIDÆ.

- [Cf. ABEILLE (5), BRANCSIK (102), BROUN (112), DESBROCHERS (225),
 FAIRMAIRE (283).]
- Anthribus minor*, p. 1260, *fungicola*, *thoracicus*, *sandageri*, p. 1261, *brun-*
neus, p. 1262, *tessellatus*, *curvatus*, p. 1263, *decens*, *finitimus*, p. 1264,
anxius, *lætabilis*, p. 1265, *deterius*, *impar*, p. 1266, New Zealand,
 BROUN, Manual, n. spp.
- ¹ *Arecopais*, n. g., for *Exilis spectabilis* ; BROUN, p. 1267, Manual.
- Choragus theryi*, *aurolineatus*, Algeria, ABEILLE, p. 73, Échange, 1893,
 n. spp.
- ¹ *Dysnocryptus*, n. g., near *Notioxenus*, for *D. plagiatus*, p. 1258, *testaceus*,
pallidus, p. 1259, *maculifer*, *nigricans*, p. 1260, n. spp., New Zealand,
 and including *Anthribus inflatus*, *rugosus*, *dignus* ; BROUN, p. 1259,
 Manual.
- ¹ *Eugonissus*, n. g., near *Eugonus*, for *Etnalis conulus* and *E. pictipes*, n. sp.,
 New Zealand ; BROUN, p. 1257, Manual.
- ¹ *Holomecus* (n. g., Fairm., not described), *tenuelineatus*, Nossibé, BRANCSIK,
 p. 241, Jahresh. Ver. Trencsen. xv, n. sp.
- Proscoporphinus signatus*, p. 1268, *viridescens*, p. 1269, New Zealand,
 BROUN, Manual, n. spp.

- Tophoderes insularis*, Comoro Is., FAIRMAIRE, p. 550, Ann. Soc. ent. Belgique, xxxvii, n. sp.
Urodon baudii, Algeria, DESBROCHERS, p. 14, Frelon, iii, n. sp.
Xenanthribus hirsutus, New Zealand, BROWN, p. 1270, Manual, n. sp.

BRUCHIDÆ.

- Bruchus*: food-plants of N. American species; RILEY & HOWARD, Insect Life, v, p. 165. *B. pisi*, earliest larva figured; t. c. p. 205.
B. obtectus, quadrimaculatus, life-histories, variation, &c.; SLINGERLAND, Psyche, vi, p. 445, pl. xvi.
Mylabris vicia, metamorphoses; KOLBE, Zeitschr. Ent. Breslau, xviii, pp. 1-3.

CERAMBYCIDÆ.

- [*Cf.* AURIVILLIUS (28, 29), BRANCSIK (102), BLACKBURN (69), BROWN (112, 113), CASEY (151), DANIEL (215), FAIRMAIRE (275, 277, 278, 282, 283, 284), FROGGATT (347), GAHAN (355, 356, 359, 360), GESTRO (369), GIGLIO-TOS (378, 379), HAMMARSTRÖM (422), HORN (461), JACOBSON (478), KOLBE (542), LAMEERE (567-570), NONFRIED (674), PIC (707, 708, 712, 716, 719, 720), REITTER (758, 761), RITSEMA (802, 803), ROTHSCHILD & JORDAN (824), SEMENOW (882), THÉRY (962), WICKHAM (1055), XAMBEU (1067).]
- Distinction of *Cerambycidæ* from *Chrysomelidæ*; JACOBSON, p. 91, Horæ Soc. ent. Ross. xxvii.
- List of *Cerambycidæ* of France and Algeria, and descriptions of varieties of Longicorns; PIC, Matériaux, &c., Cah. i.
- Acmæops pratensis*, metamorphoses; XAMBEU, Naturaliste, 1893, p. 224.
- Acoremia*, n. g., p. 252, *Compsocerinarum*, for *A. flavomaculata*, n. sp., Usambara, p. 253; KOLBE, Stettin Ent. Zeit. liv.
- Acyrusa tasmanica*, Hobart, GAHAN, p. 174, Tr. ent. Soc. London, 1893, n. sp.
- Adetus elongatus*, Venezuela, LAMEERE, p. 275, Ann. Soc. ent. France, 1893, n. sp.
- Ælara minor*, Indo-China, LAMEERE, p. 284, Ann. Soc. ent. France, 1893, n. sp.
- Æolesthes basicornis*, Andaman Is., GAHAN, p. 377, Ann. Nat. Hist. (6) xi, n. sp.
- Agalissus chamæropis*, Florida, HORN, p. 138, Tr. Amer. ent. Soc. xx, n. sp.
- ¹*Aganipus*, n. g., near *Hesperophanes*, for *A. calopodes*, n. sp., Choa, FAIRMAIRE, p. 39, Ann. Soc. ent. Belgique, xxxvii.
- Agapanthius ganglbaueri*, Altai, p. 503, *persica*, N. Persia, p. 505, SEMENOW, Horæ Soc. ent. Ross. xxvii, n. sp.
- Agrianome lorix*, New Guinea, GESTRO, p. 292, Ann. Mus. Genova, xxxiii, n. sp.
- ²*Alidus*, n. g., *Niphonides*, for *A. biplagiatus*, n. sp., China; GAHAN, p. 258, Ann. Nat. Hist. (6) xi.

- ¹*Alloeme*, n. g., *Oeminarum*, for *A. murrayi*, n. sp., W. Africa; LAMEERE, p. 40, Ann. Soc. ent. France, 1893.
- ¹*Allomicrus*, n. g., *Exocentrides*, p. 196, for *A. exiguus*, n. sp., W. Australia, p. 197; GAHAN, Tr. ent. Soc. London, 1893.
- ¹*Allostichus*, n. g., p. 285, *Acanthocininarum*, for *A. costulatus*, n. sp., Usambara, p. 286, KOLBE, Stettin Ent. Zeit. liv.
- ¹*Alluaudia*, n. g., *Apodasyinarum*?, p. 48, for *A. insignis*, n. sp., W. Africa, p. 49, LAMEERE, Ann. Soc. ent. France, 1893.
- Alphitopola sulcicollis*, W. Africa, KOLBE, p. 65, Stettin Ent. Zeit. liv, n. sp.
- Anamera fulvescens*, E. India, GAHAN, p. 383, Ann. Nat. Hist. (6) xi, n. sp.
- Ancita*, Th., = (*Hebesecis*, Pasc.); GAHAN, p. 190, Tr. ent. Soc. London, 1893.
- Ancylocera brevicornis*, Florida, CASEY, p. 586, Ann. N. York Ac. vii, n. sp.
- Anoplistes minutus*, S. W. Siberia, HAMMARSTRÖM, p. 191, Ofv. Finska Forh. xxxiv, n. sp.
- Anoploclerum spondylioides*, p. 610, Bolivia, *tetropioides*, p. 611, Argentine Rep., FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Anubis frontalis*, Centr. Africa, GAHAN, p. 743, P. Zool. Soc. London, 1893, n. sp.
- Anybostetha ocellata*, W. Africa, LAMEERE, p. 45, Ann. Soc. ent. France, 1893, n. sp.
- ¹*Aphalanthus*, n. g., p. 260, *Baræinarum*, for *A. conradti*, n. sp., Usambara, p. 261; KOLBE, Stettin Ent. Zeit. liv.
- ¹*Apharsatus*, n. g., near *Tessaromma* for *A. fallaciosus*, n. sp., Madagascar, FAIRMAIRE, p. 519, Ann. Soc. ent. Belgique, xxxvii.
- Apheledes* (sub *Toxotus*) *stigmatipennis*, Fairm., = (*velutinus*, Pasc.); FAIRMAIRE, p. 520, Ann. Soc. ent. Belgique, xxxvii.
- A. guttulatus*, Madagascar, FAIRMAIRE, p. 517, Ann. Soc. ent. Belgique; xxxvii, n. sp.
- Apomecyna acutipennis*, Usambara, KOLBE, p. 275, Stettin Ent. Zeit. liv; *A. sechellarum*, Seychelles, LAMEERE, p. cvi, Bull. Soc. ent. France, 1893; *A. lactiflua*, W. Africa, LAMEERE, p. 47, Ann. Soc. ent. France, 1893: n. spp.
- Aromia lugubris*, Choa, FAIRMAIRE, p. 40, Ann. Soc. ent. France, xxxvii, n. sp.
- ¹*Aspitus*, n. g., *Hesperophaninarum*, for *A. seriatus*, n. sp., West Africa; KOLBE, p. 61, Stettin Ent. Zeit. liv.
- ¹*Assinia*, n. g., *Parmeninarum*, for *A. alluaudi*, n. sp., W. Africa; LAMEERE, p. 43, Ann. Soc. ent. France, 1893.
- Atesta eremita*, Australia, BLACKBURN, p. 194, Tr. R. Soc. S. Austral. xvi, n. sp.
- ¹*Badariotta*, n. g., for *B. gianellii*, n. sp., Brazil; GIGLIO-TOS, No. 136, Boll. Mus. Torino, viii. *T. c.* No. 142, this is said to be *Psygmatocerus wagleri*, Perty.

- ¹*Barossus*, n. g., near *Antigenes* for *B. cineraceus*, n. sp., Madagascar ; FAIRMAIRE, p. 517, Ann. Soc. ent. Belgique, xxxvii.
- Batyle cylindrella*, Texas, CASEY, p. 587, Ann. N. York Ac. vii, n. sp.
- Belodera geni*, metamorphoses ; XAMBEU, p. 116, Ann. Soc. Linn. Lyon, xl.
- B. simplex*, p. 275, *flocifera*, p. 276, Usambara, KOLBE, Stettin Ent. Zeit. liv, n. spp.
- Bethelium signiferum*, Newm., synonymy ; GAHAN, pp. 170 & 177, Tr. ent. Soc. London, 1893.
- B. blackburni*, Tasmania, GAHAN, Tr. ent. Soc. London, p. 178, n. sp.
- Blepisanis geniculata, cylindricollis*, p. 77, *nigriventris, guineensis* [? *maculifrons*, Chev.], p. 78, KOLBE, Stettin Ent. Zeit. liv, n. spp.
- Brachyta caucasica*, n. var., *conjuncta* ; ROSE, p. 344, Ent. Nachr. xix.
- Bucynthia* : affinities and systematic position ; AURIVILLIUS, p. 165, Ent. Tidskr. 1893.
- ¹*Cacodrotus*, n. g., near *Calliprason*, for *C. bifasciatus*, n. sp., New Zealand ; BROWN, p. 1281, Manual.
- Calamobius gracilis*, metamorphoses ; XAMBEU, p. 131, Ann. Soc. Linn. Lyon, xl.
- Callichroma cyaneodorsis*, p. 61, *rufipes, subbasale*, p. 62, West Africa, KOLBE, Stettin Ent. Zeit. liv ; *C. aureovittis*, Usambara, KOLBE, p. 250, t. c. ; *C. behanzini*, West Africa, LAMEERE, p. 41, Ann. Soc. ent. France, 1893 : n. spp.
- Callidium glabratum*, metamorphoses ; XAMBEU, p. 106, Ann. Soc. Linn. Lyon, xl.
- Callipogon friedländeri* a fictitious insect ; AURIVILLIUS, Berlin. ent. Zeitschr. xxxviii.
- Cartallum ebulinum*, metamorphoses ; XAMBEU, p. 113, Ann. Soc. Linn. Lyon, xl.
- Ceresium delauneyi*, Hué, LAMEERE, p. 282, Ann. Soc. ent. France, 1893, n. sp.
- Ceroplesis fissa*, n. var., *togonica* ; KOLBE, p. 67, Stettin Ent. Zeit. liv.
- C. conradi*, Usambara, KOLBE, p. 265, Stettin Ent. Zeit. liv ; *C. aenescens*, Choa, FAIRMAIRE, p. 41, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Chariesthes gratiana*, Usambara, KOLBE, p. 263, Stettin Ent. Zeit. liv, n. sp.
- Cleonice bivittata*, Borneo, GAHAN, p. 379, Ann. Nat. Hist. (6) xi, n. sp.
- Clytanthus viridipennis*, W. Africa, LAMEERE, p. 42, Ann. Soc. ent. France, 1893, n. sp.
- Clytus grumi*, = (*namanganensis*, Heyd.), redescribed ; SEMENOW, p. 502, Horæ Soc. ent. Ross. xxvii. *C. curtisi*, n. var., *fridstedti* ; AURIVILLIUS, p. 162, fig. 3, Ent. Tidskr. 1893. *C. (Clytanthus) fuldermanni*, n. var. ?, *punctomaculatus*, Turkestan ; PIC, Echange, 1893. *C. adspersus* and *pantherinus*, distinctions ; BERGROTH, p. 349, Ent. Nachr. xix. *C. arvicola*, metamorphoses ; XAMBEU, p. 110, Ann. Soc. Linn. Lyon, xl. *C. ruficornis*, metamorphoses ; CHOBAUT, p. cclxv, Bull. Soc. ent. France, 1893. *C. tropicus*, habits ; DECAUX, t. c. p. ccxxii.

- C. (Xylotrechus) buharensis*, W. Asia, SEMENOW, p. 500, Horæ Soc. ent. Ross. xxvii; *C. montanus*, p. 337, *metallicus*, p. 338, *minutissimus*, p. 339, *simulator*, p. 340, Manipur, NONFRIED, Berlin. ent. Zeitschr. xxxviii : n. spp.
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- Celosterna fleutiauxi*, Indo-China, LAMEERE, p. 283, Ann. Soc. ent. France, 1893, n. sp.
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- C. validus*, N. W. Australia, GAHAN, p. 173, Tr. ent. Soc. London, 1893, n. sp.
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- Crossidius*: variation discussed; WICKHAM, p. 189, pl., Canad. Ent. xxv.
- C. blandi*, Utah, CASEY, p. 589, Ann. N. York Ac. vii, n. sp.
- Crossotus sawosicollis*, Somaliland, FAIRMAIRE, p. 155, Ann. Soc. ent. Belgique, xxxvii; *C. levidorsis*, Usambara, KOLBE, p. 269, Stettin Ent. Zeit. liv : n. spp.
- Cyrtophorus insinuans*, Canada, CASEY, p. 591, Ann. N. York Ac. vii, n. sp.
- ¹*Dere mius*, n. g., p. 282, *Hippopsinarum*, for *D. leptus*, n. sp., Usambara, p. 283; KOLBE, Stettin Ent. Zeit. liv.
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- Ergates neomexicanus*, characters noticed; CASEY, p. 597, Ann. N. York Ac. vii.
- Erosida trilineata*, Brazil, AURIVILLIUS, p. 183, fig. 11, Ent. Tidskr. 1893, n. sp.
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- E. frater*, W. Africa, LAMEERE, p. 46, Ann. Soc. ent. France, 1893; *E. fulvovestitus*, Comoro Is., FAIRMAIRE, p. 552, Ann. Soc. ent. Belgique, xxxvii: n. spp.
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- Euporus conradiellus*, Usambara, KOLBE, p. 252, Stettin Ent. Zeit. liv, n. sp.
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- Eurnyassa australis*, *figurata*, *servillei*, distinguished and described; AURIVILLIUS, Ent. Tidskr. 1893, pp. 154-159, figg. *E. australis*, Boisd., = (*Mall. figuratum*, Pasc.); GAHAN, p. 166, Tr. ent. Soc. London, 1893.
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- ✓ *Euseboides*, n. g., near *Nyctimene*, p. 385, for *E. plagiatus*, n. sp., Sikkim, p. 386; GAHAN, Ann. Nat. Hist. (6) xi.
- Eusyntheta brevicornis*, figured; WHITEHEAD, Kina Balu, pl. p. 184.
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- Exocentrus misellus*, Hué, LAMEERE, p. 285, Ann. Soc. ent. France, 1893, n. sp.
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- F. humeralis*, *vermiculata*, Usambara, KOLBE, Stettin Ent. Zeit. liv, n. spp.
- Gastrosarus urbanus*, *luteus*, p. 1283, *picticornis*, p. 1284, New Zealand, BROUN, Manual, n. spp.
- Gaurotes splendens*, Transbaikal, JAKOWLEFF, p. 444, Horæ Soc. ent. Ross. xxvii, n. sp.
- Geteuma*, Th., = (*Orica*, Pasc.), and *G.* (sub *Zygocera*) *albovirgulata*, Fairm., is the same as *G. quadridentata*, Coq.; FAIRMAIRE, p. 520, Ann. Soc. ent. Belgique, xxxvii.
- Glenea picta* = (*chalybea*, Ill.), *delia*, Pasc., = (*clytia*, Th.), *parthenope*, Th., ♀ = (*hygia*, Th.), *voluptuosa* = (*cybele*, Th.), *diana*, Th., = (*bimaculiceps*, Gah.); RITSEMA, p. 12, Notes Leyden Mus. xv.

- Glenea lineella*, W. Africa, KOLBE, p. 72, Stettin Ent. Zeit. liv ; *G. andrewesi, belli*, E. India, GAHAN, p. 388, Ann. Nat. Hist. (6) xi ; *G. affinis*, Borneo, p. 1, *celebensis*, Celebes, p. 3, *bisbiguttata*, p. 5, pl. i, fig. 1, *nivea*, pl. vi, fig. 2, *similis*, p. 8, fig. 3, N. Guinea, *hasselti*, p. 9, fig. 4, Sumatra, RITSEMA, Notes Leyden Mus. xv : n. spp.
- ⁴*Gnomodes*, n. g., near *Zorion*, for *G. piceus*, n. sp., New Zealand ; BROWN, p. 1282, Manual.
- Grammoptera viridipennis*, Corsica, PIC, p. 111, Feuille Natural. xxiii, n. sp.
- Hammaticherus plicatus*, metamorphoses ; XAMBEU, p. 148, Ann. Soc. Linn. Lyon, xl.
- Hebecerus crocogaster*, larva described ; FROGGATT, p. 35, P. Linn. Soc. N. S. Wales (2) viii.
- Hebesecis fasciculatus*, Australia, BLACKBURN, p. 197, Tr. R. Soc. S. Austral. xvi, n. sp.
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- Hybolasius castaneus*, p. 1297, *finitimus, albihirtus, gnarus*, p. 1298, *femoralis, thoracicus*, p. 1299, *rufescens*, p. 1300, *dubius*, p. 1389, New Zealand, BROWN, Manual ; *H. optatus*, New Zealand, BROWN, p. 389, Ann. Nat. Hist. (6) xii : n. spp.
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- Hypsioma difficilis*, Venezuela, LAMEERE, p. 278, Ann. Soc. ent. France, 1893, n. sp.
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- Kinabalua megalops*, figured ; WHITEHEAD, Kina Balu, pl., p. 184.
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- L. ciliciensis*, Taurus, p. 13, *hirsuta*, Hirsova, p. 18, *imitatrix*, Croatia, p. 24, *mæsiaca*, Servia, p. 27, *tonsa*, Araxes Valley, p. 31, *excisipes*, Taurus, p. 32, DANIEL, Col.-Studien, i ; *L. gaurotoides*, Utah, CASEY, p. 592, Ann. N. York Ac. vii : n. spp.

- Lepturges monoxenus*, Usambara, KOLBE, p. 284, Stettin Ent. Zeit. liv, n. sp.
- ° *Liodasys*, n. g., p. 278, *Apodasinarum*, for *L. maculatus*, n. sp., Usambara, p. 279 KOLBE, Stettin Ent. Zeit. liv.
- Litopus superbus*, W. Africa, LAMEERE, p. 41, Ann. Soc. ent. France, 1893, n. sp.
- Logisticus spinipennis*, p. 515, *pachydermus, nivosus*, p. 516, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- † *Lucasianus*, n. g., near *Pachydissus*, for *levaillanti*, Luc. ; PIC, Matériaux, Cah. i, p. 42.
- † *Ludwigia*, n. subg. of *Agapanthia* ; PIC, Matériaux, &c., Cah. i, p. 47.
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- † *Macroeme*, n. g. for a portion of *Sclerocerus*, AURIVILLIUS, p. 177, Ent. Tidskr. 1893.
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- M. foveolata*, Usambara, KOLBE, p. 245, Stettin Ent. Zeit. liv, n. sp.
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- Mastodera anticipes*, Madagascar, FAIRMAIRE, p. 513, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Mastododera testaceipes*, Madagascar, FAIRMAIRE, p. 514, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Mastodontodera rufosericans*, Comoro Is., FAIRMAIRE, p. 550, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Mecaspis whytei*, Central Africa, GAHAN, p. 742, P. Zool. Soc. London, 1893, n. sp.
- Mecometopus simoni*, Venezuela, LAMEERE, p. 274, Ann. Soc. ent. France, 1893, n. sp.
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- Mesosa curculionoides*, metamorphoses ; XAMBEU, p. 120, Ann. Soc. Linn. Lyon, xl.
- † *Micrambyx*, n. g., near *Pachydissus*, for *M. brevicornis*, n. sp., West Africa ; KOLBE, p. 60, Stettin Ent. Zeit. liv.
- Moecha mucorea*, Usambara ; KOLBE, p. 266, Stettin Ent. Zeit. liv.
- M. buttneri*, W. Africa, KOLBE, p. 67, Stettin Ent. Zeit. liv, n. sp.
- Mombasius gracilentus*, Usambara, KOLBE, p. 251, Stettin Ent. Zeit. liv, n. sp.
- Monohammus cribrosus*, W. Africa, LAMEERE, p. 45, Ann. Soc. ent. France, 1893, n. sp.

- ⁵*Monotylus*, n. g., near *Homelix*, for *M. klingi*, n. sp., W. Africa; KOLBE, p. 68, Stettin Ent. Zeit. liv.
⁵*Monozenus*, n. g., *Parmeninarum*, for *M. spinator*, n. sp., Usambara; KOLBE, Stettin Ent. Zeit. liv.
⁵*Myacopterus*, n. g., *Macronides*, p. 520, for *M. rufo-sericans*, n. sp., Madagascar; FAIRMAIRE, p. 520, Ann. Soc. ent. Belgique, xxxvii.
⁵*Mycerinicus*, n. g., *Niphoninarum*, for *M. punctiventris*, n. sp., W. Africa, and *Mycerinus dorcadioides*, Serv.; KOLBE, p. 71, Stettin Ent. Zeit. liv.
⁵*Mycerinodes*, n. g., p. 256, *Parmeninarum*, for *M. puerilis*, n. sp., Usambara, p. 257; KOLBE, Stettin Ent. Zeit. liv.
Mycerinus dorcadioides, Thoms., distinct from *M. dorcadioides*, Serv.; KOLBE, p. 71, Stettin Ent. Zeit. liv.
⁵*Myonoma*, n. g., p. 286, *Acanthocininarum*, for *M. glabrifrons*, p. 287, *acutipennis*, p. 288, n. spp., Usambara, including also *Nonyma guineensis*, Quedf.; KOLBE, Stettin Ent. Zeit. liv.
Navomorpha sticticum, New Zealand, BROUN, p. 1284, Manual, n. sp.
Neocerambyx chrysothrix = (*batesi*, Har.); LEWIS, p. 152, Entomologist, xxvi.
Neodorcadion quinquevittatum, p. 192, *sajanicum*, p. 193, Mongolia, HAMMARSTRÖM, Ofv. Finska Forh. xxxiv; *N. irroratum*, N. Mongolia, REITTER, p. 224, Wien. ent. Zeit. xii: n. spp.
Neoxantha immaculata, Shanghai, PIC, p. lxxxvii, Bull. Soc. ent. France, 1893, n. sp.
Niphona tibialis, S. India, GAHAN, p. 257, Ann. Nat. Hist. (6) xi, n. sp.
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N. similis, Central Africa, GAHAN, p. 744, P. Zool. Soc. London, 1893; *N. butneri*, p. 74, *comtessa*, *gracilentia*, p. 75, *nigripes*, *tibialis*, p. 76, *sanguinalis*, p. 77, W. Africa, KOLBE, Stettin Ent. Zeit. liv: n. spp.
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Nyphasia apicalis, India, GAHAN, Ann. Nat. Hist. (6) xi, p. 378, n. sp.
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O. atricilla, Choa, FAIRMAIRE, p. 43, Ann. Soc. ent. Belgique, xxxvii, n. sp.
Ophryops nigropictus, *testaceus*, p. 1278, *lentiginosus*, p. 1279, New Zealand, BROUN, Manual, n. spp.
Oxoplus coccineus, Utah, CASEY, p. 588, Ann. N. York Ac. vii, n. sp.
⁵*Oxyhammus*, n. g., *Monohamminarum* for *O. scutellaris*, n. sp., Usambara; KOLBE, Stettin Ent. Zeit. liv.
Pachydissus australasie, Hope, and *nubilus*, Pasc., noticed p. 169, *P. boops*, Blackb., = (*brevicornis*, Gah.), p. 170; GAHAN, Tr. ent. Soc. London, 1893. *P. sericus*, larva described; FROGGATT, p. 30, P. Linn. Soc. N. S. Wales (2) viii.

- P. Hector*, Usambara, KOLBE, p. 247, Stettin Ent. Zeit. liv; *P. probatus*, W. Australia, GAHAN, p. 167, Tr. ent. Soc. London, 1893: n. spp.
- Pachystola fallax*, W. Africa, LAMEERE, p. 46, Ann. Soc. ent. France, 1894, n. sp.
- Pachyteria batesi*, Borneo, RITSEMA, p. 14, Notes Leyden Mus. xv, n. sp.
- ⁴*Paragnia*, n. g., *Agniides*, p. 384, for *P. fulvomaculata*, n. sp., Sikkim, p. 385, pl. xix, fig. 5; GAHAN, Ann. Nat. Hist. (6) xi.
- Parandra conradti*, Usambara, KOLBE, p. 245, Stettin Ent. Zeit. liv, n. sp.
- ⁴*Paraphilus*, n. g., near *Vesperus* for *P. duplex*, n. sp., China; GAHAN, p. 255, Ann. Nat. Hist. (6) xi.
- ⁴*Paracorus*, n. g., p. 276, *Apodasinarum*, for *P. nitidulus, præcox*, p. 277, *piliger*, p. 278, n. spp., Usambara; KOLBE, Stettin Ent. Zeit. liv.
- Parmenonta parallela*, Venezuela, LAMEERE, p. 275, Ann. Soc. ent. France, 1893, n. sp.
- ⁴*Paroberea*, n. g., *Phytocinarum*, for *P. fuscipes, lepta*, n. spp., W. Africa; KOLBE, p. 79, Stettin Ent. Zeit. liv.
- P. apicalis*, Usambara, KOLBE, p. 289, Stettin Ent. Zeit. liv, n. sp.
- ⁴*Pedoclytus*, n. subg. of *Clytus*, for *P. conradti, saltator*, n. spp., Usambara; KOLBE, p. 254, Stettin Ent. Zeit. liv.
- ⁴*Penhammus*, n. g., *Monohammicarum*, for *P. pauper*, n. sp., Usambara; KOLBE, p. 259, Stettin Ent. Zeit. liv.
- Penthea*: sexual characters; GAHAN, p. 193, Tr. ent. Soc. London, 1893.
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- Phacodes personatum*, corrected synonymy; GAHAN, p. 170, Tr. ent. Soc. London, 1893.
- P. subfasciatus*, N. W. Australia, GAHAN, p. 170, Tr. ent. Soc. London, 1893, n. sp.
- ⁴*Phanis*, n. g., near *Crossotus*, for *P. armicollis*, n. sp., Choa; FAIRMAIRE, p. 42, Ann. Soc. ent. Belgique, xxxvii.
- Phantasia brachyceroides*, Usambara, KOLBE, p. 257, Stettin Ent. Zeit. liv, n. sp.
- Philagathes duchaussoyi*, Soudan, THÉRY, p. clxxvii, Bull. Soc. ent. France, 1893, n. sp.
- ⁴*Philomeces*, n. g., *Callichrominarum*, for *P. integricollis*, n. sp., Usambara; KOLBE, Stettin Ent. Zeit. liv.
- ⁴*Philomecyna*, n. g., *Apomecynarum*, for *P. pilosella*, p. 273, *ferruginea*, p. 274, n. spp., Usambara; KOLBE, Stettin Ent. Zeit. liv.
- Philus costatus*, Siam, GAHAN, Ann. Nat. Hist. (6) xi, p. 254, n. sp.
- Phlyctenodes fuscicollis*, Tasmania, GAHAN, p. 179, Tr. ent. Soc. London, 1893, n. sp.
- Phoracantha tricuspis*, larva described; FROGGATT, P. Linn. Soc. N. S. Wales (2), viii, p. 29.
- Phormesium pulchellum*, Venezuela, LAMEERE, p. 274, Ann. Soc. ent. France, 1893, n. sp.

- Phryneta conradti*, Usambara, KOLBE, p. 269, Stettin Ent. Zeit. liv ;
P. atricornis, Comoro Isles, FAIRMAIRE, p. 551, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- ↓ *Phrynetopsis*, n. g., p. 267, *Phrynetinarum*, for *P. trituberculata*, n. sp., Usambara, p. 268, and *Phryneta fortificata*, White ; KOLBE, Stettin Ent. Zeit. liv.
- P. fortificata*, n. var. *mystica* ; KOLBE, p. 268, Stettin Ent. Zeit. liv.
- Phrystola assimilis*, Usambara ; KOLBE, p. 267, Stettin Ent. Zeit. liv.
- ↓ *Phymatogyrus*, n. g., *Parmeninarum*, for *P. pumilis*, n. sp., Usambara ; KOLBE, p. 256, Stettin Ent. Zeit. liv.
- Phytœcia affinis*, metamorphoses ; XAMBEU, p. 128, Ann. Soc. Linn. Lyon, xl.
- Phytœcia gibbicollis*, Astrachan, REITTER, p. 114, Wien. ent. Zeit. xii ; *P. vaulozeri*, Algeria, PIC, p. 314, Rev. Ent. franc. xi : *P. (Coptosia) trilineata*, Syria, PIC, Ann. Soc. ent. France, 1892, p. 419 ; *P. mucida*, N. Persia, SEMENOW, p. 506, Horæ Soc. ent. Ross. xxvii : n. spp.
- Piesarthrius*: synonymy of the species ; GAHAN, p. 181, Tr. ent. Soc. London, 1893. *P. marginellus*, larva described ; FROGGATT, p. 34, P. Linn. Soc. N.S. Wales (2) viii.
- Piezocera gratiosa*, Venezuela, LAMÈRE, p. 273, Ann. Soc. ent. France, 1893, n. sp.
- Platyomopsis regularis*, N.W. Australia, GAHAN, Tr. ent. Soc. London, 1893, n. sp.
- Plocederus conradti*, Usambara, KOLBE, p. 247, Stettin Ent. Zeit. liv, n. sp.
- Pogonocerus thoracicus*, note on ; ROST, p. 341, Ent. Nachr. xix.
- Polyarthron* : note on synonymy of Egyptian species ; HEYDEN, Deutsche ent. Zeitschr. 1893, p. 70: characters of species ; PIC, pp. 106-109, Ann. Soc. ent. France, 1893.
- P. moissoni*, Algeria, PIC, Ann. Soc. ent. France, 1893, p. 107, n. sp.
- ↓ *Polytretus*, n. g., *Monohammides*, p. 382, for *P. cribripennis*, n. sp., Sikkim, p. 383 ; GAHAN, Ann. Nat. Hist. (6) xi.
- Praonetha scripta*, n. var. *dorsalis* ; KOLBE, p. 273, Stettin Ent. Zeit. liv.
- P. nigrosparsa*, p. 271, *variolosa*, *unifasciata*, p. 272, Usambara, KOLBE, Stettin Ent. Zeit. liv ; *P. plicata*, W. Africa, KOLBE, p. 70, t. c. : n. spp.
- Prosoplus*, Bl., = (*Micracantha*, *Prosacanthus*, *Aegomomus*, *Atyporis*), p. 191, *P. banksi*, synonym, p. 192 ; GAHAN, Tr. ent. Soc. London, 1893.
- Prosopocera plagiatrix*, Usambara, KOLBE, p. 264, Stettin Ent. Zeit. liv, n. sp.
- ↓ *Pseuderus*, n. g., *Parasteminarum*, p. 42, for *P. exul*, n. sp., W. Africa, p. 43 ; LAMÈRE, Ann. Soc. ent. France, 1893.
- ↓ *Pseudophilus*, n. g., *Hesperophanides*, for *P. testaceus*, n. sp., Euphrates Valley ; GAHAN, p. 256, Ann. Nat. Hist. (6) xi.
- ↓ *Pseudosemnus*, n. g., p. 1279, near *Leptachrous*, for *P. amabilis*, n. sp., New Zealand, p. 1280 ; BROUN, Manual.

- ¹ *Psilodasys*, n. g., *Apodasinarum*, for *P. clavipes*, n. sp., Usambara ; KOLBE, p. 279, Stettin Ent. Zeit. liv.
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Ptychodes abbreviatus, Arizona, CASEY, p. 593, Ann. N. York Ac. vii, n. sp.
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Rhopalizus letus, W. Africa, LAMEERE, p. 41, Ann. Soc. ent. France, 1893 ; *R. nigrans*, Choa, FAIRMAIRE, p. 40, Ann. Soc. ent. Belgique, xxxvii : n. spp.
Rhytiphora albospilota, Queensland, AURIVILLIUS, Ent. Tidskr. 1893, p. 168 ; *R. leucospila*, Queensland, GAHAN, p. 195, Tr. ent. Soc. 1893 : n. spp.
Romaleum procerum, *simplicolle*, distinctions ; AURIVILLIUS, p. 186, Ent. Tidskr. 1893.
Sagridola sulphurata, p. 509, *luctifera*, *plagiaticollis*, p. 510, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii, n. spp.
Saperda scalaris, oviposition, RUFERTSBERGER, p. 199, Wien. ent. Zeit. xii, n. sp.
¹ *Sarathropezus*, n. g., p. 261, *Ancylonotinarum*, for *S. conicipennis*, n. sp., Usambara, p. 262 ; KOLBE, Stettin Ent. Zeit. liv.
¹ *Scopanta*, n. g., near *Icariotes*, for *S. rufula*, n. sp., Madagascar ; FAIRMAIRE, p. 515, Ann. Soc. ent. Belgique, xxxvii.
Scotinauges diphysis, Pasc. = (*Machotypha fuliginosa*, Kolbe) ; LEWIS, p. 152, Entomologist, xxvi.
Sisyrium, notes on the characters of, on *S. stigmatosum*, *sparsum*, *ibionoides*, p. 176 ; GAHAN, Tr. ent. Soc. London, 1893.
S. ? plagiatum, Tasmania, GAHAN, Tr. ent. Soc. London, 1893, p. 177, n. sp.
Somatidia grandis, p. 1290, *spinicolle*, *costifer*, p. 1291, *variegata*, *simplex*, p. 1292, *signata*, p. 1293, *convexa*, p. 1498, *latula*, *lavior*, p. 1499, *tenebrica*, *albicoma*, p. 1500, *fuscata*, p. 1501, New Zealand, BROUN, Manual ; *S. proxima*, New Zealand, BROUN, Ann. Nat. Hist. (6) xii, p. 390 : n. spp.
Sophronica minuta, *fusca*, Usambara, KOLBE, p. 280, Stettin Ent. Zeit. liv, n. spp.
Soridus jejunus, Usambara, KOLBE, p. 282, Stettin Ent. Zeit. liv, n. sp.
Spalacopsis simoni, *fallax*, Venezuela, LAMEERE, p. 279, Ann. Soc. ent. France, 1893, n. spp.
¹ *Sphagoeme*, n. g., for *S. sahlbergi*, n. sp., Brazil ; AURIVILLIUS, p. 178, Ent. Tidskr. 1893.
¹ *Stenobrium*, n. g., p. 249, *Obrioninarum*, for *S. angusticeps*, n. sp., Usambara, p. 250 ; KOLBE, Stettin Ent. Zeit. liv.

- Stenocoptus*, n. g., p. 280, *Pericoptinarum*, for *S. brevicauda*, n. sp., Usambara, p. 281; KOLBE, Stettin Ent. Zeit. liv.
- Sternotomis ferreti* distinguished from *bohemanni*; KOLBE, p. 264, Stettin Ent. Zeit. liv.
- S. submaculata*, W. Africa, KOLBE, p. 65, Stettin Ent. Zeit. liv, n. sp.
- Sthenias bacillarius*, W. Africa, LAMEERE, p. 47, Ann. Soc. ent. France, 1893, n. sp.
- Strongylurus lumholtzi*, Queensland, AURIVILLIUS, p. 162, Ent. Tidskr. 1893, n. sp.
- Sybra pascoei*, Hué, LAMEERE, p. 285, Ann. Soc. ent. France, 1893, n. sp.
- Symphyletes*, ♂ characters; AURIVILLIUS, p. 167, Ent. Tidskr. 1893.
S. nigrovirens, *albobinctus*, *neglectus*, larvæ described; FROGGATT, pp. 32 & 33, P. Linn. Soc. N. S. Wales (2) viii.
- S. fraserensis*, Australia, BLACKBURN, p. 198, Tr. R. Soc. S. Austral. xvi, n. sp.
- Syllitus uniformis*, Australia, BLACKBURN, p. 197, Tr. R. Soc. S. Austral. xvi; *S. fulvipennis*, W. Australia, GAHAN, p. 184, Tr. ent. Soc. London, 1893: n. spp.
- ¹*Synhomelix*, n. g., for part of *Pachystola*, and including *S. lateralis*, n. sp., W. Africa; KOLBE, p. 69, Stettin Ent. Zeit. liv.
- ²*Synnupserha*, n. g., near *Nupserha*, for *S. vitticollis*, p. 73, *elongata*, p. 74, n. spp., W. Africa, and including *N. homeyeri*, Har.; KOLBE, p. 73, Stettin Ent. Zeit. liv.
- Synnupserha conradti*, Usambara, KOLBE, p. 288, Stettin Ent. Zeit. liv, n. sp.
- ³*Synobium*, n. g., p. 248, *Obrioninarum*, for *S. pilipes*, n. sp., Usambara, p. 249; KOLBE, Stettin Ent. Zeit. liv.
- Systates dollei*, p. 35, *apicipennis*, *pellucidus*, p. 36, *fuscicornis*, *pilosulus*, p. 37, *interstitialis*, *ruficornis*, p. 38, Choa, FAIRMAIRE, Ann. Soc. ent. France, xxxvii, n. spp.
- Temnopsis nigripes*, p. 179, fig. 7, *T. ? rufithorax*, p. 180, fig. 8, AURIVILLIUS, Ent. Tidskr. 1893, n. spp.
- Tethystola dispar*, Venezuela, LAMEERE, p. 276, Ann. Soc. ent. France, 1893, n. sp.
- Tetraglenes breviceps*, Usambara, KOLBE, p. 284, Stettin Ent. Zeit. liv; *T. bacillarius*, Hué, LAMEERE, p. 285, Ann. Soc. ent. France, 1893: n. spp.
- Tetrops præusta*, n. var. *algirica*; CHOBOUT, p. cclxxvi, Bull. Soc. ent. France, 1893.
- Thestus armatus*, Borneo, GAHAN, p. 381, Ann. Nat. Hist. (6) xi, n. sp.
- Theticus angulatus*, p. 270, *ecaudatus*, p. 271, Usambara; KOLBE, Stettin Ent. Zeit. liv, n. spp.
- Thylactus nubilus*, W. Africa, KOLBE, p. 70, Stettin Ent. Zeit. liv, n. sp.
- ⁴*Togonius*, n. g., near *Ancylonotus*, for *T. klingi*, n. sp., W. Africa; KOLBE, p. 64, Stettin Ent. Zeit. liv.
- ⁵*Tomolamia*, n. g., near *Styxis*, for *T. irrorata*, n. sp., W. Africa; LAMEERE, p. 44, Ann. Soc. ent. France, 1893.

- Toxitiades*, n. n. for *Toxotinus* (*infra*) ; FAIRMAIRE, p. 586, Ann. Soc. ent. Belgique, xxxvii.
- Toxotinus*, n. g., near *Toxotus*, p. 511, for *T. vinosus*, *russus*, p. 512, *subustus*, p. 513, n. spp., Madagascar ; FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii.
- Trachytus*, n. g., p. 63, near *Ancylonotus*, for *T. denticulatus*, n. sp., W. Africa, p. 64 ; KOLBE, Stettin Ent. Zeit. liv.
- T. pygmaeus*, Usambara, KOLBE, p. 263, Stettin Ent. Zeit. liv, n. sp.
- Tragidion auripenne*, Arizona, CASEY, p. 587, Ann. N. York Ac. vii, n. sp.
- Tragocephala* (sub *Rhaphidopsis*) *vittatus*, Fahr., = (*sulphurata*, Dist.) ; AURIVILLIUS, p. 130, Ent. Tidskr. 1893.
- T. fuscovelutina*, Oubanghi, FAIRMAIRE, p. 145, Ann. Soc. ent. France, 1893 ; *T. fasciata*, W. Africa, KOLBE, p. 66, Stettin Ent. Zeit. liv ; *T. alluaudi*, Seychelles, LAMEERE, p. cvi, Bull. Soc. ent. France, 1893 ; *T. nigropicta*, Comoro Is., FAIRMAIRE, p. 551, Ann. Soc. ent. Belgique, xxxvii ; *T. freyi*, Nossibé, BRANCSIK, p. 242, Jahresh. Ver. Trencsen. xv : n. spp.
- Tricholamia granulifera*, Usambara, KOLBE, p. 259, Stettin Ent. Zeit. liv, n. sp.
- Uracanthus triangularis*, larva described ; FROGGATT, p. 29, P. Linn. Soc. N.S. Wales (2) viii.
- Vadonia unipunctata*, metamorphoses ; XAMBEU, p. 142, Ann. Soc. Linn. Lyon, xl.
- Vesperus xatarti*, metamorphoses ; XAMBEU, p. 135, Ann. Soc. Linn. Lyon, xl.
- Volumnia vittata*, *proxima*, W. Africa, LAMEERE, p. 49, Ann. Soc. ent. France, 1893, n. spp.
- Xuthodes lepidus*, New Zealand, BROUN, p. 1280, Manual, n. sp.
- Xylotoles gaudens*, p. 1288, *phormiobius*, pp. 1388 & 1497, *prolongatus*, p. 1389, New Zealand, BROUN, Manual, n. spp.
- Xylotrechus nauticus*, metamorphoses ; XAMBEU, p. 150, Ann. Soc. Linn. Lyon, xl.
- X. deletus*, Indo-China, LAMEERE, p. 282, Ann. Soc. ent. France, 1893 ; *X. reginae*, Queensland, AURIVILLIUS, p. 163, Ent. Tidskr. 1893 ; *X. gemellus*, Indiana, CASEY, p. 590, Ann. N. York Ac. vii : n. spp.
- Xystrocera devittata*, Usambara, KOLBE, p. 246, Stettin Ent. Zeit. liv, n. sp.
- Zonopterus magnificus*, figured ; WHITEHEAD, Kina Balu, pl., p. 184.
- Zorion castum*, New Zealand, BROUN, p. 1281, Manual, n. sp.
- Zulphis*, n. g., near *Phelocalocera*, for *Z. subfasciata*, n. sp., Madagascar ; FAIRMAIRE, p. 518, Ann. Soc. ent. Belgique, xxxvii.

CHRYSOMELIDÆ.

- [*Cf.* BALBI (35), BLACKBURN (69, 70), BRANCSIK (102), BROUN (112, 113), CHAMPION (390), FAIRMAIRE (275, 277, 278, 283, 294), FAUVEL (306), FROGGATT (347), GAHAN (356), HORN (460), JACOBSON (478,

- 480, 481), JACOBY (482-488), LEFÈVRE (576, 577), MOFFARTS (640), REITTER (764), SCHAUFUSS (842), WEISE (1038, 1041, 1044), XAMBEU (1067).]
- Distinction of *Chrysomelidæ* from *Cerambycidæ*; JACOBSON, p. 91, Horæ Soc. ent. Ross. xxvii.
- Monograph of the *Galerucini* of North America; HORN, Tr. Amer. ent. Soc. xx, pp. 57-136.
- The *Chrysomelidæ* of Belgium tabulated; MOFFARTS, pp. 179-229, Ann. Soc. ent. Belgique, xxxvii.
- Abirus denticollis*, p. 127, *granosus*, p. 128, Tonkin, LEFÈVRE, Ann. Soc. ent. France, 1893, n. spp.
- Acrocrypta assamensis*, Assam, JACOBY, p. 151, Tr. ent. Soc. London, 1893, n. sp.
- Adoxus obscurus*, food-habits; RUPPERTSBERGER, Wien. ent. Zeit. xii, p. 215.
- Ætheomorpha pectoralis*, Tonkin, LEFÈVRE, p. 114, Ann. Soc. ent. France, 1893, n. sp.
- Allastena*, n. g., near *Luperus* for *A. nitida*, p. 1318, *quadrata*, p. 1319, n. spp., New Zealand; BROUN, Manual.
- Allocharis morosa*, *limbata*, p. 1307, New Zealand; BROUN, Manual, n. spp.
- Aphilon præstans*, p. 1309, *convexum*, *latulum*, p. 1310, *scutellare*, p. 1501, New Zealand, BROUN, Manual; *A. laticollis*, New Zealand, BROUN, p. 392, Ann. Nat. Hist. (6) xii : n. spp.
- Anomus curtipes*, *marginalis*, New Zealand, BROUN, Manual, p. 1390, n. spp.
- Aulexis languiei*, Tonkin, LEFÈVRE, p. 121, Ann. Soc. ent. France, 1893, n. sp.
- Batonota aurita*, pl. viii, fig. 2, *nodosa*, fig. 4, *insidiosa*, fig. 5, *sexplagiata*, fig. 6, *rufo-ornata*, fig. 7, *godmani*, fig. 9, figured, Biol. Centr.-Amer. Col. vi, Pt. 2.
- B. yucatanæ*, p. 162, pl. viii, fig. 3, *biplagiata*, Panama, fig. 10, p. 164, CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2, n. spp.
- Blepharida holubi*, S. Africa, *duvivieri*, Gorontalo, JACOBY, p. 148, Tr. ent. Soc. London, 1893, n. spp.
- Blepharoides*, n. g., near *Podontia*, p. 148, for *B. flavitarsis*, n. sp., Sumatra, p. 149, JACOBY, Tr. ent. Soc. London, 1893.
- Cacomolpus pullatus*, *maculatus*, New Zealand, BROUN, p. 1309, Manual, n. spp.
- Cacoscelis opacipennis*, Amazons, JACOBY, p. 155, Tr. ent. Soc. London, 1893, n. sp.
- Calaspidea columbina*, figured, pl. v, fig. 21, Biol. Centr.-Amer. Col. vi, Pt. 2.
- Calomela bartoni*, larva described; FROGGATT, p. 39, P. Linn. Soc. N. S. Wales (2) viii.
- C. satelles*, p. 200, *imperialis*, p. 201, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvi, n. spp.

- Calyptocephala brevicornis*, pl. v, fig. 7, *marginipennis*, fig. 8, figured ; CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2.
- C. discoidea*, Panama, CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2, p. 129, pl. v, fig. 9, n. sp.
- ^v*Cardax*, n. g., near *Mniophila*, for *C. stussineri*, n. sp., Istria ; WEISE, p. 1138, *Ins. Deutschlands*, vi.
- Cassida hexastigma*, metamorphoses ; XAMBEU, p. 173, *Ann. Soc. Linn. Lyon*, xl. *C. nebulosa*, destruction by parasites ; RUPERTSBERGER, p. 291, *Wien. ent. Zeit.* xii.
- C. inconstans*, Somaliland, FAIRMAIRE, p. 156, *Ann. Soc. ent. France*, xxxvii ; *C. choana*, Africa ; FAIRMAIRE, p. 49, *Ann. Soc. ent. Belgique*, xxxvii : n. spp.
- ¹*Ohalenusoma*, n. g., near *Ohalenus* for *C. metallicum*, n. sp., India ; JACOBY, p. 157, *Tr. ent. Soc. London*, 1893.
- Chalcolampra eremita*, Australia, BLACKBURN, p. 200, *Tr. R. Soc. S. Austral.* xvi, n. sp.
- Chalcophana divisa*, *suturalis*, p. 274, *multipunctata*, p. 275, Bolivia, JACOBY, *Ann. Soc. ent. Belgique*, xxxvii, n. spp.
- Cheiloxena frenchea*, Victoria, BLACKBURN, p. 138, *Tr. R. Soc. S. Austral.* xvii, n. sp.
- Chelymorpha höpfneri*, pl. vi, fig. 19, *pubescens*, fig. 20, *gressoria*, fig. 21, *sericea*, fig. 22, *comata*, figg. 23-25, *rufipennis*, pl. vii, fig. 1, *alternans*, fig. 2, *catenulata*, figg. v-vii, *juvenca*, fig. 8, *mexicana*, fig. 9, *biannularis*, figg. 10 & 11, *14-punctata*, figg. 12-14, *13-maculata*, fig. 15, *12-signata*, fig. 16, *guttifera*, fig. 17, *decemstillata*, fig. 19, figured ; CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2.
- C. vittata*, pl. vii, fig. 3, p. 152, *rugicollis*, fig. 4, p. 153, *mexicana*, fig. 9, p. 155, *flavomaculata*, fig. 18, p. 157, *epilachnoides*, fig. 20, p. 158, *obliterata*, fig. 21, p. 159, Central America, CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2, n. spp.
- Chrysochus pretiosus*, metamorphoses ; XAMBEU, p. 164, *Ann. Soc. Linn. Lyon*, xl.
- Chrysolampra festiva*, Cochin China, LEFÈVRE, p. 116, *Ann. Soc. ent. France*, 1893, n. sp.
- Chrysomela guttata*, Gebl., = (*subænea*, *gemmafera*, *guttigera*, *nigrogemmata*, Motsch.), *angusticollis*, and *aurichalcea*, distinguished ; JACOBSON, pp. 125 & 126, *Horæ Soc. ent. Ross.* xxvii. *C. exclamatoris*, larva described ; TOWNSEND, p. 168, *Canad. Ent.* xxv. *C. saccharum*, full description ; JACOBSON, p. 243, *Horæ Soc. ent. Ross.* xxvii.
- C. micans*, China, *indica*, p. 105, *semifulva*, *balyi*, p. 106, India, JACOBY, *Entomologist*, xxvi, Supp. ; *C. australica*, Fraser Range, BLACKBURN, p. 199, *Tr. R. Soc. S. Austral.* xvi : n. spp.
- ^v*Cistudinella*, n. g., p. 164, for *C. foveolata*, n. sp., Panama, p. 165, pl. viii, fig. 8, and including *Chelymorpha*, *punctipennis*, *apiata*, *obducta*, Boh. ; CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2.
- Cleoporus harmandi*, Cochin China, LEFÈVRE, p. 129, *Ann. Soc. ent. France*, 1893, n. sp.

- Clytra davidis*, Yunnan, LEFÈVRE, p. 113, Ann. Soc. ent. France, 1893, n. sp.
- ⁴*Colaspina*, n. g. for part of *Colaspidea*; WEISE, p. 1121, Ins. Deutschlands, vi.
- ⁴*Colaspinella*, n. g. for part of *Colaspidea*; WEISE, p. 1121, Ins. Deutschlands, vi.
- Colaspoides rugipennis*, Mekong, *spinigera*, Saïgon, p. 133, *diffinis*, Tonkin, p. 134, LEFÈVRE, Ann. Soc. ent. France, 1893, n. spp.
- Colasposoma angulicolle*, Cochin China, LEFÈVRE, p. 127, Ann. Soc. ent. France, 1893; *C. lucubense*, Nossibé, BRANCSIK, p. 244, Jahresh. Ver. Trencsen, xv : n. spp.
- Coptocephala gebleri*, = (*unifasciata*); JACOBSON, p. 125, Horæ Soc. ent. Ross. xxvii.
- Coptocyclus thais*, = (*crucifera*, Kr.); LEWIS, p. 153, Entomologist, xxvi.
- Corynodes zombæ*, Centr. Africa, GAHAN, p. 745, P. Zool. Soc. London, 1893; *C. florentini*, *tonkinens*, p. 130, Tonkin, *massiei*, Cambodia, p. 131, *languet*, Tonkin, p. 132, LEFÈVRE, Ann. Soc. ent. France, 1893 : n. spp.
- Cosmogramma angustofasciata*, Bolivia, JACOBY, p. 278, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Crimissa opaca*, *piceicollis*, Brazil, JACOBY, p. 145, Tr. ent. Soc. London, 1893, n. spp.
- Crioceris nigropunctata*, Lac., = (*Lema laticollis*, Jac.); JACOBY, p. 271, Ann. Soc. ent. Belgique, xxxvii. *C. oschanini*, = (*koltzei*, Weise); REITTER, p. 302, Wien. ent. Zeit. xii.
- C. laticollis*, Mongolia, REITTER, Wien. ent. Zeit. xii; *C. wagneri*, Siberia, JACOBSON, p. 122, Horæ Soc. ent. Ross. xxvii; *C. philippinensis*, Philippines, p. 268, *obscuro-plagiata*, Queensland, p. 269, *papuana*, New Guinea, *severini*, Sumatra, p. 270, JACOBY, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Cryptocephalus chrysocephalus*, de G., = (*punctiger*, Payk.), *exoletus*, de G., = (*minutus*, Fab.); GRILL, p. 254, Ent. Tidskr. 1893. *C. iridiventris*, Chap., = (*chapuisi*, Baly); BLACKBURN, p. 140, Tr. R. Soc. S. Austral. xvii.
- Damia tonkinensis*, Tonkin, LEFÈVRE, p. 114, Ann. Soc. ent. France, 1893, n. sp.
- Delocrania panamensis*, Bugaba, p. 125, pl. v, fig. 1, *latipennis*, Ecuador, p. 126, CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2, n. spp.
- Demothispa angusticollis*, Ecuador, WEISE, Deutsche ent. Zeitschr. 1893, p. 16, n. sp.
- Deuterocampta inornata*, Bolivia, JACOBY, p. 278, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Diabrotica picticornis*, p. 91, *filicornis*, p. 94, N. America, HORN, Tr. Amer. ent. Soc. xx; *D. gahani*, Bolivia, JACOBY, p. 281, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Diacantha distincta*, Central Africa, p. 746, *mutica*, Natal, p. 747, GAHAN, P. Zool. Soc. London, 1893, n. spp.

- Diamphidia locusta*, W. Africa, FAIRMAIRE, Bull. Soc. ent. France, 1893, n. sp.
- Dibolia russica*, Sarepta, p. 1029, *carpathica*, Hermannstadt, p. 1030, *orientalis*, Turkey, p. 1033, WEISE, Ins. Deutschlands, vi, n. spp.
- Dolichotoma bisbiplagiata*, fig. 16, *distincta*, fig. 17, *conspersipennis*, fig. 18, *salvini*, figg. 19 & 20, figured, pl. v, Biol. Centr.-Amer. Col. vi, Pt. 2.
- Donacia dentipes*, metamorphoses; XAMBEU, p. 152, Ann. Soc. Linn. Lyon, xl.
- D. frontalis*, China, *recticollis*, India, JACOBY, p. 261, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Doryphora biannulata*, p. 276, *purpureo-fusciata*, *boliviana*, p. 277, Bolivia, JACOBY, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Entomoscelis erythrocnema*, West Turkestan, JACOBSON, p. 241, Horæ Soc. ent. Ross. xxvii; *E. nossibiana*, Madagascar, BRANCSIK, p. 245, Jahresh. Ver. Trencsen, xv : n. spp.
- Eucolaspis ochracea*, *colorata*, p. 1303, *montana*, p. 1304, New Zealand, BROWN, Manual; *E. vittiger*, *picticornis*, New Zealand, BROWN, p. 391, Ann. Nat. Hist. (6) xii : n. spp.
- Euphitrea foveicollis*, India, JACOBY, p. 150, Tr. ent. Soc. London, 1893, n. sp.
- Eurydemus amabilis*, Nossibé, BRANCSIK, p. 245, Jahresh. Ver. Trencsen, xv, n. sp.
- ¹*Gabonia*, n. g., *Arsipodinae*, for *G. unicastata*, n. sp., W. Africa, JACOBY, Entomologist, xxvi, Supp., p. 101.
- Galeruca canigoensis*, Pyrenees, FAUVEL, p. 315, Rev. Ent. franc. xi, n. sp.
- Gynandrophthalma apicalis*, Tonkin, LEFÈVRE, p. 114, Ann. Soc. ent. France, 1893, n. sp.
- Habrophora montana*, Bolivia, JACOBY, p. 273, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹*Halticidea*, n. g., *Galerucini*, p. 61, for *H. placida*, *modesta*, p. 62, *delata*, p. 63, n. spp., N. America; HORN, Tr. Amer. ent. Soc. xx.
- Hatita choensis*, Africa, FAIRMAIRE, p. 46, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Heteraspis gloriosa*, *lameyi*, p. 123, *bidens*, *cephalotes*, p. 124, Tonkin, *mandarina*, Cochinchina, p. 125, LEFÈVRE, Ann. Soc. ent. France, 1893, n. spp.
- Himatidium impurum*, figured, pl. v, figg. 2-4, variation noticed, p. 127, *rufo-marginatum*, fig. 5, *rufiventre*, fig. 6, figured; CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2.
- Hippuriphila simplicipes*, Styria, WEISE, p. 1133, Ins. Deutschlands, vi, n. sp.
- Hispa angulosa*, Solsky, = (*japonica*, Baly); LEWIS, p. 153, Entomologist, xxvi.
- H. minuta*, Italy, BALBI, p. 195, Boll. Soc. Rom. Zool. i; *H. lividipes*, Comoro Isles, FAIRMAIRE, p. 554, Ann. Soc. ent. Belgique, xxxvii : n. spp.

- Hyperacantha verticalis*, Choa, FAIRMAIRE, p. 45, Ann. Soc. ent. Belgique, xxxvii; *H. flavodorsata*, p. 145, *pectoralis*, p. 146, Oubanghi, FAIRMAIRE, Ann. Soc. ent. France, 1893 : n. spp.
- Hyperacis harmandi*, Mekong, LEFÈVRE, p. 122, Ann. Soc. ent. France, 1893, n. sp.
- Hyphasis unifasciata*, Perak, JACOBY, p. 152, Tr. ent. Soc. London, 1893, n. sp.
- Inopelonia*, n. g., near *Trachytetra* for *Phyllotreta testacea, fuliginosa*; BROUN, p. 1392, Manual.
- Ischyromus*, n. g., for *Pseudocoluspis sarwadensis*, Solsky, JACOBSON, p. 241, Horæ Soc. ent. Ross. xxvii.
- Labidostomis glasunowi*, West Turkestan, JACOBSON, p. 238, Horæ Soc. ent. Ross. xxvii, n. sp.
- Lactica marginicollis*, p. 99, *gabonensis*, p. 100, W. Africa, JACOBY, Entomologist, xxvi, Supp.; *L. thoracica*, Bolivia, JACOBY, p. 279, Ann. Soc. ent. Belgique, xxxvii; *L. amazonica*, Upper Amazons, p. 150, *rotundicollis*, Gaboon, p. 151, JACOBY, Tr. ent. Soc. London, 1893 : n. spp.
- Lema crioceroides*, n. n. for *robusta*, Jac. nec. Lac.; JACOBY, p. 271, Ann. Soc. ent. Belgique, xxxvii. *L. melanopus*, metamorphoses; KAROLY, Termes. Kozl. Magyar Tars. xxv, pp. 1-13. *L. hoffmannseggi*, metamorphoses; XAMBEU, p. 155, Ann. Soc. Linn. Lyon, xl.
- L. nossibiana*, Madagascar, BRANCSIK, p. 243, Jahresh. Ver. Trencsen, xv; *L. africana*, p. 262, *atrofasciata*, p. 263, *turgida*, W. Africa, *transvalensis*, S. Africa, p. 264, *lateralis*, India, *glabricollis*, Cambodia, p. 265, *multimaculata*, Hong Kong, p. 266, *severini*, Australia, *semperi*, Philippines, p. 267, *staudingeri*, New Guinea, p. 268, JACOBY, Ann. Soc. ent. Belgique, xxxvii; *L. semiflava*, Bolivia, JACOBY, p. 272, t. c. : n. spp.
- Lindinia*, n. g., *Metachromites*, p. cclxvi, for *L. reflexo-ænea, tibialis, picitursis, fulva, fusco-nigra*, p. cclxvii, *corrugata*, p. cclxviii, n. spp., Philippines; LEFÈVRE, Bull. Soc. ent. France, 1893.
- Liniscus fasciolatus*, Somaliland, FAIRMAIRE, p. 155, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Liprus flavilabris*, Java, JACOBY, p. 154, Tr. ent. Soc. London, 1893, n. sp.
- Longitarsus brevicollis*, p. 993, Germany, *violentus*, Caucasus, p. 1016, WEISE, Ins. Deutschlands, vi; *L. tmetopterus*, West Turkestan, JACOBSON, p. 246, Horæ Soc. ent. Ross. xxvii : n. spp.
- Luperaltica*, characters and position discussed; HORN, p. 134, Tr. Amer. ent. Soc. xx.
- Luperodes* and *Luperus*, distinctions of; HORN, pp. 107-109, Tr. Amer. ent. Soc. xx.
- L. atriceps*, p. 112, *texanus, transitus*, p. 113, *laticeps, wickhami*, p. 114, *spretus*, p. 117, N. America, HORN, Tr. Amer. ent. Soc. xx; *L. bolivianus*, Bolivia, JACOBY, p. 281, Ann. Soc. ent. Belgique, xxxvii : n. spp.

- Luperus oleareæ*, p. 1312, *rugicollis*, *brevicollis*, *sulcifer*, p. 1313, *rectipes*, *calcaratus*, *princeps*, p. 1314, *monticola*, *fuscatus*, p. 1315, *sordidus*, *truncatus*, p. 1316, *mollis*, p. 1502, New Zealand, BROWN, Manual, n. spp.
- Malacosoma vittipenne*, Texas, HORN, p. 123, Tr. Amer. ent. Soc. xx, n. sp.
- Manobia dohertyi*, p. 152, *castanea*, p. 153, Perak, JACOBY, Tr. ent. Soc. London, 1893, n. spp.
- Massiea*, n. g., *Endocephalites*, p. 132, for *M. cyanipennis*, n. sp., Cambodia, p. 133, LEFÈVRE, Ann. Soc. ent. France, 1893.
- Megalopus nigrovittatus*, Bolivia, JACOBY, p. 272, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Menius subcostatus*, p. 97, *flavitarisus*, *M. ? splendidus*, p. 98, W. Africa, JACOBY, Entomologist, xxvi, Supp., n. spp.
- Mesomphalia punicea*, with varr., figg. 23-26, *illustris*, fig. 22, *tristigma*, figg. 27 & 28, *lebasii*, pl. vi, fig. 1, *primaria*, figg. 2 & 3, *salvini*, figg. 7 & 8, *pictilis*, figg. 9-11, figured, variations described, pp. 137-144; CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2.
- M. costaricensis*, pl. vi, fig. 4, *xanthospila*, fig. 5, p. 140, *quadriguttata*, pl. vi, fig. 6, p. 141, *isthmica*, figg. 12-14, p. 143, *æneovittata*, fig. 15, p. 144, *quadrivittata*, fig. 16, p. 145, *nigrolineata*, fig. 17, *interrupta*, fig. 18, p. 146, CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2.
- Microdonacia*, n. g., near *Donacia*, for *M. incerta*, n. sp., Victoria, BLACKBURN, Tr. R. Soc. S. Austral. xvii.
- Momæa rugipennis*, Celebes, JACOBY, p. 108, Entomologist, xxvi, Supp., n. sp.
- Monolepta cavidorsis*, Choa, FAIRMAIRE, Ann. Soc. ent. France, xxxvii; *M. atomaria*, Oubanghi, FAIRMAIRE, p. 146, t. c. : n. spp.
- Nerissus gabonensis*, W. Africa, JACOBY, Entomologist, xxvi, Supp., p. 99, n. sp.
- Nodostoma limbatum*, p. 116, *nigriventre*, *harmandi*, Cochin China, p. 117, *bicolor*, p. 118, *lameyi*, *menalopus* (sic), p. 119, *cyanipenne*, Tonkin, *speciosum*, Cochin China, p. 120, LEFÈVRE, Ann. Soc. ent. France, 1893, n. spp.
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- Omaspides bistriata*, figured, pl. viii, fig. 1, Biol. Centr.-Amer. Col. vi, Pt. 2.
- Omplata tersa*, pl. vii, fig. 24, *quadrivittata*, fig. 25, figured, Biol. Centr.-Amer.-Col. vi, Pt. 2.
- Oomorphyus floridanus*, N. America, HORN, p. 133, Tr. Amer. ent. Soc. xx, n. sp.
- Otillea seminigra*, Bolivia, JACOBY, p. 276, Ann. Soc. ent. Belgique, xxxvii, n. sp.

- Pachybrachys eruditus* = (*donitzi*, Har.); LEWIS, p. 153, Entomologist, xxvi.
- Paropsides*: variation of species; JACOBSON, p. 123, Horæ Soc. ent. Ross. xxvii.
- Paropsis variolosa*, p. 38, *reticulata*, p. 39, larva described; FROGGATT, P. Linn. Soc. N.S. Wales (2) viii.
- P. lateralis*, p. 201, *squiresensis*, p. 202, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xvi, n. spp.
- Pheloticus rufus*, p. 244, *affinis*, p. 245, Nossibé, BRANCSIK, Jahresh. Ver. Trencsen. xv, n. spp.
- Phyllecthrus parallelus, subsulcatus*, Texas, HORN, Tr. Amer. ent. Soc. xx, n. spp.
- Phyllobrotica jacobyi*, Madagascar, SCHAUFUSS, p. 623, Nunquam ot. iii; *P. costipennis*, p. 99, *vittata*, p. 100, *nigripes*, p. 102, N. America, HORN, Tr. Amer. ent. Soc. xx : n. spp.
- Phyllotreta graminicola, littoralis*, p. 1391, *vittigeru*, p. 1392, New Zealand, BROUN, Manual, n. spp.
- Physoma haroldi*, W. Africa, JACOBY, Entomologist, xxvi, Supp. p. 100, n. sp.
- Phytodecta sibirica*, Siberia, WEISE, p. 1128, Ins. Deutschlands, vi, n. sp.
- Phytorus tonkineensis*, Tonkin, LEFÈVRE, p. 128, Ann. Soc. ent. France, 1893, n. sp.
- Plagiodera quadriplagiata*, Bolivia, JACOBY, p. 279, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Porphyraspis flexuosa*, Panama, pl. v, fig. 11, p. 130, *marginata*, Panama, fig. 12, p. 131, CHAMPION, Biol. Centr.-Amer. Col. vi, Pt. 2, n. spp.
- Praonetha biangulata, distigma*, Comoro Is., FAIRMAIRE, p. 553, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Prionispa pulchella*, figured; WHITEHEAD, Kina Balu, pl., p. 184.
- Proseicla tarsalis*, Kirsch, note on; JACOBY, p. 146, Tr. ent. Soc. London, 1893.
- ⁵ *Pseudeumolpus*, n. g., p. 275, between *Eumolpidæ* and *Galerucidæ*, for *P. dimidiatus*, n. sp., Gaboon, p. 276; JACOBY, Ent. Mag. xxix.
- Pseudocolaspis tuberculicollis*, W. Africa, JACOBY, Entomologist, xxvi, Supp. p. 99, n. sp.
- Pseudocophora inornata*, Perak, JACOBY, p. 107, Entomologist, xxvi, Supp., n. sp.
- ⁴ *Pseudorupilia*, n. g., *Galerucides*, for *Cryptocephalus ruficollis*, Fab.; JACOBY, Entomologist, xxvi, Supp., p. 103.
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- Sagra johnstoni*, Centr. Africa, GAHAN, p. 745, P. Zool. Soc. London, 1893, n. sp.
- Scelolyperus flaviceps*, p. 103, *loripes*, p. 104, *schwarzii*, p. 105, *decipiens*, p. 106, N. America, HORN, Tr. Amer. ent. Soc. xx, n. spp.

- Schematiza apicicornis*, Bolivia, JACOBY, p. 280, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Sebaethe marginipennis*, Sumatra, JACOBY, p. 156, Tr. ent. Soc. London, 1893, n. sp.
- Selenis sparsa*, figured, pl. vii, figg. 22 & 23, Biol. Centr.-Amer. Col. vi, Pt. 2.
- Spharoderma bimaculata*, Sumatra, JACOBY, p. 155, Tr. ent. Soc. London, 1893, n. sp.
- Stenoplatys robustus*, All., referred to *Cceligethes*; JACOBY, Entomologist, xxvi, Supp., p. 102.
- Syneta hamata*, N. America, HORN, p. 133, Tr. Amer. ent. Soc. xx, n. sp.
- Tauroma casta*, fig. 13, = (*cæruleopunctata*) fig. 14, *azureicornis*, fig. 15, figured, pl. v, Biol. Centr.-Amer. Col. vi, Pt. 2.
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- Trachyscelida*, n. g., near *Luperus*, for *Agelastica bicolor*, Lec.; HORN, p. 107, Tr. Amer. ent. Soc. xx.
- Triarius trivittatus*, Arizona, HORN, p. 88, Tr. Amer. ent. Soc. xx, n. sp.
- Trirhabda geminata*, p. 68, *caduca*, p. 69, *diducta*, p. 70, N. America, HORN, Tr. Amer. ent. Soc. xx, n. spp.
- Xenidea fulvicollis*, p. 156, *balyi*, p. 157, New Guinea, JACOBY, Tr. ent. Soc. London, 1893, n. spp.
- Xenoda basalis*, Sumatra, JACOBY, Entomologist, xxvi, Supp., p. 107, n. sp.
- Yulenia flavofusciata*, Batchian, JACOBY, p. 108, Entomologist, xxvi, Supp., n. spp.

EROPYLIDÆ.

- [Cf. BRANCSIK (102), BROUN (112), FOWLER (330), FROGGATT (347), RITSEMA (804, 805), XAMBEU (1067).]
- Crotchia minuta* referred to *Loberus*; GROUVELLE, p. 381, Ann. Soc. ent. France, 1893.
- Cryptodacne pubescens*, New Zealand, BROUN, p. 1319, Manual, n. sp.
- Doubledaya severini*, Bengal, FOWLER, p. 74, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Episcaphula pictipennis*, larva described; FROGGATT, p. 40, P. Linn. Soc. N. S. Wales, (2) viii.
- Helota*: list of recently described species; RITSEMA, p. 160, Notes Leyden Mus. xv. *H. gemmata*, Gorb., = (*fulviventris*, Kolbe); LEWIS, p. 150, Entomologist, xxvi. *H. fulviventris* and *gemma* distinct characters; RITSEMA, Entomologist, xxvi, p. 183.
- H. pasteuri*, Java, RITSEMA, p. 111, Notes Leyden Mus. xv; *H. desgodinsi*, p. 131, *pustulata*, p. 133, *guttata*, p. 134, *tibialis*, p. 136, *severini*, p. 138, North India, RITSEMA, Notes Leyden Mus. xv: n. spp.

- Languria vulgaris*, Har., = (*vandepolli*, Fowler); BLACKBURN, p. 140, Tr. R. Soc. S. Austral. xvii. *L. lewisii*, = (*geniculata*, Har.); LEWIS, p. 153, Entomologist, xxvi.
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Pentelanguria elateroides, redescribed; FOWLER, p. 75, Ann. Soc. ent. Belgique, xxxvii.
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T. fasciata, Nossibé, BRANCSIK, p. 246, Jahresh. Ver. Trencsen. xv, n. sp.

ENDOMYCHIDÆ.

- Aphorista morosa*, pupa; WICKHAM, p. 342, Bull. Lab. Iowa, ii.
Cenomychus, n. n. for *Cyanauges*, Gorh.; LEWIS, p. 153, Entomologist, xxvi.

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- [Cf. BROUN (112), FAIRMAIRE (277, 283), THOMPSON (969), WEISE (1040, 1045).]
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Alexia basicollis, Comoro Isles, FAIRMAIRE, p. 555, Ann. Soc. ent. Belgique, xxxvii, n. sp.
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Chilomenes posticalis, Choa, FAIRMAIRE, p. 49, Ann. Soc. ent. Belgique, xxxvii, n. sp.
Coccinella coriacea, New Zealand, BROUN, p. 1319, Manual, n. sp.
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Holopsis pictulus, *rotundatus*, New Zealand, BROUN, p. 1503, Manual, n. spp.
Micaria personata, Columbia, WEISE, p. 94, Deutsche ent. Zeitschr. 1893, n. sp.

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- Orcus australasiae*, pp. 16-18, *chalybeus*, p. 19, life histories ; COQUILLET, Bull. Dep. Agric. Ent. 30.
- Psyllobora drakei*, Bolivia, WEISE, p. 96, Deutsche ent. Zeitschr. 1893, n. sp.
- Vedalia cardinalis* and *Icerya purchasi*, in New Zealand ; WIGHT, Insect Life, vi, p. 194.
- Verania suturata*, Comoro Isles, FAIRMAIRE, p. 555, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ▷ *Veronicobius*, n. g., near *Scymnus* for *V. hirtus*, n. sp., New Zealand, BROUN, p. 1393, Manual.

CORYLOPHIDÆ.

- [Cf. BROUN (112).]
- ♯ *Sacina*, n. g., for *S. oblonga*, n. sp., New Zealand ; BROUN, Manual, p. 1071.
- Sericoderus fulvicollis*, p. 1072, *scutellaris*, *basalis*, p. 1073, New Zealand, BROUN, Manual, n. spp.

(B.) HYMENOPTERA.

Structure of ♂ organs; VERHOEFF, Zool. Anz. xvi, p. 407, BORDAS, C.R. Ac. Sci. cxvii, pp. 316 & 317.

ACULEATA.

[Cf. ANDRÉ (14-17), BARGAGLI (38), BELLEVOYE (47), BORDAS (90, 91), BOS (92, 93), CAMERON (390), COSTA (199, 200), DALLA TORRE (213), DAVIDSON (218), EMERY (261-266), FERTON (310), FOREL (320-328), FOX (331-336), FRIESE (311, 312), FROGGATT (344), GRIBODO (394, 395), HANDLIRSCH (424, 425), HART (429), JANET (493-496), KOHL (534-537), MARCHAL (613, 614, 615), MAYR (624), MÖLLER (641), MORAWITZ (652, 653, 654), NICOLAS (672), PLANTA (726), RADOSZKOWSKI (738, 740, 741), ROBERTSON (809), REED (751), SAHLBERG (831), SCHULTESS-RECHBERG (856), SHARP (890), SICKMANN (898), SHIPP (897), SPENCER (930), VACHAL (1003), VERHOEFF (1005-1009), WASMANN (1029), WEISMANN (1046).]

Origin of forms of social insects; WEISMANN (1046), SPENCER (930).

Abundance of *Hymenoptera* in England in 1893; LATTER (573).

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A. jheringi, Brazil, GRIBODO, Bull. Soc. ent. Ital. xxv, p. 417, n. sp.

Agapostemon nigricornis, radiatus, synonymy; ROBERTSON, p. 148, Tr. Amer. ent. Soc. xx.

A. bicolor, Illinois, ROBERTSON, p. 148, Tr. Amer. ent. Soc. xx, n. sp.

Aglae cærulea, male armour; RADOSZKOWSKI, p. 186, pl. vii, fig. 44, Bull. Soc. Moscou, 1893.

Andrena atrata, p. 62, *braunsiana*, p. 63, Hungary, *croatica*, p. 65, *dragana*, p. 67, *grossa*, p. 69, Fiume, *hungarica*, p. 70, Hungary, *korleviciano*, p. 72, *liburnica*, p. 74, Fiume, *niveata*, Germany, p. 76, *sisymbrii*, Hungary, p. 78, FRIESE, Bienen-Fauna, Deutschland; *A. transcaspica, germabica*, Central Asia, RADOSZKOWSKI, p. 56, Horæ Soc. ent. Ross. xxvii; *A. serotina, scutellaris*, N. America, ROBERTSON, p. 148, Tr. Amer. ent. Soc. xx; *A. crategi*, Illinois, ROBERTSON, p. 273, t. c. : n. spp.

Anthidium germabicum, p. 48, *seraxense*, p. 49, Transcaspian Region, RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii, n. spp.

- Anthophora aschabadensis*, p. 38, *germabica*, *mervensis*, p. 39, *tedshenensis*, p. 40, Central Asia, RADOSZKOWSKI, Horæ Soc. ent. Ross, xxvii; *A. libyphænica*, Algeria, p. 275, *epichariformis*, Cape Good Hope, p. 285, *proserpina*, Malacca, p. 287, GRIBODO, Bull. Soc. ent. Ital. xxv; *A. scymna*, Queensland, p. 389, *virgo*, p. 390, *plumigera*, p. 391, Punta Arenas, GRIBODO, *t. c.* : n. spp.
- Apis mellifica*, ♂ characters; BORDAS, C.R. Ac. Sci. cxvii, p. 746. *A. testacea*, *dorsata*, note on; GRIBODO, p. 250, Bull. Soc. ent. Ital. xxv.
- Augochlora similis*, Illinois, p. 146, *matilda*, *austrina*, Florida, p. 147, ROBERTSON, Tr. Amer. ent. Soc. xx, n. spp.
- Bombus* : male internal organs; BORDAS, p. 2, C.R. Soc. Philom. 1893, No. 4. *B. hyperboreus*, notes on, p. 27, *bultatus*, male and female characters, p. 28, AURIVILLIUS, Bih. Svenska Ak. xv, No. 1. *B. terrestris*, *lapidarius*, varr.; MORICE, Ent. Mag. xxix, p. 11. *B. lapidarius*, variation; MORICE, *t. c.* p. 90.
- Calliopsis compositarum*, *solidaginis*, Illinois, ROBERTSON, Tr. Amer. ent. Soc. xx, n. spp.
- Centris citrotaniata*, Chiriqui, GRIBODO, p. 268, Bull. Soc. ent. Ital. xxviii, n. sp.
- Chalicodoma perezii*, nest noticed; Arch. Zool. exp. 1893, Notes, p. xxx.
- Chrysantheda* : male armour; RADOSZKOWSKI, p. 185, pl. vii, fig. 42, Bull. Soc. Moscou, 1893.
- Cœlixys undecimdentata*, p. 50, *parvula*, p. 51, *seræensis*, p. 52, Transcaspian Region, RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii, n. spp.
- Crocisa* : structure of ♂ armour; RADOSZKOWSKI, Bull. Soc. Moscou, 1893, p. 163.
- C. transcaspica*, Transcaspian Region, p. 165, *portchinski*, Caucasus, *merviensis*, Merv, p. 166, *ashabadensis*, Transcaspian, p. 167, *caucasica*, Caucasus, *minuta*, p. 168, *massuri*, p. 169, *himalayensis*, E. India, *quadrinaculata*, Australia, p. 171, *guinensis*, p. 172, *africana*, p. 173, Africa, *sibirica*, p. 174, *altaica*, Minusinsk, *bimaculata*, p. 175, *chinensis*, China, *quadrinotata*, no locality, *amboinensis*, Amboyna p. 176, *australensis*, Australia, p. 177, RADOSZKOWSKI, Bull. Soc. Moscou, 1893, n. spp.
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- Eucera spatulata*, Algeria, GRIBODO, p. 398, Bull. Soc. ent. Ital. xxv; *E. tedshenensis*, Transcaspian Region, RADOSZKOWSKI, p. 41, Horæ Soc. ent. Ross. xxvii : n. spp.
- Euglossa cordata*, male armour; RADOSZKOWSKI, p. 187, pl. vii, fig. 46 Bull. Soc. Moscou, 1893.
- Eulema* : male armour; RADOSZKOWSKI, p. 187, pl. vii, fig. 48, Bull. Soc. Moscou, 1893.
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- H. arcuatus*, p. 145, *cæruleus*, p. 146, N. America, ROBERTSON, Tr. Amer. ent. Soc. xx, n. spp.

- Macrocera melectoides*, p. 41, *tedshenensis*, p. 42, *clypeata*, p. 43, Transcaspian Region, RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii, n. spp.
- Megachile analis*, habits; SAHLBERG, p. 2, Medd. Soc. Fauna Fenn. xvii.
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- Megacilissa gloriosa*, New Mexico, FOX, p. 421, Psyche, vi, n. sp.
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- M. eversmanni*, *ashabadensis*, p. 180, *eczsmiadzini*, *turkestanica*, p. 181, W. Asia, *pseudoarmata*, Caucasus, p. 183, *sibirica*, Irkutsk, *quadripunctata*, Italy, p. 184, RADOSZKOWSKI, Bull. Soc. Moscou, 1893; *M. miranda*, N. America, FOX, p. 143, Ent. News, 1893 : n. spp.
- Melipona titania*, Argentine Rep., p. 251, *opposita*, Cayenne, p. 253, *variegatipes*, Guadeloup, p. 254, *schencki*, Brazil, p. 255, *sicophanta*, Guyana, p. 257, *prosopiformis*, Peru, p. 259, GRIBODO, Bull. Soc. ent. Ital. xxv, n. spp.
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- Mesochœira bicolor*, male armour; RADOSZKOWSKI, p. 186, pl. vii, fig. 43, Bull. Soc. Moscou, 1893.
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- N. melitensis*, Malta, COSTA, p. 102, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 28; *N. litigiosa*, p. 419, *plumosa*, p. 421, *podagrica*, p. 423, Algeria, GRIBODO, Bull. Soc. ent. Ital. xxv; *N. komarowi*, Central Asia, RADOSZKOWSKI, p. 55, Horæ Soc. ent. Ross. xxvii; *N. cressonii*, p. 275, *integra*, *sayi*, p. 276, N. America, ROBERTSON, Tr. Amer. ent. Soc. xx : n. spp.
- Nomia minor*, Central Asia, RADOSZKOWSKI, p. 54, Horæ Soc. ent. Ross. xxvii; *N. punctata*, N. America, FOX, p. 135, Ent. News, 1893 : n. spp.
- Nomioides ænescens*, Central Asia, RADOSZKOWSKI, p. 57, Horæ Soc. ent. Ross. xxvii, n. sp.
- Osmia decemsignata*, Rad., *villosa*, Schenck, synonymy and characters, *acuticornis*, = (*hispanica*), notes on other species; FRIESE, pp. 354-356, Ent. Nachr. xix. *O. cristata* and allies, habits; FERTON, Act. Soc. Bordeaux, xlv, p. 231. *O. bicornis*, nest noticed; RUDOW, Soc. ent. viii, p. 91.
- O. croatica*, Triest, FRIESE, p. 353, Ent. Nachr. xix; *O. conjunctoides*, Florida, ROBERTSON, p. 276, Tr. Amer. ent. Soc. xx : n. spp.
- Pachymelus meleagrus*, Madagascar, GRIBODO, p. 392, Bull. Soc. ent. Ital. xxv, n. sp.

- Paracaelioxys*, n. g., for *P. barrei*, n. sp., Central Asia, and including *Caelioxys rufiventris*, Spin. ; RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii.
- Phileremides* : account of systematic literature, and catalogue of genera and species ; DALLA TORRE, Ber. Ver. Innsbruck, xix, pp. 137-159.
- Protopis floridanus, flammipes*, Florida, ROBERTSON, p. 273, Tr. Amer. ent. Soc. xx, n. spp.
- Pseudomelecta* : male armour ; RADOSZKOWSKI, p. 185, pl. vii, fig. 41, Bull. Soc. Moscou, 1893.
- Psithyrus branickii, ferganicus*, Central Asia, RADOSZKOWSKI, p. 241, Rev. Ent. franc. xii, n. spp.
- Rhophites pamirensis*, Central Asia, MORAWITZ, p. 430, Horæ Soc. ent. Ross. xxvii, n. sp.
- Sphcodes stygius*, Illinois, ROBERTSON, p. 145, Tr. Amer. ent. Soc. xx, n. sp.
- Stelis octomaculata, minuta, signata*, descriptive notes ; MORAWITZ, pp. 116-118, Horæ Soc. ent. Ross. xxvii.
- Tetralonia brachycera*, p. 393, *lucasi*, p. 394, Algeria, GRIBODO, Bull. Soc. ent. Ital. xxv, n. spp.
- Trigona*, sp., habits ; HART, Ann. Nat. Hist. (6) xi, p. 327.
- Trigona? minima*, Santarem, p. 261, *T. melina*, p. 262, *melanocephala*, p. 264, Borneo, *staudingeri*, W. Africa, p. 265, GRIBODO, Bull. Soc. ent. Ital. xxv, n. spp.
- Xylocopa amethystina, cyanescens*, characters of ; GRIBODO, pp. 271-274, Bull. Soc. ent. Ital. xxv. *X. orpifex*, nests and parasites ; DAVIDSON, p. 151, Ent. News, 1893.
- X. stuhlmanni*, E. Africa, KOHL, p. 182, Jahresber. Hamburg. Anst. x, n. sp.

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- Belonogaster tursatus*, E. Africa, *agilis*, Angola, KOHL, p. 187, Jahresber. Hamburg. Anst. x, n. spp.
- Eumenes arbustorum, pomiformis, coarctatus*, nests noticed ; RUDOW, Soc. ent. viii, pp. 59 & 60.
- E. aschabadensis*, Askhabad, RADOSZKOWSKI, p. 491, Horæ Soc. ent. Ross. xxvii, n. sp.
- Leptochilus mervensis*, referred to *Stenoglossa* ; RADOSZKOWSKI, p. 78, Horæ Soc. ent. Ross. xxvii.
- Odynerus* : Dufour's memoir on habits translated into German, with remarks and suggestions ; VERHOEFF, Ent. Nachr. xix, pp. 49, &c. *O. parietum*, life-history, nests, enemies, rearing, &c. ; VERHOEFF, pp. 467-479, Berlin. ent. Zeitschr. xxxvii. *O. trifusciatum*, nests ; VERHOEFF, t. c. p. 479.
- O. (Lionotus) punctifrons, minutus, picticrus*, characters discussed ; FREY-GESSNER, pp. 49-53, MT. Schweiz. ent. Ges. ix. *O. crassicornis*, pupa noticed ; VERHOEFF, p. 415, Berlin. ent. Zeitschr. xxxvii.

- O. barrei*, *strigatus*, p. 76, *O. (Lionotus) murgabicus*, *germabicus*, p. 77, *O. (Ancistrocerus) meridionalis*, p. 78, Central Asia, RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii ; *O. vicinus*, p. 686, *caupolicanus*, p. 687, *sotoi*, p. 689, Chili, REED, P. Zool. Soc. London, 1893 : n. spp.
- Polistes gallicus* and allies, nests noticed ; RUDOW, Soc. ent. viii, p. 60.
- Vespa rufa*, ♂ characters ; BORDAS, p. 748, C.R. Ac. Sci. cxvii. *V. media*, nest and habitat noticed ; RUDOW, Soc. ent. viii, p. 92. *V. germanica*, production of males by workers ; MARCHAL, p. 584, C.R. Ac. Sci. cxvii.
- V. westwoodii*, N. America, SHIPP, Psyche, vi, p. 450, n. sp.

HYMENOPTERA FOSSORIA. (SPHEGIDÆ, CRABRONIDÆ,
MUTILLIDÆ, ETC.)

- Notes on habits and variation of Fossors found near Iburg ; SICKMANN (898).
- Agenia carbonaria*, pupa noticed ; VERHOEFF, p. 413, cuts, Berlin. ent. Zeitschr. xxxvii.
- Ammophila quadraticollis*, Tunis, COSTA, p. 99, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 4 ; *A. hirticeps*, Turkestan, MORAWITZ, p. 408, Horæ Soc. ent. Ross. xxvii : n. spp.
- Ampulex* and allies, descriptive list of species ; KOHL, Ann. Hofmus. Wien, viii, pp. 455-516.
- Ampulex (Rhinopsis) latifrons*, Sikkim, p. 461, *cognata*, Java, p. 462, pl. xii, fig. 32, *assimilis*, Bagdad, *dives*, Gaboon, p. 464, *metallica*, Malacca, p. 465, *honesta*, Gaboon, p. 466, *major*, Malacca, *erythropus*, Java, *japonica*, Japan, p. 467, *consimilis*, China, p. 468, *A. mutilloides*, Africa, p. 467, *sodalicia*, Malacca, *lavigata*, Philippines, p. 470, *sybarita*, Java, *cyanura*, Cape, p. 471, *splendidula*, Africa, p. 472, *conigera*, Massaua, p. 474, *lazulina*, *spectabilis*, p. 475, *assimilis*, Guinea, *moebii*, Cape Good Hope, p. 476, *psilopus*, Guinea, *sagax*, hab. ?, p. 477, *micans*, Australia or Mexico, p. 478, *neotropica*, Chiriqui, p. 479, *minor*, Brazil, p. 480, *distinguenda*, Celebes, p. 482, *pilipes*, Guinea, *cribrata*, S. Africa, 484, *gratiosa*, Guinea, *formosa*, Senegal, p. 485, *dahlbomii*, Africa, p. 486, *elegantula*, Colombia, *neotropica*, Chiriqui, p. 487, *dubia*, Cayenne, p. 488, KOHL, Ann. Hofmus. Wien, viii, n. spp.
- Aphilanthops (?) theryi*, Algeria, VACHAL, p. cclxiv, Bull. Soc. ent. France, 1893, n. sp.
- Aporus leucurus*, Tunis, COSTA, p. 100, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 11 ; *A. gratiosus*, p. 58, *gracilis*, p. 59, Central Asia, RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii : n. spp.
- Astata aschabadensis*, Askhabad, RADOSZKOWSKI, p. 491, Horæ Soc. ent. Ross. xxvii, n. sp.
- Astatus bicolor*, Say, and allies, synonymy ; HART, p. 27, Canad. Ent. xxv ; FOX, t. c. p. 44.

- Bembex dilatata*, ♂ described; MORAWITZ, p. 423, Horæ Soc. ent. Ross. xxvii. *B. rostrata*, habits and instinct; MARCHAL, pp. 93-98, Ann. Soc. ent. France, 1893.
- B. transcaspica*, p. 63, *mervensis*, p. 64, *admirabilis, asiatica*, p. 65, Central Asia, RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii, n. spp.
- Brachymerus curvitaris*, habits; EMERY, p. lxiii, Bull. Soc. ent. France, 1893.
- Cerceris angustata*, Turkestan, MORAWITZ, p. 418, Horæ Soc. ent. Ross. xxvii; *C. murgabica*, p. 66, *seraxensis*, p. 67, *barrei*, p. 68, Central Asia, RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii; *C. austrina*, Florida, FOX, p. 556, Psyche, vi : n. spp.
- Ceropales balearica*, Balcaric Is., COSTA, p. 28, Atti Acc. Napoli (2) v, No. 14, p. 28, n. sp.
- Chevrieria unicolor*, pupa noticed; VERHOEFF, p. 415, Berlin. ent. Zeitschr. xxxvii.
- Crabro loewi*, characters and systematic position; KOHL, p. 24, Verb. Ges. Wien, xliii. *C. ingriscus*, descriptive note; MORAWITZ, Horæ Soc. ent. Ross. xxvii. *C. cephalotes*, habits, nidification, parasites; MARCHAL, Ann. Soc. ent. France, 1893, pp. 331-336, pl. viii, figg. 1-9.
- C. signaticrus*, p. 425, *dilatatoris*, p. 427, Turkestan, Horæ Soc. ent. Ross. xxvii; *C. alticola*, Pamir, MORAWITZ, p. 431, *t. c.* : n. spp.
- Dasytibris koenigi*, ♀ described, RADOSZKOWSKI, p. 492, Horæ Soc. ent. Ross. xxvii.
- Dielis ciliata*, n. var. *fastuosa*; GRIBODO, p. 179, Bull. Soc. ent. Ital. xxv.
- D. diversipennis*, Amboina, GRIBODO, Bull. Soc. ent. Ital. xxv, p. 180, n. sp.
- ⁴*Diploplectron*, n. g., *Larridae*, for *Liris brunneipes*, Cress.; FOX, p. 38, Tr. Amer. ent. Soc. xx.
- Discolia costæ*, Perak, GRIBODO, Bull. Soc. ent. Ital. xxv, p. 175, n. sp.
- Elis angulata*, ♂ described; MORAWITZ, p. 396, Horæ Soc. ent. Ross. xxvii.
- E. mexicana*, p. 232, pl. xii, fig. 14, Mexico, CAMERON, Biol. Centr.-Amer. Hymenoptera, ii; *E. (Trielis) siderea*, Tunis, COSTA, p. 100, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 12, pl. iv, fig. 4 : n. spp.
- Epomidiopteron aureohirtum*, pl. xii, fig. 8, p. 235, *nigrum, smithi*, p. 236, *canaliculatum*, p. 237, *rustitarse*, p. 238, *saussurei*, p. 239; Central America, CAMERON, Biol. Centr.-Amer. Hymenoptera, ii, n. spp.
- Gorytes (Hoplisus) curtulus*, Tunis; COSTA, p. 100, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 7, pl. iv, fig. 2; *G. gazagnairei, fairmairei*, Algeria, HANDLIRSCH, Bull. Soc. ent. France, 1893, p. clvi; *G. jheringii*, p. 276, *austerus*, p. 277, Brazil, *mendicus*, Brit. Columbia, *egregius*, Araxes, p. 278, *vicinus*, Washington, p. 279, *proximus*, Caucasus, p. 280, *schlettereri*, Tyrol, *intercedens*, Madrid, p. 281, HANDLIRSCH, Ann. Hofmus. Wien, viii; *G. dentatus*, Arizona, FOX, p. 116, Canad. Ent. xxv : n. spp.

- Harpactus turcomenicus*, Central Asia, RADOSZKOWSKI, p. 70, Horæ Soc. ent. Ross. xxvii, n. sp.
- Isodontia azteca*, = (*macrocephala*, Fox); PATTON, p. 302, Ent. News, 1893.
- Lindenius pygmæus*, habits, larvæ; MARCHAL, p. 337, pl. viii, figg. 13 & 14, Ann. Soc. ent. France, 1893.
- Meria cercerigastra*, p. 182, *anceps*, p. 184, Algeria, GRIBODO, Bull. Soc. ent. Ital. xxv; *M. sanguinicollis*, p. 398, *petiolaris*, p. 399, Turkestan, MORAWITZ, Horæ Soc. ent. Ross. xxvii : n. spp.
- Mimesa fallax*, Turkestan, MORAWITZ, p. 409, Horæ Soc. ent. Ross. xxvii; *M. maculipes*, Florida, FOX, p. 117, Canad. Ent. xxv : n. spp.
- Mutilla* : critical notes on palæarctic species, viz., *cephalica*, Rad., *lezginica*, Rad., *bipunctata*, Latr., *halensis*, Fab., *littoralis*, Pet.; variation in colour with list of false species; ANDRÉ, pp. 289–292, Mem. Soc. zool. France, vi. *M. rufipes*, n. var., *tropicalis*, p. 217, *ocellata*, n. var., *abyssinica*, p. 220; ANDRÉ, Rev. ent. xii. *M. arenaria* and *maura*, distinctions; MORAWITZ, p. 391, Horæ Soc. ent. Ross. xxvii.
- M. dalmatica*, Dalmatia, p. 292, *innesi*, Egypt, p. 293, *semirufa*, Ordubad, p. 294, *pectinifera*, Greece, p. 295, *schulthessi*, Ordubad, p. 296, ANDRÉ, Mem. Soc. zool. France, vi; *M. baréyi*, Persia, RADOSZKOWSKI, p. 492, Horæ Soc. ent. Ross. xxvii; *M. mervensis*, Central Asia, RADOSZKOWSKI, p. 73, t. c.; *M. turanica*, p. 392, *subcornuta*, p. 393, Turkestan, MORAWITZ, t. c.; *M. spiculifera*, *foreli*, p. 218, *crisrigera*, p. 219, *ilgi*, p. 220, Abyssinia, ANDRÉ, Rev. ent. xii; *M. elderi*, W. Australia, FROGGATT, p. 70, Tr. R. Soc. S. Austral. xvi : n. spp.
- Myrmilla* : note on this subgenus, with list of species; ANDRÉ, pp. 286–288, Mem. Soc. zool. France, vi.
- Myzine fulviceps*, pl. xii, fig. 20, p. 248, *pulchriceps*, figg. 21 & 22, p. 249, *toluca*, p. 252, *centralis*, *parvimaclulata*, p. 253, *pulchrina*; pl. xii, fig. 18, p. 254, *montivaga*, fig. 15, p. 255, *ornaticeps*, fig. 24, p. 256, CAMERON, Biol. Centr.-Amer. Hymenoptera, ii; *M. thoracica*, Illinois, FOX, p. 113, Canad. ent. xxv : n. spp.
- Neolarra*, characters and position; FOX, p. 292, Ent. News, 1893.
- Nileliopsis plenoculoides*, N. America, FOX, p. 555, Psyche, vi, n. sp.
- Notocyphus violaceipennis*, Mexico, pl. xii, fig. 1, p. 213, *apicalis*, p. 212, *chiriquensis*, p. 213, *stimulator*, p. 214, Panama, CAMERON, Biol. Centr.-Amer. Hymenoptera, ii, n. sp.
- Nysson barrei*, Central Asia, RADOSZKOWSKI, p. 71, Horæ Soc. ent. Ross. xxvii; *N. ruspolii*, Somaliland, SCHULTESS-RECHBERG, p. 18, Ent. Nachr. xix : n. spp.
- Oxybelus canaliculatus*, n. var., *seraksensis*; RADOSZKOWSKI, p. 244, Rev. Ent. franc. xii.
- O. citrinus*, Central Asia, RADOSZKOWSKI, p. 72, Horæ Soc. ent. Ross. xxvii; *O. pectoralis*, Turkestan, MORAWITZ, p. 416, Horæ Soc. ent. Ross. xxvii; *O. mervensis*, p. 242, *barrei*, p. 243, *kirgiscicus*, Central

- Asia, caucasicus*, Lagodechi, p. 244, RADOSZKOWSKI, Rev. Ent. franc. xii : n. spp.
- Palarus aurantiacus*, p. 68, *seraxensis*, p. 69, *incertus*, p. 70, Central Asia, RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii ; *P. affinis*, Turkestan, MORAWITZ, p. 414, *t. c.* : n. spp.
- Passalacus eremita*, Austria, KOHL, p. 37, Verh. Ges. Wien, xliii, n. sp.
- Pepsis azteca*, p. 215, *guatemalensis*, p. 216, pl. xii, fig. 2, *antennalis*, fig. 3, p. 217, *occidentalis*, fig. 5, p. 218, *centralis*, p. 221, Central America, CAMERON, Biol. Centr.-Amer. Hymenoptera, ii, n. spp.
- Philanthus (Philoponus) = (Pseudoscolia, Rad.)*, *Ph. variegatus = (Ps. maculata)* ; KOHL, p. 547, Verh. Ges. Wien, xliiii.
- Pison = (Pseudonysson, Radoz.)*, p. 545, *P. cameronii*, n. n. for *fusciatum*, Kohl nec Rad., p. 546 ; KOHL, Verh. Ges. Wien, xliiii.
- Pisonopsis*, n. g., *Larridae* for *P. clypeata*, n. sp., Nevada ; FOX, p. 553, Psyche, vi.
- Planiceps calcaratus*, Florida, FOX, p. 115, Canad. Ent. xxv, n. sp.
- Plenoculus*, n. g., near *Tachyrhostus* for *P. davisii*, n. sp., Michigan ; FOX, p. 554, Psyche, vi.
- Pogonius bifusciatus*, habits and metamorphosis ; VERHOEFF, Zool. Anz. xvi, p. 258, figg.
- Pompilus perlatus*, Tunis, COSTA, p. 100, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 10 ; *P. pictus*, Central Asia, RADOSZKOWSKI, p. 59, Horæ Soc. ent. Ross. xxvii ; *P. signaticeps*, p. 101, *carinulatus*, *westerlundi*, p. 102, *guntheri*, p. 104, *sahlbergi*, p. 105, Karelia, MORAWITZ, Horæ Soc. ent. Ross. xxvii ; *P. simplex*, *sogdianus*, p. 401, *lutigena*, p. 402, Turkestan, MORAWITZ, Horæ Soc. ent. Ross. xxvii ; *P. solanus*, E. Africa, KOHL, p. 184, Jahresber. Hamburg. Anst. x ; *P. relativus*, p. 114, *posterus*, p. 115, New Jersey, FOX, Canad. Ent. xxv ; *P. (Planiceps) pulchritarsis*, p. 185, *P. telemon*, p. 186, *eubule*, pl. xi, fig. 8, *impudicus*, p. 187, *bugabensis*, p. 188, *P. (Aporus) yucatanensis*, p. 189, *decorus*, *monticola*, p. 190, *flavomarginatus*, *smithianus*, pl. xi, fig. 9, p. 191, *sinaloæ*, p. 192, *montezuma*, fig. 10, *zapotecus*, fig. 11, p. 193, *pulchrinellus*, fig. 12, *alticola*, fig. 13, p. 194, *toluca*, fig. 14, *interstitialis*, fig. 15, p. 195, *championi*, fig. 17, p. 196, *omiltemensis*, fig. 18, p. 197, *acapulcoensis*, *leona*, fig. 20, p. 198, *veræpacis*, fig. 21, p. 200, *chiriquensis*, fig. 22, p. 201, *admirationis*, *exactus*, fig. 23, p. 202, *neotropicalis*, p. 203, *boucardi*, fig. 24, *guatemalensis*, *dubitatus*, p. 206, *torolæ*, p. 207, *temaxensis*, p. 208, *balteolus*, p. 209, Central America, CAMERON, Biol. Centr.-Amer. Hymenoptera, ii : n. spp.
- Prionemis culpabilis*, Tunis, COSTA, p. 100, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 9, pl. iv, fig. 3, n. sp.
- Psen fuscipennis*, ♂ described ; MORAWITZ, p. 109, Horæ Soc. ent. Ross. xxvii.
- Pseudoferreola barrei*, Central Asia, RADOSZKOWSKI, p. 61, Horæ Soc. ent. Ross. xxvii, n. sp.

- Salix distantis*, variation noticed ; KOHL, p. 184, Jahresber. Hamburg-Anst. x.
- S. bicallosus*, Turkestan, MORAWITZ, p. 403, Horæ Soc. ent. Ross. xxvii ; *S. trifasciatus*, pl. x, fig. 23, *rufospina*, fig. 24, p. 177, *juno*, p. 178, *smithi*, fig. 25, *alpestris*, fig. 26, p. 179, Mexico, *guatemalensis*, fig. 27, *centralis*, pl. xi, fig. 1, Panama, p. 180, *teapensis*, p. 181, *nivalis*, fig. 2, p. 182, Mexico, *rogersi*, Costa Rica, fig. 4, p. 183, *dolichocerus*, fig. 5, p. 183, *morelosensis*, *verapacis*, fig. 7, p. 184, Central America, CAMERON, Biol. Centr.-Amer. Hymenoptera, ii : n. spp.
- Sapyga glasunovi*, Turkestan, MORAWITZ, p. 394, Horæ Soc. ent. Ross. xxvii, n. sp.
- Scolia monticola*, p. 223, *saussurei*, p. 224, pl. xii, fig. 9, Central America, CAMERON, Biol. Centr.-Amer. Hymenoptera, ii, n. spp.
- Solenius vagus*, note on habits ; MARCHAL, p. 337, Ann. Soc. ent. France, 1893.
- Sphex regalis*, Smith, = (*Chlorion superbum*, Rad.) ; RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii. *S. splendidulus*, nest noticed, Arch. Zool. exp. 1893, notes, p. xxix ; habits, metamorphosis, NICOLAS, p. 826, C.R. Soc. Biol. 1893.
- S. suavis*, Turkestan, MORAWITZ, p. 405, Horæ Soc. ent. Ross. xxvii, n. sp.
- Stizus gracilis*, Somaliland, SCHULTESS-RECHBERG, p. 19, Ent. Nachr. xix ; *S. handlirschi*, *transcaspicus*, p. 62, *barrei*, p. 63, Central Asia, RADOSZKOWSKI, Horæ Soc. ent. Ross. xxvii ; *S. prestans*, Turkestan, MORAWITZ, p. 421, t. c. ; *S. tuncanus*, Tunis, COSTA, Rend. Acc. Napoli (2) vii, p. 100, and Atti Acc. Napoli (2) v, No. 14, p. 7, pl. iv, fig. 1 : n. spp.
- Tachysphex opacus*, p. 410, *radoszkowskyi*, *splendidulus*, p. 411, *nasalis*, *subdentatus*, p. 412, *falsus*, p. 413, Turkestan, MORAWITZ, Horæ Soc. ent. Ross. xxvii, n. spp.
- Tachytes melanopyga*, Tunis, COSTA, p. 99, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 5 ; *T. germabensis*, Transcaspian Region, RADOSZKOWSKI, p. 490, Horæ Soc. ent. Ross. xxvii : n. spp.
- Thynnus taniolatus*, Australia, FROGGATT, p. 71, Tr. R. Soc. S. Austral. xvi, n. sp.
- Tiphia elegans*, pl. xii, fig. 16, p. 240, *guatemalensis*, *azteca*, p. 241, *montezuma*, p. 242, *trichiosoma*, p. 243, *gaumeri*, p. 244, *carinata*, p. 245, *rugosa*, p. 246, Central America, CAMERON, Biol. Centr.-Amer. Hymenoptera, ii, n. spp.
- Tricholabioides asiaticus* = (*Mutilla pedunculata*, Rad., nec Kl.), RADOSZKOWSKI, p. 74, Horæ Soc. ent. Ross. xxvii, n. sp.
- Trielis annulata*, ♂ described ; RADOSZKOWSKI, p. 72, Horæ Soc. ent. Ross. xxvii.
- Trisciloa*, n. g., *Scoliides*, p. 145, for *T. saussurei*, n. sp., Amboyna, p. 149 ; GRIBODO, Bull. Soc. ent. Ital. xxv.
- Triscolia flavifrons*, *hæmorrhoidalis*, discussed, p. 150, n. var. *rubida*, p. 151, *procer*, variation, pp. 152-164 ; GRIBODO, Bull. Soc. ent. Ital. xxv.

- T. scutellaris*, Philippines, p. 164, *vespillo*, Perak, p. 168, *macrocephala*, Sulu, p. 169, *magrettii*, Borneo, p. 172, *pseudoforaminate*, Palawan, p. 173, GRIBODO, Bull. Soc. ent. Ital. xxv : n. spp.
- Trypoxylon albipes*, Smith, redescribed from Spain ; KOHL, p. 30, Verh. Ges. Wien, xliii.
- T. kolazyi*, Austria, KOHL, p. 29, Verh. Ges. Wien, xliii, n. sp.
- Wesmaëlinius transcaspicus*, Central Asia, RADOSZKOWSKI, p. 60, Horæ Soc. ent. Ross. xxvii, n. sp.
- Zoyphium*, n. g., near *Tachyrrhostus*, p. 569, for *Z. sericeum*, n. sp., Adelaide, p. 571 ; KOHL, Verh. Ges. Wien, xliii.

FORMICIDÆ.

- Classification of the family; FOREL, pp. 161-167, Ann. Soc. ent. Belgique, xxxvii.
- A new subfamily, *Amblyoponinæ* is proposed for the primitive forms, *Amblyopone*, *Myopopone*, *Mystrium*, &c.; FOREL, p. 162, Ann. Soc. ent. Belgique, xxxvii.
- General catalogue; DALLA TORRE (212).
- FOREL objects to some of the changes in Dalla Torre's Catalogue, Ann. Soc. ent. Belgique, xxxvii, pp. 166 & 167.
- Notes on some ants in the Spinola collection at Turin; EMERY, Boll. Mus. Torino, viii, No. 163.
- Stridulating organs; SHARP, Tr. ent. Soc. London, 1893, pp. 199-213, pl. ix
- Sounds produced by ants; JANET (493); EMERY, Biol. Centralbl. xiii, p. 189; WASMANN, t. c. p. 39.
- Apparatus for rearing ants in captivity; JANET (494, 495).
- Parasitism of *Elasmosoma berlinense*; PIERRE, Rev. Sci. Bourbon, vi, p. 112.
- Nematode worms in pharyngeal glands of ants; JANET, C.R. Ac. Sci. cxvii, p. 700.
- Acantholepis lunaris*, Ceylon, EMERY, p. 250, Ann. Soc. ent. France, 1893, n. sp.
- Acanthomyrmex*, n. g., near *Pristomyrmex*, p. 244, for *A. luciola*, Ceylon, *ferox*, Perak, n. spp., p. 245, and including *Pheidole notabilis*, Smith; EMERY, Ann. Soc. ent. France, 1893.
- Acromyrmex*: its composition; FOREL, p. 589, Ann. Soc. ent. Belgique, xxxvii.
- Acropyga (Rhizomyrma) goldii*, Brazil, p. 348, *smithii*, St. Vincent, p. 349, FOREL, Tr. ent. Soc. London, 1893, n. spp.
- Enictus rougieri*, Tunis, ANDRÉ, p. cxcii, Bull. Soc. ent. France, 1893, n. sp.
- Æromyrma nosindambo*, varr. described; FOREL, p. 523, Ann. Soc. ent. Belgique, xxxvi.
- Aneuretus*, n. g., *Ponerides*, p. 241, for *A. simoni*, n. sp., Ceylon, p. 242; EMERY, Ann. Soc. ent. France, 1893.

- Anochetus (Stenomyrmex) emarginatus*, n. st. *testaceus*; FOREL, p. 356, Tr. ent. Soc. London, 1893.
- Aphnognaster (Messor) barbara*, n. st. *sordida*, p. 90, *A. striola*, n. var. *levior*, *A. hispanica*, worker, described, p. 91; FOREL, Act. Soc. Espan. xxii.
- A. (Ischnomyrmex) cockerelli*, Chihuahua, ANDRÉ, p. 150, Rev. Ent. franc. xii, n. sp.
- Apterostigma pilosum*, *mölleri*, *wasmanni*, habits and nests; MÖLLER (641).
- A. urichii*, p. 603, *mayri*, p. 604, Trinidad, FOREL, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Atta*: n. subg., vide *Mycocephurus infrà*. Synonymical notes, p. 587, *sexdens*, n. var. *vollenweideri*, p. 588, *A. octospinosa* redescribed, p. 590, *wasmannii*, ♀ described, p. 605; FOREL, Ann. Soc. ent. Belgique, xxxvii. *A. discigera*, *hystriæ*, *coronata*, sp.?, habits; MÖLLER (641).
- A. (Acromyrmex) jamaicensis*, Jamaica, ANDRÉ, p. 149, Rev. Ent. franc. xii; *A. lutea*, Barbadoes, p. 587, *A. (Acromyrmex) subterranea*, Brazil, p. 593, *guntheri*, Trinidad and Venezuela, p. 594, *moelleri*, p. 596, with var. *meinerti*, p. 599, Brazil, *A. (Trachymyrmex) urichii*, Trinidad, p. 602, FOREL, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Belonopelta darwinii*, N.W. Australia, FOREL, p. 460, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Bothroponera glabripes*, Philippines, EMERY, p. 262, Ann. Soc. ent. France, 1893, n. sp.
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- B. minutus*, St. Vincent, FOREL, Tr. ent. Soc. London, 1893, p. 346, n. sp.
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- C. wroughtonii*, Himalaya, p. 430, *nirvana*, E. India, p. 433, FOREL, J. Bombay Soc. vii; *C. simoni*, p. 250, *albipes*, p. 253, Ceylon, EMERY, Ann. Soc. ent. France, 1893; *C. pressipes*, Borneo, EMERY, p. 268, t. c.; *C. peregrinus*, Galapagos, Emery, p. 91, t. c.; *C. walkeri*, Baudin I., *insipidus*, Wallaby I., p. 454, *impavidus*, Port Darwin, p. 455, FOREL, Ann. Soc. ent. Belgique, xxxvii; *C. sayi*, Arizona, p. 679, *hyatti*, California, p. 680, EMERY, Zool. Jahrb. Syst. vii; *C. sharpi*, p. 335, St. Vincent, FOREL, Tr. ent. Soc. London, 1893; n. spp.
- Cardiocondyla*: note on the males; FOREL, p. 536, Ann. Soc. ent. Belgique, xxxvi.

- Cataulacus simoni*, Ceylon, EMERY, p. 248, Ann. Soc. ent. France, 1893, n. sp.
- Cerapachys mayri*, n. var. *brachynodus*; FOREL, p. 520, Ann. Soc. ent. Belgique, xxxvi.
- C. emeryi*, with var. *clarus*, N. W. Australia, FOREL, pp. 461 & 462, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Colobopsis angustata*, n. var. *siggii*; FOREL, p. 436, J. Bombay Soc. vii.
- C. rothneyi*, p. 435, *cotesii*, p. 438, East India, FOREL, J. Bombay Soc. vii, n. spp.
- Cre mastogaster curvispinosa*, n. var. *antillana*, *brevispinosa*, n. var. *minutior*; FOREL, p. 399, Tr. ent. Soc. London, 1893. *C. emmae*, n. var. *laticeps*, p. 529, *hova*, n. var. *latinoda*, p. 535; FOREL, Ann. Soc. ent. Belgique, xxxvi. *C. bicolor*, n. subsp. *imbellis*; EMERY, p. 266, Ann. Soc. ent. France, 1893. *C. sordidula* harbouring *Tetrigometra*; SCHNEIDER, Ent. Nachr. xix, p. 79.
- Orematogaster alluaudi*, with n. st. *noualkhieri*, Canary Is., EMERY, p. 83, Ann. Soc. ent. France, 1893; *C. discinodis*, Singapore, EMERY, p. 261, t. c.; *C. simoni*, *semperi*, p. 263, *longiclava*, p. 264, *crassicornis*, p. 265, Philippines, EMERY, t. c.; *C. marthe*, p. 529, *paolinee*, p. 530, *agnetis*, p. 531, Madagascar, *aberrans*, India, p. 532, FOREL, Ann. Soc. ent. Belgique, xxxvi; *C. vicina*, Jamaica, ANDRÉ, p. 152, Rev. Ent. franc. xii : n. spp.
- ¹*Cryptopone*, n. g., near *Trapeziopelta*, for *Amblyopone testacea*, Motsch.; EMERY, p. 240, Ann. Soc. ent. France, 1893.
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- C. olitor*, p. 605, S. Brazil, FOREL, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Diacamma geometricum*, n. var., *viridipurpureum*; EMERY, p. 261, Ann. Soc. ent. France, 1893.
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- Ectatomma punctatum*, worker described, FOREL, p. 459, Ann. Soc. ent. Belgique, xxxvii; *E. (Rhytidoponera) reticulatum*, Port Darwin, FOREL, p. 459, Ann. Soc. ent. Belgique, xxxvii : n. spp.
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- F. pergandei*, p. 646, *dakotensis*, p. 652, *ulkei*, p. 653, *lasioides*, *pilicornis*, p. 664, *rufiventris*, p. 665, North America, EMERY, Zool. Jahrb. Syst. vii, n. spp.
- Gigantiops*: an arboreal springing Ant; EMERY, p. 190, Biol. Centralbl. xiii.
- Harpagoxenus*, n. n. for *Tomognathus*, Mayr. nec Dixon; FOREL, p. 167, Ann. Soc. ent. Belgique, xxxvii.

- Harpegnathos* : habits and instinct ; FOREL, p. 51, Bull. Soc. Vaudoise, xxix.
- Iridomyrmex cordatus*, n. var. *stewartii* ; FOREL, p. 456, Ann. Soc. ent. Belgique, xxxvii.
- Lasius* : tabulation of the characters of the N. American species and varieties ; EMERY, Zool. Jahrb. Syst. vii, pp. 637 & 638. *L. fuliginosus*, description and figure of a nest ; BOS, pp. 230-239, pl. vii, Tijdschr. Ent. xxxvi. *L. alienus* founding a new colony ; JANET, p. 168, Bull. Soc. zool. France, xviii.
- L. brevicornis*, p. 639, *speculiventris*, p. 641, N. America, EMERY, Zool. Jahrb. Syst. vii, n. spp.
- Leptogenysii*, n. tribe of *Ponerinæ* ; FOREL, p. 162, Ann. Soc. ent. Belgique, xxxvii.
- Leptogenys (Lobopelta) stuhlmanni*, E. Africa, MAYR, p. 198, Jahresber. Hamburg. Anst. x ; *L. mucronata*, St. Vincent, FOREL, p. 360, Tr. ent. Soc. London, 1893 : n. spp.
- Leptothorax cabreræ*, Teneriffe, FOREL, p. 464, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Lobopelta angusta*, Madagascar, FOREL, p. 519, Ann. Soc. ent. Belgique, xxxvi, n. sp.
- ^d*Moellerius*, n. subg. of *Atta* for *A. laudolti* and *balzani* ; FOREL, p. 589, Ann. Soc. ent. Belgique, xxxvii.
- Monomorium bicolor*, n. subsp., *nitidiventris* ; EMERY, p. 256, Ann. Soc. ent. France, 1893. *M. pharaonis*, habits ; BOS, p. 244, Biol. Centralbl. xiii : native country ; EMERY, t. c. p. 435 : natural history ; BELLEVOYE, Bull. Soc. Reims, i, pp. 21-45, pl.
- M. medinæ*, Canaries, FOREL, p. 93, Act. Soc. Espan. xxii ; *M. termitobium*, Madagascar, FOREL, p. 522, Ann. Soc. ent. Belgique, xxxvi : n. spp.
- ^e*Mycocepurus*, n. subg. of *Atta*, p. 369, for *M. smithii*, St. Vincent, *goldii*, Brazil, n. spp., p. 370 ; FOREL, Tr. ent. Soc. London, 1893, and p. 602, Ann. Soc. ent. Belgique, xxxvii.
- Myrmecii* to be a separate tribe of *Ponerinæ*, but not a subfamily ; FOREL, Ann. Soc. ent. Belgique, xxxvii, p. 162.
- Myrmecia walkeri*, p. 456, *lucida*, p. 458, Tasmania, FOREL, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Myrmecocystus melliger*, n. varr. *semirufus*, *testaceus*, EMERY, Zool. Jahrb. Syst. vii, p. 667.
- Myrmelachista ambigua*, St. Vincent, FOREL, p. 350, Tr. ent. Soc. London, 1893, n. sp.
- ^f*Myrmoteras*, n. g. *Camponotides*, p. 607, for *M. binghamii*, n. sp., Burma, p. 608 ; FOREL, Ann. Soc. ent. Belgique, xxxvii.
- Mystrium mysticum*, ♀ described ; FOREL, p. 520, Ann. Soc. ent. Belgique, xxxvi.
- Odontomachus hæmatodes*, n. varr. *paucidens*, *bruneipes* ; EMERY, p. 91, Ann. Soc. ent. France, 1893. *O. hæmatodes*, var. ? *microcephalus* noticed ; FOREL, p. 353, Tr. ent. Soc. London, 1893. *O. ruficeps* and *cordarius* probably one species ; FOREL, p. 459, Ann. Soc. ent. Belgique, xxxvii.

- O. sharpii*, N. W. Australia, FOREL, p. 458, Ann. Soc. ent. Belgique, xxxvii ; *O. bauri*, Galapagos, EMERY, p. 90, Ann. Soc. ent. France, 1893 : n. spp.
- Pheidole guilelmi mulleri*, n. st., *antillana*, p. 401, n. var. *nigrescens*, p. 404, *radoszkowski*, n. var. *luteola*, p. 406, *subarmata*, n. var. *elongatula*, p. 408, *flavens*, n. var. *vincentensis*, p. 411, n. st. *sculptior*, p. 414 ; FOREL, Tr. ent. Soc. London, 1893. *P. veteratrix*, n. var. *angustinoda*, *sikoræ*, n. var. *litigiosa*, p. 526, *oswaldi*, n. var. *decolata*, n. st., p. 527 ; FOREL, Ann. Soc. ent. Belgique, xxxvi. *P. variabilis*, n. var. *ampla*, n. st. ; FOREL, p. 463, t. c.
- P. teneriffana*, Canaries, FOREL, p. 465, Ann. Soc. ent. Belgique, xxxvii ; *P. madecassa*, p. 525, *memoralis*, p. 526, Madagascar, FOREL, *op. cit.* xxxvi ; *P. simoni*, Philippines, EMERY, p. 266, Ann. Soc. ent. France, 1893 ; *P. bos*, W. Australia, FOREL, p. 463, Ann. Soc. ent. Belgique, xxxvii ; *P. godmani*, p. 404, *orbica*, p. 408, St. Vincent, FOREL, Tr. ent. Soc. London, 1893 : n. spp.
- Pheidologeton pygmaeus*, n. var., *albipes* ; EMERY, p. 266, Ann. Soc. ent. France, 1893.
- Plagiolepis madecassa* is not a variety, but a distinct species ; FOREL, p. 519, Ann. Soc. ent. Belgique, xxxvi.
- Polyergus rufescens*, n. var., *breviceps*, n. subsp. ; EMERY, p. 666, Zool. Jahrb. Syst. vii.
- Polyrhacis* : table of the characters of the E. Indian species and varieties, pp. 17-27, nests described, p. 36 ; FOREL, J. Bombay Soc. viii. *P. cubaensis*, n. var., *striolato-rugosa*, MAYR, p. 195, Jahresber. Hamburg. Anst. x. *P. thrinax*, n. st., *lucidula* ; EMERY, p. 269, Ann. Soc. ent. France, 1893. *P. hippomanes*, n. subsp. *lucidula*, Burma, *ceylonensis*, Ceylon ; EMERY, p. 254, Ann. Soc. ent. France, 1893.
- P. yerburyi*, Ceylon, p. 29, *venus*, Birma, *ædipus*, Ceylon, p. 31, *mulleri*, Singapore, *achilles*, p. 32, *binghamii*, Birma, *tubericeps*, Barrackpore, p. 33, FOREL, J. Bombay Soc. viii ; *P. terpsichore*, N. W. Australia, FOREL, p. 455, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Ponera stigma*, n. var. *attrita*, p. 362, *trigona*, n. var. *opacior*, p. 363 ; FOREL, Tr. ent. Soc. London, 1893.
- P. melanaria*, Ceylon, EMERY, p. 260, Ann. Soc. ent. France, 1893 ; *P. fæda*, p. 364, *ergatandria*, p. 365, St. Vincent, FOREL, Tr. ent. Soc. London, 1893, n. spp.
- Prenolepis fulva*, n. st. *pubens*, p. 338, *guatemalensis*, n. st. *antillana*, p. 340 ; FOREL, Tr. ent. Soc. London, 1893. *P. amblyops*, ♀, n. st. *rubescens*, described ; FOREL, p. 516, Ann. Soc. ent. Belgique, xxxvi. *P. imparis*, n. var. *testacea*, *minuta* ; EMERY, Zool. Jahrb. Syst. vii, p. 636.
- P. gracilis*, Madagascar, FOREL, p. 517, Ann. Soc. ent. Belgique, xxxvi ; *P. steinhæili*, St. Vincent, with var. *minuta*, FOREL, p. 342, Tr. ent. Soc. London, 1893 : n. spp.
- ▷ *Rhizomyrma*, n. subg. of *Acropyga*, *q.v.* ; FOREL, p. 347, Tr. ent. Soc. London, 1893.

- Solenopsis orbuloides* n. var., *rhombinoda* n. st.; FOREL, p. 466, Ann. Soc. ent. Belgique, xxxvii.
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- Strumigenys saliens*, saltatory powers; MAYR, Wien. ent. Zeit. xii, p. 23. *S. eggersi*, n. var. *vincentensis*; FOREL, p. 378, Tr. ent. Soc. London, 1893.
- S. margaritæ*, p. 378, *albertæ*, p. 380, St. Vincent, FOREL, Tr. ent. Soc. London; *S. grandidieri*, Madagascar, FOREL, p. 517, Ann. Soc. ent. Belgique, xxxvi : n. spp.
- Tapinoma anale*, Chihuahua, ANDRÉ, p. 148, Rev. Ent. franc. xii, n. sp.
- Technomyrmex albipes*, n. subsp. *foreli*; EMERY, p. 249, Ann. Soc. ent. France, 1893.
- T. bicolor*, Ceylon, EMERY, p. 249, Ann. Soc. ent. France, 1893, n. sp.
- Tetramorium (Xiphomyrmex) andrei*, n. var. *robustior* n. st.; FOREL, p. 521, Ann. Soc. ent. Belgique, xxxvi. *T. pacificum*, n. var. *subscabrum*; EMERY, p. 246, Ann. Soc. ent. France, 1893.
- T. (Xiphomyrmex) steinheili*, p. 520, *nassonovii*, p. 521, *sikora*, p. 522, Madagascar, FOREL, Ann. Soc. ent. Belgique, xxxvi; *T. (Xiphomyrmex) pilosum*, Ceylon, *flavipes*, Siam, EMERY, p. 247, Ann. Soc. ent. France, 1893 : n. spp.
- ▷ *Trachymyrmex*, n. subg. of *Atta*, *q.v.*; FOREL, p. 600, Ann. Soc. ent. Belgique, xxxvii.
- T. sharpii*, St. Vincent, FOREL, p. 372, Tr. ent. Soc. London, 1893, n. sp.
- ▷ *Wasmannia*, n. g. for *Tetramorium auropunctatum*, *sigmoideum*; FOREL, Tr. ent. Soc. London, 1893, p. 383.

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- C. (Holoachrysis) birmanica*, p. 214, *ignifascia*, p. 215, Birma, *mesochlora*, p. 216, Rhodes, *sodalis*, p. 217, *angusticollis*, p. 219, Caucasus, *C. (Tetrachrysis) monochroma*, Greece, p. 221, *concolor*, *circassica*, p. 222, Caucasus, *natalensis*, S. Africa, p. 224, *angustata*, p. 225, *ionophris*, p. 226, Birma, *microtrema*, p. 227, Australia, *sickmanni*, E. Siberia, p. 228, *tenera*, Algeria, p. 229, *araxana*, Caucasus, p. 230, *anomala*, Algeria, p. 231, *C. (Hexachrysis) igniceps*, Philippines, p. 233, *macrodon*, S. Africa, p. 234, *feana*, Birma, p. 235, MOCSÁRY, Termes. Fuzetek, xv; *C. (Tetrachrysis) adelaidensis*, Australia, p. 248, *cotesi*, p. 249, E. India, *C. (Pentachrysis) africana*, Congo, p. 250, *C. (Hexachrysis) ordinata*, Congo, p. 252, BUYSSON, Rev. Ent. franc. xii : n. spp.
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- Hedychridium hispanicum*, Spain, BUYSSON in André Spec. Hym. vi, n. sp.
- Hedychrum lama*, ♀ described; BUYSSON, p. 247, Rev. Ent. franc. xii.
- H. radoszkowskyi*, Algeria, BUYSSON in André Spec. Hym. vi, p. 213, n. sp.
- Holopyga indica*, ♂ described; BUYSSON, p. 246, Rev. Ent. franc. xii.
- H. speciosissima*, Russia, BUYSSON in André Spec. Hym. vi, p. 174 ; *H. (Hedychridium) pulchella*, Caucasus, MOCSÁRY, p. 214, Termes. Fuzetek, xv : n. spp.
- Notozus afer*, ♂ described; BUYSSON, Rev. Ent. franc. xii, p. 245.
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- Olochrysis eldari*, Caucasus, RADOSZKOWSKI, p. 242, Rev. Ent. franc. xii, n. sp.
- Philoctetes obtusus*, Algeria, p. 155, *abeillei*, Spain, p. 159, BUYSSON in André Spec. Hym. vi, n. spp.

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- Agriotypus armatus*, metamorphoses; KLAPÁLEK, Arch. Landesdf. Bohmen, viii, No. 6, pp. 52-54, fig. 14.
- ³*Amphibulus*, n. g., *Cryptides*, for *A. gracilis*, n. sp., Bavaria; KRIECHBAUMER, p. 122, Ent. Nachr. xix.
- Aptesis major*, Michigan, DAVIS, p. 32, Ent. News Philad. 1893, n. sp.
- Banchus (Corynephanus) groenlandicus*, Greenland, AURIVILLIUS, Bih. Svenska Ak. xv, No. 1, p. 30, n. sp.
- Coleocentrus pettitti*, ♂ described; HARRINGTON, p. 30, Canad. Ent. xxv.
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- Ephialtes divinator*, parasite of *Elampus auratus*; VERHOEFF, p. 480, Berlin. ent. Zeitschr. xxxvii. *E. irritator*, habits; CHITTENDEN, Insect Life, v, p. 247.
- Exephanes*: species revised; KRIECHBAUMER, p. 325, Ent. Nachr. xix.
- Hemicryptus tener*, Munich, KRIECHBAUMER, p. 152, Ent. Nachr. xix, n. sp.
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- Microcryptus abdominator*, Gr., ♂ described; KRIECHBAUMER, p. 123, Ent. Nachr. xix.
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- Ophion slossone*, N. America, DAVIS, p. 135, Ent. News Philad. 1893, n. sp.
- Pimpla (Itopectis) kolthoffi*, Greenland, AURIVILLIUS, Bih. Svenska Ak. xv, No. 1, p. 29, n. sp.
- Probolus slaviceki*, Austria, KRIECHBAUMER, p. 264, Ent. Nachr. xix, n. sp.
- ¹*Pseudocryptus*, n. g., for *Cryptus grisescens*, Gr.; KRIECHBAUMER, p. 120, Ent. Nachr. xix.
- Spilocryptus brevipennis*, Piedmont, *magrettii*, Lombardy, KRIECHBAUMER, p. 54, Ent. Nachr. xix, n. spp.
- Tryphon flavifrons*, Quebec, FYLES, p. 107, Canad. Ent. xxv, n. sp.

BRACONIDÆ.

- Braconids* parasitic on *Coleoptera*; CHITTENDEN, Insect Life, v, p. 248.
- Adelura tibialis*, Virginia, ASHMEAD, p. 79, Canad. Ent. xxv, n. sp.
- Apanteles nonagriæ*, Australia; OLLIFF, p. 381, pl. xxii, fig. II, Agric. Gaz. N.S.W., n. sp.
- Bracon anthonomi*, Washington, ASHMEAD, p. 185, Insect Life, v; *B. lizi*, p. 67, *rufomarginatus*, p. 68, Virginia, ASHMEAD, Canad. Ent. xxv: n. spp.

- Cænophanes longicaudus*, *flavicollis*, *consimilis*, *languriæ*, *anthaxiæ*, p. 75, *pityophthori*, *floridanus*, *atriceps*, *hylotropidis*, *aciculatus*, p. 76, *chittendenii*, p. 77, N. America, ASHMEAD, *Canad. ent.* xxv, n. spp.
- Chremylus terminalis*, p. 39, *nigriceps*, p. 40, N. America, ASHMEAD, *Tr. Amer. ent. Soc.* xx, n. spp.
- Cælinus hopkinsii*, Virginia, ASHMEAD, p. 79, *Canad. Ent.* xxv, n. sp.
- Elasmosoma berolinense*, habits; OLIVIER, p. lxxi, *Bull. Soc. ent. France*, 1893, and PIERRE, *Rev. Sci. Bourbonnais*, vi, p. 112.
- Hormiopterus fasciatus*, Kansas, ASHMEAD, p. 43, *Tr. Amer. ent. Soc.* xx, n. sp.
- Hormiineæ*: the N. American; ASHMEAD, pp. 39-44, *Tr. Amer. ent. Soc.* xx.
- Hormius erythrogaster*, p. 41, *pallidipes*, *atriceps*, p. 42, *vulgaris*, p. 43, ASHMEAD, *Tr. Amer. ent. Soc.* xx, n. spp.
- Lysitermus scolyticida*, Virginia, ASHMEAD, p. 74, *Canad. Ent.* xxv, n. sp.
- Mirax aspidiscæ*, *minuta*, *lithocolletidis*, *grapholithæ*, p. 378, *pallida*, p. 379, N. America, ASHMEAD, *Psyche*, vi, n. spp.
- Rhysipolis* ? *biformis*, Virginia, ASHMEAD, p. 69, *Canad. Ent.* xxv, n. sp.
- Rhysalus pityophthori*, Virginia, ASHMEAD, p. 69, *Canad. Ent.* xxv, n. sp.
- Spathius*: table of N. American species; ASHMEAD, pp. 70-72, *Canad. Ent.* xxv.
- S. longipetiolatus*, *californicus*, *claripennis*, *unifasciatus*, *simillimus*, p. 70, *tomici*, *brachyurus*, *floridanus*, p. 71, *pallidus*, p. 74, N. America, ASHMEAD, *Canad. Ent.* xxv, n. spp.

EVANIDÆ.

- Gasteruption deletangi*, Brazil, SCHLETTERER, p. 166, *Ent. Nachr.* xix, n. sp.
- Stenophasmus butneri*, W. Africa, STADELMANN, p. 226, *Ent. Nachr.* xix, n. sp.

CHALCIDIDÆ.

- Chalcids* parasitic on *Coleoptera*; CHITTENDEN, *Insect Life*, v, pp. 249 & 250.
- Catolaccus anthonomi*, p. 185, fig. 17, *incertus*, p. 186, Washington, ASHMEAD, *Insect Life*, v, n. spp.
- Chaetosticha pretiosa*, host; DYAR, p. 256, *Canad. Ent.* xxv.
- Eupelmus howardi*, Australia, OLLIFF, p. 381, pl. xxii, fig. 1, *Agric. Gaz. N.S.W.* iv, n. sp.
- Eurytoma carpini*, Paris, DECAUX, p. 93, *Naturaliste*, 1893, n. sp.
- Isosoma*: galls; MASSALONGO (622).
- Megastigmus*: food habits discussed; WACHTL, *Wien. ent. Zeit.* xii, pp. 24-26: its phytophagic habit discussed; RILEY, *P. ent. Soc. Washington*, ii, pp. 359-364.
- M. spermotrophus*, N. America, WACHTL, p. 26, pl. i, *Wien. ent. Zeit.* xii, n. sp.
- Torymus hainesii*, Lower California, ASHMEAD, p. 278, *Ent. News Philad.* 1893, n. sp.

PROCTOTRUPIDÆ.

List of hosts of N. American *Proctotrupidæ* ; ASHMEAD, Bull. U. S. Mus. No. 45, pp. 449-451.

Proctotrupidæ on *Coleoptera* ; CHITTENDEN, Insect Life, v, p. 250.

Betyla fulva, ♂ ♀ figured ; HUDSON, p. 164, pl. ix, Tr. N. Zealand Inst. xxv.

The following are the new genera and species described in ASHMEAD's monograph of the North American *Proctotrupidæ*, Bull. U. S. Mus. No. 45 :—

- ¹*Acanthoscelis*, n. g., for *A. americanus*, pl. x, fig. 6, *flavipes*, n. spp., S. America, ASHMEAD, p. 236, t. c.
- Acerota cecidomyiæ*, California, ASHMEAD, p. 261, t. c., n. sp.
- Aclista rufa*, *rufescens*, *rufopetiolata*, pl. xv, fig. 4, p. 376, *missouriensis*, *conica*, *rugosopetiolata*, p. 377, *californica*, *borealis*, *floridana*, p. 378, N. America, ASHMEAD, t. c., n. spp.
- Acoloides howardii*, p. 171, *bicolor*, *melleus*, p. 172, *subapterus*, *seminiger*, p. 173, N. America, ASHMEAD, t. c., n. spp.
- Acolus xanthogaster*, p. 174, *zabriskiei*, p. 175, pl. xv, fig. 7, N. America, ASHMEAD, t. c., n. spp.
- Acropiesta flavicauda*, pl. xiv, fig. 3, *subaptera*, N. America, ASHMEAD, p. 354, t. c., n. spp.
- Amblyaspis occidentalis*, p. 267, *californicus*, *petiolatus*, p. 268, *minutus*, *rugiceps*, p. 269, N. America, ASHMEAD, t. c., n. spp.
- ⁴*Anpulicomorpha*, n. g., *Embolemineæ*, p. 79, for *A. confusa*, n. sp., California, p. 80, pl. v, fig. 1 ; ASHMEAD, t. c.
- Anectata californica*, p. 381, *polita*, *georgica*, p. 382, N. America, ASHMEAD, t. c., n. spp.
- Aneurhynchus floridanus*, pl. xvii, fig. 4, *virginicus*, N. America, ASHMEAD, p. 405, t. c., n. spp.
- Anopedias pentatomus*, N. America, ASHMEAD, p. 292, t. c., n. sp.
- Anoxus chittendenii*, pl. iv, fig. 6, *lævis*, N. America, ASHMEAD, p. 68, t. c., n. spp.
- Anteon unifasciatus*, p. 95, *rugosus*, *politus*, pl. vi, fig. 2, p. 96, *pallidicornis*, *puncticeps*, *minutus*, p. 97, N. America, ASHMEAD, t. c., n. spp.
- Anteris virginiensis*, p. 225, *nigriceps*, p. 226, pl. x, fig. 2, N. America, ASHMEAD, t. c., n. spp.
- Apenesia coronata*, N. America, p. 47, pl. iii, fig. 3, ASHMEAD, t. c., n. sp.
- Aphanogmus niger*, p. 133, *bicolor*, *floridanus*, p. 134, *virginiensis*, *marylandicus*, *pallidipes*, *varipes*, pl. vii, fig. 1, p. 135, N. America, ASHMEAD, t. c., n. spp.
- Aphelopus rufiventris*, p. 100, *albopictus*, p. 101, *affinis*, p. 102, N. America, ASHMEAD, t. c., n. spp.
- ⁴*Aradophagus*, n. g., *Telenomini*, for *A. fasciatus*, n. sp., Florida, pl. vii, fig. 9 ; ASHMEAD, t. c.
- Ateleoapterus virginiensis*, pl. iii, figg. 1 & 2, *tarsalis*, p. 45, N. America, ASHMEAD, t. c., n. spp.

- Atritomus americanus*, N. America, ASHMEAD, p. 122, pl. vi, fig. 9, *t. c.*, n. sp.
Bæoneura bicolor, N. America, ASHMEAD, p. 235, pl. ix, fig. 6, *t. c.*, n. sp.
Bæus minutus, niger, p. 178, *piceus*, p. 179, N. America, ASHMEAD, *t. c.*,
 n. spp.
Baryconus cecanthi, N. America, pl. ix, fig. 2, p. 215, RILEY, *t. c.*, n. sp.
Basalys fuscipennis, picipes, utahensis, p. 444, *analis*, p. 445, *brevicornis,*
californica, pl. xviii, fig. 7, p. 446, N. America, ASHMEAD, *t. c.*,
 n. spp.
Belyta frontalis, pl. xiv, fig. 4, p. 356, *erythropus, texana*, p. 357, N.
 America, ASHMEAD, *t. c.*, n. spp.
Bethylus constrictus, Florida, ASHMEAD, p. 53, *t. c.*, n. sp.
²*Bocchus, n. g.*, near *Dryinus*, for *B. flavicollis*, n. sp., Michigan ; ASHMEAD,
 p. 9, *t. c.*
⁴*Cacus, n. g.*, p. 223, for *C. æcanthi* (Riley), n. sp., N. America, pl. xvi,
 fig. 6, p. 224 ; ASHMEAD, *t. c.*
¹*Calliscelio, n. g.*, near *Macroteleiu*, p. 218, for *C. laticinctus*, n. sp., St.
 Vincent, p. 219, pl. ix, fig. 7 ; ASHMEAD, *t. c.*
Caloteleia striata, heidemanni, pl. ix, fig. 1, p. 213, *marlattii*, p. 214, N.
 America, ASHMEAD, *t. c.*, n. spp.
Cephalonomia hyalinipennis, Florida, ASHMEAD, p. 49, pl. iii, fig. 5, *t. c.*,
 n. sp.
Ceraphron fusciceps, auripes, p. 125, *pallidiventris*, p. 126, *basalis, cali-*
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t. c., n. spp.
⁴*Ceratobæus, n. g.*, *Bæini*, p. 175, for *C. cornutus*, pl. viii, fig. 8, *binotatus*,
 p. 176, n. spp., N. America ; ASHMEAD, *t. c.*
¹*Ceratopria, n. g.*, *Diapriini*, p. 428, for *C. longiceps*, p. 429, *megaplasta,*
bifoveolata, pusilla, p. 430, *infuscatipes*, pl. xviii, fig. 3, p. 431,
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Chelogyne henshawi, canadensis, pl. vi, fig. 1, N. America, ASHMEAD,
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¹*Chromoteleia, n. g.*, near *Macroteleia*, p. 219, for *C. semicyanea*, n. sp., St.
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Cinetus ruficornis, macrodyctium, p. 360, *similis, californicus*, p. 361,
 N. America, ASHMEAD, *t. c.*, n. spp.
¹*Cælogaster, n. g.*, *Platygasterini*, p. 289, for *C. mirabilis*, n. sp., St. Vincent,
 p. 290, pl. xii, fig. 6 ; ASHMEAD, *t. c.*
¹*Cre mastobæus, n. g.*, *Scelionini*, p. 228, for *C. bicolor*, n. sp., St. Vincent,
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Diapria californica, p. 422, pl. xviii, fig. 3, *utahensis, erythropus*, p. 423,
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 N. America, ASHMEAD, *t. c.*, n. spp.
⁴*Dissomphalus, n. g.*, *Bethylinæ*, p. 41, for *D. xanthopus*, p. 42, pl. ii, figg.
 7 & 8, *californicus, carolinensis*, p. 43, n. spp., N. America ; ASH-
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- ¹*Dissolcus*, n. g., near *Telenomus*, p. 164, for *D. nigricornis*, n. sp., Florida, p. 165, pl. vii, fig. 8; ASHMEAD, *t. c.*
- Epyris occidentalis*, *carbonarius*, pl. iv, fig. 4, *æneiceps*, p. 59, *columbianus*, p. 60, *megacephalus*, p. 61, N. America, ASHMEAD, *t. c.*, n. spp.
- Eumegaspilus erythrothorax*, Florida, ASHMEAD, p. 120, pl. vi, fig. 6, *t. c.*, n. sp.
- ⁴*Eritrissomerus*, n. g., near *Platygaster*, p. 298, for *E. cecidomyiæ*, n. sp., Florida; ASHMEAD, p. 299, pl. xiii, fig. 1, *t. c.*
- Galesus atricornis*, p. 409, *texasus*, *pilosus*, p. 411, N. America, ASHMEAD, *t. c.*, n. spp.
- Glyptonota nigriclavata*, Washington, ASHMEAD, pl. xvii, fig. 1, p. 401, *t. c.*, n. sp.
- Gonatopus flavifrons*, pl. v, fig. 4, p. 84, *californicus*, *bicolor*, p. 85, N. America, ASHMEAD, *t. c.*, n. spp.
- Goniozus megacephalus*, p. 74, *platynotæ*, pl. iv, fig. 8, *politus*, p. 75, *columbianus*, p. 76, N. America, ASHMEAD, *t. c.*, n. spp.
- Gryon fumipennis*, p. 206, *columbianus*, *flavipes*, p. 208, N. America, ASHMEAD, *t. c.*, n. spp.
- Hadronotus largi*, p. 231, *myrmecophilus*, p. 232, *rugiceps*, p. 233, N. America, ASHMEAD, *t. c.*, n. spp.
- Hemilexis submarginata*, pl. xvi, fig. 4, p. 389, *californica*, p. 390, N. America, ASHMEAD, *t. c.*, n. spp.
- ⁵*Hemilexodes*, n. g., near *Spilomicrus*, p. 399, for *H. floridana*, n. sp., Jacksonville, p. 400, pl. xvi, fig. 8, ASHMEAD, *t. c.*
- ⁴*Hoplogryon*, n. g., near *Prosacantha*, p. 200, with *H. longipennis*, pl. viii, fig. 6, p. 202, *tibialis*, *claripennis*, *pteridis*, p. 203, *obscuripes*, p. 204, *rufipes*, *solitarius*, p. 205, n. spp., N. America; ASHMEAD, *t. c.*
- ⁴*Hoplopria*, n. g., *Spilomicrini*, for *H. pulchripennis*, n. sp., Bogota; ASHMEAD, p. 388, *t. c.*
- ⁴*Hoploteleia*, n. g., p. 227, for *Baryconus floridanus*, Ashm., figured, pl. x, fig. 1; ASHMEAD, *t. c.*
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- Isorhombus arizonensis*, N. America, ASHMEAD, p. 277, *t. c.*, n. sp.
- Isostasius fuscipennis*, Washington, ASHMEAD, p. 255, *t. c.*, n. sp.
- Idris laviceps*, N. America, ASHMEAD, p. 235, *t. c.*, n. sp.
- Inostemma californica*, *lintheri*, N. America, ASHMEAD, p. 260, *t. c.*, n. spp.
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- ⁴*Laelius*, n. g., *Bethylinæ*, p. 50, for *L. trogodermatis*, *tricarinatus*, *rufipes*, p. 51, *nigripilosus*, pl. iii, fig. 7, p. 52, n. spp., N. America; ASHMEAD, *t. c.*
- Lagynodes minutus*, N. America, ASHMEAD, p. 121, *t. c.*, n. sp.
- ⁴*Lapitha*, n. g., *Scelionini* for *L. spinosa*, n. sp., St. Vincent, pl. ix, fig. 8 ASHMEAD, p. 222, *t. c.*

- Leptacis rugiceps*, pl. xii, fig. 1, *punctatus*, *floridanus*, p. 272, *striatifrons*, *longiventris*, *breviventris*, p. 273, *puncticeps*, *flavicornis*, *pubescens*, p. 275, N. America, ASHMEAD, *t. c.*, n. spp.
- Leptorhaptus conicus*, *rufus*, N. America, ASHMEAD, p. 350, *t. c.*, n. spp.
- Loxotropa columbiana*, p. 413, *ruficornis*, pl. xvii, fig. 8, p. 414, *californica*, *flavipes*, *nana*, p. 415, N. America, ASHMEAD, *t. c.*, n. spp.
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- Macroteleia macrogaster*, pl. ix, fig. 6, p. 217, *virginiensis*, p. 218, N. America, ASHMEAD, *t. c.*, n. spp.
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- Mesitius vancouverensis*, pl. iv, fig. 5, *nevadensis*, p. 64, *minutus*, *californicus*, p. 65, *bifoveolatus*, *brachypterus*, p. 66, *texanus*, p. 67, N. America, ASHMEAD, *t. c.*, n. spp.
- Miota analis*, Carolina, ASHMEAD, p. 352, *t. c.*, n. sp.
- Monocrita carinata*, N. America, ASHMEAD, p. 254, pl. xi, fig. 4, *t. c.*, n. sp.
- ↳ *Myrmecopria*, n. g., *Diapriini*, p. 446, for *Loxotropa mellea*, Ashm., pl. xviii, fig. 8; ASHMEAD, *t. c.*
- ↳ *Neoceraphron*, n. g., for *Ceraphron macroneurus*, Ashm.; ASHMEAD, p. 136, *t. c.*
- ↳ *Opisthacantha*, n. g., *Scelionini* for *O. mellipes*, n. sp., Washington, pl. ix, fig. 4; ASHMEAD, p. 221, *t. c.*
- Pantoclis montana*, *picipes*, *megaplata*, p. 368, *insularis*, *crassicornis*, p. 369, *analis*, pl. xv, fig. 2, *ruficauda*, *flavipes*, p. 370, *californica*, p. 371, *rufescens*, *floridana*, p. 372, N. America, ASHMEAD, *t. c.*, n. spp.
- Pantolyta brunnea*, N. America, ASHMEAD, p. 383, pl. xvi, fig. 1, *t. c.*, n. sp.
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- ↳ *Phænopria*, n. g., *Diapriini*, p. 436, for *P. minutissima*, *hæmatobia*, *virginica*, pl. xviii, fig. 5, *schwarzii*, *aptera*, p. 439, *affinis*, *parva*, *montana*, n. spp., N. America; ASHMEAD, *t. c.*
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- ↳ *Phorbas*, n. g., *Dryiniæ* for *P. laticeps*, n. sp., Florida, pl. v, fig. 7; ASHMEAD, *t. c.* p. 90.
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- ↓ *Scelionomorpha*, n. g., *Scelionini*, p. 239, for *S. longicornis*, Santarem, pl. x, fig. 8, *S. ? bisulca*, Florida, n. spp., p. 240; ASHMEAD, *t. c.*
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- Spilomicrus armatus*, pl. xvi, fig. 7, *atriclavus*, *flavicornis*, p. 398, N. America, ASHMEAD, *t. c.*, n. spp.
- Synopeas nigripes*, p. 286, *rufipes*, p. 287, pl. xii, fig. 5, *cornicola*, *antennaria*, *rufiscapus*, p. 288, N. America, ASHMEAD, *t. c.*, n. spp.
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- Trichacis rufipes*, pl. xii, fig. 9, p. 295, *rubicola*, *arizonensis*, p. 296, *virginensis*, p. 297, N. America, ASHMEAD, *t. c.*, n. spp.
- ↓ *Trichopria*, n. g., *Diapriini*, p. 431, for *T. pentaplasta*, p. 433, *zimmermanni*, *rufipes*, pl. xviii, fig. 4, *carolinensis*, p. 434, *popenoei*, p. 435, *pacifica*, *flavipes*, p. 436, n. spp., N. America; ASHMEAD, *t. c.*

- Trimorus americanus*, N. America, ASHMEAD, p. 139, pl. vii, fig. 4, *t. c.*,
n. sp.
- Trissacantha rugosa*, N. America, ASHMEAD, p. 183, *t. c.*, n. sp.
- Trissolcus*, n. g., near *Telenomus*, p. 161, for *T. podisi*, p. 162, *thyantæ*,
murgantia, *rufiscapus*, p. 163, n. spp., N. America; ASHMEAD, *t. c.*
- Tropidopria*, n. g., *Diapriini*, p. 416, with *T. simulans*, p. 419, *tetraplasta*,
p. 420, n. spp., N. America; ASHMEAD, *t. c.*
- Tropidopsis*, n. g., *Spilomicrini*, for *T. clavata*, n. sp., St. Vincent; ASH-
MEAD, p. 402, pl. xvii, fig. 2, *t. c.*
- Xenomerus pallidipes*, N. America, ASHMEAD, p. 184, *t. c.*, n. sp.
- Xenotoma xanthopus*, *mandibularis*, pl. xiv, fig. 7, N. America, ASHMEAD,
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- Zelotypa texana*, *longicornis*, pl. xv, fig. 1, *flavipes*, p. 365, *ruficornis*, p. 366,
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- Zygota californica*, p. 373, *texana*, p. 374, N. America, ASHMEAD, *t. c.*,
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General catalogue; DALLA TORRE (212).

Monograph of British *Cynipidæ*, concluded; CAMERON (141).

Production of galls; ROTHERA, Nat. Sci. iii, pp. 353-366.

Acraspis undulata, Colorado, GILLETTE, p. 28, Ent. News Philad. 1893,
n. sp.

Andricus (sub *Diplolepis*) *pallidus*, Ol., = (*sieboldi*, Hart.); STADELMANN,
p. 493, Berlin. ent. Zeitschr. xxxvii.

Belonocnema colorado, N. America, GILLETTE, p. 210, Ent. News Philad.
1893, n. sp.

Biorhiza aptera, on roots of birch; MCLACHLAN, Ent. Mag. xxix, p. 263.

Diastrophus kincaidii, Washington, GILLETTE, p. 110, Canad. Ent. xxv,
n. sp.

Holcaspis rubens, p. 29, *monticola*, p. 30, *brevipennata*, p. 31, Colorado,
GILLETTE, Ent. News Philad. 1893; *H. colorado*, N. America,
GILLETTE, p. 210, *t. c.*: n. spp.

Neuroterus congregatus, *virgens*, Colorado, GILLETTE, p. 166, Ent. News
Philad. 1893, n. spp.

Synergus garryana, Washington, GILLETTE, p. 110, Canad. Ent. xxv,
n. sp.

SESSILIVENTRES.

[Cf. CAMERON (141), COSTA (199, 200), GUERCIO (411), HARRINGTON
(428), HEIM (433), KIRBY (529), KOHL (537), MACGILLIVRAY (608),
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Natural. vii, pp. 117-128.

Notes on synonymy and generic characters of British species; CAMERON
(141) pp. 142-207.

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- Sirex fantoma*, ♂ described; SAHLBERG, p. 5, Medd. Soc. Faun. Fenn. xvii.
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Xiphydria canadensis, note on; HARRINGTON, p. 63, Canad. Ent. xxv.

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- Full list of the *Tenthredinidæ* of Switzerland; STECK, MT. Schweiz. ent. Ges. ix, pp. 1-45.
 Injurious *Tenthredinidæ* in Canada; HARRINGTON, pp. 17-23.
 Proportions of sexes; HARRINGTON, p. 57, Canad. Ent. xxv.
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Allantus mauritanicus, Tunis, COSTA, p. 101, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 20, pl. iv, fig. 5, n. sp.
Blennocampa atrata, Washington, MACGILLIVRAY, p. 239, Canad. Ent. xxv, n. sp.
Cerealecs cyathiformis, Australia, KIRBY, p. 42, Ann. Nat. Hist. (6) xii, n. sp.
Cræsus latitarsus, metamorphoses; DYAR, p. 246, Canad. Ent. xxv.
Dolerus borealis, Washington, MACGILLIVRAY, p. 238, Canad. Ent. xxv, n. sp.
Fenusia varipes, metamorphoses; DYAR, p. 247, Canad. Ent. xxv.
Harpiphorus tarsatus = (*varianus* and *versicolor*, Norton); HARRINGTON, p. 59, Canad. Ent. xxv.
H. varipicta, referred to *Pachyprotasis*; HARRINGTON, Canad. Ent. xxv, p. 60.
Hemichroa americana, metamorphoses; DYAR, p. 244, Canad. Ent. xxv.
Hoplocampa pallipes, Washington, MACGILLIVRAY, p. 239, Canad. Ent. xxv, n. sp.
Hylotoma pagana, life-history; GUERCIO, Bull. Soc. ent. Ital. xxiv, pp. 331-345.
H. stuhlmanni, Mozambique, KOHL, p. 190, Jahrb. Hamburg. Anst. x, n. sp.
Labida opimus, n. var. *bigemina*; DYAR, p. 195, Canad. Ent. xxv.
Lyda stellata, metamorphoses; XAMBEU, p. cccxxv, Bull. Soc. ent. Franco, 1893.
L. olympia, Washington, MACGILLIVRAY, p. 243, Canad. Ent. xxv, n. sp.
Macrophya albilabris, Canada, HARRINGTON, p. 60, Canad. Ent. xxv; *M. magnifica*, Washington, MACGILLIVRAY, p. 240, t. c. : n. spp.
Messa atra, Washington, MACGILLIVRAY, p. 238, Canad. Ent. xxv, n. sp.
Monophadnus atricornus, Washington, MACGILLIVRAY, p. 239, Canad. Ent. xxv, n. sp.
Monostegia rosea, metamorphoses figured; Insect Life, v, p. 273.

- M. kincaidii*, Washington, MACGILLIVRAY, p. 239, *Canad. Ent.* xxv, n. sp.
- Nematus acuminatus*, p. 113, *saxsenii*, p. 115, *scutellatus*, p. 117, larvæ described; STEIN, *Ent. Nachr.* xix.
- N. salicis*, its galls and their nature; HEIM, *Ann. Soc. ent. France*, 1893, pp. 347-372.
- N. rufo-cinctus*, *thoracicus*, p. 58, *lineatus*, p. 59, Canada, HARRINGTON, *Canad. Ent.* xxv, n. spp.
- Pachyprotasis omega* and *Synairema americana* are probably one species; HARRINGTON, p. 60, *Canad. Ent.* xxv.
- Pamphilius erythrocephalus*, life-history; OUDEMANS, *Tijdschr. Ent.* xxxvi, p. 41, pl. ii.
- P. ruficeps*, *cinctus*, Canada, HARRINGTON, p. 62, *Canad. Ent.* xxv, n. spp.
- Perga*: list of species in Oxford Museum; SHIPP, *Entomologist*, xxvi, p. 263.
- P. divaricata*, p. 39, *sericea*, *sellata*, p. 40, *lalage*, p. 41, Australia, KIRBY, *Ann. Nat. Hist.* (6) xii, n. spp.
- Schizocerus tristis*, n. var. *fumipennis*, with description of larva; DYAR, p. 195, *Canad. Ent.* xxv.
- Strongylogaster pacificus*, *primativus*, Washington, MACGILLIVRAY, p. 241, *Canad. Ent.* xxv, n. spp.
- Taxonus nigrisoma* and *dubitatus*, larvæ; JACK, p. 183, *Canad. Ent.* xxv.
- Tenthredo grandis*, *basillaris*, *signata*, notes on; HARRINGTON, p. 61, *Canad. Ent.* xxv.
- Tenthredopsis?* *annulicornis*, Canada, HARRINGTON, p. 61, *Canad. Ent.* xxv; *T. transversa*, *ruficornis*, Washington; MACGILLIVRAY, *t. c.* p. 242: n. spp.
- Zaræa americana*, metamorphoses; FYLES, *Canad. Ent.* xxv, p. 23.

(C.) *LEPIDOPTERA*.

Classification of *Lepidoptera*; COMSTOCK (185), pp. 96-113.

Structure of the head; KELLOGG (515).

Nature of colouration of scales; URECH (999).

Considerations as to food of larvæ; SEITZ (874).

RHOPALOCERA.

[*Cf.* AURIVILLIUS (27, 30, 31), BARRETT (39), BEUTENMÜLLER (63), BUCKELL (118), BUTLER (124, 128), CHRISTOPH (162), DIXEY (239), DRUCE & BAKER (247), EDWARDS (256), EHRMANN (257), EIMER (258), ELWES & EDWARDS (259, 260), FRÜHSTORFER (348-351), GODMAN & SALVIN (390), GRUM-GRSHIMAILO (409), HOLLAND (449, 454, 456), JOANNIS (498), JOHANSEN (499), KARSCH (508, 509), KELLOGG (515), KIRBY (530), KRETZSCHMAR (558), KUNZE (560), LEECH (574, 575), LOWER (598), MABILLE (605), MABILLE & VUILLOT (606), MARTIN (617), MELVILL (627), MERRIFIELD (628, 629), MITIS (638), MOORE (649), NICÉVILLE (670, 671), OBERTHUR (676), PAGENSTECHE (696, 697, 698), RIPPON (800), ROTHSCHILD (822), ROTHSCHILD & JORDAN (825), SAHLBERG (832), SALVIN (835), SCUDDER (861-864), SEITZ (870-874), SHARPE (894), SKINNER (902, 903), SMITH & KIRBY (915), STAUDINGER (934, 935, 936), SWINHÖE (953, 954, 955), THOMAS (966), TRIMEN (989), WATSON (1033), WEYMER (1048).]

Tables of the genera of the families found in Adeli, Africa; KARSCH, pp. 167-173, &c., Berlin ent. Zeitschr. xxxviii.

Changes of external form during metamorphosis; SCUDDER (861).

Structure and function of androchonia; THOMAS, Amer. Natural. 1893, p. 1018, pl.

Sketch of history of Butterfly classification; BUCKELL (118).

Descriptions of the Butterflies, their larvæ and pupæ, found round New York; BEUTENMÜLLER, Bull. Amer. Mus. v, pp. 241-310, pls. ii-vi. Decoying Butterflies; KNAGGS (532).

PAPILIONIDÆ.

Baronia, n. g., for *B. brevicornis*, n. sp., Mexico; SALVIN, p. 331, Tr. ent. Soc. London, 1893.

Calinaga sudassana, Siam, MELVILL, p. 121, pl. vii, Tr. ent. Soc. London, 1893, n. sp.

- Charus rotalita*, Ké I., SWINHOE, p. 258, Ann. Nat. Hist. (6) xii, n. sp.
- Davidina armandi*, figured pl. xxxiii, fig. 9 ; LEECH, Butt. China.
- Luehdorfia japonica*, with var. *N. chinensis*, p. 491, figured ; LEECH, Butt. China, pl. xxxiii, figg. 1 & 2.
- Menelaides thessalia*, Ké I., SWINHOE, p. 258, Ann. Nat. Hist. (6) xii, n. sp.
- Ornithoptera naias* = (*socrates*, Stgr.), figured, pl. i, fig. 1, Deutsche ent. Zeitschr. Lep. vi.
- O. honrathiana*, Sumatra, MARTIN, p. 492, Berlin. ent. Zeitschr. xxxvii ;
O. paradisea, New Guinea, STAUDINGER, p. 177, Ent. Nachr. xix ;
O. paradisea = (*schoenbergi*), fuller description, figure, STAUDINGER, t. c. pp. 350-360, pls. vi & vii ;
O. (Schoenbergia) paradisea, New Guinea, PAGENSTECHER, p. 29, Jahrb. Nassau. Ver. xlv, pls. ii & iii ; its probable ♀, *id. t. c.* p. 83, pl. iv ;
O. (Priamoptera) dohertyi, I. of Talaut, RIPPON, p. 295, Ann. Nat. Hist. (6) xi : n. spp.
- Papilio machaon*, var. figured, pl. xxxv, fig. 2, *cloanthus*, n. var. *clymenus*, pl. xxxii, fig. 2, *mikado*, fig. 6, *dialis*, fig. 4, *syfanius*, fig. 5, *gyas*, var. *sciron*, fig. 1, *agestor*, n. var. *restricta*, pl. xxxv, fig. 5, p. 557, figured ; LEECH, Butt. China. *P. arjuna*, n. var. *gedecensis*, p. 285, *tenggerensis*, p. 286 ; FRUHSTORFER, Ent. Nachr. xix. *P. inopinatus*, Butl., *stratiotes*, pl. xiii, figg. 1 & 2, *paron*, fig. 3 & 4, *polistratus*, figg. 5 & 6, figured ; SMITH & KIRBY, Rhop. ex. Papilio, xii. *P. pilumnus*, pl. lxxii, fig. 10, *alexiaures*, figg. 6 & 7, p. 241, *americus*, fig. 8, p. 243, figures and notes ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii. *P. stratiotes*, *procles*, figured ; WHITEHEAD, Kina Balu, pl., p. 118. *P. slateri*, n. var., *marginata* ; OBERTHUR, p. 3, pl. iv, fig. 35, Etudes Ent. xvii. *P. leucothoë*, n. var. *interjectus*, *P. paradoxa*, n. var. *leucothoides* ; HONRATH, p. 490, Berlin. ent. Zeitschr. xxxvii. *P. elwesi*, ♀ described and figured ; WATSON, p. 279, pl. xii, Ent. News Philad. 1893. *P. bairdii* and *oregonia* are one species, and probably also *P. hollandii* ; EDWARDS, p. 253, Canad. Ent. xxv. *P. sarpedon*, melanic var., p. 54, pl. L, fig. 11, *sycorax*, p. 54, pl. M, fig. 1, *hageni*, p. 55, fig. 2, figured and described ; NICÉVILLE, J. Bombay Soc. viii. *P. turnus*, black var. ; WINKLE, p. 212, Canad. Ent. xxv. *P. sthenelus*, *maclayanus*, metamorphoses figured ; SCOTT, Australian Lep. pl. xx. *P. eury-medon*, life-history ; DYAR, p. 243, Ent. News Philad. 1893. *P. homerus* in San Domingo ; AARON, p. 258, Canad. Ent. xxv : larva described ; PANTON, J. Inst. Jamaica, i, p. 375. *P. thersites*, larva ; TOWNSEND, t. c. p. 376. *P. pelaus*, larva noticed ; COCKERELL, p. 179, t. c., and p. 450, Psyche, vi. *P. philenor*, cannibal larvæ ; KUNZE, p. 17, Canad. Ent. xxv.
- P. nivinox*, Central Africa, BUTLER, p. 667, P. Zool. Soc. London, 1893 ;
P. preussius, p. 368, *chionicus*, p. 370, Cameroons, KARSCH, Berlin. ent. Zeitschr. xxxviii ;
P. junodi, Delagoa Bay, TRIMEN, p. 138, Tr. ent. Soc. London, 1893 ;
P. crassipes, p. 2, pl. iv, fig. 38, *henricus*,

- p. 3, fig. 39, Tonkin, OBERTHUR, *Etudes Ent.* xvii; *P. eurous*, pl. xxxii, fig. 3, p. 521, China, LEECH, Butt. China; *P. dialis*, W. China, LEECH, *Entomologist*, xxvi, Supp., p. 104; *P. prillwitzii*, Java, FRUHSTORFFER, *Ent. Nachr.* xix, p. 225 : n. spp.
- Parnassius delphius*, n. var. *elwesi*; LEECH, *Entomologist*, xxvi, Supp., p. 104. *P. jacquemonti*, var., pl. xxxiii, fig. 3, *delphius*, var. *elwesi*, fig. 4, *citrinarius*, fig. 6, and var., fig. 5, figured; LEECH, Butt. China. *P. clodius* and *smintheus*, distinctions; STRECKER, p. 163, *Canad. Ent.* xxv.
- Schoenbergia*, n. subg. of *Ornithoptera*, *q.v.*; PAGENSTECHEK, *Jahrb. Nassau. Ver.* xlvi, p. 35.
- Sericinus telamon*, var. *telmona*, ♂ ♀ figured, pl. xxxiii, figg. 7 & 8; LEECH, Butt. China.

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- Anthocharis gruneri*, n. var. *armeniaca*; CHRISTOPH, p. 86, *Deutsche ent. Zeitschr. Lep.* vi.
- Aporia dubernardi*, pl. xxxvi, fig. 8, *dauidis*, fig. 1, var. *venata*, fig. 3, *procris*, pl. xxxiii, fig. 10, *hippia*, var., pl. xxxvi, fig. 2, figured; LEECH, Butt. China.
- Appias whiteheadi*, figured; WHITEHEAD, *Kina Balu*, pl., p. 118.
- Belenois crawshayi*, p. 665, *diminuta*, p. 666, pl. lx, fig. 7, Central Africa, BUTLER, *P. Zool. Soc. London*, 1893, n. spp.
- Colias*: many varr. and abb. described, with new names, including *cogene*, n. var. *leechi* (an. sp. prop. ?), Himalaya; GRUM-GRSHIMAILO, *Horæ Soc. ent. Ross.* xxvii, pp. 379-383: notes on distribution; DUPONT, *Feuille Natural.* xxxiii, pp. 65, 66, & 83-88. *C. hecla*, note on, with var. *sulitelma*; AURIVILLIUS, pp. 11 & 12, pl. ii, figg. 9 & 10, *Bih. Svenska Ak.* xv, No. 1. *C. edusa*, n. var. *aubouissoni* (intermediate to *helice*); CARADJA, p. 172, *Deutsche ent. Zeitschr. Lep.* vi: early hatching of eggs; BIGNELL, *Ent. Mag.* xxix, p. 64: life history; FROHAWK, *Entomologist*, xxvi, pp. 184-187. *C. hyale*, varr. figured, pl. xxxiv, figg. 1-14, *montium*, fig. 15, *feldii*, pl. xxxv, figg. 6 & 7, figured; LEECH, Butt. China: earlier stages; FROHAWK, *Entomologist*, xxvi, pp. 5 & 145; WILLIAMS, *t. c.* p. 7; FROHAWK, *t. c.* p. 60; HAWES, *Ent. Mag.* xxix, p. 12: note on larva; BARRETT, *Ent. Mag.* xxix, p. 44. *C. behrii*, metamorphoses; DYAR, p. 158, *Canad. Ent.* xxv. *C. philodice*, n. var. *luteitincta*; WOLCOTT, p. 104, *t. c.*
- Delias*: revision of the genus, with catalogue of the species and synonymy; MITIS, *Deutsche ent. Zeitschr. Lep.* vi, pp. 97-153, pls. ii & iii. *D. eumolpe*, figg. 1 & 2, *inferna*, figg. 3-5, *belisar*, figg. 6 & 7, *singhapura*, figg. 1 & 2, *nigidius*, figg. 3 & 4, *oraia*, figg. 5-7, pl. iii, figured; SMITH & KIRBY, *Rhop. ex. Delias*, ii. *D. belladonna*, figured, pl. xxxvii, figg. 3 & 4, LEECH, Butt. China; *sanaca*, varr. with *subnubila*, n. var., figg. 7 & 8, *patrua*, figg. 1 & 2, with *lativitta*, n. var., pl. xxxv, fig. 1, p. 422, LEECH, Butt. China. *D. dorylæa*, n. var. *altivaga*; FRUHSTORFFER, p. 333, *Ent. Nachr.* xix.

- D. bromo*, Java, FRUHSTORFER, p. 335, Ent. Nachr. xix ; *D. datames*, *danala*, *derceto*, Sumatra, NICÉVILLE, p. 557, J. Bombay Soc. vii, and viii, pp. 51-53, pl. l., figg. 9, 4, 8 ; *D. cathara*, Borneo, SMITH, Ann. Nat. Hist. (6) xii, p. 34 ; *D. honrathi*, New Pomerania, p. 134, pl. iii, fig. 1, *dorothea*, Waigiou, p. 146, fig. 3, MITIS, Deutsche ent. Zeitschr. Lep. vi : n. spp.
- Dercas wallichii*, pl. xxxv, fig. 3, figured ; LEECH, Butt. China.
- Gonepteryx rhamnii*, var. figured, pl. xxxv, fig. 4 ; LEECH, Butt. China.
- Leucophasia gigantea*, figured, pl. xxxvi, figg. 10 & 11 ; LEECH, Butt. China.
- Metaporia largeteaui*, pl. xxxvi, fig. 9, *oberthuri*, fig. 7, *lotis*, fig. 6, figured ; LEECH, Butt. China.
- Mylothris jaopura*, W. Africa, KARSCH, p. 232, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Pieris napi*, variation of colour according to temperature ; MERRIFIELD, p. 56, Tr. ent. Soc. London, 1893 : figured, pl. xliii, figg. 1 & 2, *melete*, figg. 3 & 4, with n. var. *mandarina*, p. 451, *extensa*, pl. xxxvi, figg. 4 & 5, pl. xliii, fig. 6, *cisseis*, fig. 5, figured ; LEECH, Butt. China.
- Pinacopteryx mahobo*, figg. 1-3, *mabella*, figg. 4-6, *liliana*, figg. 7-9, figured ; SMITH & KIRBY, Rhop. ex. Papil. Pierinæ.
- P. gerda*, Mombasa, SMITH & KIRBY, Rhop. ex. Papil. Pierinæ, p. 4, pl. i, figg. 10 & 11, n. spp.
- Synchlœ lacinia*, variation of larva ; EDWARDS, Canad. Ent. xxv, pp. 286-291. *S. joppa*, oviposition ; COCKERELL, p. 450, Psyche, vi.
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- Amauris niavius*, variation of male, *bulbifera*, figure, fig. 1, description, p. 260, larva, pl. iii, fig. 1, pupa, fig. 1a ; AURIVILLIUS, Ent. Tidskr. 1893.
- A. whytei*, Central Africa, BUTLER, p. 644, P. Zool. Soc. London, 1893, n. sp.
- Anosia plexippus*, off Cape St. Vincent, Portugal ; HARKER, Ent. Mag. xxix, p. 86 : in the Atlantic ; BARRETT, t. c. p. 163.
- Danaida* to be used in place of *Danais* ; AURIVILLIUS, p. 259, Ent. Tidskr. 1893.
- Danais archippus*, cannibalism of larvæ ; FIELD, p. 88, Canad. Ent. xxv : resting swarm, figured ; Insect Life, v, p. 206. *D. plexippus*, *jamaicensis*, life-histories ; PANTON, J. Inst. Jamaica, i, pp. 311-314.
- D. (Caduga) tytioides*, Sumatra, NICÉVILLE, p. 555, J. Bombay Soc. vii, and viii, p. 37, pl. k, figg. 1 & 2, n. sp.
- Danisepa niasana*, Nias I., SWINHOE, p. 254, Ann. Nat. Hist. (6) xii, n. sp.
- Euplœa (Narmada) martinii*, Sumatra, NICÉVILLE, p. 555, J. Bombay Soc. vii, and viii, p. 38, pl. k, figg. 3 & 4, n. sp.

- Hestia riukiensis*, Loo-Choo Is., HOLLAND, p. 337, pl. xv, fig. 1, Ent. News Philad. 1893, n. sp.
- Pademna klugi*, n. var. *hamiltoni*; SWINHOE, p. 269, Tr. ent. Soc. London, 1893.
- Stictoplaea binotata*, variation and synonymy; SWINHOE, p. 269, Tr. ent. Soc. London, 1893.
- Tithorea flavescens*, early stages noticed; GUPPY, p. 199, J. Trinidad Club, i.

ACRÆIDÆ and HELICONIIDÆ.

- Acræa*: synonymy of numerous African species discussed; HOLLAND, pp. 247–250, Ann. Nat. Hist. (6) xii. *A. serena*, var. *melas*, p. 24, pl. i, fig. 13, *cynthius*?, Drury, figure, pl. i, fig. 5, synonymy, p. 28; OBERTHUR, Etudes Ent. xvii. *A. penelcos*, p. 274, pl. iv, fig. 2, *pharsalus*, p. 275, fig. 1, *zetes*, p. 276, fig. 4, *vinidia*, p. 277, fig. 3, *lycoa*, pl. v, fig. 2, *cydonia*, p. 278, pl. v, fig. 3, larva and pupa noticed; AURIVILLIUS, p. 279, Ent. Tidskr. 1893. *A. areca*, figured; MABILLE & VUILLOT, Novitat Lep. pl. xiv, fig. 5.
- A. niobe*, *newtoni*, p. 554, *insularis*, p. 555, I. of St. Thomas, W. Africa, SHARPE, P. Zool. Soc. London, 1893; *A. eugenia*, W. Africa, KARSCH, p. 196, Berlin. ent. Zeitschr. xxxviii; *A. empusa*, Central Africa, BUTLER, p. 656, t. c.; *A. kraka*, p. 272, pl. vi, fig. 3, *fenelos* (Stgr., i. l.), p. 273, fig. 5, Cameroons, AURIVILLIUS, Ent. Tidskr. 1893; *A. thelestis*, Gaboon, p. 17, pl. iii, fig. 33, *epidica*, Usambara, fig. 27, *strattipodes*, pl. i, fig. 9, pl. iii, fig. 25, Madagascar, p. 18, *chæribula*, pl. ii, fig. 16, *guillemei*, pl. i, fig. 1, p. 19, *periphanes*, pl. ii, fig. 23, Tanganyika, *regalis*, Kilimanjaro, fig. 20, p. 20, *thesprio*, Zanzibar, pl. iii, fig. 34, p. 21, *orinata*, pl. ii, fig. 22, Congo, *conradti*, pl. i, fig. 10, p. 22, *apexida*, Usambara, pl. ii, fig. 15, *cappadox*, pl. i, fig. 2, p. 23, *planesium*, Kilimanjaro, pl. i, fig. 11, p. 24, *proteina*, E. Africa, pl. i, fig. 4, pl. ii, figg. 14, 19, 21, pl. iii, fig. 29, p. 25, *kilimanjara*, pl. ii, fig. 17, p. 26, *masaris*, Comoro Is., pl. i, figg. 3, 12, pl. ii, fig. 18, pl. iii, fig. 30, p. 27, *machoni*, Zanzibar, pl. iii, fig. 28, p. 29, OBERTHUR, Etudes Ent. xvii; *A. sanderi*, New Guinea, ROTHSCHILD & JORDAN, Ann. Nat. Hist. (6) xii, p. 455 : n. spp.
- Alæna nyassa*, n. var. *ochracea*; BUTLER, p. 659, P. Zool. Soc. London, 1893.
- Heliconius*: revision of Staudinger's 1st (*Silvana*) group, with synonymy and many new varietal names; WEYMER, Deutsche ent. Zeitschr. Lep. vi, pp. 281–345, pls. iv, v.
- H. metellus*, Santarem, p. 290, pl. iv, fig. 1, *mirus*, Bolivia, p. 296, pl. iv, fig. 2, *geminatus*, Amazons, fig. 3, p. 299, *jonas*, S. Paulo, p. 307, *spurius*, Massauary, p. 309, fig. 7, *sulphureus*, Rio Negro, p. 311, pl. iv, fig. 8, *gordius*, Upper Amazons, p. 312, fig. 9, *felix*, Peru, fig. 10, p. 315, *versicolor*, Rio Madeira, p. 317, pl. iv, fig. 12, *leopardus*, Bolivia, p. 319, pl. v, fig. 11, *staudingeri*, Peru, p. 324, pl. v.

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The tropical *Nymphaline* of N. America systematically treated; SCUDDER, P. Amer. Ac. xxvii, pp. 236-251.

Aganisthos orion, larva and its spines described; COCKERELL, p. 481, Psyche, vi.

Aptura iris, ilia, habits of larvæ; CASPARI, Jahrb. Nassau. Ver. xlvi, pp. 135-139.

Argynnis chariclea and varr. discussed; AURIVILLIUS, Bih. Svenska Ak. xv, No. 1, pp. 7-11, pl. i, figg. 1-4. *A. frigga, apherape*, varr. described and figured; SAHLBERG, pp. 202-205, pl., Medd. Soc. Faun. Fenn. xviii. *A. niobe*, n. var. *tekkensis*; CHRISTOPH, p. 87, Deutsche ent. Zeitschr. Lep. vi. *A. erinna*, n. var. *cunninghami*; OWEN, p. 246, Ent. News Philad. 1893. *A. niphe*, note on early stages; ROBSON, J. Bombay Soc. viii, p. 151. *A. paphia*, var. figured; FROHAWK, Entomologist, xxvi, p. 97: var. *valezina*, time of emergence; HAMM, Ent. Mag. xxix, p. 189. *A. oweni, cornelia*, figures, Ent. News Philad. 1893, pl. xi. *A. cybele* and *leto*, note on; SKINNER, p. 318, t. c. *A. astarte* queried as *amphilochus*, Men.; ELWES, p. 186, Canad. Ent. xxv.

A. erda, Vilui, CHRISTOPH, p. 87, Deutsche ent. Zeitschr. Lep. vi, n. sp.

Atella philiberti, Seychelles, JOANNIS, p. li, Bull. Soc. ent. France, 1893, n. sp.

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Athyma assa, Sumatra, NICÉVILLE, p. 556, J. Bombay Soc. vii, and viii, p. 42, pl. k, fig. 8, n. sp.

Charaxes lactetinctus, redescribed and figured; KARSCH, p. 190, pl. v, fig. 3, Berlin. ent. Zeitschr. xxxviii.

C. hollandi, Sierra Leone, BUTLER, p. 266, Ann. Nat. Hist. (6) xii; *C. whytei*, Central Africa, BUTLER, p. 649, pl. ix, fig. 2, P. Zool. Soc. London, 1893; *C. everetti*, North Borneo, p. 348, *staudingeri*, Java, p. 349, ROTHSCHILD, Deutsche ent. Zeitschr. Lep. vi: n. spp.

Cirrhochroa jiraria, Khasia Hills, SWINHOE, p. 281, Tr. ent. Soc. London, 1893, n. sp.

- Crenis umbrina*, figured and redescribed; KARSCH, p. 179, Berlin. ent. Zeitschr. xxxviii, pl. v, fig. 2.
- C. crawshayi*, Central Africa, BUTLER, p. 654, P. Zool. Soc. London, 1893, n. sp.
- Cynthia erota*, seasonal forms; SWINHOE, p. 277, Tr. ent. Soc. London, 1893.
- Cyrestis (Chersonesia) cyanee*, Sumatra, NICÉVILLE, J. Bombay Soc. vii, and viii, p. 49, pl. I, figg. 6 & 7, n. sp.
- Dichorragia nesseus*, N. W. China, SMITH, Ann. Nat. Hist. (6) xi, p. 217, n. sp.
- ¹ *Diastogyna*, n. g. for *Papilio veronica*, Cr.; KARSCH, p. 181, Berlin. ent. Zeitschr. xxxviii.
- Doleschallia richardi*, fig. 1, *sciron*, figg. 4-6, figured; SMITH & KIRBY, Rhop. exot. Nymphal. Doleschallia, i.
- D. sinis*, N. Guinea, Doleschallia, i, p. 2, pl. i, figg. 2 & 3, *gurelca*, New Britain, pl. ii, figg. 1-3, p. 5, *noorna*, New Guinea, figg. 4-6, p. 6, Doleschallia, ii, SMITH & KIRBY, Rhop. ex., n. spp.
- Euphædra imitans*, W. Africa, HOLLAND, p. 3, Canad. Ent. xxv, n. sp.
- Euptera hirundo*, figure; STAUDINGER, pl. i, fig. 3, Deutsche ent. Zeitschr. Lep. vi.
- E. mocquerysi* (no locality), STAUDINGER, p. 84, Deutsche ent. Zeitschr. Lep. vi; *E. sterna*, n. n. for *mocquerysi*, Stgr., p. 369, t. c. : n. sp.
- Eurypyædra thauma*, figure; STAUDINGER, Deutsche ent. Zeitschr. Lep. vi, pl. i, fig. 2.
- Euryphece staudingeri*, Cameroons, AURIVILLIUS, p. 199, Ent. Tidskr. 1893; *E. castanea*, p. 1, *suffumigata*, p. 2, W. Africa, HOLLAND, Canad. Ent. xxv : n. spp.
- Eurytela alinda*, W. Africa, MABILLE, p. 50, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Euthalia merilia*, p. 286, *delmana*, p. 287, Khasia Hills, SWINHOE, Tr. ent. Soc. London, 1893; *E. strephon*, *irrubescens*, N. W. China, SMITH, Ann. Nat. Hist. (6) xi, p. 216; *E. elone*, *E. (Nora) erana*, Sumatra, NICÉVILLE, p. 556, J. Bombay Soc. vii, and viii, pp. 46 & 47, pl. κ, figg. 1-3 : n. spp.
- Godartia crossleyi*, ♀ figured; OBERTHUR, p. 31, pl. i, fig. 7, Etudes Ent. xvii, n. sp.
- Grapta zephyrus*, food-plants; BEAN, Ent. News Philad. 1893, p. 220.
- Gynæcia dirce*, larva and its spines; COCKERELL, p. 481, Psyche, vi.
- Herona pringondani*, Java, FRUHSTORFER, p. 314, Ent. Nachr. xix; *H. djarang*, Nias I., FRUHSTORFER, p. 319, t. c. : n. spp.
- Hypolimnas* : mimetic forms; SWINHOE (954).
- Junonia aurorina*, pl. lx, fig. 3, *trimenii*, fig. 4, p. 651, *calescens*, p. 652, Central Africa, BUTLER, P. Zool. Soc. London, 1893; *J. orbitola*, Sapareea I., Celebes, SWINHOE, p. 257, Ann. Nat. Hist. (6) xii : n. spp.

- Kallima chinensis*, Omei-shan, SWINHOE, p. 255, Ann. Nat. Hist. (6) xii, n. sp.
- Melitæa aurinia*, n. var. *pellucida*, *læta*, *phæbe*, n. var. *ornata*, CHRISTOPH, p. 86, Deutsche ent. Zeitschr. Lep. vi. *M. didyma*, n. var. *altaica*; GRUM-GRSHIMAILO, Horæ Soc. ent. Ross. xxvii, p. 127.
- Mynes dohertyi*, Buru, HOLLAND, p. 337, pl. xv, figg. 2 & 3, Ent. News Philad. 1893, n. sp.
- Neptis najo*, W. Africa, KARSCH, p. 186, pl. v, fig. 1, Berlin. ent. Zeitschr. xxxviii; *N. disopa*, China, SWINHOE, p. 256, Ann. Nat. Hist. (6) xii : n. spp.
- Nora*, n. subg. of *Euthalia*, *q.v.*; NICÉVILLE, p. 44, J. Bombay Soc. viii.
- Panacea prola*, ♀ described; KRETZSCHMAR, p. 159, Deutsche ent. Zeitschr. Lep. vi.
- Phyciodes carlota*, larva described; DYAR, p. 93, Canad. Ent. xxv.
- Protogoniomorpha definita*, ♀ described; BUTLER, p. 653, P. Zool. Soc. London, 1893.
- Pseudacreea conradii*, pl. iii, fig. 32, p. 29, E. Africa, *gazengeli*, W. Africa, p. 30, fig. 31, OBERTHUR, Etudes Ent. xvii, n. spp.
- Symbrenthia hypatia*, ♀, and n. var. *chersonesia* described; FRUHSTORFER, p. 366, Berlin. ent. Zeitschr. xxxviii.
- Symphædra khasiana*, Shillong, SWINHOE, p. 284, Tr. ent. Soc. London, 1893, n. sp.
- Terinos teos*, Sumatra, NICÉVILLE, p. 556, J. Bombay Soc. vii, and viii, p. 41, pl. k, figg. 5 & 6, n. sp.
- Vanessa atalanta*, influence of temperature on variation; MERRIFIELD, p. 58, Tr. ent. Soc. London, 1893. *V. antiopa*, hibernated ind. with yellow border; MOLESWORTH, Entomologist, xxvi, p. 219. *V. urticae*, development of the eye of imago; JOHANSEN, Zool. Jahrb. Anat. vi, pp. 445-480, pls. xxiii & xxiv.

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- Clerome arcesilaus* and *kirata*, distinctions of; SWINHOE, p. 276, Tr. ent. Soc. London, 1893.
- Tenaris catops*, n. var. *westwoodi*; STAUDINGER, p. 368, Deutsche ent. Zeitschr. Lep. vi.
- T. kubaryi*, p. 365, pl. vii, fig. 2, *cyclops*, p. 367, New Guinea, STAUDINGER, Deutsche ent. Zeitschr. Lep. vi, n. spp.
- Morphotenaris*, n. g., near *Tenaris*, p. 317, for *M. schönbergi*, n. sp., New Guinea, p. 318; FRUHSTORFER, Ent. Nachr. xix.
- Morphotenaris*: the genus not valid, p. 363, the insect figured is *Tenaris falcata*, pl. vii, fig. 1; STAUDINGER, Deutsche ent. Zeitschr. Lep. vi.
- Zeuxidia dohrni*, Java, FRUHSTORFER, Ent. Nachr. xix, p. 257, n. sp.

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- Descriptions and figures of the E. Indian, continued ; MOORE, Lep. Ind. ii, pp. 1-112, pls. xcv-cxxii.
- Aulocera brahminoides*, pl. xcix, figg. 2 & 2a, p. 29, *chumbica*, p. 30, figg. 3 & 3a, E. India, MOORE, Lep. Ind. ii, n. spp.
- Bicyclus medontias*, larva and pupa noticed ; AURIVILLIUS, Ent. Tidskr. 1893, p. 264.
- ¹*Chazara*, n. g., type *C. briseis* ; MOORE, p. 21, Lep. Ind. ii.
- Chionobas subhyalina*, note on ; EDWARDS, p. 137, Canad. Ent. xxv. *C. ceno*, *Chionobas vii*, *maccounii*, *Chionobas x*, metamorphoses figured ; EDWARDS, Butt. N. America (3). *C. semidea*, egg and young larva ; BEUTENMÜLLER, p. 87, Bull. Amer. Mus. v.
- ¹*Chonala*, n. g., p. 14, for *Debis masoni*, *Pararge espicopalis* and *præusta* ; MOORE, Lep. Ind. ii.
- Ctenonympha iphis*, n. var. *heroides*, *tiphon*, n. var. *grisescens* ; CHRISTOPH, p. 87, Deutsche ent. Zeitschr. Lep. vi.
- ¹*Crebeta*, n. g., type *Pararge deidamia*, Eversm. ; MOORE, p. 11, Lep. Ind. ii.
- ¹*Dallacha*, n. g., for *Ypthima hyagriva* ; MOORE, p. 94, Lep. Ind. ii.
- ¹*Dichothyris*, n. g., for *D. graphidhabra*, n. sp., W. Africa, including also *Mycalesis sambulos*, Hew., *auricruda*, Butl., and *kenia*, Rogenh. ; KARSCH, p. 203, Berlin. ent. Zeitschr. xxxviii.
- Erebia turanica*, n. var. *tristis* ; GRUM-GRSHIMAILO, p. 383, Horæ Soc. ent. Ross. xxvii. *E. christi*, ♀ and distinctive characters ; RÄTZER, p. 359, Stettin Ent. Zeit. liii.
- Epinephela dysdora*, n. var. *tristis*, p. 128, *amardæa*, n. var. *glasunovi*, *lycaon*, n. var. *galtscha*, p. 129 ; GRUM-GRSHIMAILO, Horæ Soc. ent. Ross. xxvii.
- Gnophodes chelys*, larva and pupa noticed ; AURIVILLIUS, p. 263, Ent. Tidskr. 1893.
- ¹*Hemadara*, n. g., type *Ypthima narasingha* ; MOORE, p. 106, Lep. Ind. ii.
- Heteronympha paradelpha*, Melbourne, LOWER, p. 146, Tr. R. Soc. S. Austral. xvii, n. sp.
- ¹*Kanetisa*, n. g., type *Hipparchia digna* ; MOORE, p. 42, Lep. Ind. ii.
- ¹*Karanasa*, n. g., p. 38, type *K. hubnèri*, Feld., with *K. leechii*, Ladak, pl. ci, figg. 4, 4a, *modesta*, Lahul, pl. cii, figg. 1, 1a, n. spp., p. 41 ; MOORE, Lep. Ind. ii.
- ¹*Kirinia*, n. g., type *Lasiommata epimenides*, Men. ; MOORE, p. 14, Lep. Ind. ii.
- ¹*Kolasa*, n. g., p. 82, type *Ypthima chenui*, MOORE, Lep. Ind. ii.
- Lethe darena*, Felder, fig. and description ; NICÉVILLE, p. 40, pl. k, fig. 7, J. Bombay Soc. viii.
- L. sicelides*, N. W. China, SMITH, Ann. Nat. Hist. (6) xi, p. 218, n. sp.
- ¹*Lohana*, n. g., type *Ypthima inica* ; MOORE, p. 92, Lep. Ind. ii.
- ¹*Lopinga*, n. g., *Pararge dumetorum*, Oberth. ; MOORE, p. 11, Lep. Ind. ii.

- Maniola latistigma*, Afghanistan, p. 46, pl. ciii, figg. 2, 2a, *brevistigma*, Indus Valley, p. 47, figg. 3, 3a, *tenuistigma*, Beluchistan, p. 48, figg. 4, 4a, *kashmirica*, Gulmurg, p. 51, pl. civ, figg. 2, 2a, MOORE, Lep. Ind. ii, n. spp.
- Melanitis leda*, var. ; AURIVILLIUS, p. 262, Ent. Tidskr. 1893.
- M. harpa*, W. Africa, KARSCH, p. 211, Berlin. ent. Zeitschr. xxxviii ; *M. gylippa*, Ké I., SWINHOE, p. 255, Ann. Nat. Hist. (6) xii : n. spp.
- Mycalesis phalanthus*, p. 265, *agraphis*, p. 266, *rhanidostroma*, p. 267, *anisops*, p. 268, fig. 3, notes on, *dorothea* larva, p. 271 ; AURIVILLIUS, Ent. Tidskr. 1893.
- M. golo*, p. 267, *nobilis*, p. 269, pl. vi, figg. 1 & 2, *dubia*, fig. 4, p. 270, Cameroons, AURIVILLIUS, Ent. Tidskr. 1893 ; *M. campa*, p. 206, pl. v, fig. 4, *agraphis*, *rhanidostroma*, figg. 5 & 6, p. 207, *leptoglana*, p. 208, fig. 7, *elisi*, p. 209, fig. 8, *procora*, p. 210, W. Africa, KARSCH, Berlin. ent. Zeitschr. xxxviii ; *M. eminens*, New Guinea, STAUDINGER, p. 360, pl. vii, fig. 3, Deutsche ent. Zeitschr. Lep. vi : n. spp.
- ^ *Nadiria*, n. g., type *Ypthima bolanica* ; MOORE, p. 85, Lep. Ind. ii.
- Neocenyra* : a valid genus ; BUTLER, p. 646, P. Zool. Soc. London, 1893.
- N. ypthimoides*, Central Africa, BUTLER, P. Zool. Soc. London, 1893, n. sp.
- Neominois ridingsii*, metamorphoses ; EDWARDS, Butt. N. Amer. (3), *Neominois* i.
- Neorhina saka*, E. India, FRUHSTORFER, p. 337, Ent. Nachr. xix, n. sp.
- Eneis*, revision of the genus, with descriptions of the male characters and list of the species ; ELWES & EDWARDS, Tr. ent. Soc. London, 1893, pp. 457-481, pl. xv. *E. semidea*, n. var. *pansa* ; CHRISTOPH, p. 87, Deutsche ent. Zeitschr. Lep. vi.
- E. alberta*, p. 467, *beanii*, p. 468, N. America, ELWES & EDWARDS, Tr. ent. Soc. London, 1893, n. spp.
- ^ *Pandima*, n. g., p. 86, type *Ypthima nareda*, with *P. watsoni*, n. sp., Birma, p. 89, pl. cxiii, fig. 4 ; MOORE, Lep. Ind. ii.
- ^ *Paralasa*, n. g., type *Erebia kalinda* ; MOORE, p. 104, Lep. Ind. ii.
- Pararge eversmanni*, n. var. *unicolor* ; GRUM-GRSHIMAILO, p. 384, Horæ Soc. ent. Ross. xxvii.
- ^ *Parceneis*, n. g., type *Ohionobus pumilus* ; MOORE, p. 36, Lep. Ind. ii.
- Pedaliodes palades*, figg. 1 & 2, *palupolis*, figg. 3 & 4, *polinea*, fig. 5, *perperma*, fig. 6, *phanoclea*, figg. 7 & 8, *praxia*, figg. 9 & 10, figured ; SMITH & KIRBY, Rhop. ex. Satyridæ, Pedaliodes.
- P. corderoi*, Ecuador, DOGNIN, p. 367, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Periplysia johnstoni*, Central Africa, BUTLER, p. 647, pl. lx, fig. 1, P. Zool. Soc. London, 1893, n. sp.
- Perisama maloina*, Colombia, KRETZSCHMAR, p. 158, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- ^ *Philaretu*, n. g., type *P. hanifa* ; MOORE, p. 23, Lep. Ind. ii.
- Satyurus lehana*, n. var. *turkestana*, *cordula*, n. var. *altaica*, *ganssuensis* ; GRUM-GRSHIMAILO, p. 384, Horæ Soc. ent. Ross. xxvii. *S. huebneri*,

- n. var. *hoffmanni*; CHRISTOPH, p. 32, Stettin Ent. Zeit. liv. S. *huebneri*, n. var. *conradti*; ALPHÉRAKY, p. 346, Deutsche ent. Zeitschr. Lep. vi.
- S. tancrei*, Central Asia, GRUM-GRSHIMAILO, p. 128, Horæ Soc. ent. Ross. xxvii, n. sp.
- Tatinga*, n. g., for *Satyryrus tibetanus*, Oberth.; MOORE, p. 5, Lep. Ind. ii.
- Thymipa*, n. g., p. 58, type *Ypthima baldus*, Fab., with *T. dohertyi*, p. 65, pl. cviii, figg. 1 & 1a, Yunan, *austeni*, Khasia Hills, p. 69, pl. cix, figg. 3 & 3a, n. spp.; MOORE, Lep. Ind. ii.
- Ypthima*: characters of the species, and figures of the male genitalia; ELWES & EDWARDS, pp. 1-54, pls. i-iii, Tr. ent. Soc. London, 1893.
- Y. imitans*, Hainan, *obscura*, Korea, p. 17, *sordida*, Kiu Kiang, p. 19, *impura*, Angola, p. 23, *sobrina*, p. 29, *similis*, Karen Hills, *affectata*, Khasia Hills, p. 30, *humci*, Tenasserim, p. 32, *prattii*, Ichang, p. 35, EDWARDS, Tr. ent. Soc. London, 1893, n. spp.

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- Abisara aita*, Sumatra; NICÉVILLE, p. 557, J. Bombay Soc. vii, and viii, p. 49, pl. L, fig. 10, n. sp.
- Dodona durga*, var. figured, pl. xxviii, fig. 3, p. 291, *eugenes*, var. *maculosa*, pl. xxviii, fig. 1, p. 293; LEECH, Butt. China.
- Elymnias glauconia*, New Guinea, STAUDINGER, p. 362, pl. vi, fig. 2, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Polycæna lama*, pl. xxviii, figg. 13 & 15, *matula*, fig. 16, Thibet, LEECH, p. 294, Butt. China, n. spp.

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- Allotinus caudatus*, Borneo, SMITH, p. 34, Ann. Nat. Hist. (6) xii, n. sp.
- Amblopala*, n. g., for *Amblypodia aoidiena*, Hew.; LEECH, p. 341, Butt. China.
- Aphnæus lohita*, var. figured, pl. xxx, fig. 16; LEECH, Butt. China.
- A. propinquus*, W. Africa, HOLLAND, p. 25, pl. i, fig. 14, Ent. News Philad, 1893; *A. avriko*, W. Africa, KARSCH, p. 223, pl. v, fig. 9, Berlin. ent. Zeitschr. xxxviii: n. spp.
- Arhopala ganesa*, var., pl. xxx, fig. 11, *japonica*, fig. 14, figured; LEECH, Butt. China.
- Camena icetas* = (*Iolaus contractus*, Leech); LEECH, p. 350, Butt. China.
- Castalius hypoleucus*, Central Africa, BUTLER, p. 660, P. Zool. Soc. London, 1893, n. sp.
- Catochrysops sancti-thomæ*, W. Africa, SHARPE, p. 556, P. Zool. Soc. London, 1893, n. sp.
- Chrysophanus dispar*, varr. figured, p. 397, pl. xxviii, figg. 4 & 6, *tseng*, pl. xxx, fig. 17, *standfussi*, fig. 19, figured; LEECH, Butt. China. *C. phleas*, variation; FROHAWK, Entomologist, xxvi, p. 295, SOUTH, t. c. p. 305: variation according to temperature; MERRIFIELD, p. 62, Tr. ent. Soc. London, 1893. *C. dione*, early stages; SKINNER, p. 22, Canad. Ent. xxv

- Cyaniris albocæruleus*, pl. xxxi, fig. 13, *dilectus*, fig. 10, *nebulosa*, fig. 18, figured; LEECH, Butt. China.
- C. victoria*, Shillong, SWINHÖE, p. 293, Tr. ent. Soc. London, 1893; *C. hersilia*, pl. xxxi, fig. 16, p. 319, *oreas*, figg. 12 & 15, p. 321, China, LEECH, Butt. China: n. spp.
- Cupido kontu*, W. Africa, KARSCH, p. 227, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Deudorix acares*, W. Africa, KARSCH, p. 219, Berlin. ent. Zeitschr. xxxviii, n. sp.
- D'Urbania carnuta*, figured; SMITH & KIRBY, Rhop. ex. Lycænidae (African), xxi, figg. 1 & 2.
- D. mapongua*, W. Africa, HOLLAND, p. 24, Ent. News Philad. 1893, n. sp.
- Epitola miranda*, figured; SMITH & KIRBY, Rhop. ex. Lycænidae (African), pl. xx, figg. 9 & 10; *E. purpurascens*, Holl., referred to *Astlauga*, and figured, t. c., figg. 7 & 8. *E. lychnaptes*, note on; HOLLAND, p. 250, Ann. Nat. Hist. (6) xii.
- E. pinodoides*, p. 85, pl. xx, figg. 1 & 2, *conjuncta*, figg. 3-5, *rezia*, fig. 6, p. 86, W. Africa, SMITH & KIRBY, Rhop. ex. Lycænidae (African), n. spp.
- Euliphyra mirifica*, figured; SMITH & KIRBY, Rhop. ex. Lycænidae (African), pl. xx, figg. 11 & 12.
- Everes arcana*, pl. xxxi, fig. 1, *ion*, fig. 4, *filicaudis*, fig. 6, *davidi*, fig. 3, *potanini*, fig. 2, figured; LEECH, Butt. China.
- E. zuthus*, W. China, LEECH, p. 330, pl. xxxi, fig. 7, Butt. China, n. sp.
- Ilerda viridipunctata*, pl. xxx, fig. 3, *saphir*, var. *marica*, p. 407, figg. 1 & 4, *epicles*, fig. 6, figured; LEECH, Butt. China.
- Iolaus æthria*, W. Africa, KARSCH, p. 220, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Lachnocnema brimo*, W. Africa, KARSCH, p. 217, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Larinopoda tirza*, fig. 6, *livæa*, figg. 10-12, figured; SMITH & KIRBY, Rhop. ex. Lycænidae (African), pl. xxi.
- L. melandeta*, W. Africa, HOLLAND, p. 25, pl. i, figg. 5 & 6, Ent. News Philad. 1893, n. sp.
- Leucolepis*, n. g., for *Teriomima decipiens*, Smith & Kirby; KARSCH, p. 216, Berlin. ent. Zeitschr. xxxviii.
- Liptena gelinia*, Usambara, OBERTHUR, p. 31, pl. ii, fig. 24, Etudes Ent. xvii, n. sp.
- Lycæna osiris*, ♀ described; TRIMEN, p. 127, Tr. ent. Soc. London, 1893.
- L. argus*, n. var. *cærulescens*, GRUM-GRSHIMAILO, Horæ Soc. ent. Ross. xxvii, p. 127. *L. anteros*, n. var. *crassipuncta*, *calestina*, n. var. *alticola*; CHRISTOPH, p. 86, Deutsche ent. Zeitschr. Lep. vi. *L. cyane* and *pylaon*, distinctions; CHRISTOPH, p. 31, Stettin Ent. Zeit. liv. *L. argus*, figg. 5 & 8, n. var. *insularis*, p. 302, pl. xxxi, figg. 5 & 8, *agina*, figured, fig. 11, *moorei*, figured, fig. 9, *chinensis*, Murr., = *mandschurica*, Stgr., p. 315; LEECH, Butt. China. *L. theophrastus*, climatal variation; MANDERS, P. ent. Soc. London, 1893, p. xiv. *L. ægon*, life-history; FROHAWK, Entomologist, xxvi, p. 285. *L. arion*, food-plant; BROMILOW, Ent. Mag. xxix, p. 190.

- L. grahami*, Cape Colony, p. 123, pl. viii, figg. 1 & 2, *procera*, figg. 3 & 4, p. 125, *barkeri*, figg. 5 & 6, p. 129, Natal, TRIMEN, Tr. ent. Soc. London, 1893; *L. barine*, Japan, p. 304, pl. xxxi, fig. 14, LEECH, Butt. China; *L. musina*, p. 145, *cyanicornis*, p. 146, Java, SNELLEN, Tijdschr. Ent. xxxv : n. spp.
- Lycænesthes neglecta*, figured, pl. viii, figg. 7 & 8, ♀ described, p. 132; TRIMEN, Tr. ent. Soc. London, 1893. *L. lychnoptera*, figg. 1 & 2, *scintillula*, figg. 3-6, *mahota*, figg. 7-10, *rubricincta*, figg. 11 & 12, figured, pl. xxii, *lucretilis*, pl. xxiii; SMITH & KIRBY, Rhop. ex. Lycænidæ (African).
- L. musagetes*, p. 25, *erythropæcilus*, p. 26, *xanthopæcilus*, *melambrotus*, p. 27, W. Africa, HOLLAND, Ent. News Philad. xix; *L. oculatus*, Gaboon, pl. xxiii, figg. 1 & 2, p. 101, *grammicus*, Mombasa, figg. 3 & 4, p. 102, *flavomaculatus*, figg. 7 & 8, p. 104, *pulcher*, figg. 9 & 10, p. 105, *turbatus*, figg. 11 & 12, p. 105, *brunneus*, p. 106, figg. 13 & 14, W. Africa, SMITH & KIRBY, Rhop. ex. Lycænidæ (African), pl. xxiii; *L. millari*, p. 133, pl. viii, fig. 9, *minima*, p. 135, fig. 10, Natal, TRIMEN, Tr. ent. Soc. London, 1893 : n. spp.
- Maiva, n. g., near *Teriomima*, for *M. sulphurea*, n. sp., Lake Nyassa; SMITH & KIRBY, Rhop. ex. Lycænidæ (African), pl. xxi, fig. 13, p. 96.
- Megalopalpus metalucius*, = (*Allotinus zymna*, Smith, Kirby); KARSCH, p. 217, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Niphandia fusca*, var. figured; LEECH, pl. xxxi, fig. 17, Butt. China.
- Oboronia*, n. g., for *Lycæna clorea*, Stgr., and *ornata*, Mab.; KARSCH, p. 229, Berlin. ent. Zeitschr. xxxviii.
- Orthomiella pontis*, var. *sinensis*, figured, pl. xxxi, fig. 19; LEECH, Butt. China.
- Phengaris atroguttata*, var. figured, pl. xxviii, fig. 5, p. 317; LEECH, Butt. China.
- Polyommatus dispar* and *rutilus*, note on; HORMUZAKI, Soc. ent. viii, p. 58. *P. rutilus*, n. var. *vernalis*, HORMUZAKI, t. c., p. 130.
- Rapala nissa*, = (*subpurpurea*, Leech), pl. xxix, figg. 12 & 15, *repercussa*, figg. 10 & 13, *micans*, var. *betuloides*, fig. 13, figured; LEECH, Butt. China.
- Satsuma pratti*, pl. xxx, fig. 10, *chalybeia*, figg. 7 & 8, figured; LEECH, Butt. China.
- S. circe*, pl. xxx, fig. 12, p. 354, *nicevillei*, fig. 9, p. 355, China, LEECH, Butt. China, n. spp.
- Sithon kiana*, figured; WHITEHEAD, Kina Balu, pl., p. 118.
- Tajuria luculentus*, figured, pl. xxx, fig. 13; LEECH, Butt. China.
- Tetrarhanis*, n. g., for *Liptena ilma*, Hew.; KARSCH, p. 217, Berlin. ent. Zeitschr. xxxviii.
- Thecla mera*, pl. xxix, fig. 14, *patrius*, fig. 11, *caimia*, fig. 1, with n. var. *faxeni*, figg. 2 & 3, p. 360, *rubicundula*, fig. 8, *ornata*, fig. 7, figures; LEECH, Butt. China. *T. rubi*, variety; FREER, Ent. Mag. xxix, p. 163. *T. grunus*, larva described; DYAR, p. 94, Canad. Ent. xxv.

- T. lais*, p. 363, pl. xxix, fig. 4, *percomis*, fig. 5, *ænone*, figg. 6 & 9, p. 366, *ithalia*, fig. 15, p. 367, China, LEECH, Butt. China, n. spp.
- Thestor ballus*, early stages; BROMILOW, Entomologist, xxvi, p. 238.
- Thysonotis* monographed, with drawings of the male genitalia; DRUCE & BAKER, P. Zool. Soc. London, 1893, pp. 536-553, pls. xlv-xlvii: the following being figured, *serapis*, pl. xlv, figg. 1 & 2, *danis*, ♂ characters, pl. xvii, fig. 1, *karpaia*, n. var., p. 540, pl. xlv, figg. 3 & 4, *appollonius*, pl. xlv, figg. 5 & 6, pl. xvii, figg. 2, 2a, with n. var. *supous*, p. 542, pl. xlv, fig. 7, *philostratus*, pl. xlv, fig. 8, pl. xvii, fig. 3, *schaeffera*, pl. xvii, figg. 4, 4a, *caledonica*, pl. xlvi, fig. 1, *taygetus*, male characters, pl. xvii, fig. 5, *piepersi*, pl. xlvi, fig. 9, *cyanea*, ♂ genitalia, pl. xvii, fig. 6, *epicoritus*, pl. xlvi, fig. 10, *arinia*, pl. xlvi, figg. 6 & 7, pl. xvii, fig. 7, *pindus*, pl. xlvi, fig. 11.
- T. melimnos*, pl. xlvi, fig. 2, *perpheres*, pl. xlv, figg. 9 & 10, p. 544, New Guinea, *korion*, Kei Is., pl. xlvi, fig. 3, *brownii*, New Ireland, fig. 8, p. 547, *eudocia*, Batchian, pl. xlvi, fig. 4, p. 548, *smaragdus*, Wetter L., fig. 5, p. 550, *T. ? miraculum*, Waigiou, p. 552, pl. xlvi, fig. 12, DRUCE & BAKER, P. Zool. Soc. London, 1893, n. spp.
- Tingra picena*, figg. 3 & 4, *phidia*, fig. 5, *lagyra*, fig. 6, *rotha*, fig. 8 & 9, figured; SMITH & KIRBY, Lycænidæ (African), pl. xxi.
- T. nunu*, W. Africa, KARSCH, p. 215, pl. v, fig. 10, Berlin. ent. Zeitschr. xxxviii; *T. glagæssa*, p. 22, pl. i, fig. 4, *limbata*, fig. 3, *amenaidoides*, p. 23, W. Africa, HOLLAND, Ent. News Philad. 1893: n. spp.
- Triclema*, n. g., p. 227, type *Lycænesthes lucretilis*, Hew., and including *T. phaniciis*, n. sp., W. Africa, p. 228; KARSCH, Berlin. ent. Zeitschr. xxxviii.
- Yasoda pitane*, Sumatra, NICÉVILLE, p. 557, J. Bombay Soc. vii, and viii, p. 50, pl. L, fig. 5, n. sp.
- Zephyrus texila*, variation tabulated, p. 371, *atascus*, pl. xxvii, figg. 5 & 6, *orientalis*, n. var. *suffusa*, fig. 14, p. 377, *icana*, fig. 4, *signata*, fig. 12, *quercivora*, fig. 15, *cælistis*, fig. 9, *betuleæ*, pl. xxviii, varr., fig. 8, *crassa*, n. var., fig. 11, p. 384, *melpomene*, fig. 14, *minerva*, fig. 12, *comes*, fig. 9, *thespis*, fig. 2, *michaelis*, n. var. *gabrielis*, fig. 7, *raphaelis*, var. *flamen*, fig. 10, *entheæ*, var., pl. xxx, fig. 18, figured; LEECH, Butt. China.
- Z. coruscans*, p. 373, pl. xxvii, figg. 7 & 8, *scintillans*, p. 367, figg. 10 & 11, *pedius*, fig. 3, p. 378, *hecale*, figg. 1 & 2, p. 379, China, LEECH, Butt. China, n. spp.
- Zeritis simplex*, S. Africa, TRIMEN, p. 136, Tr. ent. Soc. London, 1893, n. sp.

HESPERIDÆ.

New classification and revision of the genera; WATSON, P. Zool. Soc. London, 1893, pp. 3-132, pls. i-iii. In this work previously established genera are redefined, and in many cases divided; but for these changes the student must refer to the memoir itself, as we shall mention below only the new genera and species.

- Abantis bismarcki*, redescribed, p. 242, and figured, pl. vi, fig. 1; KARSCH, Berlin. ent. Zeitschr. xxxviii.
- † *Ablepsis*, n. g., type *vulpinus*, Hub.; WATSON, p. 36, P. Zool. Soc. London, 1893.
- Acolastus amyntas*, ♂ characters figured, pl. lxxvii, fig. 9, noticed, p. 304; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- † *Actinor*, n. g., type *radians*, Moore; WATSON, p. 108, P. Zool. Soc. London, 1893.
- Aeromachus* ? *johnstoni*, Central Africa, BUTLER, p. 673, P. Zool. Soc. London, n. sp.
- † *Amenis*, n. g., type *pionia*, Hew.; WATSON, p. 12, P. Zool. Soc. London, 1893.
- A. ponina*, figured; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii, pl. lxxiii, figg. 23 & 24.
- Antigonus synestalmenus*, W. Africa, KARSCH, p. 263, pl. vi, fig. 8, Berlin. ent. Zeitschr. xxxviii, n. sp.
- † *Ardaris*, n. g., type *eximia*, Hew.; WATSON, p. 13, P. Zool. Soc. London, 1893.
- † *Argopteron*, n. g., type *aureipennis*, Blanch.; WATSON, p. 88, P. Zool. Soc. London, 1893.
- † *Arnetta*, n. g., type *atkinsoni*, Moore; WATSON, p. 81, P. Zool. Soc. London, 1893.
- Astictopterus kada*, Shillong, SWINHOE, p. 328, Tr. ent. Soc. London, 1893; *A. obliquans*, Java, MABILLE, p. 51, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- † *Azonax*, n. g., for *Myscelus typhaon*, Hew., figured, pl. lxxiv, figg. 27 & 28; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- Baracus fenestratus*, Central Africa, BUTLER, p. 673, P. Zool. Soc. London, 1893, n. sp.
- † *Bungalotis*, n. g., type *midas*, Cr.; WATSON, p. 28, P. Zool. Soc. London, 1893.
- B. midas*, male characters, pl. lxxix, fig. 8, *ramusis*, figg. 9-12, *heras*, figg. 16-18, *dexo*, figg. 13-15, *salatis*, male characters, pl. lxxx, fig. 1, figured; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- † *Burara*, n. g., near *Ismene*, including *vasutana*, *harisa*, *gomata*, Moore; SWINHOE, p. 329, Tr. ent. Soc. London, 1893.
- † *Calloris*, n. g. (for part of *Baoris* ?), including *C. onchisa*, n. sp., Shillong; SWINHOE, Tr. ent. Soc. London, 1893, p. 323.
- Caprona adelica*, redescribed and figured; KARSCH, p. 245, pl. vi, fig. 2, Berlin. ent. Zeitschr. xxxviii.
- Carcharodus swinhoei*, N. W. India, WATSON, p. 68, P. Zool. Soc. London, 1893, n. sp.
- Carterocephalus palæmon*, n. var. *albigutta*; CHRISTOPH, p. 87, Deutsche ent. Zeitschr. Lep. vi.
- Carystus albescens*, *singularis*, Java, MABILLE, p. 51, Ann. Soc. ent. Belgique, xxxvii, n. spp.

- Ceratrachia tetrastigma*, pl. xvi, fig. 8, figured; MABILLE & VUILLOT, Novitat. Lep.
- † *Chrysopectrum*, n. g., type *otriades*, Hew.; WATSON, p. 24, P. Zool. Soc. London, 1893.
- C. perniciosum*, figured, pl. lxxvii, figg. 6, 7, & 8, *C. otriades* = (*Thymele euphronius*, Mab.), p. 303; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- Cyclopius uniformis*, W. Africa, KARSCH, p. 245, Berlin. ent. Zeitschr. xxxviii; *C. quadrisignatus*, p. 670, pl. lx, fig. 9, *midus*, p. 671, Central Africa, BUTLER, P. Zool. Soc. London, 1893 : n. spp.
- † *Drephalys*, n. g., type *helixus*, Hew.; WATSON, p. 34, P. Zool. Soc. London, 1893.
- † *Dyscophellus*, n. n. for *Dyscophus*, Burm., p. 319, *D. doriscus*, ♂ characters, pl. lxxviii, fig. 18; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- Eagris decastigma*, pl. xvi, fig. 7, figured; MABILLE & VUILLOT, Novitat. Lep.
- Entheus bicolor*, Tonkin, OBERTHUR, p. 14, pl. iv, fig. 36, Études Ent. xvii, n. sp.
- Epargyreus exadeus*, pl. lxxvii, fig. 1, *asander*, fig. 4, figured; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- E. gaumeri*, Honduras, p. 300, pl. lxxvii, figg. 2 & 3, GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii, n. sp.
- Eudamus simplicius*, pl. lxxv, fig. 1, *chalco*, fig. 4, *proteus*, fig. 5, *esmeraldus*, fig. 6, *dorantes*, fig. 7, *zilpa*, fig. 8, *catillus*, figg. 9 & 10, *albofasciatus*, fig. 11, *alcaeus*, fig. 12, *ridens*, figg. 13-15, *auginus*, fig. 26, *octomaculatus*, fig. 23, *metallescens*, figg. 27-29, *undulatus*, fig. 30, figured; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- E. aemilea*, Oregon, SKINNER, p. 64, Ent. News Philad. 1893; *E. chales*, p. 274, pl. lxxv, figg. 2 & 3, *millas*, figg. 18 & 19, *crison*, figg. 16 & 17, p. 282, *auginulus*, figg. 20-22, p. 284, *alciphron*, figg. 24 & 25, p. 285, Central America, GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii : n. spp.
- Eurypterus peruvianus*, pl. xv, fig. 4, figured; MABILLE & VUILLOT, Novitat. Lep.
- † *Gehenna*, n. g., type *abima*, Hew.; WATSON, p. 108, P. Zool. Soc. London, 1893.
- Goniurus piliger*, pl. xv, fig. 3, figured; MABILLE & VUILLOT, Novitat. Lep. *G. celus*, pl. lxxvi, fig. 1, *talus*, fig. 2, figured; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- † *Grynopsis*, n. g., type *caeleste*, Westw.; WATSON, p. 42, P. Zool. Soc. London, 1893.
- Halpe nigerrima*, Central Africa, BUTLER, P. Zool. Soc. London, 1893, p. 672; *H. moorei*, E. India, WATSON, p. 109, *t. c.*; *H. aucma*, *marta*, *wantona*, p. 325, *perara*, *teliga*, p. 326, Shillong, SWINHAE, Tr. ent. Soc. London, 1893 : n. spp.

- Hesperia hyrcana*, Lenkoran, CHRISTOPH, p. 87, Deutsche ent. Zeitschr. Lep. vi; *H. geron*, Quetta, WATSON, p. 66, P. Zool. Soc. London, 1893: n. spp.
- Hesperilla perornata*, Australia, ANDERSON, p. 437, Ann. Nat. Hist. (6) xii, n. sp.
- Heteropia bryaxis*, figured, pl. lxxvi, fig. 25, GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- H. melon*, Mexico, GODMAN & SALVIN, p. 297, pl. lxxvi, figg. 26 & 27, Biol. Centr.-Amer. Rhopalocera, ii, n. sp.
- Heteropterus formosus*, Central Africa, BUTLER, p. 670, P. Zool. Soc. London, 1893, n. sp.
- Hyda majorella*, *tricerata*, *micacea*, figured; MABILLE & VUILLOT, Novitat. Lep. pl. xiii.
- ↓ *Hypocryptothrix*, n. g., type *teutas*, Hew.; WATSON, p. 22, P. Zool. Soc. London, 1893.
- Hypoleucis indusiata*, pl. xvi, fig. 6, figured; MABILLE & VUILLOT, Novitat. Lep.
- H. titanota*, p. 254, pl. vi, fig. 5, *enantia*, p. 255, W. Africa, KARSCH, Berlin. ent. Zeitschr. xxxviii, n. spp.
- ↓ *Iambrix*, n. g., type *salsala*, Moore; WATSON, p. 76, P. Zool. Soc. London, 1893.
- Isma isota*, Shillong, SWINHOE, p. 320, Tr. ent. Soc. London, 1893, n. sp.
- Ismene ataphus*, E. India, WATSON, p. 126, P. Zool. Soc. London, 1893, n. sp.
- ↓ *Jemadia*, n. g., type *hospita*, Butl.; WATSON, p. 14, P. Zool. Soc. London, 1893.
- J. hospita*, pl. lxxiv, figg. 4-6, *hewitsoni*, figg. 7-9, *patrobas*, figg. 13-15, *azeta*, figg. 16 & 17, figured; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- J. macleanmani*, Panama, GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii, p. 262, pl. lxxiv, figg. 10 & 12, n. sp.
- ↓ *Katreus*, n. g., type *johnstonii*, Butl.; WATSON, p. 115, P. Zool. Soc. London, 1893.
- ↓ *Kedestes*, n. g., type *lepenula*, Wallgr.; WATSON, p. 96, P. Zool. Soc. London, 1893.
- ↓ *Koruthaios*, n. g. for *K. hector*, n. sp., Malacca; WATSON, p. 76, P. Zool. Soc. London, 1893.
- ↓ *Lophoides*, n. g., type *iapis*, Nicév.; WATSON, p. 84, P. Zool. Soc. London, 1893.
- ↓ *Mahotis*, n. g., type *nurscia*, Swains.; WATSON, p. 13, P. Zool. Soc. London, 1893.
- ↓ *Microceris*, n. g., type *varicolor*, Mén.; WATSON, p. 15, P. Zool. Soc. London, 1893.
- ↓ *Motasingha*, n. g., type *dirphia*, Hew.; WATSON, p. 73, P. Zool. Soc. London, 1893, n. sp.
- ↓ *Murgaria*, n. g., type *albociliatus*, Mab.; WATSON, p. 37, P. Zool. Soc. London, 1893.

- Myscelus belti*, figured, pl. lxxiv, figg. 21–23; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- M. hages*, Central America, GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii, p. 266, pl. lxxiv, figg. 24–26, n. sp.
- ¹ *Mysoria*, n. g., type *acastus*, Cr.; WATSON, p. 12, P. Zool. Soc. London, 1893.
- M.*: limits and definition altered, p. 253, *M. venezuelæ*, pl. lxxiii, figg. 17, *affinis*, figg. 19–21, *amra*, fig. 18, *galgala*, fig. 22, figured; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- ¹ *Nascus*, n. g., type *phocus*, Cr.; WATSON, p. 28, P. Zool. Soc. London, 1893.
- N. phocus*, pl. lxxviii, fig. 19, male characters, *evathlus*, figg. 22 & 23, *cæpio*, figg. 3–5, pl. lxxix, *advena*, figg. 6 & 7, figured; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- N. engamon*, Panama, p. 321, pl. lxxviii, figg. 20 & 21, GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii, n. sp.
- ¹ *Neonoma*, n. n. for *Conognathus*, Feld.; WATSON, p. 44, P. Zool. Soc. London, 1893.
- ¹ *Echydrus*, n. g., type *chersis*, H.-S.; WATSON, p. 35, P. Zool. Soc. London, 1893, n. sp.
- ¹ *Onryza*, n. g., type *meiktilla*, Nicéy.; WATSON, p. 112, P. Zool. Soc. London, 1893.
- ¹ *Osmodes*, n. g., type *laronia*, Hew.; WATSON, p. 78, P. Zool. Soc. London, 1893.
- Oxyetra*, Feld., = (*Dis*, Mab.), p. 267, *O. hopfferi*, pl. lxxiv, fig. 18, *annulata*, fig. 20, figured; GODMAN & SALVIN, Biol. Centr.-Amer. Rhopalocera, ii.
- ¹ *Oxypalpus*, n. g., type *ignita*, Mab.; WATSON, p. 78, P. Zool. Soc. London, 1893.
- Padraona watsoni*, Central Africa, BUTLER, p. 671, P. Zool. Soc. London, 1893, n. sp.
- Pamphila chrysaugæ*, figured, pl. xiii, fig. 4, *gisgou*, fig. 6, *taracæ*, pl. xvi, fig. 1, *statira*, fig. 2, *chamæleon*, fig. 3, *heterochrus*, fig. 4; MABILLE & VUILLOT, Novitat. Lep. *P. roncilgonis*, ♂ figured and described, pl. viii, fig. 11, p. 139, larva described, p. 141; TRIMEN, Tr. ent. Soc. London, 1893.
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- Camptoloma fragrans*, Khasia Hills, SWINHÖE, p. 216, Ann. Nat. Hist. (6) xii, n. sp.
- Cania obliquifascia*, Ceylon (referred in note to *Birthama*), HAMPSON, p. 72, pl. clx, fig. 4, Ill. Lep. Het. ix, n. sp.
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- Casphalia picta*, Sierra Leone, SCHAUS & CLEMENTS, p. 23, pl. ii, fig. 6, Lep. Sierra Leone; *C. nigerrima*, W. Africa, HOLLAND, p. 397, Psyche, vi : n. spp.

- ↓ *Cataractia*, n. g., p. 537, *Notodontidæ*; for *C. divisa* (Wlk.), n. sp., W. Africa, p. 538; HOLLAND, *Psyche*, vi.
- Caviria cygna*, figured, pl. clix, fig. 6, p. 78; HAMPSON, Ill. Lep. Het. ix.
- C. proxantha*, *nigripes*, *xanthosoma*, pl. iii, fig. 15, p. 62, *eximia*, fig. 14, p. 63, W. Africa, HOLLAND, Ent. News Philad. 1893, n. spp.
- Ceruridia* merged in *Gluphisia*; DYAR, p. 35, Ent. News Philad. 1893.
- Chalcosia pretiosa*, n. var. *albina*; HAMPSON, p. 64, pl. clvii, fig. 5, Ill. Lep. Het. ix.
- C. myrrhina*, Ceylon, HAMPSON, pl. clvii, fig. 14, p. 63, Ill. Lep. Het. ix, n. sp.
- Chaliinæ*, n. subfam. of *Psychidæ*; HAMPSON, p. 67, Ill. Lep. Het. ix.
- ↓ *Chalioides*, n. g., *Psychinæ* for *C. vitrea*, n. sp., Ceylon, p. 67, pl. clix, fig. 15; HAMPSON, Ill. Lep. Het. ix.
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- Chionomera quensta*, Johor, SWINHOE, p. 259, Ann. Nat. Hist. (6) xii, n. sp.
- ↓ *Ciropteryx*, n. g., *Drepanulidæ*, for *C. viridifascia*, pl. ix, fig. 14, *ochreatea*, n. spp., W. Africa; HOLLAND, p. 176, Ent. News Philad. 1893.
- Citheronia regalis*, life history; PACKARD, p. 163, P. Amer. Phil. Soc. xxxi. *C. splendens*, larva; DYAR & DOLL, Ent. News Philad. 1893, pp. 311 & 344.
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- Cochliopodidæ*: larvæ and their affinities discussed; PACKARD, P. Amer. Phil. Soc. xxxi, pp. 83 & 84.
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- Crambidia*: characters; NEUMOEGEN & DYAR, p. 139, Ent. News Philad. 1893.
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- Ctenogyna ? ogovensis*, p. 342, pl. xv, fig. 12, *vilis*, p. 343, fig. 13, W. Africa, HOLLAND, Ent. News Philad. 1893, n. spp.

- Cydcosia jamaicensis*, Jamaica, COCKERELL, p. 135, J. Inst. Jamaica, i, n. sp.
- Cyrtogone lichenodes*, W. Africa, HOLLAND, p. 533, Psyche, vi; *C. cana*, Delagoa Bay, AURIVILLIUS, p. 202, Ent. Tidskr. 1893: n. spp.
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- Darala hamata*, Wlk., metamorphoses figured; SCOTT, Australian Lep. pl. xix.
- D. hæmoptera*, Port Lincoln, LOWER, p. 150, Tr. R. Soc. S. Austral. xvii, n. sp.
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- Deiopeia antennata*, Nicobar Is., SWINHOE, p. 215, Ann. Nat. Hist. (6) xii, n. sp.
- Demas coryli*, young larva, pl. ix, fig. 2, pupa, fig. 5; CHAPMAN, Ent. Rec. iv.
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- Desmeocæra ? hinnula*, W. Africa, HOLLAND, p. 536, Psyche, vi, n. sp.
- Devara pizarra*, Loja, DOGNIN, p. 425, Ann. Soc. ent. Belgique, xxxvii; *D. charisia*, pl. xix, fig. 7, *pallor*, fig. 9, Ecuador, p. 289, *chepta*, Bolivia, fig. 10, p. 290, DRUCE, P. Zool. Soc. London, 1893: n. spp.
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- Diloba cæruleocephala*, young larva; CHAPMAN, pl. ix, fig. 3, Ent. Rec. iv.
- Dirphia spumosa*, Brazil, VUILLOT, p. clxxxii, Bull. Soc. ent. France, 1893, n. sp.
- Dioplis charila*, pl. xx, fig. 1, *roraima*, fig. 2, British Guiana, p. 292, *pallene*, fig. 3, *cheledonis*, fig. 5, *egla*, fig. 4, p. 293, Ecuador, p. 293, *charon*, Bolivia, fig. 6, *otanes*, Ecuador, *pandates*, Colombia, p. 294, *chloris*, Ecuador, p. 295, DRUCE, P. Zool. Soc. London, 1893, n. spp.
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D. ? bioculata, W. Africa, HOLLAND, p. 177, pl. ix, fig. 10, Ent. News
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 VILLIUS, p. 212, Ent. Tidskr. 1893.
- Dryocampa rubicunda*, life-history ; PACKARD, p. 142, P. Amer. Phil.
 Soc. xxxi.
- ↓ *Dyaria*, n. g., *Liparidæ*, p. 213, for *D. singularis*, n. sp., N. America,
 p. 215, NEUMOEGEN, Canad. Ent. xxv.
- Dysodia ignita*, Wlk. (sub *Varnia*), figured ; HAMPSON, p. 71, pl. clxxi,
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- Eacles imperialis*, life-history ; PACKARD, p. 157, P. Amer. Phil. Soc.
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- Earias speiplena*, pl. clvii, fig. 9, *annulifera*, fig. 18, p. 87, figured ;
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- E. ogovana*, W. Africa, HOLLAND, p. 398, Psyche, vi, n. sp.
- Eligma latepicta*, Usambara, OBERTHUR, p. 32, pl. i, fig. 6, Etudes Ent.
 xvii, n. sp.
- Eloria cisussa*, Ecuador, pl. xx, figg. 13 & 15, p. 297, *clodia*, Santarem,
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- ↓ *Elpis*, n. g., for *Antarctia rubra*, Neum. ; DYAR, p. 36, Ent. News Philad.
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- Empretia stimulea*, life-history, p. 85, ontogenetic features, p. 89 ; PACK-
 ARD, P. Amer. Phil. Soc. xxxi.
- Empyreuma pugione*, egg noticed ; COCKERELL, p. 179, J. Inst. Jamaica, i.
- ↓ *Epijana*, n. g., *Lasiocampidæ*, for *E. lanosa*, p. 514, *cinerea*, *tenuis*,
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 in note to *Odonestis*, and queried as ♂ of *O. divisa*, Moore) *pur-
 purascens*, Ceylon, HAMPSON, p. 74, pl. clx, fig. 10, Ill. Lep. Het. ix :
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- Eucereon chalcodon*, Petropolis, DRUCE, p. 287, pl. xix, fig. 6, P. Zool.
 Soc. London, 1893, n. sp.
- Euchates fumidus*, cocoon described ; BEUTENMÜLLER, p. 92, Bull. Amer.
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- Euchontha ciris*, Ecuador, DRUCE, p. 297, pl. xx, fig. 10, P. Zool. Soc.
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- Euchromia bella*, cocoon described ; BEUTENMÜLLER, p. 92, Bull. Amer.
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- Euclea indeterminata*, larva ; DYAR & DOLL, p. 311, Ent. News Philad.
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 LAND, Ent. News Philad. 1893, n. spp.

- Eucyane poliana*, British Guiana, p. 285, *ortropea*, *philomela*, Colombia, p. 286, DRUCE, P. Zool. Soc. London, 1893, n. spp.
- Eudryina* discussed; GROTE, pp. 319-323, Canad. Ent. xxv.
- Eudryas cypris*, Assumption, GROTE, p. 322, Canad. Ent. xxv, n. sp.
- Eudule sombreata*, Loja, DOGNIN, p. 424, Ann. Soc. ent. Belgique, xxxvii, n. sp.
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- [↓]*Eumelia*, n. n. for *Melia*, Neum., 1892; NEUMOEGEN, p. 25, Canad. Ent. xxv.
- [↓]*Eupoeya*, n. g., near *Heterogenea*, p. 167, for *E. slossonia*, Florida, *nivalis*, Cuba, n. spp., p. 169; PACKARD, Ent. News Philad. 1893.
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- [↓]*Euproctidion*, n. g., *Liparida*, for *E. gabunica*, n. sp., W. Africa; HOLLAND, p. 414, Psyche, vi.
- Euproctis* includes *Lopera*, *Bembina*, and *Somena*, p. 76, *E. fraterna*, larva figured, pl. clxxvi, fig. 2; HAMPSON, Ill. Lep. Het. ix.
- E. reutlingeri*, W. Africa, HOLLAND, p. 414, Psyche, vi; *E. pelodes*, Australia, LOWER, p. 150, Tr. R. Soc. S. Austral. xvii: n. spp.
- Eurukuttarus rotundus*, Ceylon, HAMPSON, p. 67, pl. clix, fig. 16, and pl. clxxvi, fig. 11, Ill. Lep. Het. ix, n. sp.
- Eusemia hornimanni*, pl. xvii, fig. 1, *melanochiton*, fig. 2, *terminatis*, fig. 3, figured; MABILLE & VUILLOT, Novitat. Lep.
- E. triangularis*, Cameroons, MABILLE, p. 57, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Euterote coryna*, Java, SWINHOE, p. 211, Ann. Nat. Hist. (6) xii, n. sp.
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- G. cinerascens*, W. Africa, HOLLAND, p. 531, Psyche, vi, n. sp.
- Gastropachais forficulatus*, ♀ described; HOLLAND, p. 518, Psyche, vi.
- G. greyi*, n. sp., W. Africa, HOLLAND, Psyche, vi, p. 519, n. sp.
- Genussa cluaca*, Ecuador, DRUCE, p. 297, pl. xx, fig. 17, P. Zool. Soc. London, 1893; *G. cercata*, Loja, DOGNIN, p. 374, Ann. Soc. ent. Belgique, xxxvii: n. spp.
- Geodena absimilis*, pl. iii, fig. 5, *dama*, fig. 4, W. Africa, HOLLAND, p. 61, Ent. News Philad. 1893, n. spp.

- Girpa notata*, pl. iii, fig. 3, *cynocephala*, fig. 2, W. Africa, HOLLAND, p. 60, Ent. News Philad. 1893, n. spp.
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- G. severa*, metamorphoses; DYAR, *t. c.* p. 503. *G. septentrionalis*, Wlk., = (*trilineata*, Pack.); DYAR, p. 303, Canad. Ent. xxv.
- Gonimbrasia longicaudata*, W. Africa, HOLLAND, p. 137, pl. viii, fig. 1, Ent. News Philad. 1893, n. sp.
- ^ *Gonobombyx*, n. g., *Lasiocampidæ* for *G. angulata*, n. sp., Cameroons; AURIVILLIUS, p. 214, Ent. Tidskr. 1893.
- ^ *Gonajana*, n. g., *Janidæ* for *G. dimidiata*, n. sp., W. Africa; AURIVILLIUS, p. 212, Ent. Tidskr. 1893.
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- ^ *Goodia*, n. g., *Drepanulidæ*, p. 178, for *G. nubilata*, pl. ix, fig. 3, *lunata*, fig. 2, p. 179, *vestigiata*, fig. 1, p. 180, n. spp., W. Africa; HOLLAND, Ent. News Philad. 1893.
- Goodia*, Holl., = (*Orthogonioptilum*, Karsch), list of the species; HOLLAND, p. 251, Ann. Nat. Hist. (6) xii.
- Gunda (Norasuma) apicalis*, fig. 17, *variegata*, fig. 7, pl. clx, Ceylon, HAMPSON, p. 55, Ill. Lep. Het., n. spp.
- Halisdota macularia* and *megapyrrha*, Wlk., habitats queried; DYAR, Canad. Ent. xxv, p. 27.
- H. laroipa, pandama*, pl. xix, fig. 8, Ecuador, DRUCE, p. 288, P. Zool. Soc. London, 1893, n. spp.
- Harpyia fugi*, attitudes of larva; POUJADE, Naturaliste, 1893, p. 68, figg.
- Hemileuca artemis* and *maia*, notes on; TOWNSEND, W. Amer. Scient. viii, p. 51. *H. maia*, notes on larva; PACKARD, P. Amer. Phil. Soc. xxxi, p. 171.
- H. artemis*, New Mexico, PACKARD, p. 172, P. Amer. Phil. Soc. xxxi, n. sp.
- Hemonia dulcicula*, Swinh., figured, pl. clviii, fig. 15; HAMPSON, Ill. Lep. Het. ix.
- H. flava*, Ceylon, HAMPSON, Ill. Lep. Het. ix, p. 83, pl. clviii, fig. 15; *H. luteicincta*, W. Africa, HOLLAND, p. 412, Psyche, vi: n. spp.
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- H. los*, N. America, STRECKER, p. 232, P. Ac. Philad. 1893; *H. rosei-caput*, Brit. Columbia, NEUMOEGEN & DYAR, p. 125, Canad. Ent. xxv : n. spp.
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- Heterolepis plützi*, Sierra Leone, SCHAU & CLEMENTS, p. 27, pl. ii, fig. 1, Lep. Sierra Leone, n. sp.
- Heteronygmia*, n. g., *Liparidæ*, p. 414, for *H. stigmatica*, *clathrata*, *basi-brunnea*, *argiloides*, p. 415, *arctioides*, *rhodapicata*, *hypoantha*, p. 416, n. spp., W. Africa; HOLLAND, Psyche, vi.
- Heteropacha rileyana*, life-history; PACKARD, p. 185, P. Amer. Phil. Soc. xxxi.
- Heteropan cupreatum*, Ceylon, HAMPSON, p. 63, pl. clvii, fig. 10, Ill. Lep. Het. ix, n. sp.
- Holcocerus volgensis*, Sarepta, CHRISTOPH, p. 88, Deutsche ent. Zeitschr. Lep. vi; *H. strioliger*, Samarcand, ALPHERAKY, p. 346, Deutsche ent. Zeitschr. Lep. vi : n. spp.
- Holocera angulata*, W. Africa; AURIVILLIUS, p. 201, Ent. Tidskr. 1893, n. sp.
- Holocraspedon*, n. g., near *Padenia*, p. 83, for *H. nigropunctum*, n. sp., Ceylon, p. 84, pl. clviii, fig. 4; HAMPSON, Ill. Lep. Het. ix.
- Homochoa? orphne*, Sierra Leone, SCHAU & CLEMENTS, p. 31, pl. i, fig. 7, Lep. Sierra Leone, n. sp.
- Hylemera tenera*, pl. iii, fig. 7, *indentata*, fig. 8, W. Africa, HOLLAND, p. 61, Ent. News Philad. 1893, n. spp.
- Hyperchiria io*, early stages; PACKARD, p. 168, P. Amer. Phil. Soc. xxxi.
- Hyperæschra (Peridia) dentata*, Ceylon, p. 60, pl. clx, fig. 11, HAMPSON, Ill. Lep. Het. ix, n. sp.
- Hypolanprus striatulis*, Swinh. (sub *Microsca*), figured, pl. clxxi, fig. 4, p. 71; HAMPSON, Ill. Lep. Het. ix.
- Hypoprepia miniata*, n. var. *subornata*; NEUMOEGEN & DYAR, p. 124, Canad. Ent. xxv.
- Hypopta turcomanica*, Askhabad, CHRISTOPH, p. 88, Deutsche ent. Zeitschr. Lep. vi; *H. herzi*, Central Asia, ALPHERAKY, p. 346, t. c.; *H. theodori*, New Mexico, DYAR, p. 220, Canad. Ent. xxv : n. spp.
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- Ino budensis*, n. var. *mollis*, *statices*, n. var. *urulensis*; GRUM-GRSHIMAILO, p. 385, Horæ Soc. ent. Ross. xxvii.
- Ira zarina*, Ecuador, DOGNIN, p. 427, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Jana strigina*, ♀ described, and n. var. *camerunica*; AURIVILLIUS, p. 206, Ent. Tidskr. 1893.
- J. preciosa* (Stgr.), *polymorpha*, p. 207, *dampfelti*, *obscura*, p. 208, *sigyna preussi*, W. Africa, *J. ? subrosea*, Transvaal, p. 209, AURIVILLIUS, t. c.; *J. nobilis*, p. 515, *marmorata*, p. 516, W. Africa, HOLLAND, Psyche, vi : n. spp.
- Janassa lignicolor*, var. = (*coloradensis*, Edw.); PACKARD, p. 522, Psyche, vi.
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- K. punctifera*, Ceylon, HAMPSON, p. c, pl. clviii, figg. 21 & 22, Ill. Lep. Het. ix, n. sp.
- Lacipa bizonoides*, Central Africa, BUTLER, p. 677, P. Zool. Soc. London, 1893, n. sp.
- Lacosomida*, n. fam., for *Lacosoma* and allies; DYAR, p. 36, Ent. News Philad. 1893.
- Lælia rosea*, pl. i, fig. 5, *fracta*, fig. 12, Sierra Leone, SCHAUS & CLEMENTS, p. 26, Lep. Sierra Leone; *L. hypoleucis*, *L. ? barsineides*, *L. lignicolor*, *setinoides*, p. 431, *ocellata*, p. 432, W. Africa, HOLLAND, Psyche, vi; *L. cardinalis*, Ceylon, HAMPSON, p. 74, pl. clviii, figg. 29 & 30, Ill. Lep. Het. ix : n. spp.
- Lasiocampa heres*, p. 31, pl. i, fig. 8, *mæra*, p. 32, pl. ii, fig. 5, Sierra Leone, SCHAUS & CLEMENTS, Lep. Sierra Leone; *L. viridescens*, *immunda*, p. 532, *leucophaea*, *lutescens*, *minima*, p. 533, W. Africa, HOLLAND, Psyche, vi : n. spp.
- Latoia nana*, pl. vii, fig. 15, *viridifuscia*, fig. 16, *L. ? albipuncta*, fig. 14, W. Africa, HOLLAND, p. 103, Ent. News Philad. 1893, n. spp.
- Lauron choma*, *osiba*, pl. xix, fig. 13, p. 290, *padua*, fig. 16, Ecuador, *batesi*, Amazons, fig. 15, *L. ? chariata*, fig. 14, Ecuador, p. 291, DRUCE, P. Zool. Soc. London, 1893, n. spp.
- Lebedodes*, n. g., near *Encavimaptera*, for *L. cossula*, n. sp., W. Africa; HOLLAND, Psyche, vi, p. 534.
- Leipozais*, n. g., *Lasiocampidæ*, near *Libethra*, p. 519, for *L. peraffinis*, p. 520, *major*, *marginepunctata*, p. 531, n. spp., W. Africa; HOLLAND, Psyche, vi.
- Leptosoma harca*, Malay Peninsula, SWINHOE, p. 215, Ann. Nat. Hist. (6) xii, n. sp.
- Lenodora vittata*, Wlk. (sub *Lasiocampa*), figured, pl. clxi, figg. 4 & 11, p. 73; HAMPSON, Ill. Lep. Het. ix.

- Lepasta africana*, W. Africa, HOLLAND, p. 343, pl. xv, fig. 11, Ent. News Philad. 1893, n. sp.
- Lepista xanthopa, monochroma, subumbrata*, W. Africa, HOLLAND, p. 411, Psyche, vi, n. spp.
- Leucartia rickseckeri*, California, BEHR, p. 247, Zoe, iv, n. sp.
- Leucoma gracillima*, W. Africa, HOLLAND, p. 64, pl. iii, fig. 9, Ent. News Philad. 1893; *L. egerina, hipparia*, Singapore, SWINHOE, p. 214, Ann. Nat. Hist. (6) xii : n. spp.
- Lichenopteryx alba*, E. Africa, AURIVILLIUS, p. 210, Ent. Tidskr. 1893, n. sp.
- Limacodes scapha*, early stages; PACKARD, p. 98, P. Amer. Phil. Soc. xxxi.
- L. cretacea*, W. Africa, HOLLAND, p. 107, pl. vii, fig. 17, Ent. News Philad. 1893, n. sp.
- Liparis monacha*, habits, &c.; WAGNER, Helios, xi, pp. 19, &c.
- L. ? muscosa*, p. 432, *hylomima*, p. 433, W. Africa, HOLLAND, Psyche, vi, n. spp.
- Lithacodia fasciola*, partial life-history; PACKARD, p. 101, P. Amer. Phil. Soc. xxxi.
- ¹*Lomadonta*, n. g., *Liparidæ*, for *L. erythrina*, n. sp., W. Africa; HOLLAND, p. 417, Psyche, vi.
- Lomera cana* (but referred in note to *Oiketicoides*), Ceylon, HAMPSON, p. 64, pl. clix, fig. 21, and pl. clxxvi, fig. 8, Ill. Lep. Het. ix, n. sp.
- Lopera fulvipuncta*, Ceylon, HAMPSON, p. 76, pl. clix, figg. 2 & 8, and larva, pl. clxxv, fig. 14, Ill. Lep. Het. ix, n. sp.
- Lophocampa striata, humosa*, Loja, DOGNIN, p. 424, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Lophodonta* and allies, structural characters; DYAR, p. 33, Ent. News Philad. 1893.
- Ludia obscura*, Cameroons, AURIVILLIUS, p. 201, Ent. Tidskr. 1893; *L. orinoptena*, Cameroons, KARSCH, p. 504, pl. xx, fig. 2, Berlin. ent. Zeitschr. xxxvii : n. spp.
- Lyclenè* is synonym of *Miltochrista*, p. 84, *L. semifascia*, n. var. *metamelas*, pl. clviii, fig. 11; HAMPSON, Ill. Lep. Het. ix.
- L. ruptifascia*, pl. clviii, fig. 12, *varians*, figg. 10, 20, 32, & 33, Ceylon, HAMPSON, p. 85, Ill. Lep. Het. ix, n. spp.
- Lymantria rosea*, Ceylon, HAMPSON, p. 76, pl. clviii, fig. 28, Ill. Lep. Het. ix, n. sp.
- ²*Machairaphora*, n. g., *Lithosiidæ*, for *M. fulvipuncta*, n. sp., Ceylon, p. 86, pl. clix, fig. 10; HAMPSON, Ill. Lep. Het. ix.
- Macrauzata* (but referred in note to *Leucoma*) *fenestrata*, Ceylon, HAMPSON, p. 78, pl. clx, fig. 16, Ill. Lep. Het. ix, n. sp.
- Macronadata brunneidorsa*, W. Africa, HOLLAND, p. 489, Psyche, vi, n. sp.
- ³*Macrurocampa*, n. g., for *Noctua marthesia*, Cr.; DYAR, p. 34, Ent. News Philad. 1893.
- ⁴*Megadrepana*, n. g., *Drepanulidæ*, for *M. cinerea*, n. sp., W. Africa, pl. ix, fig. 4; HOLLAND, p. 178, Ent. News Philad. 1893.

- Melalopha aethe*, California, NEUMOEGEN & DYAR, p. 122, *Canad. Ent.* xxv, n. sp.
- Melisa grandis*, W. Africa, HOLLAND, p. 394, *Psyche*, vi, n. sp.
- Metagarista poggei*, pl. xvii, fig. 4, *aziyade*, fig. 5, figured; MABILLE & VUILLOT, *Novitat. Lep.*
- Metanastria porphyria*, *M. ? spargata*, HOLLAND, p. 513, *Psyche*, vi; *M. dora*, *gynandra*, *himerta*, Java, SWINHOE, p. 212, *Ann. Nat. Hist.* (6) xii : n. spp.
- ⁴*Metarbela*, n. g., near *Arbela*, for *M. stivafer*, n. sp., W. Africa; HOLLAND, p. 535, *Psyche*, vi.
- Metarctia paremphares*, *benitensis*, *pareclecta*, p. 395, *hematica*, *hematophages*, *lutea*, *haematoessa*, p. 396, W. Africa, HOLLAND, *Psyche*, vi, n. spp.
- Metastatia pampa*, Ecuador, p. 284, *ossa*, *chelidon*, pl. xix, fig. 3, Colombia, *M. ? pales*, Ecuador, pl. xix, fig. 4, p. 285, DRUCE, *P. Zool. Soc. London*, 1893, n. spp.
- Micrattacus sesostris*, Borneo, VUILLOT, p. clxxxi, *Bull. Soc. ent. France*, 1893, n. sp.
- Miltochrista numida*, *clara*, *M. ? erythrias*, p. 400, *craigii*, p. 410, W. Africa, HOLLAND, *Psyche*, vi; *M. esmia*, Shan States, SWINHOE, *Ann. Nat. Hist.* (6) xii, p. 217 : n. spp.
- Mimeusemia ceylanica*, Ceylon, HAMPSON, p. 89, pl. clvii, fig. 24, *Ill. Lep. Het.* ix, n. sp.
- Miresa syrtis*, Sierra Leone, SCHAUS & CLEMENTS, p. 28, pl. ii, fig. 3, *Lep. Sierra Leone*; *M. transversata*, pl. vii, fig. 5, *pyrosomoides*, fig. 2, p. 104, *auribasalis*, fig. 4, *nobilior*, fig. 3, p. 105, W. Africa, HOLLAND, *Ent. News Philad.* 1893; *M. pucara*, Loja, DOGNIN, p. 369, *Ann. Soc. ent. Belgique*, xxxvii : n. spp.
- Monda rhabdophora*, Ceylon (referred in note to *Amicta*), HAMPSON, p. 66, pl. clix, fig. 22, and pl. clxxvi, fig. 10, *Ill. Lep. Het.* ix, n. sp.
- Monocreagra orthyades*, pl. xx, fig. 7, *M. ? chares*, fig. 8, *chorax*, fig. 9, Ecuador, DRUCE, *P. Zool. Soc. London*, 1893, n. spp.
- ⁴*Monoschalis*, n. g., *Zyganidæ*, near *Thyrassia*, for *M. virescens*, n. sp., Ceylon, pl. clvii, fig. 11; HAMPSON, p. 63, *Ill. Lep. Het.* ix.
- Naclia syntomida*, figure; STAUDINGER, pl. i, fig. 9, *Deutsche ent. Zeitschr. Lep.* vi.
- N. tristigma*, Sierra Leone, MABILLE, p. 58, *Ann. Soc. ent. Belgique*, xxxvii, n. sp.
- Nadata gibbosa* = (*doubledayi* and *behrensii*); PACKARD, p. 521, *Psyche*, vi.
- Nagoda nigricans*, figured, pl. clxi, fig. 1, larva described and figured, pl. clxxvi, fig. 6, p. 73; HAMPSON, *Ill. Lep. Het.* ix.
- Narasodes grisea*, Ceylon, HAMPSON, p. 81, pl. clviii, fig. 2, *Ill. Lep. Het.* ix, n. sp.
- Natada suffusa*, *navaria*, Moore, *cosmiana*, Swinh., synonymy; HAMPSON, p. 71, *Ill. Lep. Het.* ix.

- N. sericea*, Ceylon, HAMPSON, Ill. Lep. Het. ix, p. 71, pl. clxi, fig. 15 ; *N. melampepla*, W. Africa, HOLLAND, p. 107, Ent. News Philad. 1893 : n. spp.
- Nelo toxicrata*, Peru, DRUCE, p. 290, pl. xix, figg. 11 & 12, P. Zool. Soc. London, 1893; *N. numbalensis*, Ecuador, DOGNIN, p. 368, Ann. Soc. ent. Belgique, xxxvii ; *N. darthula*, Colombia, p. 160, *dora, ino, albona, titan, ilione*, Bolivia, p. 161, THIERRY-MIEG, Naturaliste, 1893 : n. spp.
- Nemeophila plantaginis*, n. var. *melas* ; CHRISTOPH, p. 88, Deutsche ent. Zeitschr. Lep. vi. *N. scudderi*, metamorphoses; LYMAN, Canad. Ent. xxv.
- ¹*Neoarctia*, n. g., type *Antarctia beanii* ; NEUMOEGEN & DYAR, p. 141, Ent. News Philad. 1893.
- ¹*Neolaurona*, n. g., *Dioptidæ*, type *Pericopis hazari*, Butl., including *N. ovia*, n. sp., Ecuador, pl. xix, fig. 17 ; DRUCE, p. 292, P. Zool. Soc. London, 1893.
- ¹*Neozatrephes*, n. g., p. 286, *Phægopterina*, for *N. telesilla*, n. sp., Ecuador, p. 287, pl. xix, fig. 5 ; DRUCE, P. Zool. Soc. London, 1893.
- Nepita conferta*, n. var. *fusca*, p. 84, pl. clviii, fig. 6 ; HAMPSON, Ill. Lep. Het. ix.
- Netria viridescens*, n. var. *griseata* ; HAMPSON, p. 59, pl. clx, fig. 14, Ill. Lep. Het. ix.
- N. canescens*, Ceylon, p. 60, pl. clx, fig. 6, HAMPSON, Ill. Lep. Het. ix, n. sp.
- Neurosymphoca procrioides*, Central Africa, BUTLER, p. 676, P. Zool. Soc. London, 1893, n. sp.
- Nioda agrotoides, nigristriata, erubescens*, W. Africa, HOLLAND, p. 473, Psyche, vi, n. spp.
- Nola pascua*, Swinh. (sub *Ræselia*), larva figured and described ; HAMPSON, p. 88, pl. clxxv, fig. 9, Ill. Lep. Het. ix.
- N. impudica*, Ordubad, CHRISTOPH, p. 88, Deutsche ent. Zeitschr. Lep. vii ; *N. grisalis*, pl. clviii, fig. 9, *ceylonica*, fig. 13, *tumulifera*, fig. 19, Ceylon, HAMPSON, p. 88, Ill. Lep. Het. ix : n. spp.
- Norraca signifera, brevipennis, lineata, arctipennis*, W. Africa, HOLLAND, Psyche, vi, p. 488, n. spp.
- Notodonta stragula*, larva ; DYAR, p. 255, Ent. News Philad. 1893.
- N. nigroramosa*, Turkestan, CHRISTOPH, p. 89, Deutsche ent. Zeitschr. Lep. vi ; *N. pacifica*, California, BEHR, p. 206, P. Calif. Ac. iii : n. spp.
- ¹*Notohyba*, n. g., near *Ilema*, p. 434, for *N. nubifuga, delicata*, p. 451, *striata, obscura, proletaria*, p. 452, *muscosa, viridis*, p. 453, n. spp., W. Africa ; HOLLAND, Psyche, vi.
- Nudaria juvenis, lacteata*, W. Africa, HOLLAND, p. 412, Psyche, vi, n. spp.
- Nyctemera usambaræ*, E. Africa, OBERTHUR, p. 32, pl. i, fig. 8, Etudes Ent. xvii ; *N. fallax*, W. Africa, HOLLAND, p. 59, Ent. News Philad. 1893 : n. spp.
- Ocneria heliaspis*, metamorphoses, figured, pl. xix, SCOTT, Australian Lep.
- O. signatoria*, Turkestan, CHRISTOPH, p. 88, Deutsche ent. Zeitschr. Lep. vi, n. sp.

Odonestis; cf. *Estigena*, *suprà*.

- Æcura*, n. g., p. 389, *Liparidæ*?, for *Æ. goodii*, n. sp., W. Africa, p. 390, pl. ix, figg. 3 & 4, cocoon-bag, fig. 1; HOLLAND, *Psyche*, vi.
- Æ.*? *crucifera*, p. 453, *ocellifera*, *thersites*, p. 454, W. Africa, HOLLAND, *Psyche*, vi, n. spp.
- Ædemasia*, is not sufficiently distinct from *Schizura*; *Æ. salicis*, *concinna*, *eximia*, all one species; PACKARD, p. 522, *Psyche*, vi.
- Ædonia exigua*, Edw., generic characters; DYAR, p. 301, *Canad. Ent.* xxv.
- Ænistis entella*, larva figured and described; HAMPSON, p. 80, pl. clxxv, Ill. Lep. Het. ix.
- Oiketiscus abbottii*, notes on larva and case; TOWNSEND, p. 317, *J. Inst. Jamaica*, i.
- Olapa fulvinotata*, Central Africa, BUTLER, p. 678, *P. Zool. Soc. London*, 1893, n. sp.
- Olceclostera*, cf. *Aceclostria*, *suprà*.
- Olene mendosa*, var. *basalis*, Wlk., figured; HAMPSON, p. 75, pl. clx, fig. 2, Ill. Lep. Het. ix.
- O. costiplaga*, *hyloica*, W. Africa, HOLLAND, p. 473, *Psyche*, vi, n. spp.
- Oreta albipuncta*, Ceylon, HAMPSON, p. 69, pl. clx, fig. 8, Ill. Lep. Het. ix, n. sp.
- Orgyia*, characters of larvæ, specific validity of *O. badia* queried; DYAR, *Psyche*, vi, p. 419. *O. antiqua*, peculiarity in pupa; BERNARD, *Ann. Nat. Hist.* (6) xi, p. 25. *O. obliviosa* is spring form of *leucostigma*; BEUTENMÜLLER, p. 21, *Bull. Amer. Mus.* v. *O. gulosa*, life-history; DYAR, *Psyche*, vi, p. 438.
- O. ticana*, Sierra Leone, SCHAUS & CLEMENTS, p. 27, pl. i, fig. 11, *Lep. Sierra Leone*, n. sp.
- Orgyopsis tenuis*, W. Africa, HOLLAND, p. 475, *Psyche*, vi, n. sp.
- Orthogonioptiluna*, n. g., near *Tagoropsis*, for *O. adiegetum*, p. 501, pl. xx, fig. 1, *monochromum*, *prox*, p. 502, fig. 3, n. spp., Kamerons; KARSCH, *Berlin. ent. Zeitschr.* xxxvii.
- Otroeda permagnifica*, W. Africa, HOLLAND, p. 413, *Psyche*, vi, n. sp.
- Pachypasa directa*, W. Africa, MABILLE, p. 58, *Ann. Soc. ent. Belgique*, xxxvii, n. sp.
- Packardia elegans*, larva; PACKARD, p. 100, *P. Amer. Phil. Soc.* xxxi.
- Paleopsis*, n. g., *Lithosiidæ*, p. 86, for *P. diaphanella*, n. sp., Ceylon, p. 87, pl. clviii, fig. 8; HAMPSON, Ill. Lep. Het. ix.
- Parasa lepida*, Cram., figured, pl. clxxv, fig. 4, eggs noticed, p. 72; HAMPSON, Ill. Lep. Het. ix. *P. chloris*, larva described; PACKARD, p. 91, *P. Amer. Phil. Soc.* xxxi.
- P. viridissima*, W. Africa, HOLLAND, p. 102, *Ent. News Philad.* 1893; *P. viridis*, Ceylon, HAMPSON, p. 72, pl. clx, fig. 9, Ill. Lep. Het. ix: n. spp.
- Paracrama olivacea*, Ceylon, HAMPSON, p. 87, pl. clvii, fig. 17, Ill. Lep. Het. ix, n. sp.
- Pericopsis leucophaa*, pupa described; BEUTENMÜLLER, p. 92, *Bull. Amer. Mus.* v.

- Petosia euchana*, Shan States, SWINHOE, Ann. Nat. Hist. (6) xii, p. 216, n. sp.
- Phasis* ? *astrapeus*, W. Africa, HOLLAND, Psyche, vi, p. 373, n. sp.
- Phobetron pithecium*, egg described; PACKARD, p. 101, P. Amer. Phil. Soc. xxxi.
- Phæoptera chimara*, Paraguay, DRUCE, p. 288, P. Zool. Soc. London, 1893, n. sp.
- Phragmatæcia brunni*, E. Africa, PAGENSTECHER, p. 245, Jahrb. Hamburg. Anst. x, n. sp.
- Phyllalia nigromaculata*, Port Natal, AURIVILLIUS, p. 210, Ent. Tidskr. 1893, n. sp.
- Platysamia orizaba*, cocoon described; BEUTENMÜLLER, p. 93, Bull. Amer. Mus. v.
- Plegapteryx fasciata*, pl. ix, fig. 6, *purpurascens*, fig. 7, p. 172, *obscura*, *partita*, *subsplendens*, fig. 15, p. 173, W. Africa, HOLLAND, Ent. News Philad. 1893, n. spp.
- Polypætes colana*, Peru, *cletor*, Ecuador, DRUCE, p. 296, P. Zool. Soc. London, 1893; *P. jipiro*, Loja, DOGNIN, p. 368, Ann. Soc. ent. Belgique, xxxvii; *P. antedata*, *cuatropuntada*, Ecuador, DOGNIN, p. 426, t. c. : n. spp.
- Prabhasa binotata*, Ceylon, HAMPSON, p. 81, pl. clviii, fig. 24, Ill. Lep. Het. ix, n. sp.
- Prionia levis*, N. America, HUDSON, p. 24, Canad. Ent. xxv, n. var. or sp.
- Prionoxystus robinia*, n. var. *quercus*; EHRMANN, p. 257, Canad. Ent. xxv.
- ↳ *Prodonestis*, n. g., *Lasiocampidæ* for *P. fulva*, n. sp., W. Africa; HOLLAND, p. 538, Psyche, vi.
- ↳ *Prolatoia*, n. g., *Limacodidæ*, p. 107, for *P. perileuce*, n. sp., W. Africa; HOLLAND, p. 108, pl. vii, fig. 10, Ent. News Philad. 1893.
- Pseudoblabe*, generic characters, p. 82, *P. oophora*, figured, pl. clxviii, fig. 14; HAMPSON, Ill. Lep. Het. ix.
- Psichotoë incipiens*, Wlk., referred to *Syntomoides*, p. 61, figured as *Eressa*, pl. clvii, fig. 22; HAMPSON, Ill. Lep. Het. ix.
- P. brachypecten*, Ceylon; HAMPSON, p. 61 (referred to *Syntomoides* in note), figured as *Eressa*, pl. clvii, fig. 23, HAMPSON, Ill. Lep. Het. ix, n. sp.
- Psychidæ*: notes on the cases of N. American; DYAR, pp. 320 & 321, Ent. News Philad. 1893.
- ↳ *Pteroma*, n. g., *Psychinæ*, for *P. plagiopheps*, pl. clix, fig. 19, and pl. clxxvi, fig. 13, *uniforme*, pl. clix, fig. 17, and pl. clxxvi, fig. 15, n. spp., Ceylon [*P. uniforme* referred in note to *Pteroxys*]; HAMPSON, Ill. Lep. Het. ix.
- Pterothysanus orleans*, Tonkin, OBERTHUR, p. 15, pl. iv, fig. 37, Etudes Ent. xvii, n. sp.
- ↳ *Pteroxys*, n. g., *Psychidæ*, n. subfam. *Chaliinæ*, for *P. goniatus*, n. sp., Ceylon; HAMPSON, p. 68, pl. clix, fig. 20, and pl. clxxvi, fig. 14, Ill. Lep. Het. ix.

- Ptilura*, n. g., *Limacodidae*, p. 103, for *P. argyraspis*, n. sp., W. Africa, p. 104, pl. vii, fig. 1; HOLLAND, Ent. News Philad. 1893.
- Pyrrharctia isabella*, variation of venation in; DYAR, Psyche, vi, p. 511.
- Ramesa luridivitta*, Ceylon, HAMPSON, p. 59, pl. clx, fig. 12, Ill. Lep. Het. ix; *R. ? minuta*, W. Africa, HOLLAND, p. 488, Psyche, vi : n. spp.
- Redoa laba*, Sierra Leone, SCHAUS & CLEMENTS, p. 25, pl. i, fig. 4, Lep. Sierra Leone; *R. ogovensis*, HOLLAND, p. 63, pl. iii, figg. 12 & 13, Ent. News Philad. 1893 : n. spp.
- Rhodoneura myrsusalis*, Wlk. (sub *Pyralis*), pl. clxxi, fig. 2, *nitens*, Butl. (sub *Microsca*), fig. 7, figured; HAMPSON, p. 70, Ill. Lep. Het. viii.
- R. disparalis*, Ceylon, HAMPSON, p. 70, pl. clxxi, fig. 11, Ill. Lep. Het. viii, n. sp.
- Rhynchopalpus*, n. g., near *Callinola*, for *R. brunellus*, n. sp., Ceylon, pl. clviii, fig. 13, p. 89, and including *Aglossa argentalis*, Moore; HAMPSON, Ill. Lep. Het. ix.
- Rhypteira*, n. g., *Limacodidae*, p. 106, for *R. sordida*, n. sp., W. Africa, p. 107, pl. vii, fig. 19; HOLLAND, Ent. News Philad. 1893.
- Saturniids*, hybrid; WATSON (1033).
- Scalmeicauda*, n. g., *Notodontidae*, for *S. bengal*, n. sp., W. Africa; HOLLAND, p. 489, Psyche, vi.
- Schizura unicornis* = (*edmandsii* and *conspicua*), *ipomeæ*, var. = (*telifer*, Gr.); PACKARD, p. 522, Psyche, vi.
- Scopelodes whitelyi*, British Guiana, DRUCE, p. 299, P. Zool. Soc. London, 1893, n. sp.
- Scrancia*, n. g., near *Gargetta*, Wlk., p. 536, for *S. modesta*, n. sp., W. Africa, p. 537; HOLLAND, Psyche, vi.
- Semyra lineata*, W. Africa, HOLLAND, p. 102, pl. vii, fig. 7, Ent. News Philad. 1893, n. sp.
- Setina irrorella*, n. var. *lata*; CHRISTOPH, p. 88, Deutsche ent. Zeitschr. Lep. vi.
- Setinochroa cyllitona*, Shan States, SWINHÖE, p. 217, Ann. Nat. Hist. (6) xii; *S. trimacula*, Ceylon, HAMPSON, p. 85, pl. clvii, figg. 27 & 28, Ill. Lep. Het. ix : n. spp.
- Sisyrosea ornata*, full-grown larva described; BEUTENMÜLLER, p. 89, Bull. Amer. Mus. v.
- Soloe bigutta*, W. Africa, HOLLAND, p. 62, pl. iii, fig. 6, Ent. News Philad. 1893, n. sp.
- Somena scintillans*, Wlk., larva described and figured; HAMPSON, p. 77, pl. clxxv, fig. 12, Ill. Lep. Het. ix.
- Someru chloauchena*, *desmotis*, p. 475, *chloromorpha*, *bitioides*, *chloëropsis*, *chloana*, *infima*, p. 476, *chloe*, *falsa*, *propinqua*, p. 487, W. Africa, HOLLAND, Psyche, vi, n. spp.
- Sorocostia anisogona*, Australia, LOWER, p. 149, Tr. R. Soc. S. Austral. xvii, n. sp.
- Sozuza decipiens*, W. Africa, HOLLAND, Psyche, vi, p. 411, n. sp.
- Spalyria minor*, E. India, MOORE, p. 89, Indian Mus. Notes, iii, n. sp.

- Spatulicraspeda*, n. g., near *Limacodes*, p. 72, for *S. castaneiceps*, n. sp., Ceylon, p. 73, pl. clxi, figg. 16 & 17, and pl. clxxv, fig. 13 ; HAMPSON, Ill. Lep. Het. ix.
- Sphingicampa bicolor*, life-history ; PACKARD, p. 147, P. Amer. Phil. Soc. xxxi.
- Spilarctia subfascia*, Wlk., larva figured and described ; HAMPSON, p. 78, pl. clxxv, fig. 5, Ill. Lep. Het. ix.
- S. castanea*, Ceylon, HAMPSON, p. 79, pl. clviii, figg. 26 & 27, Ill. Lep. Het. ix, n. sp.
- Spilosoma lubricipeda*, var. *zatima* ; SOUTH, Entomologist, xxvi, pp. 257 & 346. *S. vestalis*, n. var. *amelaina* ; DYAR, p. 512, Psyche, vi. *S. virginica*, var. = (*Cyenia dubia*, Wlk.) ; DYAR, p. 180, Canad. Ent. xxv.
- S. robleti*, Madagascar, MABILILE, p. 57, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Staphylinochrous*, n. g., near *Boradia*, for *S. whytei*, n. sp., Central Africa, pl. ix, fig. 11 ; BUTLER, p. 676, P. Zool. Soc. London, 1893.
- Stauropus fagi*, habits, metamorphoses, &c. ; BAYNE, Tr. City London Soc. 1893, pp. 4-13, and Ent. Rec. iv, pp. 29-38.
- S. squamipennis*, W. Africa, HOLLAND, p. 490, Psyche, vi, n. sp.
- Sthenopsis argenteomaculatus*, n. var. *semiauratus* ; NEUMOEGEN & DYAR, p. 124, Canad. Ent. xxv.
- Stibolepis odites*, Sierra Leone ; SCHAUS & CLEMENTS, p. 30, pl. i, fig. 9, Lep. Sierra Leone ; *S. abluta*, W. Africa, HOLLAND, p. 343, pl. xv, fig. 14, Ent. News Philad. 1893 ; *S. subiridescens*, W. Africa, HOLLAND, p. 490, Psyche, vi : n. spp.
- Stygia psyche*, Central Asia, GRUM-GRSHIMAILO, p. 386, Horæ Soc. ent. Ross. xxvii, n. sp.
- Sulychra promelæna*, pl. iii, fig. 11, *S. ? flavescens*, W. Africa, HOLLAND, p. 63, Ent. News Philad. 1893, n. spp.
- Syntomis divalis*, Sierra Leone, SCHAUS & CLEMENTS, p. 21, pl. i, fig. 2, Lep. Sierra Leone ; *S. ogovensis*, p. 374, *leugalea*, *elasson*, *elachista*, *miserabilis*, *puncticincta*, *leimacis*, p. 375, *goodii*, *reutlingeri*, *leucerythra*, p. 376, *leucogastra*, *cytogaster*, *cybelistes*, *creobota*, *crenophylax*, p. 393, W. Africa, HOLLAND, Psyche, vi ; *S. albapex*, Ceylon, HAMPSON, p. 62, pl. clvii, fig. 1, Ill. Lep. Het. ix : n. spp.
- Syntrichura ceres*, Brit. Guiana ; DRUCE, p. 283, P. Zool. Soc. London, 1893, n. sp.
- Syringura*, n. g., near *Syntomis*, for *S. uranopetes*, n. sp., W. Africa, HOLLAND, p. 394, Psyche, vi.
- Systropha fuscipes*, Ceylon, HAMPSON, p. 80, pl. clviii, fig. 23, Ill. Lep. Het. ix, n. sp.
- Tagora murina*, Moore, figured, pl. cxli, fig. 18 ; HAMPSON, Ill. Lep. Het. ix.
- T. nigriceps*, p. 55, pl. cxli, fig. 19, HAMPSON, Ill. Lep. Het. ix ; *T. corax*, Mexico, DRUCE, p. 298, P. Zool. Soc. London, 1893 : n. spp.
- Tagoropsis dentifera*, n. var. *conspersa* ; AURIVILLIUS, p. 203, Ent. Tidskr. 1893.

- T. ? falcata*, Cameroons, AURIVILLIUS, Ent. Tidskr. 1893, p. 202 ; *T. nodulifera*, Cameroons, KARSCH, p. 500, Berlin ent. Zeitschr. xxxvii : n. spp.
- Tantura*, characters ; NEUMOEGEN & DYAR, p. 139, Ent. News Philad. 1893.
- Taragama chaerocampoides*, p. 516, *livida*, *fuliginosa*, p. 517, W. Africa, HOLLAND, Psyche, vi ; *T. singulare*, *lineatum*, *imitans*, W. Africa, AURIVILLIUS, Ent. Tidskr. 1893, p. 213 : n. spp.
- Tegulata ? nigristriata*, W. Africa, HOLLAND, p. 341, pl. xv, fig. 10, Ent. News Philad. 1893, n. sp.
- ^Δ*Teinorhynoha*, n. g., near *Miresa*, for *T. umbra*, n. sp., W. Africa, pl. vii, fig. 13 ; HOLLAND, p. 106, Ent. News Philad. 1893.
- Terina tenuifascia*, p. 412, *minor*, p. 413, W. Africa, HOLLAND, Psyche, vi, n. spp.
- ^Δ*Terphothrix*, n. g., *Liparidæ*, for *T. lanaria*, n. sp., W. Africa ; HOLLAND, p. 474, Psyche, vi.
- Termessa lyelliana*, Australia, LOWER, p. 148, Tr. R. Soc. S. Austral. xvii, n. sp.
- ^Δ*Thamnocera*, n. g., *Liparidæ*, p. 454, for *T. albilinea*, *nubilata*, *albinotata*, *fumosa*, *pallida*, *cæruleifascia*, n. spp., W. Africa, p. 469 ; HOLLAND, Psyche, vi.
- Thersana vidrierata*, Loja, DOGNIN, p. 425, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Thosea cotesi*, Assam, SWINHOE, p. 211, Ann. Nat. Hist. (6) xii, n. sp.
- Thumatha fuscescens*, Wlk., figured ; HAMPSON, p. 86, pl. clviii, fig. 18, Ill. Lep. Het. ix.
- Thymistada erosa*, p. 180, pl. ix, figg. 5 & 17, *miserrima*, p. 181, fig. 13, W. Africa, HOLLAND, Ent. News Philad. 1893, n. spp.
- Thysanoprymna cepiana*, Venezuela, DRUCE, p. 287, P. Zool. Soc. London, 1893 ; *T. pava*, Merida, DOGNIN, p. 368, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Totype tolteca*, Mexico, NEUMOEGEN, p. 6, Canad. Ent. xxv, n. sp.
- Tricholepis uniformis*, Ceylon, HAMPSON, p. 86, pl. clvii, fig. 29, Ill. Lep. Het. ix, n. sp.
- Trisula magnifica*, Sierra Leone, SCHAUS & CLEMENTS, Lep. Sierra Leone, p. 38, pl. iii, fig. 8, n. sp.
- Turnaca grisea*, *ignobilis*, W. Africa, HOLLAND, p. 488, Psyche, vi, n. spp.
- Urania sloanus*, swarm of ; TOWNSEND, p. 379, J. Inst. Jamaica, i.
- Utidava ? citana*, Sierra Leone, SCHAUS & CLEMENTS, p. 26, pl. i, fig. 10, Lep. Sierra Leone, n. sp.
- ^Δ*Utriculofera*, n. g., *Lithosiidæ*, p. 81, for *U. fuscapedex*, n. sp., Ceylon ; HAMPSON, p. 82, pl. clviii, figg. 7 & 17, Ill. Lep. Het. ix.
- Varina ornata*, Neum., referred to *Noctuidæ* ; PACKARD, p. 151, Canad. Ent. xxv.
- Zatrephes trigona*, generic position and description ; NEUMOEGEN & DYAR, Ent. News Philad. 1893, pp. 215 & 216.

- Zeuzera postexcisa*, Ceylon, HAMPSON, p. 68, pl. clix, fig. 18, Ill. Lep. Het. ix, n. sp.
- Zygona trifolii*, variation; BARRETT, Ent. Mag. xxix, p. 181, and SOUTH, p. 215, Entomologist, xxvi. *Z. loniceræ, trifolii, filipendulæ*, hybridisation of; FLETCHER and others, P. ent. Soc. London, 1893, pp. ix-xi, and Ent. Mag. xxix, p. 53. *Z. tamara*, n. var. *dæmon*; CHRISTOPH, p. 88, Deutsche ent. Zeitschr. Lep. vi. *Z. anthyllidis*, metamorphoses; CHRÉTIEN, Naturaliste, 1893, p. 11.
- Z. glasunovi*, Central Asia, GRUM-GRSHIMAILO, p. 386, Horæ Soc. ent. Ross. xxvii; *Z. cyanoxantha*, Abyssinia, MABILLE, p. 57, Ann. Soc. ent. Belgique, xxxvii : n. spp.

NOCTUIDÆ AND CYMATOPHORIDÆ.

- [Cf. ALPHÉRAKY (13), AURIVILIUS (27), BUCKLER (120), BUTLER (124, 125, 126, 127), CHRISTOPH (162), GRIFFITHS (401), GROTE (403), HAMPSON (423), HOLLAND (448), LOWER (598), MABILLE (605), MALLY (612), MOORE (651), OLLIFF (678, 679), PAGENSTECHER (698), RILEY & HOWARD (799), SMITH (917, 918, 919, 921), STANDFUSS (932), SWINHOE (951, 953), TUTT (994).]
- Vol. v of Larvæ of British Moths, BUCKLER (120), includes many figures of species of *Agrotis*, *Noctua*, *Tæniocampa*, *Anchocelis*, *Xanthia*, *Cosmia*, &c., &c.
- Bibliographic and synonymic catalogue of the *Noctuidæ* (including *Thyatiridæ* and *Deltoidæ*) of N. America; SMITH (917).
- BUTLER continues his notes on the synonymy of Noctuid Moths, Entomologist, xxvi, pp. 45, &c.
- Acontia nygmia*, Singapore, SWINHOE, p. 217, Ann. Nat. Hist. (6) xii, n. sp.
- Acronycta*: its systematic position and subgenera, synonymical notes; BUTLER, Ann. Nat. Hist. (6) ix, pp. 396-402. *A. auricoma*, n. var. *pyhavaaræ*; HOFFMANN, p. 126, Stettin Ent. Zeit. liv. *A. strigosa*, young larva; CHAPMAN, Ent. Rec. iv, p. 97, pl. ix, fig. 1. *A. alni*, larva noticed; CRAWSHAY, Entomologist, xxvi, p. 226, and DOBREE, t. c. p. 164.
- A. grotei*, p. 400, *smithii*, p. 401, N. America, BUTLER, Ann. Nat. Hist. (6) xi, n. spp.
- Ægilia describens*, Wlk., figured; HAMPSON, p. 105, pl. clxiii, fig. 11, Ill. Lep. Het. ix.
- Agrotiphila maculata*, p. 100, pl. vi, fig. 7, *incognita*, p. 101, fig. 9, SMITH, Ent. News Philad. 1893, n. spp.
- Agrotis clandestina*, noticed, p. 13, *westermanni*, pl. ii, fig. 8, *drewseni*, fig. 7, p. 14, *islandica*, fig. 5, p. 15, figures and notes; AURIVILIUS, Bih. Svenska Ak. xv, No. 1. *A. abdita*, figured, pl. xviii, fig. 1; MABILLE & VUILLOT, Novitat. Lep. *A. segetum*, structure of labrum of larva; CHATIN, C.R. Soc. Philom. 1893, No. 20, p. 2.

- A. haverkampfi*, Corsica, STANDFUSS, p. 359, Berlin. ent. Zeitschr. xxxviii; *A. herzi*, Persia, *marcida*, Askhabad, *marcens*, Armenia, p. 90, *sulcifera*, Kasikoparan, *alpherakii*, Daghestan, *carthalina*, Transcaucasus, p. 91, CHRISTOPH, Deutsche ent. Zeitschr. Lep. vi; *A. dalei*, Falkland Is., BUTLER, p. 207, Ann. Nat. Hist. (6) xii : n. spp.
- Alamis* to be preferred to *Pericyma*, *A. umbrina*, Gn., = (*continua*, Wlk.); BUTLER, p. 48, Entomologist, xxvi.
- Amathes c-nigrum*, Ceylonese var. of larva figured and described, p. 94, pl. clxxvi, fig. 4, *A. ruptistriga*, Wlk. (sub *Hadena*), figured, pl. clxi, fig. 12; HAMPSON, Ill. Lep. Het. ix.
- Anachrostis*, n. g., near *Metachrostis*, for *A. nigripuncta*, n. sp., Ceylon, pl. clxii, fig. 19; HAMPSON, p. 98, Ill. Lep. Het. ix.
- Anarta cordigera*, n. var. *carbonaria*; CHRISTOPH, p. 92, Deutsche ent. Zeitschr. Lep. vi. *A. richardsoni*, figured with ♂ characters, pl. i, fig. 12, and pl. iii, fig. 4, *leucocycla*, pl. i, fig. 11, and pl. iii, fig. 3, *lapponica*, figured, pl. ii, fig. 2, noticed, pp. 18 & 19; AURIVILLIUS, Bih. Svenska Ak. xv, No. 1.
- A. kolthoffi*, Greenland, AURIVILLIUS, p. 20, pl. ii, fig. 1, and pl. iii, fig. 2, Bih. Svenska Ak. xv, n. sp. or var. of *zetterstedti*.
- Ansa filipalpis*, Wlk., figured; HAMPSON, p. 110, pl. clxv, fig. 14, Ill. Lep. Het. ix.
- Antapлага koebelei*, California, RILEY, p. 333, figg. 45 & 46, Insect Life, v, n. sp.
- Anthophila subolivalis*, Madagascar, MABILLE, p. 60, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Arcte cærulea*, Gn. (sub *Cocytodes*), larva described and figured; HAMPSON, p. 104, pl. clxxvi, fig. 5, Ill. Lep. Het. ix.
- Athyrra divulsa*, Wlk., figured; HAMPSON, p. 105, pl. clxiii, fig. 4, Ill. Lep. Het. ix.
- A. aurotinctoria*, Ceylon, HAMPSON, Ill. Lep. Het. ix, pl. clxiii, fig. 10, n. sp.
- Aucha velans*, Wlk., figured, pl. clxii, fig. 15, p. 94; HAMPSON, Ill. Lep. Het. ix.
- Axylia bifascia*, Ceylon, HAMPSON, p. 91, pl. clxi, fig. 13, Ill. Lep. Het. ix, n. sp.
- Bagada pyrochroma*, figured, pl. clxii, fig. 2, larva figured and described, pl. clxxvi, fig. 20, p. 97; HAMPSON, Ill. Lep. Het. ix.
- Bamra mundata*, Wlk. (sub *Agrotis*), figured pl. clxiii, fig. 14, larva figured and described, p. 108, pl. clxxvi, fig. 7; HAMPSON, Ill. Lep. Het. ix.
- B. diplostigma*, Ceylon, HAMPSON, Ill. Lep. Het. ix, p. 109, pl. clxiii, fig. 7, n. sp.
- Baniana intorta*, Swinh. (sub *Athyrra*), figured; HAMPSON, p. 106, pl. clxiii, fig. 3, Ill. Lep. Het. ix.
- Barusa cana*, Ceylon, HAMPSON, p. 107, pl. clxiii, fig. 5, Ill. Lep. Het. ix, n. sp.

- Birtha insulata*, Wlk., figured, pl. clxiii, fig. 8; HAMPSON, p. 105, Ill. Lep. Het. ix.
- B. talusina*, Sierra Leone, SCHAUS & CLEMENTS, p. 37, pl. iii, fig. 12, Lep. Sierra Leone, n. sp.
- Blasticorhinus*, n. g. for *Thermesia rivulosa*, Wlk.; BUTLER, p. 46, Ann. Nat. Hist. (6) xii.
- Blosyris* = (*Brujas*, Gn.), synonymy of species; BUTLER, pp. 354 & 355, Entomologist, xxvi.
- Brada damnipennis*, Wlk. (sub *Phanaca*), figured, p. 101, pl. clix, fig. 7, Ill. Lep. Het. ix.
- Bryophila perla*, eggs, young larva; CHAPMAN, pl. ix, figg. 6 & 7, Ent. Rec. iv.
- Bryophila conspersa*, *præcana*, *idonea*, p. 89, *B. ? protracta*, p. 90, W. Asia, CHRISTOPH, Deutsche ent. Zeitschr. Lep. vi; *B. postochrea*, Ceylon, HAMPSON, p. 95, pl. clxi, fig. 8, Ill. Lep. Het. ix : n. spp.
- Cænipeta serapis*, synonymy; BUTLER, Entomologist, xxvi, p. 125.
- Calesia fasciculosa*, Wlk. (sub *Acontia*), p. 111, pl. clxv, fig. 11, *flabellifera*, Moore, figg. 2 & 8, p. 112, figured; HAMPSON, Ill. Lep. Het. ix.
- Calliodes pyrula*, = (*lucida*, Feld); BUTLER, Entomologist, xxvi, p. 292.
- C. rivuligera*, p. 679, *glaucescens*, p. 680, Central Africa, BUTLER, P. Zool. Soc. London, 1893, n. spp.
- Calliscolus bowreyi*: Butl., cf. *Geometridæ*, *Pterocypha*.
- Callopietria rivularis*, Wlk., figured; HAMPSON, pl. clxiii, fig. 2, p. 103, Ill. Lep. Het. ix.
- Callyna jugaria*, Wlk., figured, pl. clxiii, fig. 20, p. 106; HAMPSON, Ill. Lep. Het. ix.
- Campometra*, Gn., = (*Rhubuna*, Wlk.), *C. decessa*, Wlk., = (*Homoptera trailii*, Butl.), *simplicior*, Wlk., = (*subrosea*, Wlk.), *integerrima*, Wlk., = (*Eubolina stylobata*, Harvey); BUTLER, Entomologist, xxvi, p. 124.
- Capnodes finipalpis*, Wlk. (sub *Thermesia*), pl. clxvi, figg. 1 & 8, *tetraspila*, Wlk., fig. 2, figured; HAMPSON, p. 116, Ill. Lep. Het. ix.
- C. maculapeæ*, Ceylon, HAMPSON, p. 116, pl. clxv, fig. 18, Ill. Lep. Het. ix, n. sp.
- Caradrina ferida*, E. Africa, PAGENSTECHE, p. 246, Jahrb. Hamburg. Anst. x, n. sp.
- Carea costiplaga*, Sibsaghor, *moira*, *ocyra*, Singapore, SWINHÖE, p. 262, Ann. Nat. Hist. (6) xii; *C. chlorostigma*, Ceylon, HAMPSON, p. clix, fig. 12, Ill. Lep. Het. ix : n. spp.
- Carneades siccata*, pl. vi, fig. 1, *edictalis*, fig. 3, N. America, SMITH, p. 99, Ent. News Philad. 1893, n. spp.
- Catephia alchymista*, n. var. *varia*, CHRISTOPH, p. 94, Deutsche ent. Zeitschr. Lep. vi; *C. cazeti*, Madagascar, MABILLE, p. 59, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Catocala* in Illinois; SNYDER, Ent. News Philad. 1893, p. 73 : near New York; FOULKS, t. c. p. 261.

- C. scortorum*, Amurland, CHRISTOPH, p. 94, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Cerapoda stylata*, N. America, SMITH, p. 99, pl. vi, fig. 4, Ent. News Philad. 1893, n. sp.
- Characæa graninis*, metamorphoses; LAMPA, Ent. Tidskr. xiv, pp. 1-23, pl. i.
- Chariclea vexilliger*, E. Siberia, CHRISTOPH, p. 92, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Clethara valida*, Wlk., pl. clxiii, fig. 12, *vitea*, Swinh., fig. 24, figured; HAMPSON, p. 108, Ill. Lep. Het. ix.
- C. pallescens*, Ceylon, HAMPSON, fig. 25, Ill. Lep. Het. ix, n. sp.
- 3 *Clinophlebia*, n. g., *Glottulinae*, for *C. sericea*, n. sp., Ceylon; HAMPSON, p. 92, pl. clxi, fig. 7, Ill. Lep. Het. ix.
- Copimamestra* should replace *Barathra*, Hb.; GROTE, p. 184, Canad. Ent. xxv.
- 4 *Corythurus*, n. g., *Ophiusiinae*, p. 112, for *C. nocturnus*, n. sp., Ceylon, p. 113, pl. clxv, figg. 4 & 10; HAMPSON, Ill. Lep. Het. ix.
- 4 *Craspedogonia*, n. g., *Thermesiinae*, near *Doranaga*, for *C. nubes*, n. sp., Ceylon; HAMPSON, p. 117, pl. clxvi, fig. 3, Ill. Lep. Het. ix.
- Crioa acronyctoides* = (*Xykinia applicata* and *Briarda indistincta*, Wlk.); BUTLER, p. 45, Entomologist, xxvi.
- Crymodes endroma*, p. 259, *herchatra*, p. 260, Sikkim, SWINHÖE, Ann. Nat. Hist. (6) xii, n. spp.
- Cucullia*: synonymy of the N. American species; GROTE, p. 45, Canad. Ent. xxv. *C. inderiensis*, larva; CHRISTOPH, p. 33, Stettin Ent. Zeit. liv.
- C. herzi*, *eumorpha*, Central Asia, ALPHERAKY, p. 347, Deutsche ent. Zeitschr. Lep. vi, n. spp.
- Cylogramma*: synonymical notes; BUTLER, Entomologist, xxvi, pp. 245 & 246.
- Dasyampa rubiginea*, life-history; RIDING, p. 1, Ent. Rec. iv.
- Dasygaster mundoides*, S. Australia, BLACKBURN, p. 152, Tr. R. Soc. S. Austral. xvii, n. sp.
- Dianthecia capsincoloides*, Corsica, STANDFUSS, p. 360, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Diatenes gerula*, Gn., = (*aglossoides*, Wlk.), *aglossoides*, Gn., = (*Homoptera costalis*, Wlk., and *Setida quadrisignata*, Wlk.); BUTLER, Entomologist, xxvi, p. 74.
- 1 *Dinotodonta*, n. g., near *Dasunaga*, p. 551, for *D. longa*, n. sp., W. Africa, p. 552; HOLLAND, Psyche, vi.
- Dinumma vexilla*, *villiana*, Singapore, SWINHÖE, p. 263, Ann. Nat. Hist. (6) xii, n. spp.
- Diomea rotundata*, Wlk., figured, pl. clxv, fig. 6, p. 117; HAMPSON, Ill. Lep. Het. ix.
- Dipterygia cristifera*, Ceylon, HAMPSON, p. 94, pl. clxii, fig. 7, Ill. Lep. Het. ix, n. sp.

- Dugaria glaucinans*, Gn., figured, pl. clxv, figg. 1, 7, & 15, p. 109; HAMPSON, Ill. Lep. Het. ix : extensive synonymy; BUTLER, Entomologist, xxvi, p. 48. *D. hypophœa* = (*Homoptera plumipes*, Wlk.); BUTLER, Entomologist, xxvi, p. 121.
- Dunira nisalis*, Wlk. (sub *Hyppena*), figured, pl. clxvi, fig. 16, p. 115; HAMPSON, Ill. Lep. Het. ix.
- Dysgonia tincta*, Ceylon, HAMPSON, p. 112, pl. clxv, fig. 3, Ill. Lep. Het. ix, n. sp.
- Egnasia ceylonica*, Wlk. (sub *Thermesia*), figured, pl. clxvi, fig. 9, p. 114; HAMPSON, Ill. Lep. Het. ix.
- E. nubifasciâ*, Ceylon, HAMPSON, l. c., and pl. clxv, fig. 9, n. sp.
- Eicomorpha koppeni*, Central Asia, ALPHERAKY, p. 346, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Emmonodia pudens*, synonymy; BUTLER, Entomologist, xxvi, p. 353.
- Entomogramma* : the composition of the genus, characters of its sections, and synonymy of the species, most being referred to it from other genera; BUTLER, pp. 43-46, Ann. Nat. Hist. (6) xii.
- Erastria scitula*, economy discussed; RILEY & HOWARD, Insect Life, vi, p. 6 : habits and metamorphoses; XAMBEU, pp. 180-185, Ann. Soc. Linn. Lyon, xi.
- † *Erastroides*, n. g., *Acontiinæ*, p. 98, for *E. oliviaris*, n. sp., Ceylon, p. 99, pl. clxii, fig. 23; HAMPSON, Ill. Lep. Het. ix.
- Ericiea inangulata*, Gn., extensive synonymy given, *E. maxima*, Butl., = (*Girpa carnea*, Butl.); BUTLER, Entomologist, xxvi, p. 47.
- Eublemma olivacea*, Wlk. (sub *Acontia*), figured; HAMPSON, p. 100, pl. clxii, fig. 21, Ill. Lep. Het. ix.
- Eucoptocnemis fimbriaris*, genus and species with variety described; GROTE, p. 216, Canad. Ent. xxv.
- Eucyclomma castalia*, Fab., = (*Calliodes saturator*, Wlk.); BUTLER, Entomologist, xxvi, p. 293.
- Eulepidotis alabastraria*, Hb., referred to *Palindia*; GROTE, p. 185, Canad. Ent. xxv.
- Eulocastra cretacea*, Ceylon, HAMPSON, p. 96, pl. clxii, fig. 17, Ill. Lep. Het. ix, n. sp.
- Euplexia icamba*, Sikkim, SWINHØE, Ann. Nat. Hist. (6) xii, p. 260
- E. albonota*, Ceylon, HAMPSON, p. 92, pl. clxi, fig. 14, Ill. Lep. Het. ix : n. spp.
- Eutelia cinctipalpis*, pl. clxiii, fig. 16, *favillatrix*, fig. 15, figured; HAMPSON, p. 102, Ill. Lep. Het. ix.
- Felinia spissa*, Gn., = (*Briarda decens*, Wlk.), *precedens*, Wlk., = (*antedens*, Wlk.); BUTLER, p. 45, Entomologist, xxvi.
- Focilla docta*, Sierra Leone, SCHAUS & CLEMENTS, p. 39, pl. iii, fig. 15, Lep. Sierra Leone, n. sp.
- Fodina postmaculata*, Ceylon; HAMPSON, p. 113, pl. clxv, fig. 5, Ill. Lep. Het. ix, n. sp.
- Gesonia obeditalis*, Wlk., = (*Apphadana festina*, Swinh., and varr. *nigrofusca*, *rubicundula*, *rusticula*, Swinh.); HAMPSON, p. 117, Ill. Lep. Het. ix.

- G. glauculalis*, Ceylon, HAMPSON, Ill. Lep. Het. ix, p. c, and pl. clxvi, fig. 15, n. sp.
- ↳ *Gigantocera*, n. g., near *Risoba*, for *G. solstitialis*, p. 549, *G. ? geometroptera*, p. 550, n. spp., W. Africa; HOLLAND, Psyche, vi.
- Gonitis leona*, Sierra Leone, SCHAUS & CLEMENTS, p. 36, pl. iii, fig. 10, Lep. Sierra Leone, n. sp.
- Gortyna nitela*, p. 93, *cataphracta*, p. 94, larvæ described; BEUTENMÜLLER, Bull. Amer. Mus. v.
- Grammodes concolor*, N. America, GROTE, p. 155, Canad. Ent. xxv, n. sp.
- Gyrtona hylusalis*, pl. clxiii, figg. 18 & 21, *thoracica*, fig. 19, figured; HAMPSON, p. 104, Ill. Lep. Het. ix.
- G. yucca*, *xista*, Singapore, SWINHOE, p. 264, Ann. Nat. Hist. (6) xii, n. spp.
- Hadena adusta*, var. *grisescens*; STANDFUSS, p. 361, Berlin. ent. Zeitschr. xxxviii. *H. sommeri*, pl. i, figg. 9 & 10, and pl. iii, fig. 1, p. 15, figures and note; AURIVILLIUS, Bih. Svenska Ak. xv, No. 1.
- H. farinulenta*, Kasikoparan, CHRISTOPH, p. 92, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Hamodes aurantiaca* = (*Aphisma attaccicola*, Wlk.); BUTLER, p. 354, Entomologist, xxvi.
- Heliophobus discrepans*, figure; STAUDINGER, pl. i, fig. 10, Deutsche ent. Zeitschr. Lep. vi.
- Heliothis armiger*: life-history, enemies, parasites, &c.; MALLY (612).
H. armigera, var. *succinea*, larva figured and described; HAMPSON, p. 92, pl. clxxvi, fig. 22, Ill. Lep. Het. ix.
- Homodes vivida*, Gn., figured, HAMPSON, p. 101, pl. clxiii, fig. 17, Ill. Lep. Het. ix, n. sp.
- Homoptera*: extensive synonymy; BUTLER, pp. 122 & 123, Entomologist, xxvi.
- Hulodes*: systematic position, *H. drylla*, Gn., = (*saturnoides*, Gn., and *Hypopyra restorans*, Wlk.); BUTLER, p. 353, Entomologist, xxvi.
- Hyblæa puera*, habits; BINGHAM, Indian Mus. Notes, iii, p. 94: larva described; COCKERELLI, p. 294, Canad. Ent. xxv.
- Hydræcia micacea*, larva; LAHMANN, Deutsche ent. Zeitschr. Lep. vi, p. 279.
- Hypopyra vespertilio*, variation and synonymy; BUTLER, p. 353, Entomologist, xxvi.
- Inguva lunifera*, Ceylon, HAMPSON, p. 113, pl. clx, fig. 13, Ill. Lep. Het. ix, n. sp.
- Leocyma polla*, pl. ii, fig. 11, *pollusca*, fig. 12, *fustina*, fig. 9, Sierra Leone, SCHAUS & CLEMENTS, Lep. Sierra Leone, n. spp.
- Letis alauda*, = (*trilii*, Butl.), *hercyna*, *occidua*, *magna*, *mycerina*, synonymy given; BUTLER, Entomologist, xxvi, pp. 193 & 194.
- Leucania pseudargyria*, Gn., metamorphoses; FYLES, p. 109, Canad. Ent. xxv. *L. exterior*, pl. clxi, fig. 8, *exempta*, fig. 9, figured; HAMPSON, p. 90, Ill. Lep. Het. ix.

- L. ? lacteola*, Kasikoparan, CHRISTOPH, p. 92, Deutsche ent. Zeitschr. Lep. vi; *L. inframicans*, pl. clxi, fig. 2, *denticula*, fig. 10, Ceylon, HAMPSON, p. 90, Ill. Lep. Het. ix; *L. falklandica*, Falkland Is., BUTLER, p. 208, Ann. Nat. Hist. (6) xii : n. spp.
- Leucanitis altivaga*, Central Asia, ALPHERAKY, p. 347, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- ¹*Macrosenta*, n. g., p. 565, for *M. longicauda*, n. sp., W. Africa, p. 566; HOLLAND, Psyche, vi.
- Maguza africana*, W. Africa, HOLLAND, p. 565, Psyche, vi, n. sp.
- Mamestra pisi*, n. var. *rukavaaræ*; HOFFMANN, p. 127, Stettin Ent. Zeit. liv. *M. sabulorum*, n. var. *rhodina*, p. 91, *chrysozona*, n. var. *humilis*, p. 92, CHRISTOPH, Deutsche ent. Zeitschr. Lep. vi. *M. opposita*, Wlk., figured, pl. clxii, fig. 12, p. 95; HAMPSON, Ill. Lep. Het. ix. *M. aterrima*, Wlk., referred to *Praxis*; BUTLER, p. 124, Entomologist, xxvi.
- M. lupa*, Persia, CHRISTOPH, p. 91, Deutsche ent. Zeitschr. Lep. vi; *M. ? tarara*, W. Africa, HOLLAND, p. 566, Psyche, vi: *M. languida*, pl. vi, fig. 6, *segregata*, fig. 11, N. America, SMITH, p. 100, Ent. News Philad. 1893; n. spp.
- Marmorinia argyrographa*, Madagascar, MABILLE, p. 61, Ann. Soc. ent. Belgique, xxxvii; *M. tipula*, Shan States, SWINHOE, p. 265, Ann. Nat. Hist. (6) xii : n. spp.
- Martella participalis*, Wlk. (sub *Egnasia*), figured; HAMPSON, pl. clxv, fig. 17, p. 114, Ill. Lep. Het. ix.
- Maxula unistrigata*, = (*Angerona poensaria* and *M. idonea*, Wlk.); BUTLER, p. 354, Entomologist, xxvi.
- Meliana berthæ*, Sierra Leone, SCHAUS & CLEMENTS, p. 34, pl. iii, fig. 3, Lep. Sierra Leone; *M. hamulifera*, Ceylon, HAMPSON, p. 91, pl. clxi, fig. 5, Ill. Lep. Het. ix : n. spp.
- Melipotis cyllaria*, Cr., var. (*Achæa*) *fusifera*, Wlk., figured; HAMPSON, p. 110, pl. clxv, fig. 20, Ill. Lep. Het. ix.
- Metachrostis undulata*, Ceylon, HAMPSON, p. 98, pl. clxii, fig. 20, Ill. Lep. Het. ix, n. sp.
- ¹*Metaleptina*, n. g., near *Leptina*, p. 550, for *M. nigribasis*, *albibasis*, *obliterata*, n. spp., W. Africa, p. 551; HOLLAND, Psyche, vi.
- Metopoceras felix*, Beyrout, STANDFUSS, p. 361, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Metoponia gratiosa*, figure; STAUDINGER, pl. i, fig. 11, Deutsche ent. Zeitschr. Lep. vi.
- ¹*Metopoplus*, n. g., near *Mycteroplus*, for *M. faxeni*, n. sp., Turkestan; CHRISTOPH, p. 92, Deutsche ent. Zeitschr. Lep. vi.
- ¹*Micromania*, n. g., near *Mania*, for *M. turcomanica*, n. sp., Askhabad; CHRISTOPH, p. 93, Deutsche ent. Zeitschr. Lep. vi.
- Microphysa stuhlmanni*, E. Africa, PAGENSTECHER, p. 247, Jahrb. Hamburg. Anst. x; *M. strigicosta*, Ceylon, HAMPSON, p. 100, pl. clxii, fig. 14, Ill. Lep. Het. ix : n. spp.
- Minucia discriminans*, Wlk., figured, p. 111, pl. clxv, fig. 13; HAMPSON, Ill. Lep. Het. ix.

- M. indiscriminata*, Ceylon, HAMPSON, Ill. Lep. Het. ix, with larva, pl. clxxvi, fig. 23; *M. olista*, China, SWINHOE, p. 261, Ann. Nat. Hist. (6) xii; n. spp.
- Mudaria*, n. g., *Hadenedes*, p. 68, for *M. cornifrons*, n. sp., E. India, p. 69; MOORE, Indian Mus. Notes, iii.
- Naranga pallida*, pl. clxii, fig. 13, *albistriga*, fig. 4, Ceylon, HAMPSON, p. 96, Ill. Lep. Het. ix, n. spp.
- Neuria retrahens*, Wlk. (sub *Hadena*), figured, p. 95, pl. clxii, fig. 6, HAMPSON, Ill. Lep. Het. ix.
- Noctua pronuba*, ♂ and ♀ organs figured and described; GRIFFITHS, p. 98, pl., P. R. Soc. Edinb. xx. *N. (Apatela) radians*, Westw., referred to *Apsarasa*; SNELLEN, p. 165, Notes Leyden Mus. xv.
- Nonagria lutosa*, oviposition; GARDNER, Ent. Mag. xxix, p. 251.
- N. exitiosa*, Australia, OLLIFF, p. 380, pl. xxii, fig. E, Agric. Gaz. N.S.W. 1893, n. sp.
- Ochropleura talda*, Sierra Leone, SCHAUS & CLEMENTS, p. 33, pl. iii, fig. 1, Lep. Sierra Leone, n. sp.
- Omia nesæa*, California, SMITH, p. 332, fig. 46, 4, Insect Life, v, n. sp.
- Oncocnemis fragrantis*, California, SMITH, p. 330, fig. 46, 9, Insect Life, v; *O. pudorata*, p. 99, pl. vi, fig. 8, *colorado*, p. 100, fig. 5, N. America, SMITH, Ent. News Philad. 1893: n. spp.
- Opigena accipiter*, Sierra Leone, SCHAUS & CLEMENTS, p. 33, pl. ii, fig. 7, Lep. Sierra Leone, n. sp.
- Orosa tortricoides*, Wlk., figured, p. 102, pl. clxiii, fig. 23; HAMPSON, Ill. Lep. Het. ix.
- Orthosia suspecta*, larva described; PORRITT, Ent. Mag. xxix, p. 41, CHAPMAN, t. c. p. 42.
- O. cremnodes*, p. 152, *mésombra*, p. 153, Australia, LOWER, Tr. R. Soc. S. Austral. xvii, n. spp.
- Oxygonitis*, n. g., near *Gonitis*, for *O. sericeata*, n. sp., Ceylon, pl. clxiii, fig. 1; HAMPSON, p. 103, Ill. Lep. Het. ix.
- Ozarba arenacea*, pl. clxii, fig. 3, *fusca*, fig. 9, p. 97, *mianoides*, fig. 16, p. 98, Ceylon, HAMPSON, Ill. Lep. Het. ix, n. spp.
- Palpangula fricta*, Askhabad, CHRISTOPH, p. 93, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Pandesma quenavadi*, Gn., = (*Thria robusta*, Wlk., and *Cerbia fugitiva*, Wlk.); BUTLER, p. 45, Entomologist, xxvi.
- Penicillaria pyrospila*, Madagascar, MABILLE, p. 60, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Perigea africana*, Sierra Leone, SCHAUS & CLEMENTS, p. 33, pl. ii, fig. 10, Lep. Sierra Leone, n. sp.
- Peridroma demutabilis*, California, SMITH, p. 328, fig. 46, 1, Insect Life, v, n. sp.
- Philophila grisea*, Ceylon, HAMPSON, p. 100, pl. clxii, fig. 10, Ill. Lep. Het. ix, n. sp.
- Phycidimorpha*, n. g., *Poaphiline*, p. 103, for *P. rosea*, n. sp., Ceylon, p. 104, pl. clxiii, fig. 22; HAMPSON, Ill. Lep. Het. ix.

- (*Phycidopsis*, n. g., *Leucaninæ*, for *P. albovittata*, n. sp., Ceylon, pl. clxi, fig. 13; HAMPSON, p. 91, Ill. Lep. Het. ix.
- Platyja ciacula*, Port Blair, SWINHÖE, p. 263, Ann. Nat. Hist. (6) xii, n. sp.
- Pleonectyptera finitima*, California, SMITH, p. 333, Insect Life, v, n. sp.
- Plotheia frontalis*, Wlk., varr. figured; HAMPSON, p. 107, pl. clxiv, figg. 1-32, Ill. Lep. Het. ix.
- Plusia parvils*, figured, pl. i, fig. 6, *P. diasema*, Boisd., n. var. *borea*, p. 17, pl. i, fig. 8; AURIVILLIUS, Bih. Svenska Ak. xv, No. 1. *P. bimaculata*, early stages; FYLES, p. 225, Ent. News Philad. 1893. *P. impulsula*, pl. clxii, fig. 11, p. 100, *mutans*, fig. 5, p. 101, figured; HAMPSON, Ill. Lep. Het. ix.
- Polydesma umbricola*, Boisd., nec Wlk., = (*laudula* and *boarmoides*, Gn.), *P. otiosa*, Gn., = (*Alamis brevipalpis*, Wlk.); BUTLER, p. 46, Entomologist, xxvi.
- Praxis porphyretica* = (*inordinata*, Wlk.); BUTLER, Entomologist, xxvi, p. 124.
- Pseudopanthera habrocosma*, Australia, LOWER, p. 153, Tr. R. Soc. S. Austral. xvii, n. sp.
- Pseudophia* ? *terrulenta*, Transcaucasus, CHRISTOPH, p. 93, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- (*Pterocyclophora*, n. g., *Ommatophorinæ*, p. 109, for *P. pictimargo*, n. sp., Ceylon, p. 110, pl. clxv, fig. 16; HAMPSON, Ill. Lep. Het. ix.
- Ramphia albizona*, synonymy; BUTLER, Entomologist, xxvi, p. 195.
- Rhesala palpalis*, Wlk. (sub *Ecregma*), figured; HAMPSON, p. 114, pl. clxv, fig. 19, Ill. Lep. Het. ix.
- Rhiza indigna*, n. var. *manifesta*; CHRISTOPH, p. 92, Deutsche ent. Zeitschr. Lep. vi.
- (*Sarcopteron*, n. g., *Thermesiinæ*, near *Dunira*, for *S. punctimargo*, n. sp., Ceylon, pl. clxvi, fig. 22; HAMPSON, p. 115, Ill. Lep. Het. ix.
- Schinia ligeæ*, fig. 2, *intrabilis*, fig. 3, California, SMITH, pp. 326 & 328, Insect Life, v, n. spp.
- Scotogramma densa*, California, SMITH, p. 329, Insect Life, v; *S. uniformis*, pl. vi, fig. 12, *luteola*, fig. 10, N. America, SMITH, p. 101, Ent. News Philad. 1893 : n. spp.
- Selenis semiscripta*, W. Africa, MABILLE, p. 61, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Semiophora frontalis*, Moore (sub *Graphiphora*), pl. clxi, figg. 20 & 21, *S.* (sub *Oxira*) *ochracea*, Wlk., pl. clxii, fig. 1, figured; HAMPSON, Ill. Lep. Het. ix.
- Setagrotis terrifica*, N. America, SMITH, p. 98, pl. vi, fig. 2, Ent. News Philad. 1893, n. sp.
- Speiredonia*: systematic position and synonymy of species discussed; BUTLER, Entomologist, xxvi, p. 245.
- Spintherops dilucida*, n. var. *subfusca*; CHRISTOPH, p. 94, Deutsche ent. Zeitschr. Lep. vi.
- S. hirsutula*, Kashgar, ALPHERAKY, p. 347, Deutsche ent. Zeitschr. Lep. vi, n. sp.

- Spirama*: synonymy of various species; BUTLER, Entomologist, xxvi p. 293. *S. martha* = (*ægrotæ*, Butl.); BUTLER, *t. c.* p. 352.
- Spodoptera postfusca*, Ceylon, HAMPSON, p. 95, pl. clxii, fig. 8, Ill. Lep. Het. ix, n. sp.
- Stictoptera*: note on the species and their variation; SWINHOE, Ann. Nat. Hist. (6) xii, p. 218. *S. timesia*, Singapore, SWINHOE, *l. c.*
- Symitha nolalella*, pl. clxiii, fig. 6, *S. indicatana*, Wlk. (sub *Tortrix*), fig. 13, figured; HAMPSON, p. 107, Ill. Lep. Het. ix.
- Sypna rubrifusca*, = (*fraterna*, Moore); BUTLER, p. 195, Entomologist, xxvi. *S. obscurata*, = (*renisigma*, Moore); BUTLER, *t. c.* p. 244.
- S. olena*, China, SWINHOE, p. 261, Ann. Nat. Hist. (6) xii, n. sp.
- Tapinostola morrisii*, Dale, = (*bondii*, Kn.); TUTT, p. 72, Ent. Rec. iv.
- Tarache albonotata*, Ceylon, HAMPSON, p. 96, pl. clxii, fig. 22, Ill. Lep. Het. ix, n. sp.
- Tavia nycterina*, Boisdu, = (*instruens*, Wlk.); BUTLER, p. 195, Entomologist, xxvi.
- Thalpochares coccophaga*, *pulvinariæ*, habits; OLLIFF, p. 683, pl., Agric. Gaz. N.S.W. iv. *T. dubia*, habits; TEPPER, p. 129, Tr. R. Soc. S. Austral. xvii.
- T. caduca*, Ordubad, *transmittens*, Kasikoparan, CHRISTOPH, p. 93, Deutsche ent. Zeitschr. Lep. viii, n. spp.
- Thaumasta siderigera*, E. Siberia, CHRISTOPH, p. 90, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Toxocampa dorsigera*, Wlk., figured; HAMPSON, p. 93, pl. clxii, fig. 18, Ill. Lep. Het. ix.
- Tristyla*, n. g., *Acontiides* for *T. alboplagiata*, n. sp., California; SMITH, p. 332, Fig. 46, 6, Insect Life, v.
- Troctoptera*, n. g., *Eublemminæ*, for *T. erubescens*, n. sp., Ceylon, pl. clvii, fig. 16; HAMPSON, Ill. Lep. Het. ix.
- Westermannia anchorita*, W. Africa, HOLLAND, p. 566, Psyche, vi, n. sp.
- Xanthia*: notes on various species; TUTT, Ent. Rec. iv, pp. 25, &c., and Tr. City London Soc. 1893, pp. 14-23.
- Xanthoptera colla*, p. 35, pl. iii, fig. 6, *allecta*, p. 36, fig. 4, Sierra Leone, SCHAUS & CLEMENTS, Lep. Sierra Leone, n. spp.
- Xylis ustipennis*, Wlk., = (*Letis incipiens*, Wlk.); BUTLER, p. 121, Entomologist, xxvi.
- Zethes irrorata*, Ceylon, HAMPSON, p. 113, pl. clxv, fig. 12, Ill. Lep. Het. ix, n. sp.

DELTOIDIDÆ.

- [Cf. CHRISTOPH (162), HAMPSON (423), SCHAUS & CLEMENTS (843), SMITH (922).]
- Adrapsa ablualis*, Wlk., figured, pl. clxvii, fig. 6; HAMPSON, p. 130, Ill. Lep. Het. ix.
- Aræognatha*, n. g., near *Bocana* for *A. umbrosa*, n. sp., Ceylon, pl. clxvii, fig. 2; HAMPSON, p. 129, Ill. Lep. Het. ix.

- ⁴*Arceopteron*, n. g., p. 136, for *A. pictale*, n. sp., Ceylon, pl. clxviii, fig. 19, p. 137; HAMPSON, Ill. Lep. Het. ix.
- Avitta subsignans*, pl. clxvii, fig. 7, *iconica*, Wlk. (sub. *Anomis*), fig. 8, figured; HAMPSON, p. 132, Ill. Lep. Het. ix.
- Bertula abjudicalis*, Wlk., figured; HAMPSON, pl. clxvii, fig. 4, p. 128, Ill. Lep. Het. ix.
- Bocana manifestalis*, pl. clxvii, fig. 9, p. 129, *geometroides*, Wlk. (sub. *Lusia*), fig. 13, *quadrinotata*, Wlk. (sub. *Hypogramma*), pl. clxiii, fig. 9, *schaldualis*, pl. clxvii, fig. 1, p. 130, figured; HAMPSON, Ill. Lep. Het. ix.
- Bomolocha cyanea*, Ceylon, HAMPSON, p. 121, pl. clxvi, fig. 20, Ill. Lep. Het. ix, n. sp.
- Byturna stipata*, Wlk. (sub. *Nanaguna*), pl. clxvi, fig. 17, p. 131, *diminutiva*, Wlk. (sub. *Homoptera*), pl. clxvii, fig. 19, p. 132, figured; HAMPSON, Ill. Lep. Het. ix.
- Catada vagalis*, Wlk. (sub. *Bocana*), figured, pl. clxvii, fig. 24; HAMPSON, p. 128, Ill. Lep. Het. ix.
- Chusaris punctilinealis*, p. 124, pl. clxvii, fig. 27, *retalalis*, fig. 5, p. 125, figured; HAMPSON, Ill. Lep. Het. ix.
- Calobochyla silona*, Sierra Leone, SCHAUS & CLEMENTS, p. 40, pl. iii, fig. 5, Lep. Sierra Leone, n. sp.
- Corgatha zonalis*, pl. clxvii, fig. 16, *minoralis*, Wlk. (sub. *Bleptina*), fig. 17, figured; HAMPSON, p. 123, Ill. Lep. Het. ix.
- Decetia subobscurata*, Wlk. (sub. *Gynopteryx*), figured, pl. clxviii, figg. 1 & 7; HAMPSON, p. 138, Ill. Lep. Het. ix.
- Dirades crepuscularis*, Ceylon, HAMPSON, p. 138, pl. clvii, fig. 12, Ill. Lep. Het. ix, n. sp.
- Dragana pansalis*, figured, pl. clxvii, fig. 3, HAMPSON, p. 127, Ill. Lep. Het. ix.
- Epiplema tenebrosa*, pl. clvii, fig. 3 (as *Erosia*), *pulverea*, fig. 4 (as *Dirades*), *lanigera*, fig. 13 (as *Erosia*), Ceylon, HAMPSON, p. 137, Ill. Lep. Het. ix, n. spp.
- Epizeuxis laurentii*, N. Carolina, SMITH, p. 83, Ent. News Philad. 1893, n. sp.
- Gathynia ferrugata*, Wlk. (sub. *Dirades*), figured (as *Erosia*), pl. clvii, fig. 7; HAMPSON, p. 138, Ill. Lep. Het. ix.
- ⁴*Goniocraspedon*, n. g. for *Nagadeba misturum*, Swinh., figured, pl. clxviii, fig. 20; HAMPSON, p. 125, Ill. Lep. Het. ix.
- ⁴*Gyrognatha*, n. g., for *G. atriceps*, n. sp., Ceylon, pl. clxviii, fig. 10; HAMPSON, p. 134, Ill. Lep. Het. ix.
- Hadennia hypenalis*, Wlk. (sub. *Bocana*), figured, pl. clxvii, fig. 21; HAMPSON, Ill. Lep. Het. ix, p. 129.
- Helia tessellata*, pl. clxviii, fig. 18, *paucimaculata*, fig. 16, Ceylon; HAMPSON, p. 136, Ill. Lep. Het. ix, n. spp.
- Herminia proxima*, Ordubad, CHRISTOPH, p. 94, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Hydrillodes? janalis*, Sierra Leone, SCHAUS & CLEMENTS, p. 41, pl. iii, fig. 11, Lep. Sierra Leone, n. sp.

- Hypena damnosalis*, synonymy ; BUTLER, Entomologist, xxvi, p. 311.
H. ineffectalis, p. clxvi, fig. 25, *jocosalis*, fig. 6, *lignalis*, fig. 5, *mandatalis*, fig. 11, p. 118, *molpusalis*, fig. 12, *quæsitalis*, fig. 4, p. 119, *varialis*, fig. 13, *thermesialis*, fig. 14, p. 120, figured ; HAMPSON, Ill. Lep. Het. ix.
- H. saltalis*, pl. iii, fig. 14, *H. ? ducalis*, fig. 13, Sierra Leone, SCHIAUS & CLEMENTS, Lep. Sierra Leone, p. 40 ; *H. ferrealis*, p. 119, pl. clxvi, fig. 10, *adustalis*, fig. 7, *obfuscalis*, figg. 18 & 19, p. 120, Ceylon, HAMPSON, Ill. Lep. Het. ix : n. spp.
- Hyphenagonia*, n. g., *Hypheninae*, for *H. nigrifascia*, n. sp., Ceylon, pl. clxvi, fig. 24, including also *Egnesia pusilla*, Butl., and *Acidalia vexataria*, Wlk. ; HAMPSON, p. 122, Ill. Lep. Het. ix.
- Hyphenodes croceipicta*, Ceylon, HAMPSON, p. 121, pl. clxvi, fig. 23, Ill. Lep. Het. ix, n. sp.
- Hypertrocta*, n. g., near *Bocana*, for *H. marmorata*, n. sp., Ceylon, p. clxvii, fig. 22 ; HAMPSON, p. 131, Ill. Lep. Het. ix.
- Hyposemeia*, n. g., near *Ophiuche*, for *Herminia incertalis*, Wlk., figured, pl. clxvi, fig. 21 ; HAMPSON, p. 121, Ill. Lep. Het. ix.
- Ilyrgis echephurealis*, Wlk., figured, pl. clxvii, fig. 12 ; HAMPSON, p. 126, Ill. Lep. Het. ix.
- Imma rugosalis*, Wlk., figured, pl. clxvii, fig. 11 ; HAMPSON, p. 127, Ill. Lep. Het. ix.
- Labanda fasciata*, Wlk. (sub *Lazanda*), pl. clxvii, fig. 14, p. 132, *chloromella*, Wlk. (sub *Diomea*), pl. clxviii, fig. 5, *herbealis*, Wlk., fig. 9, *semipars*, Wlk. (sub *Bryophila*), fig. 3, p. 133, figured ; HAMPSON, Ill. Lep. Het. ix.
- L. graminalis*, Ceylon, HAMPSON, Ill. Lep. Het. ix, p. 133, pl. clxvii, fig. 23, n. sp.
- Lobocheilos berresoides*, Ceylon, HAMPSON, p. 123, pl. clxvii, figg. 15 & 18, Ill. Lep. Het. ix, n. sp.
- Lophocraspedon*, n. g., for *L. cristatum*, n. sp., Ceylon, pl. clxviii, fig. 4, HAMPSON, p. 135, Ill. Lep. Het. ix.
- Mecistoptera*, n. g., for *M. griseifusa*, n. sp., Ceylon, pl. clxviii, fig. 14, HAMPSON, p. 134, Ill. Lep. Het. ix.
- Metorthocheilus*, n. g., near *Dirades*, type *Azata emarginata*, Hamps. ; HAMPSON, p. 138, Ill. Lep. Het. ix.
- Micræschus* (sub *Hyria*) *elataria*, Wlk., figured, pl. clxx, fig. 16, *M. oblataria*, Wlk. (sub *Hyria*), larva figured and described, pl. clxxvi, fig. 17 ; HAMPSON, p. 126, Ill. Lep. Het. ix.
- M. rosellus*, Ceylon, HAMPSON, Ill. Lep. Het. ix, p. c, pl. clxx, fig. 17, n. sp.
- Ptyophora*, n. g., *Herminiinae*, p. 123, for *P. ochreistigma*, n. sp., Ceylon, p. 124, pl. clxvii, fig. 25 ; HAMPSON, Ill. Lep. Het. ix.
- Simplicia rectalis*, larva noticed ; GRIEBEL, p. 412, Stettin Ent. Zeit. liv.
- Sophronia capalis*, Wlk., figured, pl. clxviii, fig. 11 ; HAMPSON, p. 133, Ill. Lep. Het. ix.
- Tathodelta*, n. g., near *Pasira*, for *T. purpurascens*, n. sp., Ceylon, pl. clxviii, fig. 15 ; HAMPSON, p. 135, Ill. Lep. Het. ix.

- ¹*Toxophleps*, n. g., type *Tarache optiva*, Swinh., figured, pl. clxvii, fig. 26 ; HAMPSON, p. 124, Ill. Lep. Het. ix.
Zanclognatha lysimeloides, Ceylon, HAMPSON, p. 127, pl. clxvii, fig. 10, Ill. Lep. Het. ix, n. sp.
²*Zanclopalpus*, n. g., type *Micreremites rasalis*, Warr., figured, pl. clxvii, fig. 20 ; HAMPSON, p. 127, Ill. Lep. Het. ix.

GEOMETRIDÆ.

- [Cf. BOHATSCH (83), BUTLER (124, 127, 129, 130), CALVERT (136, 137), CHRISTOPH (162), DOGNIN (240-244), DRUCE (246, 390), FUCHS (352), GUMPPENBERG (419), HAMPSON (423), HORMUZAKI (459), LOWER (598, 599), MABILLE (605), PAGENSTECHE (698), POPPIUS (731), SWINHÖE (951, 952, 953), THIERRY-MIEG (963), WARREN (1025).]
- Monograph of the *Phytometridæ* of Finland ; POPPIUS, Acta Soc. Fauna Fenn. viii, No. 3.
- ¹*Absala*, n. g., near *Pachyodes*, for *A. dorcada*, n. sp., Khasia Hills ; SWINHÖE, Ann. Nat. Hist. (6) xii, p. 149.
- Abraxas grossulariata*, preferring *Euonymus* to *Ribes* ; MARLEY, Entomologist, xxvi, p. 220 ; GUITOU, t. c. p. 248. *A. ulmata*, food-plant ; NASH, Ent. Mag. xxix, p. 66 ; HALI, t. c., p. 87 ; HOLLAND, l. c. ; PRIDEAUX, t. c. p. 112 ; NASH, l. c.
- A. conferta*, India, SWINHÖE, p. 153, Ann. Nat. Hist. (6) xii ; *A. metamorpha*, p. 392, *diaphana*, *semilugens*, p. 393, *alpestris*, pl. xxx, fig. 15, *nigrivena*, *triseriata*, pl. xxxi, fig. 9, p. 394, Sikkim, WARREN, P. Zool. Soc. London, 1893 ; *A. leucostola*, pl. clxix, fig. 6, p. 143, *sordida*, fig. 12, p. 143, Ceylon, HAMPSON, Ill. Lep. Het. ix : n. spp.
- Achrosis quadraria*, Bhotan, WARREN, p. 409, P. Zool. Soc. London, 1893, n. sp.
- Acidalia vexataria*, Wlk., cf. *Hypenagonia* in *Deltoididæ*, p. 274. *A. vesubiata*, proper larva and metamorphoses, p. 364, *asellaria*, larva, *cenosaria*, larva, p. 367 ; PÜNGELER, Stettin Ent. Zeit. liii. *A. subfalcata* referred to *Schidax* ; CHRISTOPH, p. 34, op. cit. liv. *A. volitaria*, pl. xviii, fig. 5, *agraria*, fig. 6, *pastoraria*, fig. 7, figured ; MABILLE & VUILLOT, Novitat. Lep.
- A. descitaria*, Sarepta, *divisaria*, Guberli, CHRISTOPH, p. 94, Deutsche ent. Zeitschr. Lep. vi ; *A. ferruginea*, Ceylon, HAMPSON, p. 149, pl. clxix, fig. 20, Ill. Lep. Het. ix ; *A. didymosema*, Australia, LOWER, p. 156, Tr. R. Soc. S. Austral. xvii ; *A. vecina*, Loja, DOGNIN, p. 428, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- ³*Actenochroma*, n. g., near *Hypochroma*, for *A. farinosa*, n. sp., N.W. India ; WARREN, p. 350, P. Zool. Soc. London, 1893.
- ⁴*Acuspis*, n. subg. of *Gnophus*, for *calibaria* and *scalettaria* ; GUMPPENBERG, p. 430, Acta Ac. German. lix.
- Agathia interscissa*, Wlk., figured, pl. clxx, fig. 3 ; HAMPSON, p. 146, Ill. Lep. Het. ix.

- A. prasina*, Khasia Hills, SWINHOE, p. 219, Ann. Nat. Hist. (6) xii, n. sp.
Alcis dasimaria, Darjiling, SWINHOE, p. 223, Ann. Nat. Hist. (6) xii ; *A. nigralbata*, n. g., *subrufaria*, *tenera*, p. 422, Sikkim, WARREN, P. Zool. Soc. London, 1893 : n. spp.
- † *Amalthea*, n. g., for *Hibernia bajaran* ; GUMPPENBERG, p. 407, Acta Ac. German. lix.
- Amathia nigronotata*, p. 362, pl. xxxi, fig. 18, *sanguinipunctata*, fig. 17, *rivularis*, fig. 16, p. 363, Sikkim, WARREN, P. Zool. Soc. London, 1893, n. spp.
- Amelora idiomorpha*, Australia, LOWER, p. 161, Tr. R. Soc. S. Austral. xvii, n. sp.
- Amæbe* ? *niveopicta*, Sikkim, WARREN, p. 372, pl. xxx, fig. 5, P. Zool. Soc. London, 1893, n. sp.
- *Amorphozancte*, n. g., *Ennomineæ*, for *A. discatu*, n. sp., Naga Hills ; WARREN, p. 408, pl. xxxii, fig. 23, P. Zool. Soc. London, 1893.
- Anagoge* ? *albipicta*, p. 410, *concinna*, *costinotata*, *A. lignicolor*, p. 411, *rufa*, p. 412, Sikkim, WARREN, P. Zool. Soc. London, 1893, n. spp.
- Anisodes argentispila*, Naga Hills, WARREN, p. 361, P. Zool. Soc. London, 1893 ; *A. verbena*, p. 158, *pintada*, *granillosa*, p. 159, *mezclata*, p. 160, Ecuador, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- † *Anonychia*, n. g., *Selidoseminæ*, type *Nadagara grisea*, Butl., and including *Cidaria rostrifera*, Warr., figured, pl. xxxii, fig. 3 ; WARREN, P. Zool. Soc. London, 1893.
- *Aplochlora*, n. g., *Deiliniinæ*, type *Iodis vivilaca*, Wlk., and including *A. viridis*, n. sp., Sikkim, pl. xxxi, fig. 7 ; WARREN, p. 386, P. Zool. Soc. London, 1893.
- † *Apophyga*, n. g., near *Medasina*, for *A. sericea*, n. sp., Sikkim ; WARREN, p. 418, P. Zool. Soc. London, 1893.
- Arichanna biquadrata*, *marginata*, p. 423, *rubrivena*, pl. xxx, fig. 13, p. 424, *subalbida*, pl. xxxii, fig. 15, *transfusciata*, p. 425, *A. ? subænescens*, p. 426, N. India, WARREN, P. Zool. Soc. London, 1893, n. spp.
- Asestra igguierdoi*, Chili, CALVERT, p. 219, Tr. ent. Soc. London, 1893, n. sp.
- Asthena flavilinea*, p. 363, *A. ? rustigrisea*, pl. xxxii, fig. 6, p. 364, Sikkim, WARREN, P. Zool. Soc. London, 1893, n. spp.
- Atomophora punctistrigaria*, Askhabad, CHRISTOPH, p. 95, Deutsche ent. Zeitschr. Lep. vi, n. spp.
- *Autallacta*, n. g., near *Asthena*, for *A. lineata*, n. sp., Sikkim ; WARREN, p. 365, P. Zool. Soc. London, 1893.
- *Auzeodes*, n. g., *Ennomineæ*, p. 404, for *A. nigroseriata*, n. sp., Pegu, p. 405 ; WARREN, P. Zool. Soc. London, 1893.
- *Axinoptera*, n. g., near *Eupithecia*, p. 154, for *A. subcostalis*, n. sp., Ceylon, pl. clxxi, figg. 24 & 25, p. 155 ; HAMPSON, Ill. Lep. Het. ix.
- Azelina galbanata*, Ecuador, DOGNIN, p. 80, Ann. Soc. ent. Belgique, xxxvii ; *A. synopsioides*, Loja, DOGNIN, p. 573, t. c. ; *A. tipuldii*, Peru, THIERRY-MIEG, p. 162, Naturaliste, 1893 : n. spp.

- Bagodares*, n. g., near *Larentia*, type *B. prosa*, n. sp., Guatemala, pl. Ivii, figg. 28 & 29; DRUCE, p. 175, Biol. Centr.-Amer. Heterocera, ii.
- Bapta griseola*, Sikkim, WARREN, p. 386, P. Zool. Soc. London, 1893, n. sp.
- Berta albiplaga*, Naga Hills, pl. xxxi, fig. 5, p. 357, WARREN, P. Zool. Soc. London, 1893, n. sp.
- Biston lefuarius*, Ersch., = (*Eremia maturaria*, Chr.); CHRISTOPH, p. 35, Stettin Ent. Zeit. liv. *B. hirtarius*, wingless ♀; ROBBE, p. 514, Ann. Soc. ent. Belgique, xxxvi.
- Boarmia* (*Macaria*) *castigataria*, Brem., = (*suifunaria*, Chr.), *senex*, Butl., = (*hedemanni*, Chr.); CHRISTOPH, p. 35, Stettin Ent. Zeit. liv. *B. crepuscularia*, n. var. *schillei*; KLIEMENSIEWICZ, Soc. Ent. viii, p. 18,
- B. atrilunaria*, p. 63, *antelmaria*, Mauritius, *subocularia*, W. Africa, p. 64. MABILLE, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- Bylazora heledaria*, Mahableschwur, SWINHOE, p. 223, Ann. Nat. Hist. (6) xii, n. sp.
- Calluga modesta*, Darjiling, WARREN, p. 383, P. Zool. Soc. London, 1893, n. sp.
- Cambojia ambarilla*, Loja, DOGNIN, p. 428, Ann. Soc. ent. Belgique, xxxvii; *C. azafranata*, p. 82, *golosata*, *yvata*, *escamata*, p. 83, *tertulua*, *borrata*, *cobardata*, p. 84, *bermellada*, *amarillada*, *rubiada*, p. 85, Ecuador, DOGNIN, t. c. : n. spp.
- Catopyrrha khasiana*, Khasia Hills; SWINHOE, p. 221, Ann. Nat. Hist. (6) xii, n. sp.
- √ *Ceratorhynchus*, n. g., near *Eupithecia*, for *C. deletarius*, n. sp., Ceylon, pl. clxx, fig. 20; HAMPSON, p. 154, Ill. Lep. Het. ix.
- † *Chalyboclydon*, n. g. *Asthenina*, for *C. marginata*, n. sp., Sikkim, pl. xxxii, fig. 16; WARREN, p. 366, P. Zool. Soc. London, 1893.
- Chiasmia strigata*, Sikkim, WARREN, pl. xxxi, fig. 22, p. 412, P. Zool. Soc. London, 1893, n. sp.
- Chlenias carburaria*, Gn., referred to *Smyriodes* and redescribed; LOWER, p. 164, Tr. R. Soc. S. Austral. xvii.
- C. melanostrepta*, p. 161, *pachymela*, *gonosema*, p. 162, *C. ? rhynchophora*, p. 163, Australia, LOWER, Tr. R. Soc. S. Austral. xvii, n. spp.
- † *Chlorodontopera* (sic), n. g., p. 35, type *Odontoptera chalybeata*, Moore, and including *C. æruginata*, n. sp., Naga Hills, p. 352; WARREN, P. Zool. Soc. London, 1893.
- Chrysocraspeda* (Warr. MS.) *cerasina*, Ceylon, SWINHOE, Ann. Nat. Hist. (6) xii, p. 157, n. sp.
- Cidaria navata*, Feld., = (*suavata*, Chr.), *taczanowskiaria*, = (*pervagata*, Chr.); CHRISTOPH, p. 35, Stettin Ent. Zeit. liv. *C. caesiata*, n. var. *impallescens*, p. 95, *intermediaria*, n. var. *muscosaria*, p. 96; CHRISTOPH, Deutsche ent. Zeitschr. Lep. vi. *C. polata*, figured and noticed; AURIVILLIUS, p. 22, pl. ii, fig. 4, Bih. Svenska Ak. xv, No. 1.

- C. calliduria*, figured; MABILLE & VUILLOT, Novitat. Lep. pl. xviii, fig. 4. *C. nebulata*, larva described; HABICH, p. 414, Ent. Zeit. Stettin, liv.
- C. propagata*, *milvaria*, p. 95, *percandidata*, p. 96, Caucasus, CHRISTOPH, Deutsche ent. Zeitschr. Lep. vi; *C. dentistrigata*, pl. xxx, fig. 4, *intertexta*, fig. 3, p. 374, *exquisita*, fig. 2, p. 375, Sikkim, WARREN, P. Zool. Soc. London, 1893; *C. polyphonta*, pl. lvi, figg. 1 & 4, *C. ♀ prema*, fig. 5, *pomponia*, figg. 6 & 7, p. 162, *damo*, figg. 8 & 9, *C. cyriades*, fig. 10, p. 163, Mexico, DRUCE, Biol. Centr.-Amer. Heterocera, ii; *C. arcillata*, *penicula*, p. 87, *cazadora*, p. 88, Ecuador, DOGNIN, Ann. Soc. ent. Belgique, xxxvii; *C. pecata*, *salediza*, p. 575, *goteada*, *praderia*, p. 576, *sabrosa*, *gustosa*, p. 577, *narangilla*, *icterica*, p. 578, *denguera*, *radiosa*, p. 579, *rajiza*, *gazupina*, p. 580, *saladara*, p. 581, *pizarrena*, *cortadoides*, p. 582, *saja*, p. 583, Ecuador, DOGNIN, t. c.; *C. malacata*, *cortada*, *cenizata*, Loja, DOGNIN, p. 28, Naturaliste, 1893; *C. zenobia*, *zara*, Ecuador, THIERRY-MIEG, p. 162, t. c.; *C. adela*, Chili, BUTLER, p. 465, Ann. Nat. Hist. (6) xii : n. spp.
- Cirsodes puntiaguda*, Ecuador, DOGNIN, p. 80, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹*Cleomantes*, n. g., near *Lobophora*, for *C. marens*, n. sp., Mexico, pl. lv, fig. 11; DRUCE, p. 149, Biol. Centr.-Amer. Heterocera, ii.
- Collix hypospilata*, Gn., figured, pl. clxxi, fig. 26, p. 156; HAMPSON, Ill. Lep. Het. ix.
- Comibcena biplagiata*, larva figured, pl. clxxvi, fig. 18, p. 145; HAMPSON, Ill. Lep. Het. ix.
- C. integranota*, Ceylon, HAMPSON, Ill. Lep. Het. ix, p. 146, pl. clxx, fig. 13, n. sp.
- Comostola meritaria*, Wlk. (sub *Geometra*), figured, pl. clxx, fig. 6, p. 145; HAMPSON, Ill. Lep. Het. ix.
- C. cærulea*, Sikkim, WARREN, p. 354, pl. xxxi, fig. 1, P. Zool. Soc. London, 1893, n. sp.
- Coremia cinereolimitata* (sub *Cidaria*), Thierry-Mieg, figured, pl. lvii, fig. 4, Biol. Centr.-Amer. Heterocera, ii.
- O. procilla*, pl. lvii, fig. 5, *pravila*, fig. 6, p. 169, *cyllene*, fig. 7, *cyane*, fig. 8, p. 170, Central America; DRUCE, Biol. Centr.-Amer. Heterocera, ii; *C. gata*, Ecuador, DOGNIN, p. 574, Ann. Soc. ent. Belgique, xxxvii; *C. ocyptaria*, Khasia Hills, SWINHÖE, p. 157, Ann. Nat. Hist. (6) xii : n. spp.
- Corycia luteocephalata*, Ecuador, DOGNIN, p. 81, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Craspedia ligataria*, Wlk. (sub *Acidalia*), figured, pl. clxix, fig. 19, p. 148; HAMPSON, Ill. Lep. Het. ix.
- O. micra*, Ceylon, HAMPSON, Ill. Lep. Het. ix, fig. 16, n. sp.
- Crocallis goleta*, Ecuador, DOGNIN, p. 159, Naturaliste, 1893, n. sp.
- Crocypus* (?) *orocana*, Panama, DRUCE, p. 143, pl. liv, fig. 20, Biol. Centr.-Amer. Heterocera, ii, n. sp.

- ¹*Cryptoloba*, n. g., p. 343, *Orthostixina*, type *Larentia ærata*, Moore, and including *C. minor*, *subusta*, *trinotata*, pl. xxxii, fig. 12, n. spp., N-India, p. 344; WARREN, P. Zool. Soc. London, 1893.
- Cusiala raptaria*, pl. clxix, fig. 13, *suisasa*, Wlk. (sub *Boarmia*), fig. 1, figured; HAMPSON, p. 143, Ill. Lep. Het. ix.
- O. rufifasciata*, n. sp., Ceylon, HAMPSON, p. 143, Ill. Lep. Het. ix, fig. 7, n. sp.
- Cusuma flavifusa*, Ceylon, HAMPSON, p. 144, pl. clxviii, fig. 17, Ill. Lep. Het. ix, n. sp.
- Dalina intricata*, Bhotan, WARREN, p. 396, P. Zool. Soc. London, 1893, n. sp.
- Darantasia pachygramma*, W. Australia, LOWER, p. 154, Tr. R. Soc. S. Austral. xvii, n. sp.
- ⁴*Defoa*, n. g., near *Somatina*, for *D. ustata*, n. sp., Khasia Hills; SWINHOE, Ann. Nat. Hist. (6) xii, p. 151.
- ⁴*Deinotrichia*, n. g., *Ascotina*, for *D. cervina*, *livida*, p. 419, *scotosiaria*, pl. xxx, fig. 9, p. 420, Sikkim; WARREN, P. Zool. Soc. London, 1893.
- Diastictis goniota*, *odontias*, p. 158, *D. (Selidosema) heterogyna*, *chionomera*, p. 159, *mesombra*, p. 160, *cremnodes*, p. 161, Australia, LOWER, Tr. R. Soc. S. Austral. xvii, n. spp.
- Dichromodes strophiodes*, Victoria, LOWER, p. 156, Tr. R. Soc. S. Austral. xvii, n. sp.
- Dindica mollerii*, Sikkim, WARREN, p. 349, P. Zool. Soc. London, 1893, n. sp.
- Dineurodes? populonia*, Panama, pl. lviii, fig. 1, *cynossema*, Guatemala, fig. 2, DRUCE, p. 176, Biol. Centr.-Amer. Heterocera, ii, n. spp.
- Doleroschelis roseifascia*, Ceylon, HAMPSON, p. 153, pl. clxx, fig. 4, Ill. Lep. Het. ix, n. sp.
- Drepanodes levis*, Rio de Janeiro, THIERRY-MIEG, p. 159, Naturaliste, 1893, n. sp.
- Dryocæstis nigrescens*, Assam, WARREN, p. 420, P. Zool. Soc. London, 1893, n. sp.
- ¹*Dysethia*, n. g., p. 347, *Orthostixina*, for *D. bicommatata*, n. sp., Sikkim, pl. xxxii, fig. 1, p. 348; WARREN, P. Zool. Soc. London, 1893.
- Dyspterus asiatica*, Sikkim, WARREN, p. 358, pl. xxxi, fig. 8, P. Zool. Soc. London, 1893, n. sp.
- Ellopia prosapiaria*, ab., = (*cinereostrigaria*, Kliem.); REBEL, Verh. Ges. Wien, xliii, p. 14, SB., also t. c. pp. 31, 32, & 42.
- Elphos præumbrata*, Perak, WARREN, p. 433, P. Zool. Soc. London, 1893; *E. brabantii*, Java, THIERRY-MIEG, p. 40, Naturaliste, 1893 : n. spp.
- Emmelesiu aguada*, Loja, DOGNIN, p. 573, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Emplocia potentia*, pl. lviii, fig. 23, *cynaxa*, figg. 24 & 25, p. 183, *prumnides*, figg. 26 & 27, *tortricina*, figg. 28-30, p. 184, Central America, DRUCE, Biol. Centr.-Amer. Heterocera ii, n. spp.
- Endropia indictinaria*, Brem., = (*Selenia versicoloraria*, Chr.); CHRISTOPH, p. 35, Stettin Ent. Zeit. liv.

- Eois*, Hb., defined ; HAMPSON, p. 149, Ill. Lep. Het. ix.
- E. lineata*, Ceylon, HAMPSON, p. 149, pl. clxix, fig. 10, Ill. Lep. Het. ix, n. sp.
- Epidesmia brachygrammella*, *phaedropa*, Australia, LOWER, p. 287, Tr. R. Soc. S. Austral. xvii, n. spp.
- Epirrhoe pallidaria*, Punjab, SWINHOE, p. 156, Ann. Nat. Hist. (6) xii ; *E. (?) latifasciata*, Sikkim, p. 375, *subfalcata*, Kulu, p. 376, WARREN, P. Zool. Soc. London, 1893 ; *E. crypta*, pl. lvi, fig. 25, *daira*, fig. 26, *cyllene*, fig. 27, *psyra*, fig. 28, p. 166, *pompilia*, pl. lvii, fig. 1, p. 167, Central America ; DRUCE, Biol. Centr.-Amer. Heterocera, ii : n. spp.
- ⁴*Episothalma*, n. g., near *Thalassodes*, p. 149, for *sisunaga*, Wlk. ; SWINHOE ; Ann. Nat. Hist. (6) xii.
- Episothalma ocellata*, Khasia Hills, SWINHOE, p. 218, Ann. Nat. Hist. (6) xii, n. sp.
- Ephyra punctaria*, variation according to temperature ; MERRIFIELD, Tr. ent. Soc. London, 1893.
- E. aguzata*, p. 160, *ladrilla*, p. 161, Ecuador, FAIRMAIRE, Ann. Soc. ent. Belgique, xxxvii ; *E. pulida*, Ecuador, DOGNIN, p. 427, t. c. : n. spp.
- Erateina rogersi*, pl. lviii, figg. 10 & 11, *cyris*, figg. 12 & 13, Central America ; DRUCE, p. 180, Biol. Centr.-Amer. Heterocera, ii.
- E. pisca*, Ecuador, *cornelia*, Bolivia, DRUCE, p. 308, P. Zool. Soc. London, 1893 ; *E. punsara*, Loja, DOGNIN, p. 374, Ann. Soc. ent. Belgique, xxxvii ; *E. drucei*, *E. alma*, Bolivia, Colombia, THIERRY-MIEG, p. 161, Naturaliste, 1893 : n. spp.
- ⁴*Erinnys*, n. g., *Selidoseminæ*, for *E. combusta*, n. sp., Sikkim, WARREN, p. 415, P. Zool. Soc. London, 1893.
- Erosina strigata*, Chili, CALVERT, p. 215, Tr. ent. Soc. London, 1893, n. sp.
- Eubolia sparsaria*, synonymy, characters, habitat ; CALBERLA, Deutsche ent. Zeitschr. Lep. vi, p. 153.
- E. danae*, pl. lviii, fig. 3, p. 176, *cyda*, fig. 4, p. 177, Mexico, DRUCE, Biol. Centr.-Amer. Heterocera, ii ; *E. fulminata*, Loja, DOGNIN, p. 430, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- ⁴*Eubyjodonta*, n. g., near *Eubyja*, for *E. falcata*, n. sp., Sikkim ; WARREN, p. 416, P. Zool. Soc. London, 1893.
- Euchloris chionoplaca*, Queensland, LOWER, p. 288, Tr. R. Soc. S. Austral. xvii ; *E. ? ovifera*, Sikkim, WARREN, p. 358, P. Zool. Soc. London, 1893 : n. spp.
- Eucosmia varia*, Hed., = (*excultata*, Chr.) ; CHRISTOPH, p. 35, Stettin Ent. Zeit. liv.
- Eucrostis leprosa*, Hamps., figured, pl. clxx, fig. 15, p. 146 ; HAMPSON, Ill. Lep. Het. ix.
- E. albistrigata*, E. Africa, PAGENSTECHEK, p. 252, Jahrb. Hamburg. Anst. x, n. sp.
- Eupithecia* : observations on many palæarctic species and varieties, inter alia, *venosata* var ? *schiefereri*, p. 31, var. *nubilata*, p. 33 ; BOHATSCH, Deutsche ent. Zeitschr. Lep. vi. *E. nanata*, Greenland var. noticed, p. 22, *alternaria*, figured, pl. ii, fig. 3 ; AURIVILLIUS, Bih. Svenska Ak.

- xv, No. 1. *E. dimidiaria*, Mab., referred to *Selenis*; MABILLE, p. 61, Ann. Soc. ent. Belgique, xxxvii. *E. polyclealis*, Wlk. (sub *Botys*), pl. clxx, fig. 23, p. 151, *lucinda*, Butl., fig. 11, p. 152, figured; HAMPSON, Ill. Lep. Het. ix. *E. albosparsata*, pl. xviii, fig. 2, *illuminata*, fig. 3, figured; MABILLE & VUILLOT, Novitat. Lep.
- E. bucovinata*, Czernowitz, HORMUZAKI, p. 41, Soc. Ent. viii; *E. amasina*, Asia Minor, p. 1, *staudingeri*, Beyrout, p. 11, *inconspicuata*, Caucasus and Asia Minor, p. 12, *præsignata*, p. 21, *rebeli*, p. 23, Transalai, BOHATSCH, Deutsche ent. Zeitschr. Lep. vi; *E. costipicta*, pl. xxx, fig. 21, p. 383, *rubrinotata*, fig. 22, *atroviridis*, fig. 19, *albispumata*, fig. 23, p. 384, N. India, WARREN, P. Zool. Soc. London, 1893; *E. ruffascia*, pl. clxxi, fig. 15, *emarginaria*, fig. 14, Ceylon, HAMPSON, p. 152, Ill. Lep. Het. ix; *E. cercina*, pl. liv, fig. 21, *orilochia*, fig. 22, *orsetilla*, fig. 23, *certissa*, figg. 24 & 25, p. 144, *orbelia*, fig. 26, *carellia*, fig. 27, *chabora*, fig. 28, p. 145, *ornea*, fig. 29, *oroba*, fig. 30, *oroandes*, fig. 31, *cerynea*, fig. 32, p. 146, *oretilia*, pl. lv, fig. 1, *choma*, fig. 2, *pactia*, fig. 3, *E. ? panda*, fig. 4, *osiana*, figg. 5 & 6, p. 147, Central America, DRUCE, Biol. Centr.-Amer. Heterocera, ii; *E. disformata*, Loja, DOGNIN, p. 430, Ann. Soc. ent. Belgique, xxxvii; *E. anguligera*, Falkland Is., BUTLER, p. 209, Ann. Nat. Hist. (6) xii : n. spp.
- ⁴*Eurypeplodes*, n. g., near *Hydrelia*, for *E. irambata*, n. sp., Sikkim, pl. xxx, fig. 8, WARREN, p. 382, P. Zool. Soc. London, 1893.
- ¹*Eurytaphria*, n. g., *Ennominae*, p. 409, for *E. undilineata*, n. sp., Sikkim, p. 410; WARREN, P. Zool. Soc. London, 1893.
- Euschema scyllea*, India, SWINHOE, p. 148, Ann. Nat. Hist. (6) xii; *E. selangora*, Selangor, SWINHOE, p. 265, t. c. : n. spp.
- Eustroma monana*, Shillong, SWINHOE, Ann. Nat. Hist. (6) xii, p. 224; *E. venipicta*, Sikkim, WARREN, p. 370, P. Zool. Soc. London, 1893 : n. spp.
- Evarzia odataria*, Khasia Hills, SWINHOE, p. 154, Ann. Nat. Hist. (6) xii, n. sp.
- Fascellina chromataria*, Wlk., figured, pl. clxviii, fig. 2, p. 139; HAMPSON, Ill. Lep. Het. ix.
- F. curtaca*, p. 220, *dacoda*, p. 221, Khasia Hills, SWINHOE, Ann. Nat. Hist. (6) xii; *F. inornata*, *subsignata*, Sikkim, WARREN, p. 399, P. Zool. Soc. London, 1893 : n. spp.
- Fulguroides organa*, Mexico, DRUCE, p. 140, pl. liv, fig. 13, Biol. Centr.-Amer. Heterocera, ii; *F. panopea*, Ecuador, p. 302, *cluacina*, Colombia, p. 303, DRUCE, P. Zool. Soc. London, 1893; *F. parcitata*, *ahumata*, p. 370, *F. ? mayor*, *perasata*, p. 371, Loja, DOGNIN, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- ⁴*Gagitodes*, n. g., p. 381, type *Anticlea schistacea*, Moore, and including *G. olivacea*, n. sp., Sikkim, pl. xxx, fig. 6, p. 382; WARREN, P. Zool. Soc. London, 1893.
- Garcæus discolor*, Naga Hills, WARREN, p. 400, pl. xxxii, fig. 19, P. Zool. Soc. London, 1893, n. sp.

- ¹*Gelasma*, n. g., type *Iodis thetydaria*, Guen., and including *G. concolor*, p. 352, *griseoviridis*, pl. xxxi, fig. 6, p. 353, n. spp., N. India; WARREN, P. Zool. Soc. London, 1893.
- Geometra valida* = (*dioplasaria*, Chr.); CHRISTOPH, p. 34, Stettin Ent. Zeit. liv.
- Glaucopteryx stellata*, p. 367, *punctatissima*, *viridis*, p. 368, Sikkim, WARREN, P. Zool. Soc. London, 1893, n. spp.
- ¹*Gnamptopteryx*, n. g., p. 155, type *Lucia perficita*, Wlk., which is figured, pl. clxx, figg. 7 & 14; HAMPSON, Ill. Lep. Het. ix.
- Gonodela hebesata*, Wlk. (sub *Macaria*), figured, pl. clxx, figg. 2 & 9, p. 141; HAMPSON, Ill. Lep. Het. ix.
- G. zombina*, Central Africa, BUTLER, p. 683, P. Zool. Soc. London, 1893; *G. azataria*, Khasia Hills, SWINHOE, p. 154, Ann. Nat. Hist. (6) xii; *G. apataria*, Khasia Hills, SWINHOE, p. 222, t. c. : n. spp.
- Gonodontis vinosa*, Sikkim; WARREN, pl. xxxii, fig. 21, p. 398, P. Zool. Soc. London, 1893.
- Gorytodes orsima*, Mexico, DRUCE, p. 138, pl. liv, fig. 8, Biol. Centr.-Amer. Heterocera, ii, n. sp.
- Graphipidus gorrion*, Ecuador, DOGNIN, p. 583, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹*Gymnospile*, n. g., for *corticaria*, Dup.; GUMPPENBERG, p. 373, Acta Ac. German. lix.
- Hammaptera coras*, Costa Rica, pl. lvi, fig. 2, p. 160, *H. ? cydon*, Mexico, fig. 3, p. 161; DRUCE, Biol. Centr.-Amer. Heterocera, ii, n. sp.
- Hemerophila scalaria*, Transcaucasus, CHRISTOPH, p. 95, Deutsche ent. Zeitschr. Lep. vi; *H. mauritiaria*, Mauritius, MABILLE, p. 62, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- ¹*Hemistola*, n. g., *Geometrinae*, p. 353, for *H. rubrimargo*, n. sp., Sikkim, p. 354, pl. xxxi, fig. 3; WARREN, P. Zool. Soc. London, 1893.
- Hemitheia rubripicta*, *nigropunctata*, pl. xxxi, fig. 4, N. India, WARREN, p. 353, P. Zool. Soc. London, 1893, n. spp.
- Heterolochu saeta*, p. 157, *olorosa*, *albarita*, Ecuador, DOGNIN, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- ¹*Heteromiza*, n. g., *Ennominae*, type *Cimicodes castanearia*, Moore, and including *H. cervina*, n. sp., Sikkim, pl. xxxii, fig. 8; WARREN, p. 405, P. Zool. Soc. London, 1893.
- ¹*Heterostegane*, n. g., type *Macaria subtessellata*, Wlk., and including *H. rectifascia*, n. sp., Ceylon, p. clxx, fig. 8; HAMPSON, p. 142, Ill. Lep. Het. ix.
- ¹*Heterostegania*, n. g., type *Anisodes lunulosa*, Moore, and including *H. nigrofusa*, n. sp., Sikkim; WARREN, p. 415, P. Zool. Soc. London, 1893.
- Heterusia clustimena*, pl. lv, figg. 18 & 19, Central America, DRUCE, p. 153, Biol. Centr.-Amer. Heterocera, ii; *H. comata*, p. 304, pl. xxi, fig. 2, Bolivia, *conna*, fig. 3, *placida*, figg. 5 & 6, *comana*, fig. 7, p. 305, *pirene*, figg. 8 & 9, *combana*, p. 306, *placilla*, figg. 10 & 11, *pinara*, figg. 12-14, *conon*, fig. 4, Ecuador, p. 307, DRUCE, P. Zool. Soc. London, 1893 : n. spp.

- Hierochroma*, n. g., near *Pingasa*, for *H. babu*, n. sp., Khasia Hills ; SWINHOE, Ann. Nat. Hist. (6) xii, p. 148.
- Hololoma*, n. g., p. 395, *Ennominae*, for *H. lucens*, n. sp. ; Sikkim, p. 396 ; WARREN, P. Zool. Soc. London, 1893.
- Hoplosauris valeria*, p. 463, *H. ? edelmira*, p. 464, Chili, BUTLER, Ann. Nat. Hist. (6) xii, n. spp.
- Hydrelia lilacina*, pl. xxx, fig. 4, *marginepunctata*, fig. 5, p. 364, WARREN, P. Zool. Soc. London, 1893 ; *H. sikkimensis*, ELWES, t. c. p. 365 : n. spp.
- Hydriomena sordidata*, figured, pl. lvi, figg. 11-16, Biol. Centr.-Amer. Heterocera, ii.
- H. cuma*, pl. lvi, fig. 17, *proba*, figg. 18 & 19, p. 164, *cydra*, figg. 20 & 21, *dada*, figg. 22 & 23, *cynosura*, fig. 24, p. 165, Mexico and Guatemala ; DRUCE, Biol. Centr.-Amer. Heterocera, ii.
- Hypochroma signifrontaria*, Mayotte, MABILLE, p. 65, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Hyposidra kala*, India, SWINHOE, p. 153, Ann. Nat. Hist. (6) xii ; *H. albipunctata*, Sikkim, WARREN, p. 398, P. Zool. Soc. London, 1893 : n. spp.
- Hyria auricincta*, p. 149, pl. clxx, fig. 1, *rosea*, fig. 3, *minuta*, fig. 18, p. 150, Ceylon, HAMPSON, Ill. Lep. Het. ix, n. spp.
- Idea peralba*, Shan States, SWINHOE, p. 151, Ann. Nat. Hist. (6) xii ; *I. falcipennis*, pl. xxxii, fig. 11, *butyroasa*, Sikkim, WARREN, p. 362, P. Zool. Soc. London, 1893 : n. spp.
- Iodis rhytiphorus*, Australia, LOWER, p. 156, Tr. R. Soc. S. Austral. xvii, n. sp.
- Iramba admixtaria*, pl. clxxi, fig. 13, *immixtaria*, fig. 20, p. 153, *recensitaria*, fig. 19, p. 154 (Wlk., sub *Eupithecia*), figured ; HAMPSON, Ill. Lep. Het. ix.
- I. spissidentata*, Sikkim, WARREN, p. 383, P. Zool. Soc. London, 1893, n. sp.
- Ischalis colorata*, Sikkim, WARREN, pl. xxxii, fig. 26, p. 401, P. Zool. Soc. London, 1893, n. sp.
- Ischnopteryx chrysez*, pl. lv, figg. 23-25, *canopus*, figg. 26 & 27, p. 158, *I. ? aristophilides*, fig. 28, *polymenes*, fig. 29, p. 159, Central America, DRUCE, Biol. Centr.-Amer. Heterocera, ii, n. spp.
- Isoloba*, n. g., *Orthostixinae*, for *I. bifasciata*, n. sp., Sikkim, pl. xxxii, fig. 18 ; WARREN, P. Zool. Soc. London, 1893.
- Larentia columella*, pl. lv, figg. 12 & 13, *core*, fig. 14, *polimela*, fig. 15, p. 150, *L. ? conica*, fig. 16, Mexico, *plantilla*, fig. 17, Guatemala, p. 151, DRUCE, Biol. Centr.-Amer. Heterocera, ii, n. spp.
- Laudosia monastica*, Loja, DOGNIN, p. 159, Naturaliste, 1893, n. sp.
- Leiocera*, n. g., near *Eupithecia*, for *L. ferrisparsata*, pl. clxxi, fig. 8, p. 152, *axis*, pl. clxx, fig. 22, p. 153, n. spp., Ceylon, HAMPSON, Ill. Lep. Het. ix.
- Lepiodes chrodna*, pl. lv, fig. 7, *L. ? pieria*, fig. 8, Mexico, DRUCE, p. 148, Biol. Centr.-Amer. Heterocera, ii, n. spp.

- Leptomiza*, n. g., *Ennominae*, type *Hyperythra calcearia*, Wlk., and including *L. ? anomala*, Pegu, *L. straminea*, p. 406, *fuscomarginata*, p. 407, n. spp., Sikkim; WARREN, P. Zool. Soc. London, 1893.
- Leptostichia*, n. g., *Ennominae*, for *L. latitans*, n. sp., Sikkim; WARREN, P. Zool. Soc. London, 1893, p. 397.
- Leucula ? lechula*, Loja, DOGNIN, p. 369, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Lipomelia*, n. g., *Idæineæ*, p. 359, for *L. subusta*, n. sp., N. India, p. 360, pl. xxxii, fig. 24; WARREN, P. Zool. Soc. London, 1893.
- Lobogonia*, n. g., p. 345, *Orthostixinae*, for *L. ambusta*, n. sp., N. India, p. 346, pl. xxxi, fig. 21; WARREN, P. Zool. Soc. London, 1893.
- Lobophora pulcherrima*, Khasia Hills, SWINHOE, Ann. Nat. Hist. (6) xii, p. 224; *L. ? orthesia*, pl. lv, fig. 9, *cerevia*, fig. 10, Mexico, DRUCE, p. 149, Biol. Centr.-Amer. Heterocera, ii; *L. ligereza*, Loja, DOGNIN, p. 574, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Lophophleps purpurea*, Hamps., figured, pl. clxx, fig. 21, p. 150; HAMPSON, Ill. Lep. Het. ix.
- Loxaspilates*, n. g., type *Aspilates obliquaria*, Moore, and including *L. dispar*, n. sp., Sikkim, pl. xxx, fig. 14; WARREN, P. Zool. Soc. London, 1893, p. 413.
- Lycauges carnosus*, Ceylon, HAMPSON, p. 150, pl. clxix, fig. 9, Ill. Lep. Het. ix, n. sp.
- Lygris ludovicaria*, Oberth., = (*tigrinata*, Chr.), *L. venulata* = (*Cidaria chlorovenosata*, Chr.); CHRISTOPH, p. 35, Stettin Ent. Zeit. liv.
- Macaria liturata*, n. var. *pressaria*; CHRISTOPH, p. 95, Deutsche ent. Zeitschr. Lep. vi.
- Mæandrogonaria valentina*, Chili, BUTLER, p. 460, Ann. Nat. Hist. (6) xii, n. sp.
- Marmopteryx patamon*, Mexico, DRUCE, p. 178, pl. lviii, figg. 7 & 8, Biol. Centr.-Amer. Heterocera, ii; *M. jaspeata*, Ecuador, DOGNIN, p. 81, Ann. Soc. ent. Belgique, xxxvii : n. spp.
- Medasina quadrinotata*, Sikkim, WARREN, p. 417, P. Zool. Soc. London, 1893, n. sp.
- Melanchroia cephise*, larva described; COCKERELL, p. 26, Canad. Ent. xxv.
- Melanippe pontina*, pl. lvii, fig. 2, p. 168, *cyurda*, fig. 3, p. 169, Mexico, DRUCE, Biol. Centr.-Amer. Heterocera, ii, n. spp.
- Mesosemia agnilata*, Ecuador, DOGNIN, p. 156, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Mesotrophe*, n. g., type *Anisodes maximaria*, Gn.; HAMPSON, p. 148, Ill. Lep. Het. ix.
- Metabraxas regularis*, Naga Hills, WARREN, p. 392, P. Zool. Soc. London, 1893, n. sp.
- Micrabraxas ? subolivacea*, p. 426, *incolorata*, p. 427, Sikkim, WARREN, P. Zool. Soc. London, 1893, n. spp.
- Microclysia philippii*, p. 220, *paulseni*, p. 221, Chili, CALVERT, Tr. ent. Soc. London, 1893, n. spp.

- ¹*Microloxia*, n. g., *Geometrinæ*, for *M. efformata*, n. sp., Sikkim, pl. xxxi, fig. 2; WARREN, p. 354, P. Zool. Soc. London, 1893.
- Micronia albidiorata*, Congo, MABILILE, p. 62, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Micronidia* ? *subpunctata*, pl. xxxi, fig. 11, *M. unipunctata*, Sikkim, WARREN, p. 387, P. Zool. Soc. London, 1893, n. sp.
- ¹*Microniodes*, n. g., *Urapteryginæ*, for *M. obliqua*, n. sp., Ceylon, pl. clxviii, fig. 21; HAMPSON, p. 139, Ill. Lep. Het. ix.
- M. ocernaria*, Khasia Hills, SWINHOE, p. 152, Ann. Nat. Hist. (6) xii, n. sp.
- Micronissa delphinaria* = (*margaritata*, Swinh., nec Moore), Khasia Hills, SWINHOE, p. 152, Ann. Nat. Hist. (6) xii, n. sp.
- Mnesampela* ? *dictyodes*, Victoria, LOWER, p. 291, Tr. R. Soc. S. Austral. xvii, n. sp.
- Mychonia galanata*, Loja, DOGNIN, p. 82, Naturaliste, 1893, n. sp.
- ¹*Myostoma*, n. g., p. 346, *Orthosticiniæ*, for *M. straminea*, n. sp., N. India, p. 347; WARREN, P. Zool. Soc. London, 1893.
- ¹*Myrioblephara*, n. g., *Ascotiniæ*, for *M. albipunctata*, p. 428, *enormis*, *rubrifusa*, p. 429, n. spp., Sikkim; WARREN, P. Zool. Soc. London, 1893.
- Naxa orthostigialis*, Sikkim, WARREN, p. 343, P. Zool. Soc. London, 1893, n. sp.
- Nearcha pseudophaes*, Australia, LOWER, p. 155, Tr. R. Soc. S. Austral. xvii, n. sp.
- Nelo*: see *Bombyces*, p. 257.
- Nephodia cetaria*, pl. liv, fig. 18, *N. ? oreades*, fig. 19, Panama, DRUCE, p. 142, Biol. Centr.-Amer. Heterocera, ii; *N. pieria*, *perimede*, British Guiana, *cissa*, p. 303, *claelia*, *philyra*, Ecuador, *colada*, Rio Janeiro, p. 304, DRUCE, P. Zool. Soc. London, 1893 : n. spp.
- Nipteria viatrix*, figured, pl. liv, fig. 17, Biol. Centr.-Amer. Heterocera, ii.
- N. ordæa*, p. 140, pl. liv, figg. 14 & 15, *crata*, p. 141, fig. 16, Panama, DRUCE, Biol. Centr.-Amer. Heterocera, ii; *N. chthonia*, p. 299, *cissoessa*, pl. xx, fig. 11, *perilla*, *philomela*, fig. 16, p. 300, *cletagora*, Ecuador, *phocusa*, Brazil, *cleona*, *pania*, fig. 12, *panthea*, p. 301, *clytia*, Ecuador, pl. xxi, fig. 1, p. 302, DRUCE, P. Zool. Soc. London, 1893; *N. manchata*, *apicilineata*, Ecuador, DOGNIN, p. 86, Ann. Soc. ent. Belgique, xxxvii : *N. clerigata*, *legata*, *pecalba*, p. 372, *cenagossa*, *pardata*, p. 373, Ecuador, DOGNIN, t. c. : n. spp.
- Obeidia lucifera*, Darjiling, SWINHOE, p. 153, Ann. Nat. Hist. (6) xii; *O. millepunctata*, *fumosa*, N. India, WARREN, p. 389, P. Zool. Soc. London, 1893 : n. spp.
- Omiza muscicolor*, Karen Hills, WARREN, pl. xxxii, fig. 25, p. 407, P. Zool. Soc. London, 1893, n. sp.
- Onychodes heliochrysa*, Victoria, LOWER, p. 288, Tr. R. Soc. S. Austral. xvii, n. sp.
- Opisogonia rayada*, Loja, DOGNIN, p. 159, Naturaliste, 1893, n. sp.
- Opisthograptis mollerii*, pl. xxxi, fig. 12, *longipennis*, Sikkim, WARREN, p. 403, P. Zool. Soc. London, 1893, n. spp.

- Ophthalmodes caritaria*, Wlk. (sub *Boarmia*), figured, pl. clxviii, fig. 8, p. 142; HAMPSON, Ill. Lep. Het. ix.
- O. cordularia*, Khasia Hills, SWINHOE, p. 155, Ann. Nat. Hist. (6) xii, n. sp.
- ↓ *Organopoda*, n. g., *Acidaliinæ*, p. 147, type *Anisodes carnearia*, Moore; HAMPSON, p. 148, Ill. Lep. Het. ix.
- Orthocabera brunneiceps*, Sikkim, WARREN, p. 387, pl. xxxi, fig. 23, P. Zool. Soc. London, 1893, n. sp.
- Ortholitha duplicata*, N. India, WARREN, p. 385, P. Zool. Soc. London, 1893, n. sp.
- Pachydia carfnia*, pl. liii, figg. 25 & 26, *casperia*, figg. 27 & 28, *oræa*, pl. liv, figg. 1 & 2, p. 136, *cercyon*, fig. 3, *cermala*, figg. 4 & 5, *oroanda*, figg. 6 & 7, p. 137, Central America, DRUCE, Biol. Centr.-Amer. Heterocera, ii, n. spp.
- Pachyodes erionoma*, Khasia Hills, SWINHOE, p. 219, Ann. Nat. Hist. (6) xii, n. sp.
- Panisala olivescens*, Sikkim, WARREN, p. 395, P. Zool. Soc. London, 1893 n. sp.
- ↓ *Paralophia*, n. g., *Hydriomeninæ*, for *P. pustulata*, n. sp., Sikkim, pl. xxx, fig. 7, WARREN, P. Zool. Soc. London, 1893, p. 371.
- ↓ *Parasynegia*, n. g., p. 413, type *Anisodes pluristriaria*, Wlk., and including *P. complicata*, *suffusa*, n. spp., Naga Hills, p. 414; WARREN, P. Zool. Soc. London, 1893.
- ↓ *Paricterodes*, n. g., *Abraxinæ*, p. 389, type *Abraxas tenebraria*, Moore, and including *P. commixta*, *luciguttata*, p. 390, *P. ? violacea*, p. 391, pl. xxx, fig. 12, n. spp., Sikkim; WARREN, P. Zool. Soc. London, 1893.
- ↓ *Pepasmenoptera*, n. g. for *Phasianæ glarearia*; GUMPPENBERG, p. 360, Acta Ac. German, lix.
- Percnia submissa*, p. 391, *interfusa*, p. 392, N. India, WARREN, P. Zool. Soc. London, 1893, n. spp.
- Perigramma orates*, pl. liv, fig. 9, *P. ? cessata*, fig. 10, Panama, DRUCE, p. 139, Biol. Centr.-Amer. Heterocera, ii, n. spp.
- ↓ *Perissolophia*, n. g., near *Terpna*, for *P. subrosea*, n. sp., Sikkim; WARREN, p. 350, P. Zool. Soc. London, 1893.
- Perizera obscurata*, Sikkim, WARREN, p. 361, pl. xxxii, fig. 20, P. Zool. Soc. London, 1893, n. sp.
- Perizoma variabilis*, pl. xxx, fig. 17, p. 377, *apicistrigata*, fig. 19, *lacteiguttata*, fig. 16, p. 378, *bicolor*, *fusciata*, fig. 20, p. 379, *interrupta*, fig. 18, *P. ? albidivisa*, p. 380, N. India, *conjuncta*, Karen Hills, p. 381, WARREN, P. Zool. Soc. London, 1893, n. spp.
- Petelia immaculata*, Ceylon, HAMPSON, p. 140, pl. clxviii, figg. 6 & 12, Ill. Lep. Het. ix, n. sp.
- Phasianæ partitaria*, n. var. *feculenta*; THIERRY-MIEG, p. 162, Naturaliste, 1893.
- P. irrorata*, Vilui, CHRISTOPH, p. 95, Deutsche ent. Zeitschr. Lep. vi, n. sp.

- Phellinodes rubedinaria*, figured, pl. lviii, fig. 9, Biol. Centr.-Amer. Heterocera, ii.
- Phibalapteryx emanata*, Ecuador, DOGNIN, p. 86, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Phorodesma menadiara*, Algeria, THIERRY-MIEG, Naturaliste, 1893, p. 40.
- P. mabillei*, Amurland, THIERRY-MIEG, p. 162, Naturaliste, 1893, n. sp.
- Photoscotosia keraria*, Darjiling, SWINHOE, p. 224, Ann. Nat. Hist. (6) xii;
P. aromarginata, pl. xxx, fig. 1, *multilinea*, fig. 10, p. 369, *fulguritis*, fig. 11, p. 370, Sikkim, WARREN, P. Zool. Soc. London, 1893 : n. spp.
- Phthonoloba olivacea*, Darjiling, WARREN, pl. xxxi, fig. 20, p. 363, P. Zool. Soc. London, 1893, n. sp.
- Plagodis reticulata*, Sikkim, WARREN, p. 408, P. Zool. Soc. London, 1893, n. sp.
- ¹*Platycerota*, n. g., type *Ennomos spilotelaria*, Wlk., and including *P. punctilineata*, n. sp., Ceylon, pl. clxix, fig. 8 ; HAMPSON, p. 141, Ill. Lep. Het. ix.
- Plutodes triangularis*, Sikkim, WARREN, p. 388, P. Zool. Soc. London, 1893;
P. exiguifascia, Ceylon, HAMPSON, pl. clxix, fig. 17, p. 140, Ill. Lep. Het. ix : n. spp.
- ¹*Pæciliacis*, n. g., type *Cleora nigridorsaria*, Guen., and including *P. ? latifasciata*, n. sp., Sikkim ; WARREN, p. 427, P. Zool. Soc. London, 1893.
- Polyphasia albiseriata, albiangulata*, Sikkim, WARREN, p. 373, P. Zool. Soc. London, 1893, n. spp.
- Pomasia moniliata*, pl. xxxii, fig. 9, *denticlathrata*, N. India, WARREN, p. 367, P. Zool. Soc. London, 1893, n. spp.
- Prionia obliquilineata*, Naga Hills, WARREN, P. Zool. Soc. London, 1893, n. sp.
- ¹*Prionodonta*, n. g., *Ennominae*, p. 401, for *P. amethystina*, n. sp., Sikkim, p. 402, pl. xxxi, fig. 13 ; WARREN, P. Zool. Soc. London, 1893.
- Problepsis conjunctiva*, Sikkim, WARREN, p. 358, P. Zool. Soc. London, 1893, n. sp.
- ¹*Prorhinia*, n. g., *Ascotinae*, for *P. pingasoides*, n. sp., Naga Hills ; WARREN, p. 430, P. Zool. Soc. London, 1893.
- Psaliodes crotona*, pl. lvii, fig. 9, p. 170, *pomona*, fig. 10, *damia*, fig. 11, *cydna*, fig. 12, *daedala*, figg. 13 & 14, p. 171, *damophila*, fig. 15, *potina*, fig. 16, *cyra*, fig. 17, p. 172, *cynthia*, fig. 18, *porcia*, fig. 19, *cunina*, fig. 20, *cronia*, fig. 21, p. 173, *posides*, fig. 22, *pronax*, fig. 23, *chromna*, figg. 24 & 25, *polyxena*, fig. 26, *cormasa*, fig. 27, p. 174, Central America, DRUCE, Biol. Centr.-Amer. Heterocera ii, n. spp.
- Pseudaleucis oyarzuni*, Chili, CALVERT, p. 219, Tr. ent. Soc. London, 1893, n. sp.
- Pseudocoremia dendrellaria*, Khasia Hills, SWINHOE, p. 156, Ann. Nat. Hist. (6) xii, n. sp.
- ¹*Pseudosiona*, n. g., for *P. taylori*, n. sp., Mackenzie River ; BUTLER, p. 18, Ann. Nat. Hist. (6) xii.

- Pseudoterpna argyraspis*, S. Australia, LOWER, p. 157, Tr. R. Soc. S. Austral. xvii, n. sp.
- Psilalcis*, n. g., type *Tephrosia inceptaria*, Wlk., p. 430, and including *P. atrifasciata*, *dentilinea*, n. spp., Sikkim, p. 431; WARREN, P. Zool. Soc. London, 1893.
- Psilocambogia*, n. g., type *Pomasia memorata*, Wlk.; HAMPSON, p. 151, Ill. Lep. Het. ix.
- Pilonaxa*, n. g., *Orthostixinae*, type *taicoumaria*, de POrza, including *P. obliterated*, n. sp., N. India, pl. xxxi, fig. 10; WARREN, P. Zool. Soc. London, 1893.
- Pterocypha*: *Calliscotus bowreyi*, referred to this; BUTLER, p. 125, Entomologist, xxvi.
- P. cometes*, Central America, DRUCE, p. 157, pl. lv, fig. 22, Biol. Centr.-Amer. Heterocera, ii, n. sp.
- Racheospila dispansa*, Wlk. (sub *Comibenu*), figured, pl. clxx, figg. 5 & 12, p. 146; HAMPSON, Ill. Lep. Het. ix.
- R. puntillada*, Ecuador, DOGNIN, p. 81, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Rambara ochreicostalis*, Ceylon, HAMPSON, p. 150, pl. clxix, fig. 21, Ill. Lep. Het. ix, n. sp.
- Remodes nigripalpata*, Wlk. (sub *Sauris*), figured, pl. clxxi, fig. 1; HAMPSON, Ill. Lep. Het. ix.
- Rhodostrophia subflavida*, Kashmir, WARREN, p. 360, P. Zool. Soc. London, 1893, n. sp.
- Rhopalodes esmeralda*, Chili, CALVERT, p. 218, Tr. ent. Soc. London, 1893, n. sp.
- Rumia niko*, Swanetia, CHRISTOPH, p. 95, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Sabulodes polvoreata*, Ecuador, DOGNIN, p. 157, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Scordylia v-album*, referred to *Heterusia* and figured, pl. lv, figg. 20 & 21, Biol. Centr.-Amer. Heterocera, ii.
- S. tiricia*, *captata*, Loja, DOGNIN, p. 429, Ann. Soc. ent. Belgique, xxxvii; *S. jacintina*, *merula*, *columbi*, with var. *deficiens*, *adulatrix*, Bolivia, *colmala*, Peru, THIERRY-MIEG, p. 160, Naturaliste, 1893: n. spp.
- Scoria selectata*, figured, pl. liv, fig. 12, Biol. Centr.-Amer. Heterocera, ii.
- Scotopterix permucosa*, Bhotan, *albistellaria*, Khasia Hills, WARREN, p. 432, P. Zool. Soc. London, 1893, n. spp.
- Selidosema thermæu*, *gilva*, *destinataria*, *luxaria*, metamorphoses figured; SCOTT, Australian Lepidoptera, pl. xxi.
- S. zygophora*, Victoria, LOWER, p. 289, Tr. R. Soc. S. Austral. xvii, n. sp.
- Semiothisa emersaria*, Wlk. (sub *Macaria*), figured, pl. clxx, fig. 18, p. 142; HAMPSON, Ill. Lep. Het. ix. *S. acutaria*, Wlk., pl. liii, fig. 17, *contorta*, Thierry-Mieg, fig. 19, figured, noticed p. 133; DRUCE, Biol. Centr.-Amer. Heterocera, ii.

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- Siona alba*, Chili, CALVERT, p. 218, Tr. ent. Soc. London, 1893, n. sp.
- Sirinopteryx rufilineata*, *undulifera*, Sikkim, WARREN, p. 385, P. Zool. Soc. London, 1893, n. spp.
- Smyriodes heterochaes*, Australia, LOWER, p. 163, Tr. R. Soc. S. Austral. xvii, n. sp.
- Somatina lapidata*, Naga Hills, WARREN, p. 359, pl. xxxii, fig. 7, P. Zool. Soc. London, 1893, n. sp.
- Spargania orbisticta*, Loja, DOGNIN, p. 110, Naturaliste, 1893; *S. bellissima*, Chili, BUTLER, p. 466, Ann. Nat. Hist. (6) xii, n. spp.
- ⁴*Spermo*, n. g., for *ambustaria*, H. G.; GUMPPENBERG, p. 359, Acta Ac. German, lix.
- ⁴*Sphagnodela*, n. g., *Pseudoterpnina*, for *S. lucida*, n. sp., Sikkim, pl. xxxii, fig. 13; WARREN, p. 351, P. Zool. Soc. London, 1893.
- Spica parallelangula*, Central Asia, ALPHERAKY, p. 346, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- ⁴*Spilopera*, n. g., *Ennomina*, p. 402, type *debilis*, Butl., and including *S. umbrata*, n. sp., Assam, p. 403; WARREN, P. Zool. Soc. London, 1893.
- Stamnodes proana*, Guatemala, DRUCE, p. 177, pl. lviii, figg. 5 & 6, Biol. Centr.-Amer. Heterocera, ii, n. sp.
- Stegania orsitaria*, = (*Corycia sulphurata*, Maassen); DRUCE, p. 129, Biol. Centr.-Amer. Heterocera, ii.
- Sterrha aglaodesma*, W. Australia, LOWER, p. 157, Tr. R. Soc. S. Austral. xvii, n. sp.
- Stibaroma plagiosema*, Victoria, LOWER, p. 291, Tr. R. Soc. S. Austral. xvii, n. sp.
- Synegia imitaria*, Wlk. (sub *Anisodes*), figured, pl. clxix, figg. 5 & 11, p. 148; HAMPSON, Ill. Lep. Het. ix.
- Tanaorhinus kina*, Khasia Hills, SWINHOE, p. 150, Ann. Nat. Hist. (6) xii, n. sp.
- ⁴*Tanaotrichia*, n. g., *Idæina*, p. 360, for *T. trilineata*, n. sp., Sikkim, p. 361, pl. xxxii, fig. 2; WARREN, P. Zool. Soc. London, 1893.
- Taxeotis gonosemella*, Australia, LOWER, p. 154, Tr. R. Soc. S. Austral. xvii, n. sp.
- Tephrina johnstoni*, Central Africa, BUTLER, p. 683, P. Zool. Soc. London, 1893, n. sp.
- Tephrosia griseoalbata*, Madagascar, MABILLE, p. 63, Ann. Soc. ent. Belgique, xxxvii; *T. atigrada*, Loja, DOGNIN, p. 110, Naturaliste, 1893: n. spp.
- Terpna opalina*, N. India; WARREN, p. 349, pl. xxxii, fig. 14, P. Zool. Soc. London, 1893.
- Thalaina hieroglyphica*, S. Australia, LOWER, p. 289, Tr. R. Soc. S. Austral. xvii, n. sp.

- Thalassodes leucospilota*, larva figured, pl. clxxvi, fig. 3, p. 145; HAMPSON, Ill. Lep. Het. ix.
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- Thalera acutissima*, figured, pl. clxx, fig. 10; HAMPSON, p. 145, Ill. Lep. Het. ix.
- T. albomaculata*, Ceylon, HAMPSON, pl. clxx, fig. 10, p. 145, and fig. 19, Ill. Lep. Het. ix, n. sp.
- Thamnonoma gracilior*, Slave River, BUTLER, p. 16, Ann. Nat. Hist. (6) xii; *T. imitata*, pl. liii, figg. 20 & 21, *olympusa*, fig. 22, p. 134, *panassa*, fig. 23, *T. ? cecinna*, fig. 24, p. 135, Mexico, DRUCE, Biol. Centr.-Amer. Heterocera, ii : n. spp.
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- ^ *Trirachopoda*, n. g., *Aciduliniæ*, type *Anisodes subroseata*, Wlk., including *A. ignorata*, Wlk., figured, p. clxix, fig. 2, and *T. anulifera*, n. sp., Ceylon, fig. 15; HAMPSON, p. 147, Ill. Lep. Het. ix.
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- Tyloptera (Melanippe) bella*, Butl. = (*eburneata*, Chr.); CHRISTOPH, p. 35, Stettin Ent. Zeit. liv.
- ^ *Uliocnemis*, n. g., *Geometrinæ*, type *cassidara*, Guen., and including *U. albimarginata*, p. 355, *albiradiata*, *delineata*, pl. xxxi, fig. 14, p. 356, *U. ? signifera*, fig. 15, p. 357, n. spp., N. India; WARREN, P. Zool. Soc. London, 1893.
- Xanthorrhoe obfuscata*, Sikkim, WARREN, p. 376, P. Zool. Soc. London, 1893, n. sp.
- o *Xenographia*, n. g., *Enthominae*, for *X. lignataria*, n. sp., Sikkim; WARREN, p. 404, P. Zool. Soc. London, 1893.
- ^ *Xenozancla*, n. g., *Enochrominae*, for *X. versicolor*, n. sp., Naga Hills, p. 342, pl. xxxii, fig. 17; WARREN, P. Zool. Soc. London, 1893.
- Ypsipetes algosa*, *ranuncula*, Loja, DOGNIN, p. 28, Naturaliste, 1893, n. spp.
- Zamarada cosmiararia*, Khasia Hills, SWINHOE, p. 155, Ann. Nat. Hist. (6) xii; *Z. ? marginata*, Naga Hills, WARREN, p. 388, pl. xxxii, fig. 22, P. Zool. Soc. London, 1893 : n. spp.
- Zerena orsona*, Mexico, DRUCE, p. 140, pl. liv, fig. 11, Biol. Centr.-Amer. Heterocera, ii, n. sp.
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- Zonosoma* : variation in Germany; FUCHS (352).

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- Laodamia griseosparsella*, Japan, pl. xliii, fig. 10, with var. *nigrans*, fig. 11, p. 407, *infausta*, Ala Tau, p. 409, pl. xli, fig. 20, *mikadella*, p. 412, pl. xliii, fig. 9, *furvicostella*, p. 413, fig. 8, Japan, *flavitinctella*, p. 418, pl. xvii, fig. 9, RAGONOT, in Romanoff Mem. vii, n. spp.
- Lasiosticha microcosma*, Australia, LOWER, p. 166, Tr. R. Soc. S. Austral. xvii, n. sp.
- Leucocraspeda ablactalis*, p. clxxii, fig. 6, *illectalis*, p. clxxiii, fig. 9 (Wlk., sub *Botys*), figured; HAMPSON, p. 164, Ill. Lep. Het. ix.
- Leucoides*, n. g., near *Schenobius*, p. 167, for *L. fuscicostalis*, n. sp., Ceylon, p. 168, pl. clxxii, fig. 18; HAMPSON, Ill. Lep. Het. ix.
- Locastra cristalis*, Ceylon, HAMPSON, p. 157, pl. clxxii, fig. 24, Ill. Lep. Het. ix, n. sp.
- Lomotropa vellerialis*, full description, p. 165, figure, pl. x, figg. 9 & 10; SNELLEN, Tijdschr. Ent. xxxv.
- Lotanga deciusalis*, Wlk. (sub *Botys*), figured, pl. clxxiii, fig. 13, p. 172; HAMPSON, Ill. Lep. Het. ix.
- Loxostege sticticalis*, metamorphoses and habits; RILEY & HOWARD, Insect Life, v, pp. 320-322, cuts.

- L. macluræ*, Texas, RILEY, p. 158 ; with habits, by MURTFELDT, p. 155, fig. 11, *Insect Life*, v, n. sp.
- Lygropia uniformis*, Ceylon, HAMPSON, p. 171, pl. clxxiii, fig. 7, *Ill. Lep. Het.* ix, n. sp.
- Mælinoptera (Hercyna ?) anartalis*, Central Asia, STAUDINGER, p. 72, *Deutsche ent. Zeitschr. Lep.*, n. sp.
- Marasmia venialialis*, Wlk. (sub *Asopia*), figured, pl. clxxiv, fig. 11, p. 175 ; HAMPSON, *Ill. Lep. Het.* ix.
- ¹*Megarhtria*, n. g., for *Myelois peterseni*, Zell. ; RAGONOT, p. 156, *Romanoff Mem.* vii.
- Megasis hyrcanella*, Hyrcania, RAGONOT, p. 545, *Romanoff Mem.* vii, n. sp.
- ²*Melathria*, n. g., *Phycitinae*, for *pratestella*, Chr. ; RAGONOT, p. 435, *Romanoff Mem.* vii.
- Meroctena tullalis*, Wlk. (sub *Botys*), figured, pl. clxxii, fig. 31, p. 162 ; HAMPSON, *Ill. Lep. Het.* ix.
- Meroptera mirandella*, Colorado, RAGONOT, p. 313, pl. xlvii, fig. 4, *Romanoff Mem.* vii, n. sp.
- ⁴*Metriostola*, n. g., for *Neph. vacciniella*, Zell. ; RAGONOT, p. 478, *Romanoff Mem.* vii.
- Micreremites*, Warr., composition and systematic position noticed ; HAMPSON, p. 128, *Ill. Lep. Het.* ix.
- Microthrix insulsella*, Natal ; RAGONOT, p. 325, pl. xiv, fig. 13, *Romanoff Mem.* vii.
- Musotima aclaralis*, Wlk. (sub *Isopteryx*), figured, pl. clxxiv, fig. 24, p. 180 ; HAMPSON, *Ill. Lep. Het.* ix.
- M. fulvalis*, Ceylon, HAMPSON, fig. 24, p. 180, *Ill. Lep. Het.* ix, n. sp.
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- Myrlæa serratella*, Mardin, RAGONOT, p. 399, pl. xv, fig. 23, *Romanoff Mem.* vii, n. sp.
- Nascia arenalis*, Ceylon, HAMPSON, pl. clxxiii, fig. 29, p. 163, *Ill. Lep. Het.* ix, n. sp.
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- Niaccaba sumptualis*, Wlk., figured, pl. clxxi, fig. 3, p. 161 ; HAMPSON, *Ill. Lep. Het.* ix.
- ²*Niphopyralis*, n. g., for *N. nivalis*, pl. clxxiv, fig. 6, *albida*, fig. 25, *contaminata*, fig. 14, n. spp., Ceylon ; HAMPSON, p. 181, *Ill. Lep. Het.* ix.

- Noctuella mardinalis*, Kurdistan, STAUDINGER, p. 77, Deutsche ent. Zeitschr. Lep. vi, n. sp.
- Noctuomorpha pulchellalis*, Samarcand, STAUDINGER, p. 71, Deutsche ent. Zeitschr. Lep. n. sp.
- Nomophila noctuella*: structure, habits, metamorphoses; FELT, pp. 129-134, Canad. Ent. xxv.
- Notarcha ultimalis*, Wlk. (sub *Botys*), figured, pl. clxxii, fig. 8, p. 170; HAMPSON, Ill. Lep. Het. ix.
- ¹*Numonia*, n. g., *Phycitinae*, for *N. cymindella*, n. sp., Wladiwostock; RAGONOT, p. 4, pl. xi, fig. 15, Romanoff Mem. vii.
- ¹*Ocrisia*, n. g., p. 525, for *Myelois robiniella*, Mill.; RAGONOT, Romanoff Mem. vii.
- ¹*Odontarthria*, n. g., *Phycitinae*, for *O. ochrioenella*, n. sp., Thomar, pl. xlvi, fig. 4, and including *Ceroprepes almella* and *C. sebasmia*, Meyr.; RAGONOT, p. 147, Romanoff Mem. vii.
- Oligochroa sindella*, E. India, p. 380, pl. xli, fig. 16, *funebrella*, Madagascar, p. 381, pl. xv, fig. 14, RAGONOT, Romanoff Mem. vii, n. spp.
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- Opsibotys purpurascens*, Ceylon, HAMPSON, p. 162, pl. clxxii, fig. 14, Ill. Lep. Het. ix, n. sp.
- Orphanostigma angustale*, Ceylon, HAMPSON, p. 173, pl. clxxii, fig. 20, Ill. Lep. Het. ix, n. sp.
- Pachynoa ledereri*, Java, SNELLEN, p. 164, pl. x, fig. 8, Tijdschr. Ent. xxxv, n. sp.
- Pagyda aurantialis*, Ceylon, HAMPSON, p. 169, pl. clxxiii, fig. 17, Ill. Lep. Het. ix, n. sp.
- Palibothra nebulosella*, Rangoon, RAGONOT, p. 311, pl. xiv, fig. 11, Romanoff Mem. vii, n. sp.
- Paliga macheralis*, pl. clxxiii, fig. 8, *mandronalis*, fig. 19, *damastesalis*, fig. 1, Wlk. (sub *Scopula*), *celatalis*, Wlk. (sub *Botys*), fig. 6, figured, p. 165, HAMPSON, Ill. Lep. Het. ix.
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- Paraponyx votalis*, Wlk. (sub *Oligostigma*), pl. clxxiv, fig. 4, p. 175, *crisonalis*, Wlk. (sub *Hydrocampa*), fig. 8, p. 176, figured; HAMPSON, Ill. Lep. Het. ix.
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- Parasarama jucundalis*, Wlk. (sub *Bleptina*), figured, pl. clxxii, fig. 7, p. 157; HAMPSON, Ill. Lep. Het. ix.
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- Patissa tortualis*, Java, p. 58, pl. iii, fig. 3, *semicostalis*, p. 60, Colombia, SNELLEN, Tijdschr. Ent. xxxvi, n. spp.
- Pempelia sejunctella*, Chr., synonymy; CHRISTOPH, p. 35, Stettin Ent. Zeit. liv. *P. fusca*, figured, from Greenland; AURIVILLIUS, pl. ii, fig. 5, Bih. Svenska Ak. xv, No. 1.
- Perinephele* ? *doerriesi*, Amurland, STAUDINGER, p. 81, Deutsche ent. Zeitschr. Lep., n. sp.
- Pessocosma peritalis*, Wlk. (sub *Lepyrodes*), figured, pl. clxxiv, fig. 21, p. 174; HAMPSON, Ill. Lep. Het. ix.
- Phadropsis molusalis*, Wlk. (sub *Botys*), figured, pl. clxxiii, fig. 27, p. 170; HAMPSON, Ill. Lep. Het. ix.
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- ¹*Polopeustis*, n. g., p. 232, for *P. annulatella*, Zett.; RAGONOT, p. 233, Romanoff Mem. vii.
- Polythlipta* ? *caradrinalis*, Java, SNELLEN, p. 162, pl. x, fig. 7, Tijdschr. Ent. xxxv, n. sp.
- ²*Pretoria*, n. g., *Phycitinae*, for *P. hutchinsoni*, n. sp., Natal; RAGONOT, p. 624, pl. xlvi, fig. 17, Romanoff Mem. vii.
- ¹*Pristarthria*, n. g., for *Oligochroa minutella*, Rag.; RAGONOT, p. 326, Romanoff Mem. vii.
- ¹*Pristocera*, n. g., for *Myelois ochroleucella*, Stgr.; and *P. deltagrammella*, Rag.; RAGONOT, p. 229, Romanoff Mem. vii.
- Pristophara miridella*, Asiatic Turkey; RAGONOT, p. 244, pl. xi, fig. 24, Romanoff Mem. vii.
- Pterothrix orientella*, Turkey in Asia, p. 127, pl. xli, fig. 4, RAGONOT, Romanoff Mem. vii, n. sp.
- Pterygisis calligraphalis*, Java, SNELLEN, p. 175, pl. x, fig. 13, Tijdschr. Ent. xxxv, n. sp.
- Pyralis postflava*, pl. clxxi, fig. 22, *minimalis*, fig. 18, *duplicilinea*, fig. 21, *ustalis*, pl. clxxii, fig. 26, Ceylon, HAMPSON, p. 159, Ill. Lep. Het. ix, n. spp.
- Ramila ruficostalis*, Ceylon, HAMPSON, pl. clxxiii, fig. 22, p. 166, Ill. Lep. Het. ix, n. sp.
- Rectothyris gratiosalis*, Wlk. (sub *Samea*), figured, pl. clxxiii, fig. 12, p. 162; HAMPSON, Ill. Lep. Het. ix.
- ¹*Rhimphaliodes*, n. g., near *Rhimphalia*, for *R. macrostigma*, n. sp., Ceylon, pl. clxxiv, fig. 9; HAMPSON, p. 174, Ill. Lep. Het. ix.
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- Samaria*, n. g., *Phycitinae*, p. 58, for *S. indentella*, Beyrout, pl. xi, fig. 5, *ardentella*, Japan, pl. xliii, fig. 5, p. 59, n. spp.; RAGONOT, Romanoff Mem. vii.
- Sandrabatis*, n. g., *Phycitinae*, p. 203, for *S. crassiella*, p. 204, n. sp., Assam; RAGONOT, Romanoff Mem. vii.
- Sarata tephrella*, N. America, RAGONOT, p. 616, pl. xxiv, fig. 5, Romanoff Mem. vii, n. sp.
- Scirpophaga fusciflua*, Ceylon, HAMPSON, p. 167, pl. clxxii, figg. 29 & 30, Ill. Lep. Het. ix, n. sp.
- Sclerobia*, n. g., for *Hypochalcia tritalis*, Wlk.; RAGONOT, p. 528, Romanoff Mem. vii.
- Scoparia murana*, n. var. *tuoniana*; HOFFMANN, p. 130, Stettin Ent. Zeit. liv. *S. centuriella*, from Greenland, figured; AURIVILLIUS, p. 23, pl. ii, fig. 6, Bih. Svenska Ak. xv, No. 1. *S. congestalis*, pl. clxxiv, fig. 2, *murifcalis*, Wlk., fig. 10, figured; HAMPSON, p. 182, Ill. Lep. Het. ix. *S. leucomela*, S. Australia, LOWER, p. 165, Tr. R. Soc. S. Austral. xvii, n. sp.
- Sedenia erythrura*, Australia, LOWER, p. 165, Tr. R. Soc. S. Austral. xvii, n. sp.
- Spatulipalpia*, n. g., p. 19, for *S. effosella*, n. sp., Assam, p. 20, pl. xviii, fig. 2; RAGONOT, Romanoff Mem. vii.
- Stemmatophora salmo*, Hamps., pl. clxxi, fig. 6, p. 157, *vulsalis*, Wlk. (sub *Botys*), fig. 9, p. 158, figured; HAMPSON, Ill. Lep. Het. ix.
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- Stenia profanalis*, Wlk. (sub *Botys*), figured, pl. clxxiv, fig. 22, p. 175; HAMPSON, Ill. Lep. Het. ix.
- Stericta nubilalis*, Ceylon, HAMPSON, p. 157, pl. clxxii, fig. 9, Ill. Lep. Het. ix, n. sp.
- Sybrida ragonotalis*, Java, SNELLEN, p. 153, Tijdschr. Ent. xxxv, n. sp.
- Synclera rotundalis*, pl. clxxii, fig. 23, *danalis*, fig. 25, Ceylon, HAMPSON, p. 169, Ill. Lep. Het. ix, n. spp.
- Tarquitia*, n. g., *Phycitinae*, for *T. jacksoni*, n. sp., Zanzibar; RAGONOT, p. 215, pl. xv, fig. 1, Romanoff Mem. vii.
- Tephris ochreella*, Schahrud, p. 448, pl. xiii, fig. 13, *connexella*, p. 449, pl. xvii, fig. 19, *perlucidella*, fig. 18, p. 450, Hyderabad, RAGONOT, Romanoff Mem. vii, n. spp.
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- Tocolosida bilinealis*, Java, SNELLEN, p. 154, Tijdschr. Ent. xxxv, n. sp.
- Trachycera*, n. g., for *Rhodophæa pallicornella*, Rag.; RAGONOT, Romanoff Mem. vii.
- Trachypteryx*, n. g., for *Myelois magella*, Zell.; RAGONOT, p. 566, Romanoff Mem. vii.

- Trianoneura*, n. g., for *Acrobasis laticinctella*, Wlk.; RAGONOT, p. 312, pl. xiii, fig. 18, Romanoff Mem. vii.
- Trichophyesis fulvalis*, pl. clxxiv, fig. 7, *nigricincta*, fig. 15, Ceylon, HAMPSON, p. 180, Ill. Lep. Het. ix, n. spp.
- Udea hyatialis*, Wlk. (sub *Scopula*), figured, pl. clxxiii, fig. 2, p. 164; HAMPSON, Ill. Lep. Het. ix.
- Vinicia*, n. g., for some Australian *Salebria* and *Epicrocis*; RAGONOT, p. 462, Romanoff Mem. vii.
- Vitessa suradeva*, Moore, larva figured; HAMPSON, pl. clxxvi, fig. 21, p. 156, Ill. Lep. Het. ix.

TORTRICIDÆ.

- [Cf. CONSTANT (186), HOFFMANN (444), LOWER (598), REBEL (750).]
- Argyrolepis baumanniana*, food-plant; BANKES, Ent. Mag. xxix, p. 191.
- Capua leucospila*, *ammochroa*, Australia, LOWER, p. 167, Tr. R. Soc. S. Austral. xvii, n. spp.
- Conchylis degreyana*, habits, food-plants, queries; WALSINGHAM, Ent. Mag. xxix, p. 202. *C. implicitana* and *heydeniana*, synonymy; WALSINGHAM, t. c., pp. 224-226.
- C. cedemana*, p. 402, *fulvicinctana*, p. 403, Alpes Maritimes, CONSTANT, Ann. Soc. ent. France, 1893, n. spp.
- Coccyx nemorivaga*: habits of larva, pupa; CHAPMAN, Ent. Rec. iv, pp. 38 & 39.
- Dichelia thermaterrima*, Australia, LOWER, p. 168, Tr. R. Soc. S. Austral. xvii, n. sp.
- Dichrorampha subsequana*, Stgr. & Wocke, consists of two species, viz., *montanana*, Dp., and *alpestrana*, H.-S., synonymy given; WALSINGHAM, Ent. Mag. xxix, p. 180.
- Eupæcilia geyeriana*: double-broods; CAMBRIDGE, Entomologist, xxvi, p. 90. *E. anthemidana*, probably synonymous with *subroseana*; DURRANT, Ent. Mag. xxix, p. 203.
- Grapholitha abacana*, Ersch. = (*opulentana*, Chr.); *G. expressana* and *contrasignana*, distinctions; CHRISTOPH, p. 35, Stettin Ent. Zeit. liv.
- G. suomiana*, Finland, HOFFMANN, p. 142, Stettin Ent. Zeit. liv, n. sp.
- G. scutana*, S. France, CONSTANT, p. 391, Ann. Soc. ent. France, 1893: n. spp.
- Heterocrossa mimica*, Australia, LOWER, p. 168, Tr. R. Soc. S. Austral. xvii, n. sp.
- Pædisca albohamulana*, Caucasus, REBEL, p. 41, Stettin Ent. Zeit. liv, n. sp.
- Penthina schulziana*, n. var. *jivaarana*; HOFFMANN, p. 133, Stettin Ent. Zeit. liv.
- Phthoroblastis trauniana*: male character; HOFFMANN, p. 145, Stettin Ent. Zeit. liv.

- Retinia retiferana* and *margarotana* : characters ; BARRETT, Ent. Mag. xxix, p. 113. *R. resinella*, biennial ; ADKIN, Entomologist, xxvi, p. 92.
- Steganoptycha subsequana*, Hw., synonymy = (*abiegana*, Dp.), p. 177. *S. mercuriana*, Fröl. = (*monticolana*, Dp.), p. 178 ; WALSINGHAM, Ent. Mag. xxix. *S. nanana*, n. var. *wallavaarana* ; HOFFMANN, p. 135, Stettin Ent. Zeit. liv.
- Tmetocera ocellana* : natural history ; SLINGERLAND (908).
- Tortrix cesareana*, figured, pl. xviii, fig. 8 ; MABILLE & VUILLOT, Novitat. Lep.

TINEIDÆ.

- [Cf. CHAPMAN (156), CONSTANT (186), HERING (437, 438), HOFFMANN (444, 445), LOWER (598, 599), MEYRICK (633), REBEL (750), RICHARDSON (783), RILEY (790, 791), SLINGERLAND (908), SMITH (919), TEICH (960), WOOD (1063).]
- Definition of the family and its 7 groups, pp. 478, 479 ; tabulation of the 47 Australian genera, pp. 480-483 ; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Instructions for collecting, preparing, and preserving *Microlepidoptera* ; HERING, pp. 152-187, Stettin Ent. Zeit. liv.
- Tineid constructing a bag-like case from mesquite leaves ; TOWNSEND, Zoc, iv, p. 226.
- Acridotarsa*, n. g., p. 516, near *Mesophera*, infra, for *A. mylitis*, n. sp., W. Australia, p. 517 ; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Adela griseella*, Wals. = (*irroratella*, Chr.) ; CHRISTOPH, p. 36, Stettin Ent. Zeit. liv.
- Agriophara leucosta*, p. 173, *leptoscmela*, p. 174, Australia, LOWER, Tr. R. Soc. S. Austral. xvii, n. spp.
- Amphithera*, n. g., *Tineides*, approaching *Plutellides* and *Gelechiades*, for *A. heteromorpha*, n. sp., Australia ; MEYRICK, p. 597, P. Linn. Soc. N. S. Wales (2) vii.
- Argyresthia semifusca* = (*spiniella*, Z.), habits of larva ; HERING, p. 90, Stettin Ent. Zeit. liv. *A. helvetica* and *inaurata*, Tengstr., note on ; HOFFMANN, p. 137, t. c.
- Ardiosteres*, n. g. for *Tinea moretonella*, Wlk. ; MEYRICK, p. 519, P. Linn. Soc. N. S. Wales (2) vii.
- Atachia bilbäensis*, Spain, REBEL, p. 58, Stettin Ent. Zeit. liv, n. sp.
- Blabophanes heringi* and *ferruginella*, characters discussed ; RICHARDSON, Ent. Mag. xxix, p. 14.
- B. argillacea*, Melbourne, MEYRICK, p. 528, P. Linn. Soc. N. S. Wales (2) vii, n. sp.
- Bryotropha brevipalpella*, Livonia, REBEL, p. 47, Stettin Ent. Zeit. liv, n. sp.
- Bucculatrix xenaula*, p. 601, *ptochastis*, p. 602, Australia, MEYRICK, P. Linn. Soc. N. S. Wales (2) vii, n. spp.

- Butalis sinensis*, Feld. = (*Staintonia apiciguttella*, Chr.); CHRISTOPH, p. 36, Stettin Ent. Zeit. liv. *B. fuscoænea*, habits of larva; HOFFMANN, p. 308, t. c.
- Casyra kershawi*, Victoria, LOWER, p. 293, Tr. R. Soc. S. Austral. xvii, n. sp.
- Catoryctis polysticha*, Australia, LOWER, p. 172, Tr. R. Soc. S. Austral. xvii, n. sp.
- Cemiostoma lotella*: double broods; CAMBRIDGE, Entomologist, xxvi, p. 90.
- Chambersia*, n. n. for *Blepharocera*, Chamb. nec Macq.; RILEY, p. 103, in Smith's Lep. of Boreal America.
- Chorocosma*, n. g., *Tineides*, for *C. melanorma*, n. sp., N. S. Wales; MEYRICK, p. 560, P. Linn. Soc. N. S. Wales (2) vii.
- Chrysoryctis xystidophora*, p. 548, *tyrannica*, p. 549, *eurybaphes*, p. 550, *hypocritica*, p. 551, *talantias*, *ocranthes*, p. 552, *meliphanes*, *balanosema*, *ochracea*, p. 553, Australia, MEYRICK, P. Linn. Soc. N. S. Wales (2) vii, n. spp.
- Casyra porphyryplaca*, S. Australia, LOWER, p. 181, Tr. R. Soc. S. Austral. xvii, n. sp.
- Coleophora lixella*, and others: habits; HERING, pp. 108-112, Stettin Ent. Zeit. liv. *C. deauratella*, *fabriciella*, two years in pupa; BANKES, Ent. Mag. xxix, p. 46.
- C. siliquella*, p. 399, *asthenella*, p. 400, S. France, CONSTANT, Ann. Soc. ent. France, 1893; *C. longicornella*, S. France, CONSTANT, p. 401, t. c. : n. spp.
- Coriscium sulphurellum* and allies, synonymy and variation; HERING, pp. 106-108, Stettin Ent. Zeit. liv.
- Cryptophaga aglaodes*, Yorke Peninsula, LOWER, p. 171, Tr. R. Soc. S. Austral. xvii, n. sp.
- Ctenocompa*, n. g., near *Sentica*, for *C. baliodes*, n. sp., Queensland; MEYRICK, p. 489, P. Linn. Soc. N. S. Wales (2) vii.
- Dascia*, n. g. between *Zelleria* and *Tinea*, for *D. sagittifera*, n. sp., Australia; BLACKBURN, p. 579, P. Linn. Soc. N. S. Wales (2) vii.
- Decadarchis*, merged in *Ereunetis*; MEYRICK, p. 563, P. Linn. Soc. N. S. Wales (2) vii,
- Demobrotis*, n. g., p. 555, near *Tinea*, for *D. anaglypta*, p. 556, *ocymorpha*, *hemiphara*, p. 557, n. spp., Australia; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Depressaria chironiella*, S. France, CONSTANT, p. 392, Ann. Soc. ent. France, 1893, n. sp.
- Diplothectis*, n. g., *Tineides*, for *D. chionocalca*, n. sp., Sydney; MEYRICK, p. 539, P. Linn. Soc. N. S. Wales (2) vii.
- Doryphora* ? *gypsella*, S. France, CONSTANT, p. 396, Ann. Soc. ent. France, 1893, n. sp.
- Dryadaula*, n. g., *Tineides*, for *D. glycinopa*, n. sp., N. S. Wales; MEYRICK, p. 560, P. Linn. Soc. N. S. Wales (2) vii.
- Elachista elegans*, note on; HERING, p. 115, Stettin Ent. Zeit. liv. *E. reuttiana*, p. 309, *bedellella*, p. 310, *rudectella*, p. 311, habits of larvæ; HOFFMANN, Stettin Ent. Zeit. liv.

- Endophtora oxytona*, S. Australia, MEYRICK, p. 558, P. Linn. Soc. N. S. Wales (2) vii, n. sp.
- Epigraphia orientella*, S.E. Europe, REBEL, p. 45, Stettin Ent. Zeit. liv, n. sp.
- Ereunetis phileris*, p. 563, *oxymacha*, *symmacha*, p. 564, Australia, MEYRICK, P. Linn. Soc. N. S. Wales (2) vii, n. spp.
- Eriocottis euryphracta*, S. Australia, MEYRICK, P. Linn. Soc. N. S. Wales (2) vii, p. 514, n. sp.
- Euchaetis crypsichroa*, p. 175, *sarcozantha*, p. 176, Australia, LOWER, Tr. R. Soc. S. Austral. xvii, n. spp.
- Eulechria gypsota*, *xanthocephala*, p. 177, *adelphodes*, *lithodora*, p. 178, Australia, LOWER, Tr. R. Soc. S. Austral. xvii, n. spp.
- ¹*Eurytyla*, n. g., p. 565, near *Ereunetis*, for *E. automacha*, n. sp., New South Wales, p. 566; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Euteles subsignella*, Caucasus, REBEL, p. 52, Stettin Ent. Zeit. liv, n. sp.
- Gelechia nigricans*, p. 94, *distinctella* and allies, p. 96, *ochrisignella*, p. 97, synonymy discussed; HERING, Stettin Ent. Zeit. liv.
- G. ilmatariella*, Finland, HOFFMANN, p. 138, Stettin Ent. Zeit. liv; *G. leucocephala*, *thermochroa*, p. 169, *macroplaca*, *thanatodes*, p. 170, *centrosema*, p. 171, Australia, LOWER, Tr. R. Soc. S. Austral. xvii: n. spp.
- Gracilaria syringella*: habits; CHARBONNIER, P. Bristol Soc. n. s. vii, pp. 132 & 133.
- Glyphipteryx argyrocuttella*, Rag., description, p. 57; *fuscoviridella* = (*areinitidella*, Mill.), p. 58; REBEL, Stettin Ent. Zeit. liv.
- G. lyelliana*, p. 182, *platydisema*, *halimophila*, p. 183, Australia, LOWER, Tr. R. Soc. S. Austral. xvii, n. spp.
- ¹*Harpedonistes*, n. g., near *Nematobola*, for *H. geometra*, n. sp., Victoria; MEYRICK, p. 594, P. Linn. Soc. N. S. Wales (2) vii.
- Heliocausta iozona*, p. 174, *euspilomela*, p. 175, Australia, LOWER, Tr. R. Soc. S. Austral. xvii, n. spp.
- ¹*Hestiaula*, n. g., *Tineides*, p. 589, for *H. rhodacris*, n. sp., Queensland, p. 590; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- ¹*Hieroaxestis*, n. g., *Tineides*, for *H. omoscopa*, n. sp., N. S. Wales; MEYRICK, p. 567, P. Linn. Soc. N. S. Wales (2) vii.
- Hypatima binotella*, protected appearance; HERING, p. 105, Stettin Ent. Zeit. liv.
- ¹*Iphierga*, n. g., *Tineides*, p. 517, for *I. euphragma*, *pentulias*, p. 518, *stasiodes*, p. 519, n. spp., Australia; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Lampronia devotella*, Caucasus, REBEL, p. 43, Stettin Ent. Zeit. liv, n. sp.
- Lampros cæruleopicta*, Chr., redescribed; REBEL, p. 56, Stettin Ent. Zeit. liv.
- ¹*Lepidoscia*, n. g., p. 506, near *Xysmatodoma*, for *L. magnifica*, *comochora*, p. 508, *melitona*, p. 509, *microsticha*, *strigulata*, p. 510, *tyrobathra*, *chloropetala*, p. 511, *desmophthora*, *sciodesma*, p. 512, *amphiscia*, *rari-coma*, *palleuca*, p. 513, n. spp., Australia; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.

- Lichenaula monosema*, Australia, LOWER, p. 172, Tr. R. Soc. S. Austral. xvii, n. sp.
- Linosticha chrysoloma*, *dichroa*, S. Australia, LOWER, p. 179, Tr. R. Soc. S. Austral. xvii, n. spp.
- Lita semidecandrella*, note on; HERING, p. 99, Stettin Ent. Zeit. liv. *L. ocellatella* and *instabilella*, characters, p. 243, of larvæ, pp. 246 & 247; RICHARDSON, Ent. Mag. xxix.
- L. suædella*, England, RICHARDSON, p. 241, Ent. Mag. xxix; *L. pusillella*, Spain, REBEL, p. 47, Stettin Ent. Zeit. liv; *L. thymifoliella*, S. France, CONSTANT, p. 394, Ann. Soc. ent. France, 1893 : n. spp.
- Lithocolletis populifoliella*, extreme abundance; JOURDHEUILLE, p. cccxciv, Bull. Soc. ent. France, 1893.
- Lyonetia clerkella*, mimicking *Typhlocyba stellulata*; KENNEL, p. 513, S.B. Ges. Dorpat, ix.
- ¹*Macarangela*, n. g., p. 537, for *M. leucochrysa*, *uranarcha*, p. 588, *pyracina*, p. 589, Australia, n. spp.; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- ¹*Mucraeola*, n. g., p. 554, near *Tinea*, for *M. linobola*, n. sp., Sydney, p. 555; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Macrobathra paracentra*, *isocelana*, Australia, BLACKBURN, p. 182, Tr. R. Soc. S. Austral. xvii, n. spp.
- ¹*Mesopherna*, n. g., between *Tinea* and *Xysmatodoma*, p. 514, for *Mesopherna palustris*, p. 515, *isomacra*, p. 516, n. spp., Australia, and including *Prays castella*, Wlk.; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Micropteryx*: account of structure of pupa, mode of emergence of imago, &c.; CHAPMAN (156).
- ¹*Mimoscopa*, n. g., near *Tinea*, p. 525, for *M. ochetaula*, n. sp., New South Wales, p. 526; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- ¹*Mychonoa*, n. g., p. 558, near *Tinea*, for *M. mesozona*, n. sp., Queensland, p. 559; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- ¹*Nematobola*, n. g., p. 591, near *Thereutis*, for *N. isorista*, *orthotricha*, p. 592, *candescens* (larva described), p. 593, n. spp., Australia; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Nemophora caucasica*, Caucasus, REBEL, p. 44, Stettin Ent. Zeit. liv, n. sp.
- Nemotois orichalcias*, p. 484, *topazias*, p. 485, Australia, MEYRICK, P. Linn. Soc. N. S. Wales (2) vii, n. spp.
- Nephogenes xylochroa*, Australia, LOWER, p. 179, Tr. R. Soc. S. Austral. xvii, n. sp.
- Nepticula*: notes on the early stages and metamorphosis; WOOD, Ent. Mag. xxix, pp. 197, &c. *N. tentationis*, n. sp., to be discovered on a rosebush in the Anio Valley; HOFFMANN, p. 215, Stettin Ent. Zeit. liv.
- Œcophora fuscescens*: habits; HERING, p. 103, Stettin Ent. Zeit. liv.
- Opostega basiliasa*, p. 606, *chalinas*, *diorthota*, p. 607, *xenodoxa*, p. 608, Australia, MEYRICK, P. Linn. Soc. N. S. Wales (2) vii, n. spp.

- Ornix alpicola* : habits of larva ; HOFFMANN, p. 307, Stettin Ent. Zeit. liv.
- Pachycera catoryctopsis*, Australia, LOWER, p. 184, Tr. R. Soc. S. Austral. xvii, n. sp.
- Panacalia leuvenhoekella*, food plant and larva ; FLETCHER, Ent. Mag. xxix, p. 81.
- Parasia torosulella*, Spain, REBEL, p. 49, Stettin Ent. Zeit. liv, n. sp.
- Philobota platyptera*, *ideæ*, p. 180, *porphryxantha* (sic), p. 181, Australia, LOWER, Tr. R. Soc. S. Austral. xvii ; *P. pentamera*, Victoria, LOWER, p. 292, *t. c.* : n. spp.
- Phthonerodes ? leucomerata*, Australia, LOWER, p. 173, Tr. R. Soc. S. Austral. xvii, n. sp.
- Plectophila placocosma*, Sydney, LOWER, p. 292, Tr. R. Soc. S. Austral. xvii, n. sp.
- Pogonias euryplaca*, Australia ; LOWER, p. 171, Tr. R. Soc. S. Austral. xvii.
- Procometis ? orthosema*, Victoria, LOWER, p. 173, Tr. R. Soc. S. Austral. xvii, n. sp.
- Prodoxus* : descriptions and figures of the species, RILEY, pp. 145-153, pls. xxxix & xliii, Rep. Missouri Botan. Garden, iii ; characters of the species, RILEY, Insect Life, v, pp. 305-307.
- P. intricatus*, Mexico, RILEY, p. 307, Insect Life, v, n. sp.
- Pronuba* : notes, descriptions, and figures of the species, RILEY, Rep. Missouri Botan. Garden, iii., pp. 137-144 ; notes on the metamorphoses and habits of various species, RILEY, Insect Life, v, pp. 300-305. *P. yuccasella*, life-history, habits, and metamorphosis of, RILEY, Rep. Missouri Botan. Garden, iii, pp. 99, &c. ; maxillary tentacles described and figured, SMITH, p. 162, fig. 12, Insect Life, v. *P. maculata*, habits ; COQUILLETT, Insect Life, v, pp. 312 & 313.
- Psoricoptera speciosella*, Livland, TEICH, p. 358, Stettin Ent. Zeit. liii, n. sp.
- Ptocheuusa paupella, inopella*, notes on ; HERING, p. 100, Stettin Ent. Zeit. liv.
- Scardia dictyotis*, p. 522, *pyrochroa, clonodes*, p. 523, *primæva*, p. 524, Australia ; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Sentica heliozona*, Queensland, MEYRICK, p. 488, P. Linn. Soc. N. S. Wales (2) vii, n. sp.
- Stathmopoda callichrysa*, Victoria, LOWER, p. 184, Tr. R. Soc. S. Austral. xvii, n. sp.
- Stegommata hesperias*, W. Australia, MEYRICK, p. 603, P. Linn. Soc. N. S. Wales (2) vii, n. sp.
- Stomopteryx nugatricella*, Spain, REBEL, p. 50, Stettin Ent. Zeit. liv, n. sp.
- Symmoca tofosella*, Spain, p. 53, *orphnella*, Lombardy, p. 54, REBEL, Stettin Ent. Zeit. liv, n. spp.
- Talaporina conspurcatella*, early stages ; CHRÉTIEN, Naturaliste, 1893, p. 103.

- Thelethia*, n. n. for *Thia*; DYAR, p. 361, *Canad. Ent.* xxv.
- Thereutis*, n. g., *Tineides*, p. 594, for *T. arcana*, p. 595, *insidiosus*, *schismatica*, p. 596, *chionozyga*, p. 597, n. spp., Australia; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Thudaca heterastis*, p. 571, *campylota*, *crypsidesma*, p. 572, *-haplonota*, p. 573, *mimodora*, p. 574, *calliphrontis*, *ophiosema*, p. 576, *cymatistis*, *orthodroma*, p. 577, *stadiaula*, *trabeata*, p. 578, Australia; MEYRICK, P. Linn. Soc. N. S. Wales (2) vii.
- Tinea violucella*, Cilicia, REBEL, p. 42, *Stettin Ent. Zeit.* liv; *T. bisepta*, p. 532, *monozona*, *altilis*, p. 533, *pyrotricha*, *amaurodes*, *dicharacta*, p. 536, *diaphora*, *erebocosma*, p. 537, Australia, *porphyrola*, Tasmania, *tridectis*, *chaotica*, p. 538, *colleta*, *acrozyga*, p. 539, *tetropa*, *tryphera*, p. 541, *melitocoma*, *muricata*, *phanicopa*, p. 542, *spodina*, *epimochla*, *monophthalma*, p. 543, *vetula*, *phanoptera*, p. 544, *microspora*, *aelurodes*, p. 545, *nectarea*, *teleochra*, p. 546, Australia, MEYRICK, P. Linn. Soc. N. S. Wales (2) vii : n. spp.
- Xylorycta chionopectera*, Victoria, LOWER, p. 173, *Tr. R. Soc. S. Austral.* xvii, n. sp.
- Xysmatodoma stellaris*, p. 493, *zonarcha*, *eurypetra*, p. 494, *lasiocola*, *protorna*, p. 495, *saxosa*, *adelopis*, p. 496, *charitodes*, p. 497, *crepuscularis*, *heliochaeres*, p. 498, *reticulata*, *phaulodes*, p. 499, *pygmæa*, *nephelodes*, p. 500, *apochroa*, *pelochroa*, *carlotta*, p. 501, *chrysopetala*, *hamalitha*, p. 502, *cataphracta*, *characota*, p. 504, *melanarthra*, p. 505, *chrysura*, p. 506, Australia, MEYRICK, P. Linn. Soc. N. S. Wales (2) vii, n. spp.
- Ypsolophus lotellus*, S. France, CONSTANT, p. 398, *Ann. Soc. ent. Franco*, 1893, n. sp.
- Zelleria cynetica*, *aræodes*, p. 582, *memorella*, p. 583, *aphrospora*, *callidoxa*, *proterospila*, p. 584, *pyroleuca*, p. 585, Australia, *mystarcha*, Tasmania, *citrina*, p. 586, *sigillata*, p. 587, Australia, MEYRICK, P. Linn. Soc. N. S. Wales (2) vii, n. spp.
- Zonopetala ? stenoptera*, Victoria, LOWER, p. 177, *Tr. R. Soc. S. Austral.* xvii, n. sp.

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- Alucita fishii*, *elliotti*, p. 95, *eupatorii* = (*cretiductylus*, Walsingh. nec Fitch), p. 96, N. America, FERNALD, *Canad. Ent.* xxv, n. spp.
- Stenoptilia plagiodactyla*: metamorphoses; HERING, p. 118, *Stettin Ent. Zeit.* liv.

(D.) *DIPTERA*.

[*Cf.* ALDRICH (9-12), ARRIBALZAGA (18), AUSTEN (32), BEZZI (66), BLANCHARD (73), BOAS (82), BRAUER (104, 105), COQUILLET (187-194), COSTA (199, 200), COUCKE (206, 207), EATON (255), GARMAN (363, 364), GIARD (373, 374, 375), GIGLIO-TOS (377, 380), GIRSCHNER (386), GUERCIO (410), JOURDAIN (501), KELLOGG (515), KOWARZ (545, 546), LOWNE (600, 601), MEADE (625), MEUNIER (630, 631, 632), MIALL (634), MIALL & HAMMOND (635), MIK (636, 637), MURTFELDT (660), OSTEN-SACKEN (682-687), PACKARD (695), POKORNY (727, 728, 729), PRATT (736), RADOSZKOWSKY (739), RÜDER (811, 812), RÜBSAAMEN (827, 828), SINTENIS (900), SKUSE (904), SNOW (928), STEIN (938), STROBL (946, 947, 948), SWAINSON (950), THOMAS (964, 965), TOWNSEND (971-987), WASMANN (1030), WATERHOUSE (1032), WILLISTON (1057-1061, 789), WULP (1064, 1065, 1066).]

Systematic position of order ; TOWNSEND, *Canad. Ent.* xxv, p. 7 ; ALDRICH, *t. c.* p. 25.

Evolution and systematic position of the order discussed ; PACKARD, *Science*, 1893, p. 199.

Essay on the classification of *Diptera Orthorrhapha*, with criticisms of Brauer's system ; OSTEN-SACKEN, *Berlin. ent. Zeitschr.* xxxvii, pp. 417-465.

The suborders of *Diptera* discussed ; OSTEN-SACKEN (682, 683).

Morphology of mouth-parts ; WATERHOUSE (1032), LOWNE (601).

Families of *Diptera* in which parasitic forms are known to occur ; TOWNSEND, *Insect Life*, vi, pp. 201-204.

Sketch of the Dipterous fauna of Australia ; SKUSE, *Rep. Austral. Ass.* ii, pp. 525-540.

Note on the *Ptilinum* of *Muscidae* ; OSTEN-SACKEN, p. 380, *Berlin. ent. Zeitschr.* xxxviii.

Silk-spinning larvæ ; GARMAN (364).

CECIDOMYIIDÆ.

Note on the earlier savants who were acquainted with the breast-bone of *Cecidomyiide* ; OSTEN-SACKEN, *Berlin. ent. Zeitschr.* xxxviii, p. 373.

Breast-bone and malpighian tubes of larva discussed ; GIARD, *Bull. Soc. ent. France*, 1893, pp. lxxx-lxxxiii, figg.

- Asphondylia melanopus*, its galls and metamorphoses ; MIK, p. 292, pl. iii, Wien. ent. Zeit. xii.
- A. massalongoi*, Italy, RÜBSAAMEN, p. 163, Ent. Nachr. xix ; *A. capparisi*, Italy ?, RÜBSAAMEN, p. 363, Berlin. ent. Zeitschr. xxxviii : n. spp.
- Asynapta thurawi*, Germany, RÜBSAAMEN, p. 165, Ent. Nachr. xix, n. sp.
- Cecidomyia strobi*, habits ; SAHLBERG, p. 14, Medd. Soc. Faun. Fenn. xvii.
- C. chrysopsidis*, p. 389, *serrulata*, p. 388, *clavula*, p. 390, notes on galls and larvæ ; TOWNSEND, P. ent. Soc. Washington, ii.
- C. bigeloviae-brassicoides*, New Mexico, TOWNSEND, p. 491, Psyche, vi, n. sp.
- Diplosis resinicola* : habits of larva ; TOWNSEND, p. 389, P. ent. Soc. Washington, ii.
- D. oculiperda*, p. 161, *schlechtendahliana*, *lysimachiae*, p. 162, Germany, RÜBSAAMEN, Ent. Nachr. xix, n. spp.
- ▷ *Drisina*, n. g., for *D. glutinosa*, n. sp., North France ; GIARD, p. cccxliii, Bull. Soc. ent. France, 1893.
- Lasioptera calamagrostidis*, Germany, RÜBSAAMEN, p. 164, Ent. Nachr. xix, n. sp.
- Macrolabis achilleæ*, Germany, RÜBSAAMEN, p. 164, Ent. Nachr. xix, n. sp.
- Rhopalomyia magnusi*, p. 162, Germany, *tridentata*, N. America, p. 163, RÜBSAAMEN, Ent. Nachr. xix ; *R. rubsaameni*, p. 301, *lutkemulleri*, p. 307, Alps, 6-8000 ft., THOMAS, Verh. Ges. Wien, xliii : n. spp.

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- Neoglaphyoptera striata*, Washington, WILLISTON, p. 60, Kansas quart. ii, n. sp.
- ▷ *Novakia*, n. g., *Sciarinarum*, for *N. scatopsiformis*, n. sp., Lesina ; STROBL, p. 162, Wien. ent. Zeit. xii.
- Platyura nigricauda*, Lesina, STROBL, p. 164, Wien. ent. Zeit. xii ; *P. pulchra*, *notabilis*, p. 59, *gracilis*, p. 60, N. America, WILLISTON, Kansas quart. ii : n. spp.

SIMULIIDÆ, BIBIONIDÆ.

- Simuliidæ*, in Indiana ; WEBSTER, P. Indiana Ac., 1891, pp. 155-159.
- Simulium* : sp. from Grand Cañon of the Colorado, larva and pupa described ; TOWNSEND, pp. 45-48, figg., Tr. Amer. ent. Soc. xx.
- S. argus*, California, WILLISTON, p. 253, North Amer. Fauna, vii, n. sp.
- Plecia* : the fossil *Protomyia*, *Bibiopsis*, *Mycetophætus*, are only this genus ; BRONGNIART, pp. cl & cli, Bull. Soc. ent. France, 1893.
- Bibio tristis*, Kansas, KELLOGG, p. 112, Tr. Kansas Ac. xiii, cuts, n. sp.

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- ▷ *Snowia*, n. g., p. 119, for *S. rufescens*, n. sp., Rio de Janeiro, p. 120 ; WILLISTON, Kansas quart. i.

CULICIDÆ, CHIRONOMIDÆ.

- Rhythmic rotation of head of larvæ of sp. ? ; JOURDAIN (501).
Culex inornatus, California, WILLISTON, p. 253, North Amer. Fauna, vii, n. sp.
Ceratopogon braueri, Austrian Alps (larva in nests of *Formica fusca*), WASMANN, p. 277, Wien. ent. Zeit. xij, n. sp.
Chironomidæ: marine larva; pædogensis; *Camponia*, believed to be *Chironomus*; SWAINSON, Science, xxii, pp. 107 & 108.
Chironomus dorsalis: life-history and metamorphoses; MIALI & HAMMOND, Tr. Linn. Soc. London, v, pp. 265-279, pls. xxix-xxxii.
 Position of brain of larva of *Chironomus* discussed; BRAUER, Berlin. ent. Zeitschr. xxxvii, p. 487; OSTEN-SACKEN, *op. cit.* xxxviii, p. 378.
Tersesthes, n. g., *Chironomidæ*, for *T. torrens*, n. sp., New Mexico; TOWNSEND, p. 370, pl. viii, Psyche, vi.

PSYCHODIDÆ.

- Psychodidæ*: synopsis of British genera and species; EATON, Ent. Mag. xxix.
Pericoma compta, extricata, mutua, cognata, trivialis, p. 121, *neglecta, exquisita, fallax*, p. 122, *gracilis, blandula, pulchra*, p. 123, *dalii*, p. 125, *notabilis, ambigua, decipiens*, p. 126, *consors, labeculosa, advena, morula*, p. 127, *fratercula, caliginosa*, p. 128, *incerta, revisenda*, p. 129, Britain, EATON, Ent. Mag. xxix, n. spp.
Psychoda erminea, Britain, EATON, p. 130, Ent. Mag. xxix; *P. albipunctata*, p. 113, *slossoni*, p. 114, N. America, WILLISTON, Ent. News Philad. 1893 : n. spp.

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- Ctenophora angustipennis*, Loew, ♂ described; WILLISTON, p. 63, Kansas quart. ii.
C. similis, Washington, WILLISTON, p. 63, Kansas quart. ii, n. sp.
Dicranota bimaculata: larva, pupa, habits, anatomy described; MIALI, Tr. ent. Soc. London, 1893, pp. 235-253, pls. x-xiii.
Eriocera obscura, eriophora, N. America, WILLISTON, p. 61, Kansas quart. ii, n. spp.
Limnobia hyalinata: varietal note; SINTENIS, pp. 483-489, SB. Ges. Dorpat, ix.
L. concinna, Washington, WILLISTON, p. 60, Kansas quart. ii, n. sp.
Pachyrrhina erythrophrys, Colorado, WILLISTON, p. 63, Kansas quart. ii, n. sp.
Raphidolabis debilis, California, WILLISTON, p. 62, Kansas quart. ii, n. sp.
Stygeropsis bergrothi, Alaska, WILLISTON, p. 64, Kansas quart. ii, n. sp.

Tipula goriziensis, p. 165, *macrosele*, p. 167, Austrian Coast, STROBL, Wien. ent. Zeit. xii, n. spp.

Trimicra pilipes: variation of venation; WULP, p. 499, Ann. Soc. ent. Belgique, xxxvii, cut.

XYLOPHAGIDÆ, STRATIOMYIIDÆ, TABANIDÆ.

Subula pallipes: pupa described; TOWNSEND, p. 163, Ent. News Philad. 1893.

The genera and species of *Stratiomyidae* found in Belgium tabulated; COUCKE, pp. 431-449, Ann. Soc. ent. Belgique, xxxvii.

Berismyia fusca, Mexico, GIGLIO-TOS, p. 103, pl. i, fig. 2, Mem. Acc. Torino (2) xliii, n. sp.

Chrysonotus aeneiventris, Mexico, GIGLIO-TOS, p. 121, Mem. Acc. Torino, xliii, n. sp.

Stratiomys flavolimbata, Tunis, COSTA, p. 101, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 21, pl. iv, fig. 6, n. sp.

Chrysops mauritanicus, Tunis, COSTA, p. 101, Rend. Acc. Napoli (2) vii, and Atti Acc. Napoli (2) v, No. 14, p. 22, pl. iv, figg. 7 & 8, n. sp.

Diachlorus guttatus, Kansas, TOWNSEND, p. 134, Tr. Kansas Ac. xiii, n. sp.

LEPTIDÆ, ASILIDÆ, APIOCERIDÆ.

Leptidæ: characters of the Belgian species; COUCKE, pp. 127-134, Ann. Soc. ent. Belgique, xxxvii.

Apioceridæ: defined, systematic position discussed: trophi, and male characters described and figured, the former compared with those of other families; WILLISTON, Kansas quart. i, pp. 101-118, pls. ix & x.

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A. ludius, p. 20, *rubidus*, California, *patruelis*, Texas, p. 21, COQUILLET, Canad. Ent. xxv, n. spp.

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- Mallophora*: synopsis of N. American; COQUILLET, p. 118, Canad. Ent. xxv.
M. megachile, California, COQUILLET, p. 118, Canad. Ent. xxv, n. sp.
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- Anthrax (Stonyx) sodom*, California, WILLISTON, p. 254, North Amer. Fauna, vii, n. sp.
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- Empis brunnipennis*: ♂ described; STROBL, p. 39, Wien. ent. Zeit. xii.
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Mythiocomyia, n. g. for *M. rileyi*, n. sp., California, COQUILLET, p. 209, Ent. News Philad. 1893.

- ¹*Oustaletimyia* : provisional new genus and species in amber ; MEUNIER, p. cccxxxiii, Bull. Soc. ent. France, 1893.
Tachydromia novakii, p. 37, *lesinensis*, p. 38, Lesina, STROBL, Wien. ent. Zeit., xii, n. spp.

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- ¹*Aptorthus*, n. g., *Psilopinae*, for *A. albiciliatus*, p. 48, *borealis*, *nigripes*, p. 49, *townsendii*, p. 50, n. spp., N. America ; ALDRICH, Kansas quart. ii.
²*Dactylomyia*, n. g. near *Medeterus*, for *D. gracilipes*, n. sp., Dakota ; ALDRICH, p. 151, Kansas quart. ii.
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³*Gnampopsilopus*, n. g. for a part of *Psilopus* ; ALDRICH, p. 48, Kansas quart. ii.
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⁴*Leptorhethum*, n. g. near *Psilopus*, for *L. angustatum*, n. sp., St. Vincent ; ALDRICH, Kansas quart. ii, p. 50.
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- Syrphidæ* : notes on synonymy of some S. American genera ; BIGOT, p. clvii, Bull. Soc. ent. France, 1893.
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Baccha nubilipennis, Ceylon, p. 136, pl. iv, figg. 7-9, v, fig. 14, *bicolor*, Mysol, p. 137, pl. iv, fig. 6, *refulgens*, Bouru, fig. 4, *triangulifera*, Ceylon, fig. 5, p. 138, *pulchrifrons*, p. 139, pl. iv, figg. 10 & 11, *fallax*, fig. 12, p. 142, Ceylon, *sulica*, Malay Arch., fig. 3, *sagittifera*, Jamaica,

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- Chilosia chalybescens*, California, WILLISTON, p. 76, Kansas quart. ii, n. sp.
- Cyphipellta* (sub *Brachyopa*) *rufo-cyanea*, Wlk. = (*conifrons*, Big., and *Eristalis vesicularis*, Er.) ; AUSTEN, p. 163, P. Zool. Soc. London, 1893.
- Eristalis tenax* : resemblance to bee, distribution, mythology ; OSTEN-SACKEN, Bull. Soc. ent. Ital. xxv, pp. 186-217.
- E. sumichrasti*, Mexico, GIGLIO-TOS, p. 324, Mem. Acc. Torino, xliii, n. sp.
- Lycastirrhyncha nitens* : referred to *Eristalini* ; AUSTEN, p. 163, P. Zool. Soc. London, 1893.
- Merodon minutus*, Dalmatia, STROBL, p. 77, Wien. ent. Zeit. xii, n. sp.
- Palaoascia*, n. n. for the fossil species of *Ascia* ; MEUNIER, pl. ccxlix, Bull. Soc. ent. France, 1893.
- Paragus pulcherrimus*, Fiume, STROBL, p. 78, Wien. ent. Zeit. xii, n. sp.
- Ocyptamus* : to this are referred the following of Walker's species : *Pipiza costalis*, (*pica*) = *O. trigonus*, Wied., (*divisa*, *dolosa*) = *O. dimidiatus*, Fab., *syrphus*, *stolo*, *antiphates*, *peas*, (*amissas*, *radaca*) = *O. fuscipennis*, Say, *iridipennis*, *tarsalis* ; AUSTEN, p. 134, P. Zool. Soc. London, 1893.
- O. iris*, Jamaica, AUSTEN, p. 133, pl. iv, fig. 1, P. Zool. Soc. London, 1893, n. sp.
- Rhingia semicærulea*, Sierra Leone, AUSTEN, p. 162, p. v, figg. 1 & 2, P. Zool. Soc. London, 1893, n. sp.
- Salpingogaster virgata*, pl. v, fig. 3, p. 159, *minor*, fig. 4, p. 161, Amazons, AUSTEN, P. Zool. Soc. London, 1893, n. spp.

CESTRIDÆ.

- Larva extracted from frontal sinus of an antelope of the genus *Boselaphus* ; BLANCHARD, pp. cxxxii & cxxxiii, figg., Bull. Soc. ent. France, 1893.
- Cobboldia* : note on the species found in the Indian and African elephants ; BLANCHARD, p. cxxx, Bull. Soc. ent. France, 1893.
- Cuterebra fontinella*, bred from *Lepus artemisia* ?, ♀ described ; TOWNSEND, pp. 317-320, Insect Life, v.
- Dermatobia cyaniventris* : note on ; BLANCHARD, Bull. Soc. ent. France, 1893, pp. xxiv-xxvii.
- Æstrus* larva in man ; SANGAGLI, Rend. Ist. Lombardo (2) xxvi, pp. 645-647.

CONOPIDÆ, PLATYPEZIDÆ, PIPUNCULIDÆ.

Stylogaster: note on the American species and their synonymy ;
WILLISTON, pp. 120-122, Kansas quart. i.

¹*Brachyceratias*, n. n. for *Brachycerwa*, RÖDER; RÖDER, p. 62, Ent.
Nachr. xix.

Callomyia; for n. g., allied to, in amber, *vide* Palæoentomology.

C. aurantiaca, Italy, BEZZI, p. 304, Wien. ent. Zeit. xii, n. sp.

Pipunculus aridus, California, WILLISTON, p. 255, North Amer. Fauna,
vii, n. sp.

MUSCIDÆ CALYPTRATÆ.

Essay on the classification of *Muscidae*, defining the following families of
Calyptrate, viz., *Anthomyiide*, *Tachinide*, with subdivisions *Cænosiinæ*,
Muscineæ, *Æstride*, *Calliphorineæ*, *Masicera* group, and *Sarcophaga*
group; GIRSCHNER, pp. 297-312, Berlin. ent. Zeitschr. xxxviii.

BRAUER explains the nature of the Memoirs by BRAUER & BERGENSTAMM,
gives tables for the determination of the European genera included
therein, and for correlating the genera with those of Schiner; Verh.
Ges. Wien. xliii, pp. 447-525.

Observations on BRAUER & BERGENSTAMM's genera; WILLISTON,
pp. 238-240, Insect Life, v.

Descriptive notes on some dubious *Muscide* from Jamaica; TOWNSEND,
J. Inst. Jamaica, i, pp. 314-316.

Remarks on WULP's diagnoses of *Phasiides*, &c.; TOWNSEND, Canad. Ent.
xxv, pp. 165-168.

List of hosts of some N. American *Tachinide*; TOWNSEND, Psyche, vi,
p. 466.

Larva allied to *Ochromyia* attacking man in S. Africa; BLANCHARD,
pp. cxx-cxxix, Bull. Soc. ent. France, 1893.

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other notes; STROBL, p. 274, Verh. Ges. Wien. xliii: and for many
remarks on the memoir, see POKORNY, *t. c.* pp. 526-544.

Acroglossa tessellata, Mexico, GIGLIO-TOS, p. 5, Boll. Mus. Torino, viii,
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⁴*Acroptena*, n. g., p. 60, *Anthomyiide*, for *A. simonyi*, n. sp., Alps of
Europe, p. 61; POKORNY, Wien. ent. Zeit. xii.

Admontia occidentalis, Mexico, WULP, p. 195, Tijdschr. Ent. xxv, n. sp.

Allognota, n. g. for *Cænosiæ agromyzella*, Rond.; POKORNY, p. 64, Wien.
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A. (Chortophila) atronitens, p. 254, *A. (Phorbia) cærulescens*, p. 258,
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Aporia elegans, Mexico, GIGLIO-TOS, p. 3, Boll. Mus. Torino, viii, No. 147,
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- Argyrophylax zetterstedtii*, figured ; WULF, pl. vi, fig. 4, p. 181, Tijdschr. Ent. xxxvi.
- Arcia tenuisetæ*, Tyrol, POKORNY, p. 8, Verh. Ges. Wien. xliii, n. sp.
- Atropharista jurinoides*, referred to *Melanophrys*, characters and peculiarities ; WILLISTON, p. 409, Psyche, vi.
- Belvoisia bifasciata* : its variation ; WILLISTON, Insect Life, v, p. 238, pl. i.
- B. bella*, Mexico, GIGLIO-TOS, p. 3, Boll. Mus. Torino, viii, No. 158, n. sp.
- Blepharipeza* : puparium described ; TOWNSEND, Amer. Natural. xxvii, p. 402.
- Blepharipoda mexicana*, Mexico, GIGLIO-TOS, p. 6, Boll. Mus. Torino, viii, No. 158, n. sp.
- Brachiophyra*, n. g. near *Ophyra*, for *B. effrons*, n. sp., Mexico ; GIGLIO-TOS, p. 9, Boll. Mus. Torino, viii, No. 147.
- Calliophrys*, n. g. *Cenosiinæ*, p. 49, for *C. exuta*, n. sp., Bavaria, p. 52, and *Anthomyia pulchriceps*, and *riparia*, Fall. ; KOWARZ, Wien ent. Zeit. xii.
- Calliphora præpes*, Mexico, GIGLIO-TOS, p. 3, Boll. Mus. Torino, viii, No. 147, n. sp.
- Centriocera*, n. g., type *Cænosiæ decipiens*, Meig. ; POKORNY, p. 537, Verh. Ges. Wien. xliiii.
- Chaetogena carbonaria, cincta, gracilis*, Mexico, GIGLIO-TOS, p. 4, Boll. Mus. Torino, viii, No. 158, n. spp.
- Chaetona cruenta*, Mexico, GIGLIO-TOS, p. 3, Boll. Mus. Torino, viii, No. 147, n. sp.
- Chirosia montana*, Tyrol, POKORNY, p. 17, Verh. Ges. Wien. xliii ; *C. fusca*, Styria, STROBL, p. 274, t. c. : n. spp.
- Chortophila alpigena*, Tyrol, POKORNY, p. 14, Verh. Ges. Wien. xliii ; *C. stlemba*, Mexico, GIGLIO-TOS, p. 10, Boll. Mus. Torino, viii, No. 147 : n. spp.
- Cistogaster ruficornis, melanosoma, subpetiolata*, p. 186, *propinqua, griseo-nigra, ferruginosa, hirticollis, variegata*, Mexico, WULF, Tijdschr. Ent. xxxv, n. spp.
- Clinogaster*, n. g. *Phaninæ*, for *C. notabilis*, n. sp., Mexico ; WULF, p. 189, Tijdschr. Ent. xxxv.
- Clistomorpha ochracea*, Mexico, GIGLIO-TOS, p. 7, Boll. Mus. Torino, viii, No. 158, n. sp.
- Clytia latifrons*, Fiume, STROBL, p. 98, Wien. ent. Zeit. xii, n. sp.
- Onephalia ochriceps*, Mexico, WULF, p. 194, Tijdschr. Ent. xxxv, n. sp.
- Cenosiinæ*, with unabbreviated 6th vein, revised ; KOWARZ, Wien. ent. Zeit. xii, pp. 138, &c.
- Cenosiæ mikiï*, Zara, STROBL, p. 107, Wien. ent. Zeit. xii ; *C. (Pseudolinnophora) rufimana*, Styria, STROBL, p. 272, Verh. Ges. Wien. xliii ; *C. pacifera, vitilis, uvens*, Mexico, GIGLIO-TOS, p. 11, Boll. Mus. Torino, viii, No. 147 : n. spp.

- Crossocosmia sericarica*, notes on, p. 161, ♂ figured, pl. iv, fig. 2 ; WULP, Tijdschr. Ent. xxxvi.
- C. curvipalpis*, p. 162, pl. iv, fig. 3, *discreta*, p. 164, fig. 4, Java, WULP, Tijdschr. Ent. xxxvi, n. spp.
- ¹*Cyrtoneurina*, n. g., type *Cyrtoneura mexicana*, Macq., p. 5, with *C. parilis*, *vecta*, *inuber*, *gluta*, *pellex*, p. 6, *uber*, p. 7, n. spp., Mexico ; GIGLIO-TOS, Boll. Mus. Torino, viii, No. 147.
- Cyrtophleba horrida*, Mexico, GIGLIO-TOS, p. 6, Boll. Mus. Torino, viii, No. 158, n. sp.
- Doria meditatunda* : its attacks on silkworm and *Acronyeta* ; BOUVIER & DELACROIX, C.R. Soc. Philom. 1893, No. 1, p. 3, and C.R. Ac. Sci. cxvii, p. 245.
- Degeeria mexicana*, *dicax*, *insecta*, *cruralis*, Mexico, GIGLIO-TOS, p. 7, Boll. Mus. Torino, viii, No. 158, n. spp.
- Dejeania montana*, Mexico, WULP, p. 190, Tijdschr. Ent. xxxv ; *D. aurea*, Mexico, GIGLIO-TOS, p. 3, Boll. Mus. Torino, viii, No. 158 : n. spp.
- Dezia rustica*, larva, parasitic in that of *Melolontha*, described ; BOAS, Ent. Meddel. iv, pp. 130-136, pl. i.
- D. fulvifera*, Ceylon, RÖDER, p. 235, Ent. Nachr. xix, n. sp.
- ¹*Deziopsis*, n. g., type *Aricia lacteipennis*, Zett. ; POKORNY, p. 533, Verh. Ges. Wien. xliii.
- Echinomyia praeceps*, n. var. *flavipes*, STROBL, p. 94, Wien. ent. Zeit. xii ; *E. generosa*, *compascua*, Mexico, WULP, p. 192, Tijdschr. Ent. xxxv : n. spp.
- ¹*Eutrichota*, n. g., for *Cænusia inornata*, Lw. ; KOWARZ, p. 140, Wien. ent. Zeit. xii ; cf. RÖDER, t. c., p. 181.
- Exorista leuconota*, Mexico, WULP, p. 195, Tijdschr. Ent. xxxv, n. sp.
- Graphomyia mexicana*, Mexico, GIGLIO-TOS, p. 5, Boll. Mus. Torino, viii, No. 147, n. sp.
- Gymnochaeta subviridis*, Mexico, WULP, p. 194, Tijdschr. Ent. xxxv, n. sp.
- Gymnomma discors*, Mexico, WULP, p. 193, Tijdschr. Ent. xxxv ; *G. novum*, Mexico, GIGLIO-TOS, p. 1, Boll. Mus. Torino, viii, No. 158 : n. spp.
- Gymnostylia javana*, Java, WULP, p. 181, pl. vi, fig. 5, Tijdschr. Ent. xxxvi, n. sp.
- Homalomyia pseudoarmata*, Styria, STROBL, p. 239, Verh. Ges. Wien. xliii, n. sp.
- ¹*Homogenia*, n. g., near *Trichopoda*, for *H. rufipes*, *latipennis*, *nigroscutellata*, n. spp., Mexico ; WULP, p. 184, Tijdschr. Ent. xxxv.
- Hoplogaster alpicola*, Tyrol, POKORNY, p. 528, Verh. Ges. Wien. xliii, n. sp.
- Hyadesimyia grisea*, Mexico, GIGLIO-TOS, p. 5, Boll. Mus. Torino, viii, No. 147, n. sp.
- Hyalomyia munda*, *villosa*, *hebes*, *ochriceps*, *argenteiceps*, *nigrens*, p. 185, *piccipes*, *maerens*, *umbrosa*, *umbrifera*, p. 186, Mexico, WULP, Tijdschr. Ent. xxxv, n. spp.
- ¹*Hyalomyodes*, n. g., p. 429, for *H. weedii*, n. sp., N. America, p. 430 ; TOWNSEND, Psyche, vi.

- Hyetodesia mulcata*, p. 7, *parsura*, *abacta*, *abdicta*, *insons*, p. 8, Mexico, GIGLIO-TOS, Boll. Mus. Torino, viii, No. 147, n. spp.
- Hylemyia pullula*, life-history; GUERCIO, Bull. Soc. ent. Ital. xxiv, pp. 321-330.
- H. judicaria*, Tyrol, POKORNY, p. 11, Verh. Ges. Wien. xliii; *H. pseudo-maculipes*, Styria, STROBL, p. 249, Verh. Ges. Wien. xliii; *H. levipes*, *abrepta*, *rhodina*, Mexico, GIGLIO-TOS, Boll. Mus. Torino, viii, No. 147 : n. spp.
- Hylephila* (*Prosalpia*) *styriaca*, *hydrophorina*, *teriolensis*, Pok., synonymical noto; STROBL, p. 263, Verh. Ges. Wien. 1893.
- ↓ *Hyporites*, n. g., *Anthomyiidae*, for *Eriphia montana*; POKORNY, p. 54, Wien. ent. Zeit. xii.
- Hystrichodexia roederi*, Arizona, WILLISTON, p. 77, Kansas quart. ii; *H. mellea*, *aurca*, Mexico, GIGLIO-TOS, p. 2, Boll. Mus. Torino, viii, No. 147 : n. spp.
- Hystricia testaceiventris*, *albosignata*, Mexico, WULF, p. 190, Tijdschr. Ent. xxxv, n. spp.
- Hystrisiphona bicolor*, Mexico, GIGLIO-TOS, Boll. Mus. Torino, viii, No. 147, n. sp.
- Jurinia algens*, *puparium*; TOWNSEND, p. 576, Amer. Natural. 1893.
- J. nitidula*, *punctata*, *nepticala*, p. 191, *assimilis*, *congruens*, *spinigera*, p. 192, Mexico, WULF, Tijdschr. Ent. xxxv, n. spp.
- Lasiops semipellucida*: characters; MEUNIER, p. exciv, Bull. Soc. ent. France, 1893.
- L. mexicana*, Mexico, GIGLIO-TOS, p. 10, Boll. Mus. Torino, viii, No. 147, n. sp.
- ↓ *Leiosia*, n. g., *Tachinini*, p. 185, for *L. flavisquama*, n. sp., Java; WULF, p. 186, pl. vi, fig. 6, Tijdschr. Ent. xxxvi.
- Leucomelina garrula*, *corvina*, *strigata*, Mexico, GIGLIO-TOS, p. 7, Boll. Mus. Torino, viii, No. 147, n. spp.
- Lispa candicans*, n. var. *obscurior*; STROBL, p. 108, Wien. ent. Zeit. xii.
- ↓ *Lispocephala*, n. g., type *Anthomyia alma*, Meig.; POKORNY, p. 532, Verh. Ges. Wien. xliiii.
- Lucilia præscia*, *quieta*, Mexico, GIGLIO-TOS, p. 4, Boll. Mus. Torino, viii, No. 147, n. spp.
- Masicera linearifrons*, Java, WULF, p. 166, pl. iv, fig. 5, Tijdschr. Ent. xxxvi; *M. sesquiplea*, *usta*, *glauca*, Mexico, GIGLIO-TOS, p. 6, Boll. Mus. Torino, viii, No. 158 : n. spp.
- Meigenia albifacies*, Mexico, WULF, p. 194, Tijdschr. Ent. xxxv, n. sp.
- ↓ *Melanodexia*, n. g., near *Morinia*, for *M. tristis*, n. sp., California; WILLISTON, p. 257, North Amer. Fauna, vii.
- ↓ *Mesembrinella*, n. g., near *Mesembrina*, for *M. bicolor*, n. sp., Mexico; GIGLIO-TOS, p. 4, Boll. Mus. Torino, viii, No. 147.
- Micropalpus aberrans*, Spalato, STROBL, p. 93, Wien. ent. Zeit. xii (cf. *Pokornya infra*); *M. angustifrons*, Mexico, WULF, p. 193, Tijdschr. Ent. xxxv : n. spp.

- Microphthalma sordida*, Mexico, GIGLIO-TOS, p. 3, Boll. Mus. Torino, viii, No. 147, n. sp.
- ↳ *Microtrichomma*, n. g., p. 1, near *Echinomyia*, for *Nemorea forreri*, *smithi*, *intermedium*, Wulp; GIGLIO-TOS, Boll. Mus. Torino, viii, No. 158.
- ↳ *Mikiella*, n. g., *Tachinidæ*, for *M. austriaca*, n. sp., Feldkirch; MEUNIER, p. cclxxv, Bull. Soc. ent. France, 1893.
- Miltogramma nana*, Mexico, WULP, p. 195, Tijdschr. Ent. xxxv, n. sp.
- Mochlosoma anale*, p. 1, *sericeum*, p. 2, Mexico, GIGLIO-TOS, Boll. Mus. Torino, viii, No. 147, n. spp.
- ↳ *Myioscoliptera*, n. g., *Dexinæ*, for *M. cincta*, n. sp., Mexico; GIGLIO-TOS, p. 2, Boll. Mus. Torino, viii, No. 147.
- ↳ *Mystacomyia*, n. g. for *Mystacella rubriventris*, Wulp; GIGLIO-TOS, p. 4, Boll. Mus. Torino, viii, No. 158.
- Nemocheta frontalis*, *nitida*, *infusca*, Mexico, WULP, p. 194, Tijdschr. Ent. xxxv; *N. incerta*, *dubia*, *crucia*, *pernox*, *jurinioides*, *N. ? aberrans*, Mexico, GIGLIO-TOS, p. 2, Boll. Mus. Torino, viii, No. 158 : n. spp.
- Nemoreæ tropidobothra*, Br. B., pl. iv, fig. 1, synonymy; WULP, p. 160, Tijdschr. Ent. xxxvi.
- Ocyptera signatipennis*, Mexico, WULP, p. 187, Tijdschr. Ent. xxxv, n. sp.
- ↳ *Paracyrillia*, n. g., for *P. maculata*, n. sp., Spalato; STROBL, p. 95 (cf. also p. 214), Wien. ent. Zeit. xii.
- ↳ *Parastauferia*, n. g., near *Stauferia*, p. 3, for *P. alpina*, n. sp., Tyrol, p. 4; POKORNY, Verh. Ges. Wien. xliii.
- Parexorista rubeola*, p. 168, pl. v, fig. 1, *corvinoides*, p. 170, fig. 2, *curvipes*, p. 172, fig. 3, *laviventris*, p. 173, fig. 4, *gentilis*, p. 174, fig. 5, *iridipennis*, p. 176, pl. vi, fig. 1, *modicella*, p. 178, fig. 2, Java, WULP, Tijdschr. Ent. xxxiv, n. spp.
- ↳ *Penthosia*, n. g., *Phaninæ*, for *Scopolia satanica*, Big.; WULP, p. 189, Tijdschr. Ent. xxxv.
- Phorocera degeerioides*, Java, WULP, p. 179, pl. vi, fig. 3, Tijdschr. Ent. xxxvi, n. sp.
- Plagia mexicana*, *dicta*, Mexico, GIGLIO-TOS, p. 5, Boll. Mus. Torino, viii, No. 158, n. sp.
- Pogonomyia meadei* = (*alpicola*, Meade nec Rond.), Tyrol, POKORNY, p. 8, Verh. Ges. Wien. xliii, n. sp.
- ↳ *Pokornya*, n. g., for *Micropalpus aberrans* (vide *suprà*); STROBL, p. 214, Wien. ent. Zeit. xii.
- ↳ *Prosalpia*, n. g., *Anthomyiidæ*, p. 55, for *P. styriaca*, Styrian Alps, p. 56, *teriolensis*, Tyrolese Alps, p. 57, *hydrophorina*, N. and Centr. Europe, p. 59, n. spp.; POKORNY, Wien. ent. Zeit. xii.
- Prospberrya similis*, California, WILLISTON, p. 256, North Amer. Fauna, vii, n. sp.
- ↳ *Pseudopyrellia*, n. g., type *P. cornicina*, Fll.; GIRSCHNER, Berlin. ent. Zeitschr. xxxviii.
- Pyrellia cyanea*, Ceylon, RÜDER, p. 235, Ent. Nachr. xix, n. sp.
- ↳ *Rhadina*, n. g., for *Chirosia montana*, Pok.; KOWARZ, p. 144, Wien. ent. Zeit. xii.

- ↳ *Sarromyia*, n. g., *Pyrrhosiidæ*, for *S. nubigena*, n. sp., Tyrol ; POKORNY, p. 5, Verh. Ges. Wien. xliii.
- Saundersia montivaga*, p. 190, *femorata*, *consanguinea*, *lata*, p. 191, Mexico, WULP, Tijdschr. Ent. xxxv ; *S. aurea*, *picea*, Mexico, GIGLIO-TOS, p. 3, Boll. Mus. Torino, viii, No. 158 : n. spp.
- Scotipectera cyanea*, Mexico, GIGLIO-TOS, p. 2, Boll. Mus. Torino, viii, No. 147, n. sp.
- Spilogaster* : characters of species tabulated ; STEIN, Ent. Nachr. xix, pp. 209 & 256.
- S. halterata*, p. 217, *nebulosa*, p. 219, *pubescens*, p. 222, Germany, STEIN, Ent. Nachr. xix ; *S. rufisetiformis*, Styria, STROBL, p. 223, Verh. Ges. Wien, xliii ; *S. meadei*, Austria, MEUNIER, p. clviii, Bull. Soc. ent. France, 1893 ; *S. refusa*, *abdita*, *elesia*, p. 8, *meracula*, *pansa*, *sera*, *scabra*, p. 9, Mexico, GIGLIO-TOS, Boll. Mus. Torino, viii, No. 147 : n. spp.
- ↳ *Strobilia*, n. g., type *Canosia triangula*, Fall., with *S. braueri*, n. sp., Austria, p. 542 ; POKORNY, p. 541, Verh. Ges. Wien. xliiii.
- ↳ *Syllegopterula*, n. g., near *Syllegoptera*, p. 18, for *S. beckeri*, n. sp., Alps, p. 19 ; POKORNY, Verh. Ges. Wien. xliiii.
- Tachina tibialis*, *morosa*, generic position ; MEUNIER, Bull. Soc. ent. France, 1893, p. cclxxiv.
- Thelairoides basalis*, Mexico, GIGLIO-TOS, p. 3, Boll. Mus. Torino, viii, No. 147, n. sp.
- Tricholyga gracilens*, *insita*, Mexico, GIGLIO-TOS, p. 5, Boll. Mus. Torino, viii, No. 158, n. spp.
- Trichophthicus tyrolensis*, Austria, MEUNIER, p. clix, Bull. Soc. ent. France, 1893, n. sp.
- Trichophora fucata*, *convexinervis*, Mexico, WULP, p. 193, Tijdschr. Ent. xxxv, n. spp.
- Trichopoda* : distribution and peculiarities ; the most highly specialized type of insects ; TOWNSEND, Ent. News Philad. 1893, p. 69.
- T. nitidiventris*, *alipes*, p. 183, *squamipes*, *nigripes*, p. 184, Mexico, WULP, Tijdschr. Ent. xxxv, n. spp.
- Thryptocera lithobii*, France, GIARD, p. 178, Naturaliste, 1893, also Bull. Soc. ent. France, 1893, p. ccxiv, n. sp.
- ↳ *Xanthomelana*, n. g., *Ocypterince*, for *X. articulata*, *rubicunda*, *dorsalis*, *trigonalis*, p. 188, *gracilentia*, *anceps*, p. 189, n. spp., Mexico ; WULP, Tijdschr. Ent. xxxv.
- Xysta lesinensis*, Lesina, STROBL, p. 96, Wien. ent. Zeit. xii, n. sp.

MUSCIDÆ ACALYPTRATÆ.

- Summary of food-habits, of larvæ of Acalyptrate *Muscidæ* ; TOWNSEND, pp. 10-16, Canad. Ent. xxv.
- Acrotaxa mucida*, Mexico, GIGLIO-TOS, p. 10, Boll. Mus. Torino, viii, No. 158, n. sp.

- Agromyza luctuosa*, characters and variation ; STROBL, p. 134, Wien. ent. Zeit. xii.
- Apterina polita*, California, WILLISTON, p. 259, North Amer. Fauna, vii, n. sp.
- Blepharoneura regina*, p. 9, *saga*, *io*, *diva*, *splendida*, p. 10, Mexico, GIGLIO-TOS, Boll. Mus. Torino, viii, No. 158, n. spp.
- Bricinniella*, n. g., *Ortalidinae*, for *B. cyanea*, n. sp., Mexico ; GIGLIO-TOS, Boll. Mus. Torino, viii, No. 158.
- Calobata plectilis*, Mexico, GIGLIO-TOS, p. 14, Boll. Mus. Torino, viii, No. 158, n. sp.
- Celyphus karschii*, Ceylon, RÖDER, p. 236, Ent. Nachr. xix, n. sp.
- Chaetocalia*, n. g., *Trypetinae*, for *C. palans*, n. sp., Mexico ; GIGLIO-TOS, p. 11, Boll. Mus. Torino, viii, No. 158.
- Chlorops pannonica*, Hungary, STROBL, p. 228, Wien. ent. Zeit. xii ; *C. unicornis*, Mexico, GIGLIO-TOS, p. 14, Boll. Mus. Torino, viii, No. 158 : n. spp.
- Chyliza enthea*, Mexico, GIGLIO-TOS, p. 13, Boll. Mus. Torino, viii, No. 158, n. sp.
- Clasiopa coxalis*, p. 253, *nigerrima*, p. 254, *aurifacies*, *dimidiatipennis*, p. 255, Styria, STROBL, Wien. ent. Zeit. xii, n. spp.
- Diopsis ferruginea*, Ceylon, RÖDER, p. 235, Ent. Nachr. xix, n. sp.
- Drosophila unimaculata*, Austria, p. 281, *trivittata*, Styria, p. 282, STROBL, Wien. ent. Zeit. xii ; *D. excita*, Mexico, GIGLIO-TOS, p. 14, Boll. Mus. Torino, viii, No. 158 : n. spp.
- Ephydra tarsata*, California, WILLISTON, p. 257, North Amer. Fauna, vii, n. sp.
- Epochra canadensis*, Loew., note on ; SNOW, p. 159, pl. vi, fig. 6, Kansas quart. ii.
- Euaresta aequalis*, pl. vii, fig. 10, *festiva*, pl. vi, fig. 9, notes on ; SNOW, Kansas quart. ii.
- E. bellula*, Arizona, SNOW, p. 172, Kansas quart. ii ; *E. audax*, Mexico, GIGLIO-TOS, p. 9, Boll. Mus. Torino, viii, No. 158 ; *E. latipennis*, Mexico, TOWNSEND, p. 13, Zoe, iv : n. spp.
- Eurina dalmatina*, Zara, STROBL, p. 127, Wien. ent. Zeit. xii, n. sp.
- Eurinella*, n. g., type *Madiza oscinina*, Fall. ; MEUNIER, p. cxci, Bull. Soc. ent. France, 1893.
- Eurosta solidaginis*, pl. vii, fig. 5, *comma*, fig. 3, notes on ; SNOW, p. 169, Kansas quart. ii.
- E. fenestrata*, p. 169, pl. vii, fig. 7, *reticulata*, p. 170, fig. 6, N. America, SNOW, Kansas quart. ii ; *E. (Trypeta) bigeloviae*, Colorado, TOWNSEND, p. 49, Canad. Ent. xxv : n. spp.
- Eutropha thalhammeri*, Hungary, STROBL, p. 226, Wien. ent. Zeit. xii, n. sp.
- Eutreta longicornis*, N. America, SNOW, p. 168, pl. vi, fig. 12, Kansas quart. ii, n. sp.
- Euzesta spoliata*, California, WILLISTON, p. 257, North Amer. Fauna, vii, n. sp.

- Hecamede aurella*, Styria, STROBL, p. 256, Wien. ent. Zeit. xii, n. sp.
- Helomyza iniens*, Mexico, GIGLIO-TOS, p. 8, Boll. Mus. Torino, viii, No. 158, n. sp.
- Hemilea novakii*, Lesina, STROBL, p. 124, Wien. ent. Zeit. xii, n. sp.
- Hexacheta amabilis*, note on; TOWNSEND, p. 15, Zoe, iv.
- Leptopa filiformis*: characters and systematic position discussed; RÖDER, p. 81, Wien. ent. Zeit. xii.
- Leucophenya quinquemaculata*, Styria, STROBL, p. 283, Wien. ent. Zeit. xii, n. sp.
- Limosina aldrichi*, California, WILLISTON, p. 259, North Amer. Fauna, vii, n. sp.
- Lipara minima*, Styria, STROBL, p. 229, Wien. ent. Zeit. xii, n. sp.
- Micropeza turcana*, Arizona, TOWNSEND, p. 136, Tr. Kansas Ac. xiii, n. sp.
- † *Molynocelia*, n. g., *Trypetinæ*, for *M. lutea*, n. sp., Mexico; GIGLIO-TOS, p. 11, Boll. Mus. Torino, viii, No. 158.
- Notiphila decoris*, California, WILLISTON, p. 258, North Amer. Fauna, vii, n. sp.
- Ochtheophilini*: puparia found in leaf-galls of *Schizoneura ulmi*; MIK, p. 313, pl. iv, Wien. ent. Zeit. xii.
- Œdaspis montana*, p. 163, pl. vi, fig. 5, *minuta*, fig. 2, p. 164, N. America, SNOW, Kansas quart. ii, n. spp.
- Œdicarena diffusa*, N. America, SNOW, p. 161, pl. vii, fig. 9, Kansas quart. ii, n. sp.
- Œdopa elegans*, Mexico, GIGLIO-TOS, p. 12, Boll. Mus. Torino, viii, No. 158, n. sp.
- Opomyza henselli*: note on; SINTENIS, p. 90, SB. Ges. Dorpat, x. *O. punctella*, Fall: note on; SINTENIS, p. 481, *t. c.*
- Oscinis albidipennis*, Fiume, STROBL, p. 129, Wien. ent. Zeit. xii; *O. alpicola*, Alps, p. 230. *longepilosa*, Styria, p. 231, STROBL, *t. c.*; *O. bicingulata*, Austria, STROBL, p. 250, *t. c.*: n. spp.
- † *Ostracocelia*, n. g., *Trypetinæ*, p. 10, for *O. mirabilis*, n. sp., Mexico, p. 11; GIGLIO-TOS, Boll. Mus. Torino, viii, No. 158.
- † *Paragorgopis*, n. g., *Ortulidinæ*, for *P. maculata*, n. sp., Mexico; GIGLIO-TOS, p. 12, Boll. Mus. Torino, viii, No. 158.
- Parydra nigritarsis*, Styrian Alps, STROBL, p. 280, Wien. ent. Zeit. xii, n. sp.
- Pelina mikii*, Lower Austria, STROBL, p. 280, Wien. ent. Zeit. xii, n. sp.
- † *Pelomyia*, n. g., *Ephydriidæ*, for *P. occidentalis*, n. sp., California; WILLISTON, p. 258, North Amer. Fauna, vii.
- Phytomyza crassiseta*, n. var. *flavofemorata*; STROBL, p. 306, Wien. ent. Zeit. xii.
- P. simillima*, p. 306, *anomala*, p. 307, Styria, *æneonitens*, Austria, p. 308, STROBL, Wien. ent. Zeit. xii, n. spp.
- Piophila casei*: habits, &c.; MURTFELDT (660), and Rep. ent. Soc. Ontario, xxiv, pp. 98-102.

- Platystoma mexicanum*, Mexico, GIGLIO-TOS, p. 12, Boll. Mus. Torino, viii, No. 153, n. sp.
- Polymorphomyia*, n. g., *Trypetidae*, for *P. basilica*, n. sp., San Domingo, p. 165, pl. vii, fig. 1; SNOW, Kansas quart. ii.
- Pseudopomyza*, n. g., for *P. nitidissima*, n. sp., Lower Austria; STROBL, p. 284, Wien. ent. Zeit. xii.
- Rhagoletis pomonella*, Walsh, noticed, p. 164, pl. vi, fig. 3; SNOW, Kansas quart. ii.
- R. zephyria*, California, SNOW, pl. vi, fig. 1, Kansas quart. ii, n. sp.
- Rhinotora diversa*, Mexico, GIGLIO-TOS, p. 13, Boll. Mus. Torino, viii, No. 158, n. sp.
- Sapromyza*: revision of the American; ARRIBALZAGA, An. Soc. Argent. xxxv, pp. 253-301.
- S. thomsonii* = (*connexa*, Thoms.), S. America, ARRIBALZAGA, p. 291, An. Soc. Argent. xxxv; *S. stata*, *plagosa*, *sonax*, *vinnula*, *urina*, *innuba*, Mexico, GIGLIO-TOS, p. 9, Boll. Mus. Torino, viii, No. 158: n. spp.
- Scatophaga reses*, p. 7, *cerosa*, p. 8, Mexico, GIGLIO-TOS, Boll. Mus. Torino, viii, No. 158, n. spp.
- Sepedon pramiosus*, Mexico, GIGLIO-TOS, p. 9, Boll. Mus. Torino, viii, No. 158, n. sp.
- Sepsis biflexuosa*, Hungary, *minima*, Styria, STROBL, p. 225, Wien. ent. Zeit. xii, n. spp.
- Siphonella multicingulata*, Austrian coast, p. 130, *novakii*, Lesiva, p. 131, STROBL, Wien. ent. Zeit. xii; *S. diplotoxoides*, p. 250, *sordidissima*, p. 252, Austria, STROBL, t. c.: n. spp.
- Straussia longipennis*, variation, SNOW, p. 159, Kansas quart. ii, n. sp.
- Tanypeza mexicana*, Mexico, GIGLIO-TOS, p. 14, Boll. Mus. Torino, viii, No. 158, n. sp.
- Tauromyia*, n. g., *Helomyzinae*, for *T. pachyneura*, n. sp., Mexico; GIGLIO-TOS, p. 8, Boll. Mus. Torino, viii, No. 158, n. sp.
- Tephritis dilacerata*: metamorphoses; LAMPA, Ent. Tidskr. 1893, p. 241.
- T. affinis*, pl. vii, fig. 12, p. 172, *picturata*, p. 173, *obscuripennis*, p. 174, N. America, SNOW, Kansas quart. ii, n. spp.
- Trypeta bigeloviae*: note on; COCKERELL, p. 112, Canad. Ent. xxv.
- T. occidentalis*, California, SNOW, p. 163, pl. vii, fig. 11, Kansas quart. ii, n. sp.
- Tylemyia*, n. n. to replace *Omalocephala*, Macq.; GIGLIO-TOS, p. 14, Boll. Mus. Torino, viii, No. 158.
- Xenochaeta*, n. g., *Trypetidae*, for *X. dichromata*, n. sp., N. America; SNOW, p. 166, Kansas quart. ii.

PUPIPARA.

- Ornithoica podicipis*, E. Africa, RÖDER, p. 206, Jahrb. Hamburg Anst. x, n. sp.
- Melophagus ovinus*: anatomy and development of larva; PRATT, Arch. Naturg. lix, 1, pp. 151-200, pl. v.

APHANIPTERA.

[Cf. WAGNER (1019).]

Pulicidæ : larvæ found on animals ; NEUMANN, Bull. Soc. Toulouse, xxvi, p. v, xxx, p. 19.

Hystrihopsylla talpæ : synonymical note ; SAUNDERS, Ent. Mag. xxix, p. 72.

Pulex longispinus, W. Turkestan, WAGNER, p. 356, pl. vi, fig. 1, Horæ Soc. ent. Ross. xxvii, n. sp.

Typhlopsylla : subdivisions distinguished ; WAGNER, p. 350, Horæ Soc. ent. Ross. xxvii.

T. (Ctenopsylla) pectiniceps, Transbaikal, p. 347, *T. bidentatiformis*, Crimea, p. 352, WAGNER, Horæ Soc. ent. Ross. xxvii, n. spp.

(E.) *RHYNCHOTA.*

HEMIPTERA-HETEROPTERA.

[*Cf.* BERGROTH (50-55, 57-60), BRANCSIK (102), DAHL (211), DISTANT (228, 230, 233-236, 390), FOKKER (329), HORVÁTH (471, 472, 473), HUEBER (476), JAKOWLEFF (490, 491), KARSCH (506), LETHIERRY (582), MARTIN (616), MONTANDON (643-647), NOUALHIER (675), PUTON (737), REUTER (772, 774-778), RILEY & HOWARD (794), SAUNDERS (836), SKUSE (905), STOKES (942), UHLER (789, 997, 998), VERHOEFF (1004), WALKER (1022).]

Structure of abdominal segments and of ovipositor, dividing the order into three divisions, *Hydrorhynchota*, *Gymnocerata*, *Cicadina*; VERHOEFF, Ent. Nachr. xix, pp. 369, &c.

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- Acanthosoma flammatum*, Mexico, DISTANT, p. 458, Biol. Cent.-Amer. Rhynchota, n. sp.
- Adelolcus*, n. g., near *Scribonia*, p. 116, for *A. solitarius*, n. sp., Gaboon, p. 117; BERGROTH, Ann. Nat. Hist. (6) xii.
- Adria sobrina*, Cape Verd Is., BERGROTH, p. 122, J. Sci. Lisb. 1893, n. sp.
- Amnestus forreri*, *signoreti*, p. 452, *championi*, *dallasi*, *uhleri*, *bergrothi*, p. 453, *stali*, p. 454, Central America, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- Anasida*, n. g. (*Asopidæ*, for *A. tenebrio*, n. sp.), West Africa; KARSCH, p. 481, Berlin. ent. Zeitschr. xxxvii.
- Anolcus*, n. g., near *Dalpada*, p. 113, for *A. campestris*, n. sp., Mozambique, p. 114; BERGROTH, Ann. Nat. Hist. (6) xii.
- Aspongopus distanti*, n. n. for *affinis*, Dist.; LETHIERRY & SEVERIN, Cat. p. 237.
- A. laboriosus*, Angola, BERGROTH, p. 125, J. Sci. Lisb. 1893, n. sp.
- Atizies*, n. g. near *Berynthus*, for *A. suffultus*, n. sp., Mexico, pl. xxxix, fig. 20; DISTANT, p. 456, Biol. Centr.-Amer. Rhynchota.
- Bathycalia pralongirostris*, Seychelles, BERGROTH, p. 200, Rev. Ent. franc. xii, n. sp.
- Cuntao africanus*, Congo, HORVÁTH, p. 256, Termes. Fuzetek, xv, n. sp.
- Capivaccius*, n. g., near *Tibraca*, p. 456, for *C. bufæ*, n. sp., Panama, p. 457, pl. xxxix, fig. 21; DISTANT, Biol. Centr.-Amer. Rhynchota.

- Carpocoris alluaudi*, Canary Is., NOUALHIER, Ann. Soc. ent. France, 1893, p. 7, n. sp.
- Caura modesta*, Centr. Africa, HORVÁTH, p. 256, Termes. Fuzetek, xv, n. sp.
- Chlanocoris arctatus*, Panama, DISTANT, p. 454, Biol. Centr.-Amer. Rhynchota, n. sp.
- Chrysocoris dissimilis*, Malay Arch., DISTANT, Entomologist, Supp., p. 97, 1893, n. sp.
- Coctoteris exiguus*, New Guinea, &c., DISTANT, p. 390, Ann. Nat. Hist. (6) xi, n. sp.
- Cænomorpha schioedtei, segregata*, Gaboon, BERGROTH, p. 115, Ann. Nat. Hist. (6) xii, n. spp.
- Coptosoma saundersi*, n. n. for *inclusa*, Walk.; *walkeri*, n. n. for *transversa*, Walk.; LETHIERRY & SEVERIN, Cat., p. 9. *C. elegans*, Stål, note on; MONTANDON, p. 569, Ann. Soc. ent. Belgique, xxxvii.
- C. uniforme*, p. 225, *gravidum*, p. 226, Java, *denticeps*, E. India, p. 227, *hirsutum*, Gaboon, *subsimile*, Africa, p. 229, *falloui*, p. 231, Gaboon, *subcarinatum*, Zanzibar, p. 232, *humile*, Loango, p. 234, *læviusculum*, Madagascar, p. 235, W. Bengal, p. 237, MONTANDON, Rev. Ent. franc. xii; *C. caliginosum*, Celebes, p. 562, *distanti*, N. India, p. 564, *varium*, Burma, p. 565, *coctectum*, India, p. 567, MONTANDON, Ann. Soc. ent. Belgique, xxxvii; *C. pilosulum*, p. 309, *uothum*, p. 310, *catagraphum*, p. 311, Tropical Africa, MONTANDON, Rev. Ent. franc. xi; *C. modiglianii*, Engano, MONTANDON, p. 296, Ann. Mus. Genov. xxxiii : n. spp.
- Corimelana eatensa*, larva described; TOWNSEND, p. 548, Psyche, vi.
- C. albipennis*, note on; OSBORN, Ent. News Philad. 1893, p. 91.
- Cosmopepla*: characters of the species; MONTANDON, p. 46, P. U. S. Mus. xvi.
- C. cæruleata*, Central and S. America, p. 47, *uhleri*, California, p. 48, MONTANDON, P. U. S. Mus. xvi, n. spp.
- Crato*, n. g., near *Hymenareys*, for *C. urbicus*, n. sp., Guatemala, pl. xxxix, fig. 22; DISTANT, Biol. Centr.-Amer. Rhynchota.
- Cryptacrus princeps*, Niam-Niam, HORVÁTH, p. 256, Termes. Fuzetek, xv, n. sp.
- Dalpada varia*, Dall., = (*apicifera*, Wlk.), *clavata*, Fab., = (*bulbifera* and *consobrina*, Wlk.); DISTANT, Ann. Nat. Hist. (6) xi, pp. 393 & 394.
- D. mirabilis*, India, p. 389, *insularis*, Malay Arch., p. 390, DISTANT, Ann. Nat. Hist. (6) xi, n. spp.
- Dendrocoris pini*, N. America, MONTANDON, p. 51, P. U. S. Mus. xvi, n. sp.
- Dinidor vicarius*, Centr. Africa, HORVÁTH, p. 259, Termes. Fuzetek, xv, n. sp.
- Diploxyx (Paracoponia) holubi*, Centr. Africa, HORVÁTH, p. 257, Termes. Fuzetek, xv, n. sp.
- Edessa serrulata*, n. n. for *serrata*, H.-Sch.; LETHIERRY & SEVERIN, Cat. p. 194.
- E. obnixa*, Mexico, DISTANT, p. 457, Biol. Centr.-Amer. Rhynchota, n. sp.

- Embolosterna taurus*, var. noticed; DISTANT, p. 430, Ann. Nat. Hist. (6) xi.
- Erihsina fullo*, = (*Dalpada japonica*, Wlk.); DISTANT, p. 394, Ann. Nat. Hist. (6) xi.
- Eurygaster fokkeri*, Tyrol, PUTON, p. 318, Rev. Ent. franc. xi, n. sp.
- Euschistus integellus*, Panama, DISTANT, p. 456, Biol. Centr.-Amer. Rhynchota, n. sp.
- Eysarcoris intergressus*, Utah, UHLER, p. 368, P. ent. Soc. Washington, ii, n. sp.
- Garceus*, n. g., *Cyclogasterina*, p. 434, for *G. fidelis*, n. sp., Queensland, p. 435; DISTANT, Ann. Nat. Hist. (6) xi.
- Geomorpha*, n. g., near *Tyoma*, for *G. tuberculosa*, n. sp., Angola; BERGROTH, J. Sci. Lisb. 1893, p. 124.
- Halyomorpha picus*, = (*Dalpada brevis, remota, proxima*, Wlk.), p. 394, *D. collocata*, queried as var., p. 393; DISTANT, Ann. Nat. Hist. (6) xi.
- Halys cambouei*, redescribed and referred to *Dalpada*; BERGROTH, p. 112, Ann. Nat. Hist. (6) xii.
- H. neelgiriensis*, India, DISTANT, p. 391, Ann. Nat. Hist. (6) xi, n. sp.
- Handlirschiella emarginata*, ♀ described; MONTANDON, p. 224, Rev. Ent. franc. xii.
- Leptolobus eburneatus*, Cameroons, KARSCH, p. 482, Berlin. ent. Zeitschr. xxxvii, n. sp.
- Lynamorpha picta*, Batchian, DISTANT, p. 430, Ann. Nat. Hist. (6) xi, n. sp.
- Macropelta*, n. g., for *Memmia cowani*, Dist.; BERGROTH, p. 119, Ann. Nat. Hist. (6) xii.
- Mattiphus oblongus*, Dall., = *Pycanum pallipes*, Wlk.; DISTANT, p. 434, Ann. Nat. Hist. (6) xi.
- Mecosoma spinosum*, E. Africa, HORVÁTH, p. 258, Termes. Fuzetek, xv, n. sp.
- Megarrhaphis* and *Macrorrhaphis*, united; BERGROTH, p. 124, J. Sci. Lisb. 1893.
- Megymenum montrouzieri*, n. n. for *affine*, Montr.; LETHIERRY & SEVERIN, Cat. p. 239.
- Melanodermus castaneus*, Nicaragua, DISTANT, p. 455, Biol. Centr.-Amer. Rhynchota, n. sp.
- Memmia excurrens*, Gaboon, BERGROTH, p. 117, Ann. Nat. Hist. (6) xii, n. sp.
- Menida distanti*, Centr. Africa, HORVÁTH, p. 258, Termes. Fuzetek, xv, n. sp.
- Mormidea guerini*, n. n. for *geographica*, Guér.; *walkeri*, n. n. for *basalis*, Walk.; LETHIERRY & SEVERIN, Cat. pp. 123 & 124.
- Nealeria*, n. n. for *Aleria*, Stål; BERGROTH, p. 119, Ann. Nat. Hist. (6) xii.
- Nevisanus*, n. g., near *Ctenomorpha*, p. 391, for *N. orientalis*, p. 392, *nagaensis*, p. 393, n. spp., E. India, and including *Dalpada tecta*, Wlk.; DISTANT, Ann. Nat. Hist. (6) xi.
- Nezara stictica*, n. var. *nebulosa*; DISTANT, p. 83, Tr. ent. Soc. 1893.

- ¹*Niamia*, n. g., near *Plataspis*, for *N. angulosa*, n. sp., Trop. Africa, HORVÁTH, p. 254, Termes. Fuzetek, xv.; note on the genus, MONTANDON, p. 222, Rev. Ent. franc. xii.
- Niphe ethiopica*, W. Africa, BERGROTH, p. 61, Ent. Mag. xxix, n. sp.
- ¹*Origanus*, n. g., near *Mattiphus*, p. 432, for *O. humerosus*, n. sp., India, p. 433; DISTANT, Ann. Nat. Hist. (6) xi.
- ¹*Paracoponia*, v. subg. of *Diploxys*, q. v.; HORVÁTH, p. 257, Termes. Fuzetek, xv.
- Pentatomà nossibiana*, Madagascar, BRANCSIK, p. 248, Jahresh. Ver. Trencsen, xv, n. sp.
- Peribalus politulus*, Centr. America, DISTANT, p. 457, Biol. Centr.-Amer. Rhynchota, n. sp.
- Peromatus bolivianus*, Bolivia, BERGROTH, p. 62, Ent. Mag. xxix, n. sp.
- Philia senator*, F. = (*Callidea aureocincta*, subapicalis, curtula, Wlk.); DISTANT, Entomologist, 1893, Supp., p. 97.
- Piezosternum firmatum*, *cribratum*, *ingenuum*, Wlk., referred to *Pygoplatys*; DISTANT, p. 432, Ann. Nat. Hist. (6) xi.
- Plataspis punctata* = (*gambeyi*, Mont.); MONTANDON, p. 223, Rev. Ent. franc. xii.
- P. pulchella*, Gaboon, MONTANDON, p. 223, Rev. Ent. franc. xii, n. sp.
- Podisus schaefferi*, n. n. for *pallipes*, H.-Sch.; LETHIERRY & SEVERIN, Cat. p. 219.
- P. atitlanensis*, Guatemala, DISTANT, p. 454, Biol. Centr.-Amer. Rhynchota, n. sp.
- Podops horvathi*, Tyrol, FOKKER, p. 16, pl. i, figg. 1-3, Tijdschr. Ent. xxxvi; referred to *Scotinophara* and renamed *subalpina*, BERGROTH, p. 153, Rev. d'Ent. xii, n. sp.
- ¹*Polytodes*, n. g., p. 254, near *Polytes*, for *P. ochraceus*, n. sp., Central Africa, p. 255; HORVÁTH, Termes. Fuzetek, xv.
- Ponsila insolita*, Philippines, MONTANDON, p. 558, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Pycanum jaspideum*, H.-S., referred to *Mattiphus*, p. 432, and *P. stabile* to *Carpona*, *P. pretiosum*, Stål, = (*rubidum*, Wlk.), p. 434, DISTANT, Ann. Nat. Hist. (6) xi.
- P. ochraceum*, India, DISTANT, p. 433, Ann. Nat. Hist. (6) xi, n. sp.
- Pygoplatys tauriformis*, Tenasserim, *lunatus*, Borneo, DISTANT, p. 431, Ann. Nat. Hist. (6) xi, n. spp.
- Scotinophara calligera*, Borneo, BERGROTH, p. 153, Rev. Ent. franc. xii, n. sp.
- ¹*Spathocrates*, n. g., *Plataspidina*, p. 294, for *S. atroæneus*, n. sp., Engano, p. 295; MONTANDON, Ann. Mus. Genov. xxxiii.
- Sternodontus binodulus*, n. n. for *similis*, Jak. nec Stål; JAKOWLEFF, p. 286, Horw. Soc. ent. Ross. xxvii.
- Stollia crucifera*, Centr. Africa, HORVÁTH, p. 257, Termes. Fuzetek, xv, n. sp.
- ¹*Storthogaster*, n. g., *Phyllocephalide*, p. 483, for *S. hieroglyphicus*, n. sp., W. Africa, p. 484, cut; KARSCHE, Berlin. ent. Zeitschr. xxxvii.

- Tesseratoma forticornis*, Wlk., referred to *Pygoplatus*; DISTANT, p. 432, Ann. Nat. Hist. (6) xi.
- T. absimilis*, E. Africa, DISTANT, p. 431, Ann. Nat. Hist. (6) xi, n. sp.
- Tetrarthria variegata*, varr. = (*lineata*, *lateralis*, Wlk.), DISTANT, Entomologist, Supp., 1893, p. 97, n. sp.
- Tiarocoris luminatus*, ♀ described; MONTANDON, p. 560, Ann. Soc. ent. Belgique, xxxvii.
- T. contestatus*, Burma, MONTANDON, p. 561, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Zangis montrouzieri*, n. n. for *sulcata*, Montr.; LETHIERRY & SEVERIN, Cat., p. 170.
- *Zaplutus*, n. g., for *Atelocera madagascariensis*, Fallou; BERGROTH, p. 120, Ann. Nat. Hist. (6) xii.

COREIDÆ.

- Alydus conspersus*, N. America, MONTANDON, p. 49, P. U. S. Mus. xvi, n. sp. ?
- Anoplocnemis westwoodi*, n. n. for *Myctis annulicornis*, Westw. nec Germar; DISTANT, p. 122, Ann. Nat. Hist. (6) xii.
- A. montandoni*, E. Africa, DISTANT, p. 122, Ann. Nat. Hist. (6) xii, n. sp.
- Bactrodosoma elongatum*, Panama, DISTANT, p. 459, pl. xxxix, fig. 27, Biol. Centr.-Amer. Rhynchota, n. sp.
- Corizus validus*, Utah, UHLER, p. 370, P. ent. Soc. Washington, ii, n. sp.
- Curupira villosa*, Panama, DISTANT, p. 460, pl. xxxix, fig. 24, Biol. Centr.-Amer. Rhynchota, n. sp.
- Cydamus inauratus*, pl. xxxiii, fig. 24, *deauratus*, fig. 25, Panama, DISTANT, p. 374, Biol. Centr.-Amer. Rhynchota, n. spp.
- Dalader parvulus*, Burma, DISTANT, p. 122, Ann. Nat. Hist. (6) xii, n. sp.
- ↳ *Darmistilus*, n. g., near *Stachyocnemis*, p. 706, for *D. maculatus*, n. sp., St. Vincent, p. 707; UHLER, P. Z. S. 1893.
- Elasmogaster unicolor*, E. Africa, DISTANT, p. 123, Ann. Nat. Hist. (6) xii, p. 123, n. sp.
- ↳ *Galeottus*, n. g., near *Trachelium*, for *G. formicarius*, n. sp., Centr. America, pl. xxxix, fig. 23; DISTANT, p. 459, Biol. Centr.-Amer. Rhynchota.
- Gonccerus juniperi*: varietal note; PUTON, p. 319, Rev. Ent. franc. xi.
- Harmostes corazonus*, *montivagus*, Ecuador, DISTANT, p. 85, Tr. ent. Soc. London, 1893, n. spp.
- Homocerus discretus*, Angola, BERGROTH, p. 125, J. Sci. Lisb. 1893;
- H. fuscicornis*, Centr. Africa, HORVÁTH, p. 259, Termes. Fuzetek, xv;
- H. wealei*, S. Africa, DISTANT, p. 123, Ann. Nat. Hist. (6) xii : n. spp.
- Hypselonotus balteatus*, Centr. Africa, HORVÁTH, p. 260, Termes. Fuzetek, xv, n. sp.

- Margus tibialis*, Ecuador, DISTANT, p. 84, Tr. ent. Soc. London, 1893, n. sp.
- Mictis distincta*, Madagascar, BRANCSIK, p. 249, Jahresh. Ver. Trencsen, xv, n. sp.
- Neides caducus*, Centr. America, DISTANT, p. 460, Biol. Centr.-Amer. Rhynchota, n. sp.
- Ochrochira*: to this genus the following should be referred: *Mictis biplagiata*, Wlk., *Physomerus nigrorufus*, *Discogaster fuliginosa*, Uhler, *Prionolomia pallescens*, *aberrans*, *nigrovittata*, Dist.; DISTANT, Ann. Nat. Hist. (6) xii, p. 121.
- Odontorhopala* and *Parabrachytes*: distinctive characters; DISTANT, p. 53, Ann. Nat. Hist. (6) xi.
- O. bergrothi*, Madagascar; DISTANT, p. 54, Ann. Nat. Hist. (6) xi.
- Phthia cantharidina*, Bolivia, BERGROTH, Ent. Mag. xxix, p. 62, n. sp.
- Phyllomorpha laciniata*, stridulation; NAVARRO, Act. Soc. Espan. xxii, p. 122.
- Sephina culta*, Ecuador, DISTANT, p. 84, Tr. ent. Soc. London, 1893, n. sp.
- Scrinetha toricollis*, Seychelles, BERGROTH, p. 200, Rev. Ent. franc. xii, n. sp.
- Sphictyrus bugabensis*, pl. xxxiii, fig. 15, Panama, DISTANT, p. 371, Biol. Centr.-Amer. Rhynchota, n. sp.
- Trachelium tessellatus*, Panama, DISTANT, p. 373, pl. xxxiii, fig. 23, Biol. Cent.-Amer. Rhynchota, n. sp.
- Vilga dissimilis*, pl. xxxiii, fig. 21, *divaricata*, fig. 22, Panama, DISTANT, p. 369, Biol. Centr.-Amer. Rhynchota, n. spp.
- Xenogenus extensum*, Mexico, DISTANT, p. 461, pl. xxxix, fig. 26, Biol. Cent.-Amer. Rhynchota, n. sp.

BERYTIDÆ.

- Acanthophysa*, n. g., for *A. echinata*, n. sp., California; UHLER, p. 261, North Amer. Fauna, vii.
- Parajalysus brasiliensis*, S. America, DISTANT, p. 536, Ann. Soc. ent. Belgique, xxxvi, n. sp.
- Pronotacantha*, n. g., for *P. annulata*, n. sp., California; UHLER, p. 260, North Amer. Fauna, vii.
- Protacanthus*, n. g., p. 707, near *Metacanthus*, for *P. decorus*, n. sp., St Vincent, p. 708; UHLER, P. Zool. Soc. London, 1893.

LYGÆIDÆ.

- Acolhua*, n. g., near *Clerada*, for *A. championi*, n. sp., Guatemala, pl. xxxiv, fig. 24; DISTANT, p. 394, Biol. Centr.-Amer. Rhynchota.
- Acroleucus nigellus*, pl. xxxiv, fig. 3, p. 383, *sceleratus*, fig. 4, *rubefactus*, fig. 5, *delineatus*, fig. 6, Panama, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.

- Aphanus consimilis*, Turkestan, REUTER, p. 214, Rev. Ent. franc. xii ;
A. (Graptopeltus) dilutus, Addah, HORVÁTH, p. 261, Termes. Fuzetek,
 xy : n. spp.
- Arocatus subeneus*, Mozambique, MONTANDON, p. 404, Ann. Soc. ent.
 Belgique, xxxvii, n. sp.
- Bæosus* and *Dieuches* united ; BERGROTH, p. 202, Rev. Ent. franc. xii.
- ¹*Balboa*, n. g., near *Eremocoris*, for *B. variabilis*, n. sp., Central America,
 pl. xxxv, fig. 25 ; DISTANT, p. 408, Biol. Centr.-Amer. Rhynchota.
- ¹*Bathycles*, n. g., p. 402, near *Neocattarus*, for *B. maculatus*, n. sp.,
 Guatemala, p. 403, pl. xxxv, fig. 12 ; DISTANT, Biol. Centr.-Amer.
 Rhynchota.
- ¹*Bathydema*, n. g., near *Peritrechus*, p. 709, for *B. socius*, n. sp., St. Vin-
 cent, p. 710 ; UHLER, P. Zool. Soc. London, 1893.
- Belonochilus mexicanus*, Orizaba, DISTANT, p. 386, pl. xxxiv, fig. 10, Biol.
 Centr.-Amer. Rhynchota, n. sp.
- Blissus hirtus*, N. America, p. 405, *pulchellus*, Central and S. America,
 p. 406, MONTANDON, Ann. Soc. ent. Belgique, xxxvii, n. spp.
- ¹*Bubaces*, n. g., near *Gonatas*, for *B. castaneus*, n. sp., Mexico, p. 409,
 pl. xxxvi, fig. 2 ; DISTANT, Biol. Centr.-Amer. Rhynchota.
- ¹*Ceneus*, n. g., near *Neocattarus*, for *C. novitius*, n. sp., Nicaragua, pl. xxxv,
 fig. 16 ; DISTANT, Biol. Centr.-Amer. Rhynchota.
- ¹*Cutenes*, n. g., near *Hereus*, for *C. porrectus*, n. sp., Panama, pl. xxxv,
 fig. 4 ; DISTANT, p. 397, Biol. Centr.-Amer. Rhynchota.
- Cholula discoloria*, Panama, DISTANT, p. 400, pl. xxxv, fig. 7, Biol.
 Centr.-Amer. Rhynchota, n. sp.
- ¹*Cligenes*, n. g., *Rhyppurochromaria*, for *C. distinctus*, n. sp., Panama,
 pl. xxxv, fig. 18 ; DISTANT, p. 405, Biol. Centr.-Amer. Rhynchota.
- Cynus mexicanus*, pl. xxxiv, fig. 18, *guatemalensis*, fig. 19, Central
 America, DISTANT, p. 390, Biol. Centr.-Amer. Rhynchota, n. spp.
- ¹*Davila*, n. g., near *Ligyrocoris*, for *D. concavus*, pl. xxxv, fig. 1, p. 394,
consanguineus, fig. 2, *pallescens*, fig. 3, p. 395, n. spp., Central
 America ; DISTANT, Biol. Centr.-Amer. Rhynchota.
- ¹*Delochilocoris*, n. n. for *Dorachosa*, Dist., Heteropt. nec Dist., Homopt. ;
 BERGROTH, p. 154, Rev. Ent. franc. xii.
- Dieuches schmitzi*, Madeira, REUTER, p. 215, Rev. Ent. franc. xii,
 n. sp.
- ¹*Dorachosa*, n. g., near *Gonatas*, for *D. illuminatus*, n. sp., N. and Central
 America, pl. xxxvi, fig. 1 ; DISTANT, p. 409, Biol. Centr.-Amer.
 Rhynchota.
- Drymus confinis*, Algeria, REUTER, p. 216, Rev. Ent. franc. xii, n. sp.
- ¹*Enciscoa*, n. g., near *Ninyas*, for *E. inermis*, pl. xxxiv, fig. 15, *acuminatus*,
 fig. 16, *mucronatus*, fig. 17, n. spp., Panama ; DISTANT, p. 389, Biol.
 Centr.-Amer. Rhynchota.
- Epipolops*, = (*Enciscoa*, Dist.), *Ep. oculus-caneri*, = (*En. inermis*) ; BER-
 GROTH, p. ccxxv, Bull. Soc. ent. France, 1893.
- Eremocoris germanus*, Guatemala, DISTANT, p. 407, pl. xxxv, fig. 24, Biol.
 Centr.-Amer. Rhynchota, n. sp.

- Erlacla ? insititia*, Mexico, DISTANT, p. 401, pl. xxxv, fig. 8, Biol. Centr.-Amer. Rhynchota, n. sp.
- Esuris purpurata*, Guatemala, DISTANT, p. 410, pl. xxxvi, fig. 4, Biol. Centr.-Amer. Rhynchota, n. sp.
- Graptostethus ? dissidens*, W. Africa, MONTANDON, p. 402, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- ¹*Ischnocoridaea*, n. g., near *Ischnodemus*, p. 260, for *I. elegans*, n. sp., Ashanti, p. 261; HORVÁTH, Termes. Fuzetek, xv.
- Ischnocoris laticeps*, Tetnan, SAUNDERS, Ent. Mag. xxix, p. 100 ;
I. latusculus, Canary Is., NOUALHIER, p. 12, Ann. Soc. ent. France, 1893 : n. spp.
- Ischnodemus calabouensis*, pl. xxxiv, fig. 20, *umbratus*, fig. 21, Guatemala, DISTANT, p. 391, Biol. Centr.-Amer. Rhynchota, n. spp.
- Ischnorhynchus punctatus*, Panama, pl. xxxiv, fig. 11, p. 386, *thoracicus*, fig. 12, Guatemala, p. 387, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- Lygæosoma solida*, California, UHLER, p. 262, North Amer. Fauna, vii, n. sp.
- Lygæus pandurus*, = (*elegans*, W.), *furcatus*, = (*consentaneus*, Walk.), *festivus*, Thunb., = (*planitior*, Dist.) ; BERGROTH, p. cexxv, Bull. Soc. ent. France, 1893.
- L. (Ochrostomus) carinicornis*, Minas Geraes, BERGROTH, p. 154, Rev. Ent. franc. xii ; *L. consanguineus*, W. Africa, p. 401, *melanospiloides*, Cochin China, p. 402, MONTANDON, Ann. Soc. ent. Belgique, xxxvii ; *L. melanopleurus*, California, UHLER, p. 262, North Amer. Fauna, vii ; *L. albulus*, Guatemala, pl. xxxiv, fig. 2, p. 380, *calderensis*, p. 381, Panama, *teapensis*, Mexico, fig. 1, p. 382, DISTANT, Biol. Centr.-Amer. Rhynchota : n. spp.
- Lygæus kalmii*, specific characters ; MONTANDON, p. 399, Ann. Soc. ent. Belgique, xxxvii.
- Lethæus punctus*, Seychelles, BERGROTH, p. 203, Rev. Ent. franc. xii, n. sp.
- ¹*Mayana*, n. g., near *Imbrius*, p. 387, for *M. costata*, pl. xxxiv, fig. 13, *dirupta*, n. spp., Guatemala, p. 388 ; DISTANT, Biol. Centr.-Amer. Rhynchota.
- Neocattarus thoracicus*, Guatemala, pl. xxxv, fig. 13, *maculatus*, Mexico, fig. 14, p. 403, *N. ? irrorandus*, Guatemala, p. 404, fig. 15 ; DISTANT, Biol. Centr.-Amer. Rhynchota.
- ¹*Niccuesa*, n. g., near *Acroleucus*, for *N. speciosus*, n. sp., Panama, pl. xxxiv, fig. 7 ; DISTANT, p. 385, Biol. Centr.-Amer. Rhynchota.
- Ninus sechellensis*, Seychelles, BERGROTH, p. 201, Rev. Ent. franc. xii, n. sp.
- Ninyas solubilis*, *torvus*, pl. xxxiv, fig. 14, Panama, DISTANT, p. 388, Biol. Centr.-Amer. Rhynchota, n. spp.
- Nysius procerus*, Ecuador, DISTANT, p. 86, Tr. ent. Soc. London, 1893 ; *N. monticola*, pl. xxxiv, fig. 8, *ementitus*, fig. 9, Guatemala, p. 385, DISTANT, Biol. Centr.-Amer. Rhynchota : n. spp.
- Pachygrontha bimaculata*, Panama, pl. xxxiv, fig. 23, *compacta*, Guatemala, DISTANT, p. 393, Biol. Centr.-Amer. Rhynchota, n. spp.

- Pamera bergrothi*, Addah, HORVÁTH, p. 261, Termes. Fuzetek, xv ;
P. nitidula, California, UHLER, p. 262, North Amer. Fauna, vii :
 n. spp.
- Peliopelta tropicalis*, Mexico, DISTANT, p. 411, pl. xxxvi, fig. 5, Biol.
 Centr.-Amer. Rhynchota, n. sp.
- ↓ *Perigenes*, n. g., near *Ligyrocoris*, for *P. dispositus*, n. sp., Guatemala,
 pl. xxxiv, fig. 25 ; DISTANT, p. 396, Biol. Centr.-Amer. Rhynchota.
- ↓ *Petissius*, n. g., near *Trapezus*, for *P. assimilandus*, pl. xxxv, fig. 21,
P. ? diversus, fig. 22, n. spp., Guatemala, p. 407 ; DISTANT, Biol.
 Centr.-Amer. Rhynchota.
- Plinthisus saundersi*, Gibraltar, HORVÁTH, Ent. Mag. xxix, p. 100, n. sp.
Plociomera albomaculata, Guatemala, DISTANT, p. 400, pl. xxxv, fig. 6,
 Biol. Centr.-Amer. Rhynchota, n. sp.
- ↓ *Prostemmaidea*, n. g., near *Rhyparochromus*, p. 252, for *P. mimica*, n. sp.,
 Bombay, p. 253 ; REUTER, Ent. Mag. xxix.
- ↓ *Prytanes*, n. g., near *Carpilis*, for *P. globosus*, Brit. Honduras, pl. xxxv,
 fig. 9, p. 401, *ater*, Mexico, fig. 10, p. 402, n. spp. ; DISTANT, Biol.
 Centr.-Amer. Rhynchota.
- Pseudopamera forreri*, Mexico, DISTANT, p. 399, pl. xxxv, fig. 5, Biol.
 Centr.-Amer. Rhynchota, n. sp.
- Rhaptus collina*, Guatemala, DISTANT, p. 410, pl. xxxvi, fig. 3, Biol.
 Centr.-Amer. Rhynchota, n. sp.
- Salacia ? picturata*, pl. xxxv, fig. 19, *delineata*, fig. 20, *punctata*, fig. 23,
 Panama ; DISTANT, p. 406, Biol. Centr.-Amer. Rhynchota.
- Scolopostethus atlanticus*, p. 239, *diffidens*, p. 240, N. America, HORVÁTH,
 Rev. Ent. franc. xii, n. spp.
- ↓ *Scythinus*, n. g., *Rhyparochromaria*, for *S. splendens*, n. sp., Panama,
 pl. xxxv, fig. 17 ; DISTANT, p. 405, Biol. Centr.-Amer. Rhynchota.
- ↓ *Sisamnes*, n. g., near *Carpilis*, for *S. contractus*, n. sp., Guatemala, pl. xxxv,
 fig. 11 ; DISTANT, p. 402, Biol. Centr.-Amer. Rhynchota.
- ↓ *Sphærobium*, n. g., near *Hercæus*, p. 710, for *S. gracilis*, n. sp., St. Vincent,
 p. 711 ; UHLER, P. Zool. Soc. London, 1893.
- ↓ *Stilbocoris*, n. g., p. 201, near *Macrodena*, for *S. solivagus*, n. sp.,
 Seychelles, p. 2 : 2 ; BERGROTH, Rev. Ent. franc. xii.
- Stygnus truncatus*, Gibraltar, HORVÁTH, p. 101, Ent. Mag. xxix, n. sp.
- ↓ *Tomopelta*, n. g., p. 708, for *T. munda*, n. sp., St. Vincent, p. 709 ;
 UHLER, P. Zool. Soc. London, 1893.
- ↓ *Toonglasa*, n. g., near *Ischnodemus*, p. 391, for *T. forficuloides*, n. sp.,
 Mexico, pl. xxxiv, fig. 22, p. 392 ; DISTANT, Biol. Centr.-Amer.
 Rhynchota.
- Tropistethus canariensis*, Canary Is., NOUALHIER, p. 11, Ann. Soc. ent.
 France, 1893, n. sp.

PYRRHOCORIDÆ.

- ↓ *Phæax*, n. g., *Pyrrhocoridæ*, near *Arhapse*, for *P. formicarius*, pl. xxxvi,
 fig. 6, *balleatus*, fig. 7, n. spp., Panama ; DISTANT, p. 413, Biol. Centr.-
 Amer. Rhynchota.

Renodaus, n. g., *Pyrrhocoridae*, p. 461, for *R. ficarius*, n. sp., Guatemala, p. 462, pl. xxxix, fig. 25 ; DISTANT, Biol. Centr.-Amer. Rhynchota.

TINGITIDÆ.

- Gargaphia opacula*, California, UHLER, p. 263, North Amer. Fauna, vii n. sp.
Monanthia taberculata, California, UHLER, p. 264, North Amer. Fauna, vii n. sp.
Orthostira sordida, p. 301, *elinoidea*, p. 302, Irkutsk, JAKOWLEFF, Horæ Soc. ent. Ross. xxvii, n. spp.
Typonotus, n. g., near *Gargaphia*, for *T. planaris*, n. sp., St. Vincent ; UHLER, p. 716, P. Zool. Soc. London, 1893.

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- Aneurus flavomaculatus*, Ecuador, DISTANT, p. 92, Tr. ent. Soc. London, 1893, n. sp.
Aradus lauri, Tenerife, NOUALHIER, p. 13, Ann. Soc. ent. France, 1893 ;
A. marginatus, Utah, UHLER, p. 381, P. ent. Soc. Washington, ii : n. spp.
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- Gerris aegyptiaca*, Put., referred to *Limnogonus* ; BERGROTH, p. 210, Rev. Ent. franc. xii.
G. brevisrostris, Suez, BERGROTH, p. 210, Rev. Ent. franc. xii, n. sp.
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H. whiteleggei, *regalis*, distinctions, SKUSE, p. 44, Rec. Austral. Mus. ii.
H. inermis, Atlantic ocean, DAHL, Plankton-Exp. ii, G. A. A. p. 7 ; *H. alluaudi*, Indian ocean, BERGROTH, p. 204, Rev. Ent. franc. xii : n. spp.
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Limnobates strigosa, Sydney, SKUSE, p. 43, pl. xi, figg. 1 & 2, Rec. Austral. Mus. ii, n. sp.
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Mesovelina furcata : habits ; BUTLER, Ent. Mag. xxix, pp. 232-236.

- Microvelia marginata*, St. Vincent, UHLER, P. Zool. Soc. London, 1893, p. 719, n. sp.
² *Rheumatobates*, n. g., p. 193, for *R. rileyi*, n. sp., N. America, p. 190, cuts; RILEY & HOWARD, Insect Life, v.

REDUVIIDÆ.

- Coranus aethiops*, Irkutsk, JAKOWLEFF, p. 303, Horæ Soc. ent. Ross. xxvii, n. sp.
⁴ *Coranopsis*, n. g., near *Coranus*, for *C. vittata*, n. sp., Centr. Africa; HORVÁTH, p. 262, Termes. Fuzetek, xv.
Cosmolestes fulvus, Centr. Africa, HORVÁTH, p. 263, Termes. Fuzetek, xv, n. sp.
Edocla albipennis, Centr. Africa, HORVÁTH, p. 264, Termes. Fuzetek, xv, n. sp.
Emesa angulata, St. Vincent, UHLER, p. 717, P. Zool. Soc. London, 1893, n. sp.
⁴ *Emesopsis*, n. g., near *Ploiaria*, for *E. nubilus*, n. sp., St. Vincent; UHLER, p. 718, P. Zool. Soc. London, 1893.
Harpactor (Diphymus) dudæ, Gazelle River, HORVÁTH, p. 264, Termes. Fuzetek, xv; *H. bituberculatus*, Korea, p. 319, *subtilis*, China, p. 321, *rubromarginatus*, Korea, p. 322, *sibiricus*, Krasnojarsk, p. 323, JAKOWLEFF, Horæ Soc. ent. Ross. xxvii : n. spp.
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H. curculio, W. Africa, KARSCH, p. 485, Berlin. ent. Zeitschr. xxxvii, n. sp.
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Pnohirmus whymperi, description, DISTANT, p. 93, Tr. ent. Soc. London, 1893, n. sp.
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Stirogaster herzi, Persia, JAKOWLEFF, p. 323, Horæ Soc. ent. Ross. xxvii, n. sp.

- Thysanopus*, n. g., *Holoptilines*, p. 78, for *T. lynx*, n. sp., Congo, p. 79 ;
BERGROTH, Ann. Soc. ent. Belgique, xxxvii.
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Zelus filicauda, Ecuador, BERGROTH, p. 63, Ent. Mag. xxix, n. sp.

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A. salina, N.W. Australia, BERGROTH, p. 278, Ent. Mag. xxix ;
A. andensis, Ecuador, DISTANT, p. 93, Tr. ent. Soc. London, 1893 :
n. spp.
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n. sp.
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n. sp.
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n. sp.
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S. dispersa, explanata, Utah, UHLER, p. 383, P. ent. Soc. Washington,
ii ; *S. explanata*, California, UHLER, p. 265, North Amer. Fauna,
vii : n. spp.
Triphleps retamae, Tenerife, NOUALHIER, p. 14, Ann. Soc. ent. France,
1893, n. sp.

CAPSIDÆ.

- Ætorhinella*, n. g., *Cyllocoraria*, near *Macrolophus*, for *Æ. parviceps*,
n. sp., Canary Is. ; NOUALHIER, Ann. Soc. ent. France, 1893, p. 16.
Agalliaestes obliquus, p. 378, *uniformis, stigmusosus*, p. 379, *decolor*, p. 380,
Utah, UHLER, P. ent. Soc. Washington, ii, n. spp.
Annona labeculata, Guatemala, DISTANT, p. 446, pl. xxxix, fig. 3, Biol.
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n. sp.
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n. sp.
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p. 451, pl. xxxix, fig. 18 ; DISTANT, Biol. Centr.-Amer. Rhynchota.
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figg. 11 & 12, Biol. Centr.-Amer. Rhynchota ; *C. montanus*, Ecuador,
DISTANT, p. 89, Tr. ent. Soc. London, 1893 : n. spp.
Calocorisca tenebrosa, Mexico, pl. xxxviii, fig. 9, *chontalensis*, Nicaragua,
fig. 10, DISTANT, p. 439, Biol. Centr.-Amer. Rhynchota, n. spp.

- Campylomma albicans*, Irkutsk, SEMENOW, p. 308, Horæ Soc. ent. Ross. xxvii, n. sp.
- Campptobrochis schwarzii*, Utah, UHLER, p. 375, P. ent. Soc. Washington, ii, n. sp.
- Carmelus fasciatus*, pl. xxxviii, fig. 25, *sanguineus*, pl. xxxix, fig. 1, Panama, p. 444, *eminulus*, Mexico, p. 445, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- Cimallan minuens*, Guatemala, pl. xxxviii, fig. 11, *pertingens*, fig. 12, Panama, DISTANT, p. 439, Biol. Centr.-Amer. Rhynchota, n. spp.
- Collaria improvisa*, Seychelles, REUTER, p. 208, Rev. Ent. franc. xii, n. sp.
- Compsocerochoris præsignis*, Mexico, pl. xxxvii, fig. 4, p. 427, DISTANT, Biol. Centr.-Amer. Rhynchota, n. sp.
- Cylapus picatus*, p. 420, pl. xxxvi, fig. 15, *nubilus*, p. 421, Panama, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- ¹*Cylloceps*, n. g., near *Agalliastes*, p. 711, for *C. pellicia*, n. sp., St. Vincent, p. 712; UHLER, P. Zool. Soc. London, 1893.
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- Dionyza variegata*, Ecuador, DISTANT, p. 88, Tr. ent. Soc. London, 1893, n. sp.
- Eccritotarsus vultuosus*, pl. xxxviii, fig. 13, Mexico, p. 440, *porrectus*, fig. 15, *impavidus*, fig. 14, *perobscurus*, fig. 16, Mexico, *tenebrosus*, p. 441, *nocturnus*, Guatemala, *marginatus*, fig. 17, *procurrens*, fig. 18, Mexico, p. 442, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- ¹*Eioneus*, n. g., near *Miris*, for *E. bilineatus*, n. sp., Mexico, pl. xxxvi, fig. 9; DISTANT, p. 416, Biol. Centr.-Amer. Rhynchota.
- ¹*Ficinus*, n. g., near *Jornandes*, p. 449, for *F. sagittarius*, n. sp., Mexico, p. 450, pl. xxxix, fig. 17; DISTANT, Biol. Centr.-Amer. Rhynchota.
- Fundanius rubens*, St. Vincent, UHLER, p. 714, P. Zool. Soc. London, 1893, n. sp.
- Garganus splendidus*, Mexico, DISTANT, p. 429, pl. xxxvii, fig. 9, Biol. Centr.-Amer. Rhynchota, n. sp.
- Globiceps gracilis*, Irkutsk, JAKOWLEFF, p. 306, Horæ Soc. ent. Ross. xxvii, n. sp.
- Herdonius ? panamensis*, Bugaba, DISTANT, pl. xxxvi, fig. 13, p. 418, Biol. Centr.-Amer. Rhynchota, n. sp.
- Hoplomachus consors*, California, UHLER, p. 264, North Amer. Fauna, vii, n. sp.
- Horcias plausus*, Mexico, DISTANT, p. 438, pl. xxxviii, fig. 8, Biol. Centr.-Amer. Rhynchota, n. sp.
- ¹*Jacchinus*, n. g., near *Garganus*, for *J. tabascoensis*, n. sp., Mexico, pl. xxxvii, fig. 10; DISTANT, p. 430, Biol. Centr.-Amer. Rhynchota.
- ¹*Jobertus*, n. g., near *Cylapus*, for *J. chryselectrus*, n. sp., Mexico, pl. xxxvi, fig. 16; DISTANT, p. 421, Biol. Centr.-Amer. Rhynchota.
- Jornandes præustus*, Guatemala, p. 447, pl. xxxix, fig. 8, *punctatus*, fig. 9, *subalbicans*, fig. 10, *cruralis*, fig. 11, *dissimulans*, fig. 12, *vulgaris*,

- fig. 13, p. 448, *intermedius*, fig. 14, Mexico, *parvus*, *semirasus*, fig. 15, *lautus*, fig. 16, Guatemala, p. 449, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- Lopidea mexicana*, p. 426, pl. xxxvii, fig. 2, *bicolor*, fig. 3, p. 427, Mexico, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- Lyde translucida*, Ecuador, DISTANT, p. 90, Tr. ent. Soc. London, 1893, n. sp.
- Lygæoscytaria* : new division for the following :
- Lygæoscytus*, n. g., p. 151, for *L. cimicoides*, n. sp., Tasmania, p. 152 ; REUTER, Ent. Mag. xxix.
- Lygus mimicus*, Mexico, pl. xxxvi, fig. 14, *signoreti*, Venezuela, DISTANT, p. 419, Biol. Centr.-Amer. Rhynchota, n. spp.
- Lygus obtusus*, St. Vincent, UHLER, p. 713, P. Zool. Soc. London, 1893 ; *L. tactilis*, p. 432, pl. xxxvii, fig. 16, *panamensis*, fig. 17, Panama, *godmani*, *avidus*, fig. 18, p. 433, Mexico, *sparsus*, Guatemala, fig. 19, *pellitus*, fig. 20, *hospitus*, fig. 21, p. 434, *ordinatus*, fig. 22, *lanuginosus*, fig. 23, *cuneatus*, fig. 24, p. 435, *fortinensis*, p. 462, DISTANT, Biol. Centr.-Amer. Rhynchota ; *L. collinus*, *sublimatus*, p. 89, *excelsus*, p. 90, Ecuador, DISTANT, Tr. ent. Soc. London, 1893 : n. spp.
- Megacelum* ? *sanguinolentum*, Mexico, DISTANT, p. 431, pl. xxxvii, fig. 13, Biol. Centr.-Amer. Rhynchota, n. sp.
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- Minytus bicolor*, Guatemala, DISTANT, pl. xxxvi, fig. 10, p. 416, Biol. Centr.-Amer. Rhynchota, n. sp.
- Miris panamensis*, Chiriqui, DISTANT, p. 415, pl. xxxvi, fig. 8, Biol. Centr.-Amer. Rhynchota, n. sp.
- Monalocorisca tuberculata*, pl. xxxviii, fig. 19, p. 442, *laterata*, fig. 21, Panama, *lineata*, fig. 20, *emissitia*, fig. 22, *colorata*, fig. 23, Mexico, p. 443, *scutellata*, fig. 24, Panama, p. 444, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- Neoborus fasciatus*, pl. xxxviii, fig. 2, p. 436, *crassus*, fig. 3, Panama, *manifestus*, fig. 4, *funereus*, fig. 5, Guatemala, p. 437, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- Neocapsus cuneatus*, Mexico, DISTANT, p. 438, pl. xxxviii, fig. 6, Biol. Centr.-Amer. Rhynchota, n. sp.
- Neofurius pollutus*, pl. xxxix, fig. 4, *tabascoensis*, fig. 5, *marginatus*, fig. 6, Mexico, DISTANT, p. 446, Biol. Centr.-Amer. Rhynchota, n. spp.
- Neomiris præcelsus*, Ecuador, DISTANT, p. 87, Tr. ent. Soc. London, 1893, n. sp.
- Neoproba notata*, Panama, DISTANT, p. 432, pl. xxxvii, fig. 14, Biol. Centr.-Amer. Rhynchota, n. sp.
- Neosilia pulchra*, Mexico, pl. xxxix, fig. 7, *modesta*, Guatemala, DISTANT, p. 447, Biol. Centr.-Amer. Rhynchota, n. spp.
- Notostira longula*, Canary Is., NOUALHIER, p. 15, Ann. Soc. ent. France, 1893, n. sp.

- Orthotylus salicis*, Irkutsk, JAKOWLEFF, p. 307, Horæ Soc. ent. Ross. xxvii ; *O. punctatus*, Tenerife, NOUALHIER, p. 17, Ann. Soc. ent. France, 1893 : n. spp.
- Pandama aurea*, Guatemala, DISTANT, p. 432, pl. xxxvii, fig. 15, Biol. Centr.-Amer. Rhynchota, n. sp.
- Pantiliodes*, n. g., for *Phytocoris punctum*, Reuter ; NOUALHIER, p. 15, Ann. Soc. ent. France, 1893.
- Pappus insignis*, pl. xxxvii, fig. 7, *egens*, fig. 8, Panama, DISTANT, p. 429, Biol. Centr.-Amer. Rhynchota, n. spp.
- Paracalocoris bivittatus*, Mexico, DISTANT, p. 429, pl. xxxvii, fig. 6, Biol. Centr.-Amer. Rhynchota, n. sp.
- Paracarnus mexicanus*, Atoyac, DISTANT, p. 445, pl. xxxix, fig. 2, Biol. Centr.-Amer. Rhynchota, n. sp.
- Plagiognathus fasciatus*, Irkutsk, JAKOWLEFF, p. 309, Horæ Soc. ent. Ross. xxvii, n. sp.
- Pæas*, n. g., near *Neurocolpus*, for *P. reuteri*, n. sp., Panama ; DISTANT, p. 428, pl. xxxvii, fig. 5, Biol. Centr.-Amer. Rhynchota.
- Pæcilocapsus lineatus*, natural history ; SLINGERLAND (909).
- P. mollis*, pl. xxxvii, fig. 25, *scutellatus*, fig. 26, Mexico, DISTANT, p. 436, Biol. Centr.-Amer. Rhynchota, n. spp.
- Pæciloscytus obscurus*, St. Vincent, UHLER, p. 715, P. Zool. Soc. London, 1893, n. sp.
- Ranzovius*, n. g., *Clivinemaria*, for *R. crinitus*, n. sp., Mexico ; DISTANT, p. 423, pl. xxxvi, fig. 20.
- Resthenia trujilloi*, pl. xxxvi, fig. 21, p. 424, *schumanni*, fig. 22, *pannosa*, fig. 24, Mexico, *accincta*, fig. 23, Panama, p. 425, *teapensis*, fig. 25, *intercidenda*, pl. xxxvii, fig. 1, p. 426, Mexico, DISTANT, Biol. Centr.-Amer. Rhynchota, n. spp.
- Rhasis*, n. g., near *Pæcilocapsus*, for *R. amplificatus*, n. sp., Mexico ; DISTANT, pl. xxxviii, fig. 1, p. 436, Biol. Centr.-Amer. Rhynchota.
- Sthenarops malina*, Uhler, = (*Calocoris inustus*, Dist.) ; DISTANT, p. 431, Biol. Centr.-Amer. Rhynchota.
- Stiphrosoma croceipes*, Utah, UHLER, p. 373, P. ent. Soc. Washington, ii, n. sp.
- Sysinas affinis*, Mexico, DISTANT, p. 422, Biol. Centr.-Amer. Rhynchota, n. sp.
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- Xenetus* and *Eucerochoris* distinguished ; DISTANT, p. 417, Biol. Centr.-Amer. Rhynchota.
- Zoilus marginatus*, pl. xxxvi, fig. 18, Panama, *guerreroensis*, fig. 17, p. 422, *ater*, *fuliginous*, fig. 19, p. 423, Mexico, DISTANT, Biol. Centr.-Amer. Rhynchota, n. sp.
- Zosippus fedus*, pl. xxxvi, fig. 11, *gibbus*, fig. 12, Panama, DISTANT, p. 418, Biol. Centr.-Amer. Rhynchota, n. spp.

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- Anisops canariensis*, Canary Is., NOUALHIER, p. 18, Ann. Soc. ent. France, 1893, n. sp.
- Appasus quadrivittatus*, Madagascar, BERGROTH, p. 213, Rev. Ent. franc. xii, n. sp.
- Heleocoris nossibeanus*, Nossi Bé, BERGROTH, p. 212, Rev. Ent. franc. xii, n. sp.
- Macrocoris rhantoides*, Nossi Bé, *sikora*, p. 211, *distinctus*, p. 212, Madagascar, BERGROTH, Rev. Ent. franc. xii, n. spp.
- Naucoris hydroporoides*, Madagascar, BERGROTH, p. 210, Rev. Ent. franc. xii, n. sp.
- Nepa cinerea*, development of its respiratory apparatus; MARTIN, p. 57, Bull. Soc. Philom. Paris (8) v.
- Ranatra grandocula*, Seychelles, BERGROTH, p. 207, Rev. Ent. franc. xii, n. sp.
- Zaita fluminea*, structure of tracheæ; STOKES, Science, xxi, pp. 44-46, figg.

HEMIPTERA-HOMOPTERA.

- [Cf. BRANCSIK (102), BUCKTON (123), DISTANT (228, 229, 231, 232, 237), DUZEE (250), FRENCH (340), GODING (388, 389), KARSCH (511), RILEY & HOWARD (793, 796), also *Aphididæ*, p. 341, and *Coccidæ*, p. 342.]

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- Cicada bimaculata*, and allies, distinctive characters; KIRBY, p. 179, Wien. ent. Zeit. xii. *C. tredecim* and *septendecim*, in N. America in 1893; Insect Life, v, pp. 298-300.
- Melampsalta aprilina*, probably a good species; HUDSON, p. 163, Tr. N. Zealand Inst. xxv.
- M. denisoni*, Australia, DISTANT, p. 78, Ann. Soc. ent. Belgique, xxxvii, n. sp.
- Platypleura limbimacula*, p. 170, *dimidiata*, p. 172, Cameroons, KARSCH, Ent. Nachr. xix, n. spp.
- Pæcilopsaltria stormsi*, E. Africa, *severini*, W. Africa, DISTANT, p. 76, Ann. Soc. ent. Belgique, xxxvii; *P. brancsiki*, Nossi Bé, DISTANT, p. 52, Ann. Nat. Hist. (6) xi : n. spp.
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- Trismarcha fuliginosa*, n. n. for *ferruginosa*, Karsch; KARSCH, Ent. Nachr. xix, p. 173.

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- Amalopota fitohi*, New York, DUZEE, p. 280, *Canad. Ent.* xxv, n. sp.
Euchophora atomaria, Nossi Bé, BRANCSIK, p. 253, pl. xi, fig. 7A, *Jahresh.*
 Ver. Trencsen. xv, n. sp.
Flatoides biplagiatus, pl. x, fig. 5A, *conspersus*, fig. 4A, *handlirschi*, fig. 3,
 Nossi Bé, BRANCSIK, p. 254, *Jahresh.* Ver. Trencsen. xv, n. sp.
Hemidictya distanti, Nossi Bé, BRANCSIK, p. 253, pl. xi, fig. 1, *Jahresh.*
 Ver. Trencsen. xv, n. sp.
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P. natalensis, S. Africa, p. 446, *chinensis*, China, p. 448, DISTANT, *Tr. ent.*
Soc. London, 1893, n. spp.
[^]*Prosops*, n. g., *Cixiides*, p. 49, for *P. pedisequus*, n. sp., Victoria, p. 50;
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 n. spp.

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 Notes on Fitch's types of North American *Membracidae*; GODING, *Canad.*
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Acutalis occidentalis, California, *parva*, Arizona, p. 249, *binotata*,
 California, *illinoiensis*, Galesburg, p. 430, GODING, *Bull. Illinois*
Lab. iii; *A. trifurcata, apicalis*, St. Vincent, GODING, p. 53, *Canad.*
Ent. xxv: n. spp.
Æchmophora ferruginosa, californensis, N. America, GODING, p. 466,
Bull. Illinois Lab. iii, n. sp.
Amastris læta, Arizona, GODING, *Bull. Illinois Lab.* iii, pp. 441 & 481, n. sp.
Bolbonota (Tubercunota) bispinifera, St. Vincent, GODING, p. 55, *Canad.*
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Carynota strombergi, p. 443, *muskokensis*, p. 444, GODING, *Bull. Illinois*
Lab. iii, n. spp.
Centruchus liebecki, Philadelphia, GODING, p. 471, *Bull. Illinois Lab.* iii,
 n. sp.
Ceresa illinoiensis, p. 404, *turbida*, p. 406, N. America, GODING, *Bull.*
Illinois Lab. iii, n. spp.
Cyrtolobus gloveri, N. America, GODING, p. 434, *Bull. Illinois Lab.* iii,
 n. sp.
Entophyllum (Tropidocera) rileyi, St. Vincent, GODING, p. 56, *Canad.*
Ent. xxv, n. sp.
Entilia sinuata: habits; RICE, *Insect Life*, v, p. 243.
[^]*Evashmeadea*, n. g., near *Atymna*, p. 436, for *A. concinna, bajula, arizo-*
neensis, n. spp., N. America, p. 437; GODING, *Bull. Illinois Lab.* iii.

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Heteronotus lethierryi, n. n. for *trinodosus*, Leth. nec Butler; GODING, p. 453, Bull. Illinois Lab. iii.
Hoplophora gloveri, N. America, GODING, p. 457, Bull. Illinois Lab. iii, n. sp.
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- Tachardia gemmifera*, Jamaica ; COCKERELL, p. 181, Canad. Ent. xxv, n. sp.

(F.) *NEUROPTERA.*

TRICHOPTERA.

[Cf. KLAPÁLEK (531), LINDEN (594), LUCAS (602), MORTON (656, 657), RIS (801), WALLENGREN (1023).]

Metamorphoses of 36 species described and illustrated by KLAPÁLEK, Arch. Landesdf. Bohmen, viii, No. 6. [This is the memoir referred to below by KLAPÁLEK and the page thereof.]

Anatomy of larva, of mouth of imago; mode of nutrition, &c.; LUCAS, Arch. Naturg. lix, i, pp. 285-330, pls. x-xii.

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Adela aethiops, Feld., noticed as probably a *Neuropteron*; MEYRICK, p. 486, P. Linn. Soc. N. S. Wales (2) vii.

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Agapetus fuscipes, metamorphoses; KLAPÁLEK, p. 131.

† *Allotriogametis*, n. g., for *Æcetis furva*; WALLENGREN, p. 133, No. 10, Svenska Ak. Handl. xxiv.

Anabolia laevis, metamorphoses; KLAPÁLEK, pp. 12-16.

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Asynarchus adulterinus, Stockholm, = (*thedenii*, Wallengr., pars olim); WALLENGREN, p. 69, No. 10, Svenska Ak. Handl. xxiv, n. sp.

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Brachycentrus montanus, metamorphoses; KLAPÁLEK, p. 55.

† *Cheumatopsyche*, n. g., for *Hydropsyche lepida*; WALLENGREN, p. 142, No. 10, Svenska Ak. Handl. xxiv.

Crunæcia irrorata, metamorphoses; KLAPÁLEK, p. 71.

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† *Dophnaea*, n. subg. of *Beræa*, for *B. maurus*; WALLENGREN, p. 114, No. 10, Svenska Ak. Handl. xxiv.

Ecnomus tenellus, metamorphoses; KLAPÁLEK, p. 119.

- ¹*Ernodes*, n. subg. of *Bereca*, for *B. articularis*; WALLENGREN, p. 113, No. 10, Svenska Ak. Handl. xxiv.
- Glossosoma boltoni*, metamorphoses; KLAPÁLEK, p. 128.
- Goëra pilosa*, metamorphoses; KLAPÁLEK, p. 48.
- ¹*Hydatophylax*, n. g., for *Stenophylax infumatus*; WALLENGREN, p. 73, No. 10, Svenska Ak. Handl. xxiv.
- Hydroptila maclachlani*, metamorphoses, KLAPÁLEK, p. 135; note on, with fig. of male characters, MORTON, p. 78, pl. vi, Tr. ent. Soc. London, 1893.
- H. stellifera*, Italy, p. 75, *fortunata*, Canary Is., p. 76, *uncinata*, Europe, p. 77, MORTON, Tr. ent. Soc. London, 1893, n. spp.
- ¹*Hypnotranus*, n. g., for *Stenophylax picicornis*; WALLENGREN, p. 70, No. 10, Svenska Ak. Handl. xxiv (= *Hypochiona*, Thoms.; *id. l. c.* p. 167).
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- Leptocerus annulicornis*, p. 88, *bilineatus*, p. 92, metamorphoses; KLAPÁLEK.
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- M. distinguenda*, Lapland, WALLENGREN, p. 118, No. 10, Svenska Ak. Handl. xxiv, n. sp.
- Mystacides nigra*, metamorphoses; KLAPÁLEK, p. 95.
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- Notidobia ciliaris*, metamorphoses; KLAPÁLEK, p. 43.
- Cecetis ochracea*, p. 99, *furva*, p. 103, *lacustris*, p. 107, metamorphoses; KLAPÁLEK.
- Oligoptectrum maculatum*, metamorphoses; KLAPÁLEK, p. 59.
- Oxyethira costalis*, metamorphoses; KLAPÁLEK, p. 139.
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- Plectrocnemia conspersa*, metamorphoses; KLAPÁLEK, p. 116.
- ¹*Pleurograpta*, n. g., for *Cecetis notata*, *testacea*, and *tripunctata*; WALLENGREN, p. 134, No. 10, Svenska Ak. Handl. xxiv.
- ¹*Potamophylax*, n. subg. of *Stenophylax*, for *S. stellatus*, Curt. and others; WALLENGREN, p. 75, No. 10, Svenska Ak. Handl. xxiv.
- ¹*Rhadicoleptus*, n. g., for *Stenophylax alpestris*; WALLENGREN, p. 72, No. 10, Svenska Ak. Handl. xxiv.
- Rhyacophila septentrionis*, metamorphoses; KLAPÁLEK, p. 126.
- Sericostomatinae* of France; MARTIN, xxiii, pp. 35-37, 57-59, & 73.
- Sericostoma pedemontanum*, metamorphoses; KLAPÁLEK, p. 39.
- Stenophylax rotundipennis*, p. 16, *nigricornis*, p. 20, *stellatus*, p. 23, *luctuosus*, p. 25, metamorphoses; KLAPÁLEK.
- Tinodes rostocki*, metamorphoses; KLAPÁLEK, p. 122.

NEUROPTERA-PLANIPENNIA.

[Cf. GERSTAECKER (368), McLACHLAN (610, 611).]

List of the *Planipennia* of L'Indre, France, with remarks; MARTIN, Rev. Ent. franc. xii, pp. 142-147.

Panorpidæ.

↓ *Apterobittacus*, n. g., for *Bittacus apterus*; McLACHLAN, p. 317, Ent. Nachr. xix.

Harpobittacus: note on the genus and its constituents; McLACHLAN, Ent. Nachr. xix, p. 316.

Myrmeleontidæ.

Acanthaclisis felina, E. Africa, GERSTAECKER, p. 118, MT. Ver. Vorpomm. xxv, n. sp.

↓ *Cymothales*, n. g., near *Glenurus*, p. 127, for *C. mirabilis*, Cameroons, p. 128, *dulcis*, E. Africa, p. 130, n. spp., including also *Myr. eccentros*, Wlk.; GERSTAECKER, t. c.

Formicaleo cerdo, Bengal, p. 132, *irrigatus*, Brazil, p. 133, *ephemerinus*, Brazil, p. 134, *debilis*, Chiriqui, p. 136, *sylphis*, Gaboon, p. 137, GERSTAECKER, t. c., n. spp.

Glenurus (Dendroleon) pupillaris, Yokohama, p. 120, *G. impluviatus*, Bolivia, p. 122, *psilocerus*, Venezuela, p. 124, *luniger*, Chiriqui, p. 125, GERSTAECKER, t. c., n. spp.

Myrmeleon protensus, p. 138, *tendinosus*, p. 139, Brazil, *mysteriosus*, p. 141, *punctatissimus*, p. 142, E. Africa, *lagopus*, Mesopotamia, p. 143, *marginicollis*, p. 145, *inanis*, p. 146, Bengal, *perspicuus*, Chiriqui, p. 147, GERSTAECKER, t. c., n. spp.

Palpares gigas, contrarius, males noticed; GERSTAECKER, pp. 110 & 111, t. c.

P. prætor, Gaboon, p. 111, *solidus*, Mesopotamia, p. 113, *festivus*, Delagoa Bay, p. 115, *digitatus*, Guinea, p. 117, GERSTAECKER, t. c., n. spp.

Ascalaphidæ.

Allocormodes intractabilis, ♂ described, GERSTAECKER, p. 100, MT. Ver. Vorpomm. xxv, n. sp.

Colobopterus scutellaris, Peru, *consors*, Chiriqui, GERSTAECKER, p. 109, t. c., n. spp.

Cordulecerus inquinatus, ♂ described, GERSTAECKER, p. 107, t. c., n. sp.

↓ *Episperches*, n. g., near *Haploglenius*, p. 93, for *E. tenuiatus, irideus*, n. spp., Amazons, p. 99; GERSTAECKER, t. c.

Haploglenius angulatus, p. 93, *dentiger*, p. 94, Chiriqui, *vacuus*, Honduras, p. 95, *hilaris*, Chiriqui, p. 96, *fervidus*, Brit. Honduras, p. 97, GERSTAECKER, t. c., n. spp.

Helicomitus clenocerus, Assam, GERSTAECKER, p. 101, t. c., n. sp.

Orphne umbrina, Bolivia, GERSTAECKER, p. 107, t. c., n. sp.

Suphalasca princeps, p. 103, *lugubris*, p. 104, *placida*, Java, *rutila*, Bagamoyo, p. 105, GERSTAECKER, *t. c.*, n. spp.

Mantispidæ and *Nemopteridæ*.

Mantispa morosa, Palawan, p. 149, *strenua*, p. 150, *annulicornis*, p. 151, *amabilis*, p. 152, Java, GERSTAECKER, MT. Ver. Vorpomm. xxv, n. spp.

Nemoptera (Croce) ephemera, Mesopotamia, GERSTAECKER, *t. c.*, n. sp.

Hemerobiidæ and *Osmylidæ*.

Micromus morosus, p. 170, *pusillus*, p. 171, Java, GERSTAECKER, MT. Ver. Vorpomm. xxv, n. spp.

Osmylus pulverulentus, Brazil, p. 166, *diaphanus*, p. 168, *modestus*, p. 169, Java, GERSTAECKER, *t. c.*, n. spp.

Psychopsis zebra, note on ; GERSTAECKER, p. 171, *t. c.*

Chrysopidæ.

Ancylopteryx polygramma, p. 161, *sigillaris*, p. 162, Java, GERSTAECKER, MT. Ver. Vorpomm. xxv, n. spp.

Apochrysa phantoma, New Guinea, *evanida*, Java, p. 154, *cræsus*, Chiriqui, p. 155, GERSTAECKER, *t. c.*, n. spp.

Chrysopa lineolata, amplified description, p. 232, *guadarramensis*, a valid species, p. 233 ; McLACHLAN, Tr. ent. Soc. London, 1893. *C. flava*, *vittata*, *guadarramensis*, amended characters ; McLACHLAN, Ent. Mag. xxix, p. 109.

C. walkeri, Europe, p. 229, *intima*, Siberia, Japan, p. 230, *nana*, Asia Minor, &c., Tr. ent. Soc. London, 1893 ; *C. pretiosa*, Taurus, p. 158, *catenulata*, Ceylon, *hexasticha*, p. 159, *lunigera*, p. 160, Java, GERSTAECKER, MT. Ver. Vorpomm. xxv : n. spp.

Leucochrysa meteorica, Bolivia, p. 156, *macrostigma*, Gaboon, p. 157, GERSTAECKER, *t. c.*, n. spp.

Nothochrysa polychroa, p. 163, *fervida*, p. 164, Java, *robusta*, p. 165, *olivacea*, p. 166, Yokohama, GERSTAECKER, *t. c.*, n. spp.

PSEUDO-NEUROPTERA.

MALLOPHAGA.

Mode of collecting and preserving, habits, &c. ; BEZZI (67).

TERMITIDÆ and EMBIIDÆ.

[*Cf.* EMERY (267), GRASSI & SANDIAS (393), STOKES (943), WASMANN (1031).]

GRASSI & SANDIAS give an account of the communities of *Calotermes flavicollis* and *Termes lucifugus*, explaining their development, duration of life, division of labour, and the modes of feeding ; also treating of various points in anatomy (393).

Summary of Grassi and Sandias's memoir ; EMERY, Biol. Centralbl. xiii, pp. 758-766.

Termes redemani, Ceylon, WASMANN, Wien. ent. Zeit. xii, p. 239, n. sp.

Eutermes incola, Ceylon, *capricornis*, p. 242, *sikora*, p. 244, Madagascar, WASMANN, Wien. ent. Zeit. xii, n. spp.

Termes flavipes, sense-organs ; STOKES, p. 273, figg., Science, xxii.

Termopsis angusticollis, note on ; TOWNSEND, p. 139, Zoe, iv.

Embia solieri ?, habits, sexual distinctions, mode of spinning, anatomy of tracheal system, nervous system, &c. ; GRASSI & SANDIAS (393).

PERLIDÆ and EPHEMERIDÆ.

Teniopteryx : micropterous forms in Scotland ; MORTON, Ent. Mag. xxix, p. 249.

Prosopistoma deguernei, Senegal, VAYSSIÈRE, Ann. Sci. Nat. xv, p. 338, n. sp.

ODONATA.

[Cf. CALVERT (135), GIRARD (384), INGENITZSKY (477), KARSCH (508, 512), TRYBOM (990).]

Introduction to the study of *Odonata*, with sketch of the fauna within 20 miles of Philadelphia, consisting of 66 species : for summary of synonymy see p. 269 ; CALVERT, Tr. Amer. ent. Soc. xx, pp. 152a-272.

Preserving the colours of *Odonata* ; STEFANELLI, Bull. Soc. ent. Ital. xxv, pp. 3-11.

Structure of copulatory organs of ♂ ; INGENITZKY, Zool. Anz. xvi, p. 405, woodcut.

Enumeration of species found in W. Africa, with outline figures of many larvæ ; KARSCH, Berlin ent. Zeitschr. xxxviii, pp. 17-48.

The *Odonata* of the Jenisei region discussed ; TRYBOM, Bih. Svenska Ak. xv, No. 4.

Agrion hylas, Jenisei, TRYBOM, p. 12, Bih. Svenska Ak. xv, No. 4, n. sp.

Apatelia, n. g., *Libellulides*, near *Lathrecista*, p. 25, for *A. incongruens*, n. sp., W. Africa ; KARSCH, Berlin. ent. Zeitschr. xxxviii.

Cenagrion sublacteum, W. Africa, KARSCH, p. 40, Berlin, ent. Zeitschr. xxxviii, n. sp.

Chlorocnemis elongata, ♀ described ; KARSCH, p. 36, Berlin. ent. Zeitschr. xxxviii.

C. nubilipennis, W. Africa, KARSCH, p. 37, Berlin. ent. Zeitschr. xxxviii, n. sp.

Helieschna fuliginosa, description ; KARSCH, p. 194, Ent. Nachr. xix.

Libellago luminosa, p. 33, *decorata*, p. 34, W. Africa, KARSCH, Berlin. ent. Zeitschr. xxxviii, n. spp.

Onychogomphus hageni, note on ; BOLIVAR, p. 476, Rev. biol. Nord France, v. *O. genei* and *hagenii*, redescribed with notes on other Portuguese *Odonata* ; GIRARD, Rev. Soc. Ribeiro, ii, No. 5, pp. 26-45.

- Pseudagrion emarginatum*, W. Africa, KARSCH, p. 39, Berlin. ent. Zeitschr. xxxviii, n. sp.
Pseudomacromia luxuriosa, Java, KARSCH, p. 21, Berlin. ent. Zeitschr. xxxviii, n. sp.
Somatochlora sibirica, p. 5, *sahlbergi*, p. 7, *S. ? theeli*, p. 8, Jenisei region, TRYBOM, Bih. Svenska Ak. xv, No. 4, n. spp.
Sympetrum luminans, W. Africa, KARSCH, p. 22, Berlin. ent. Zeitschr. xxxviii, n. sp.
Trithemis dichroa, W. Africa, KARSCH, p. 25, Berlin. ent. Zeitschr. xxxviii, n. sp.

THYSANOPTERA.

- Thysanoptera* in hothouses in Finland; REUTER, Medd. Soc. Faun. Fenn. xvii, pp. 161-167.
Heliothrips femoralis, hothouse in Finland, REUTER, p. 166, Medd. Soc. Faun. Fenn. xvii, n. sp.
 Notes on Hungarian species; JABLONOWSKI, Potfuz. Termes. Kozl. xxii, pp. 17-24.

APTERA.

THYSANURA and COLLEMBOLA.

- [*Cf.* GADEAU DE KERVILLE (354), HARVEY (431, 432), KARSCH (508), MACGILLIVRAY (607), MONIEZ (642), PARONA (699), REUTER (771), SCHOTT (854, 855).]

Thysanura.

- Campodea dargilani*, grotto in Lozère, MONIEZ, Rev. biol. Nord France, vi, p. 81, n. sp.
Japyx africanus, W. Africa, KARSCH, p. 16, Berlin. ent. Zeitschr. xxxviii; *J. oudemansi*, Birma, PARONA, p. 128, pl. i, figg. 5 & 6, Atti Soc. Ital. xxxiv; *J. americanus*, Washington, MACGILLIVRAY, p. 174, Canad. Ent. xxv : n. spp.
Lepisma burmanica, Birma, PARONA, p. 124, pl. i, figg. 1-3, Atti Soc. Ital. xxxiv, n. sp.
Machilis, fossil, see Palæontology, p. 87.

Collembola.

- Collembola*, found in hothouses; REUTER, Medd. Soc. Faun. Fenn. xvii, pp. 17-28.
Achorutes longispinus, New Mexico, MACGILLIVRAY, p. 315, Canad. Ent. xxv; *A. brevispinus*, N. America, HARVEY, p. 182, fig., p. 184, Ent. News, 1893 : n. spp.
Anoura magna, Ohio, MACGILLIVRAY, p. 128, Canad. Ent. xxv, n. sp.
⁴*Aphoromma*, n. g., type *Anoura granaria*, Nic.; MACGILLIVRAY, p. 314, Canad. Ent. xxv.
⁴*Aphorura*, n. g., to replace *Lipura*, Burm.; MACGILLIVRAY, p. 313, Canad. Ent. xxv.

- ¹ *Bourletia*, n. g., type *Anurophorus laricis*; Nic.; MACGILLIVRAY, p. 313, Canad. Ent. xxv.
- ² *Brachysius*, n. g., for *B. dilatatus*, n. sp., New York; MACGILLIVRAY, p. 317, Canad. Ent. xxv.
- ³ *Drepanura*, n. g., near *Entomobrya*, for *D. californica*, n. sp., pl. iv, figg. 2-5; SCHOTT, p. 19, Bih. Svenska Ak. xvii, No. 8.
- Entomobrya annulata*, in nest of *Fringilla cœlebs*; MONIEZ, Rev. biol. Nord France, v, p. 491.
- E. spectabilis*, hothouse in Berlin, REUTER, p. 25, Medd. Soc. Faun. Fenn. xvii; *E. lineata*, p. 132, pl. i, figg. 13 & 14, *fec.*, p. 134, figg. 15 & 16, Birma, PARONA, Atti Soc. Ital. xxxiv : n. spp.
- ⁴ *Gnathocephalus*, n. g., for *G. complexus*, n. sp., Washington; MACGILLIVRAY, p. 318, Canad. Ent. xxv.
- Isotoma crassicornis*, Sumatra, SCHOTT, p. 172, pl. ii, figg. 8-10, Ent. Tidskr. 1893, n. sp.
- Lepidocyrtus pallidus*, p. 24, *assimilis*, p. 25, hothouses in Berlin, REUTER, Medd. Soc. Faun. Fenn. xvii, n. spp.
- Lipura cirrigera*, grotto in Lozère, MONIEZ, p. 85, Rev. biol. Nord France, vi, n. sp.
- ⁵ *Oudemansia*, n. g., *Lipuridæ*, p. 173, for *O. cœrulea*, n. sp., Thousand Is., p. 174, pl. ii, figg. 1-7; SCHOTT, Ent. Tidskr. 1893.
- ⁶ *Neanura*, n. g., to replace *Anoura*, Gerv.; MACGILLIVRAY, p. 314, Canad. Ent. xxv.
- Podura granulata*, Tennessee, MACGILLIVRAY, p. 316, Canad. Ent. xxv, n. sp.
- Papirius rufescens*, hothouse in Berlin, REUTER, p. 22, Medd. Soc. Faun. Fenn. xvii; *P. maculosus*, California, SCHOTT, p. 14, Bih. Svenska Ak. xvii, No. 8; *P. unicolor*, N. America, HARVEY, p. 65, pl. iv, Ent. News, 1893 : n. spp.
- ⁷ *Schoturus*, n. g., type *Podura nivicola*, Fitch; MACGILLIVRAY, p. 316, Canad. Ent. xxv.
- Sira cavernarum*, grotto in Lozère, MONIEZ, p. 84, Rev. biol. Nord France, vi; *S. plumicornis*, Birma, PARONA, p. 130, pl. i, figg. 7-11, Atti Soc. Ital. xxxiv; *S. purpurea*, California, SCHOTT, p. 17, pl. iv, fig. 1, Bih. Svenska Ak. xvii : n. spp.
- Smynthurus spinatus*, *floridanus*, N. America, MACGILLIVRAY, p. 127, Canad. Ent. xxv; *S. eisenii*, p. 7, pl. i, figg. 1-6, *plicatus*, p. 13, pl. ii, figg. 2-5, California, SCHOTT, Bih. Svenska Ak. xvii, No. 8 : n. spp.

(G.) *ORTHOPTERA.*

[*Cf.* AZAM (33), BLATCHLEY (78, 79, 80), BOLIVAR (84-88), BORMANS (390), BRANCSIK (100, 101), BRONGNIART (111), BRUNER (114, 115, 789), BRUNNER (116, 117), COTES (202, 205), DISTANT (238), DUBOIS (248), FINOT (312, 313), GIGLIO-TOS (381), GRIFFINI (396 to 400), HEYMONS (441), KARSCH (508, 513, 514), KRAUSS (556), LESTAGE (581), MORSE (656), PEYTOUREAU (704, 705), RILEY (792), SAUSSURE (390, 837, 838, 839), SCHÄFF (840), SCUDDER (865), TEPPER (958), VISART (1013), VOSSELER (1015), WHEELER (1049).]

Embryology of *Orthoptera* as exemplified in *Xiphidium ensiferum*; WHEELER (1049).

FORFICULIDÆ.

Anatomy and histology of alimentary canal; VISART (1013).

Ancistrogaster variegatus, pl. ii, fig. 10, *toltecus*, figg. 11 & 12, figured; Biol. Centr.-Amer. Orthoptera.

A. championi, Panama, pl. ii, fig. 13, *impennis*, Mexico, figg. 14 & 15, p. 10, BORMANS, Biol. Centr.-Amer. Orthoptera, n. spp.

Anisolabis maxima, Br., redescribed; BOLIVAR, p. 46, Act. Soc. Espan. xxii. *A. jancirensis*, pl. i, figg. 8 & 9, *antoni*, fig. 10, figured; BORMANS, Biol. Centr.-Amer. Orthoptera.

A. bormansi, Galapagos Is., SCUDDER, p. 5, pl. i, fig. 1, Bull. Mus. Harvard, xxv, n. sp.

Cylindrogaster jansonii, Kirb., referred to *Diplatys*, figured, pl. i, figg. 1 & 2; BORMANS, p. 2, Biol. Centr.-Amer. Orthoptera.

Diplatys severa, Panama, BORMANS, Biol. Centr.-Amer. Orthoptera, p. 2, pl. i, fig. 3, n. sp.

¹*Echinopsalis*, n. g., p. 2, for *E. guttata*, n. sp., Nicaragua, pl. i, fig. 4, p. 3; BORMANS, Biol. Centr.-Amer. Orthoptera.

Echinosoma occidentale, W. Africa, BORMANS, p. 170, Ann. Soc. ent. France, 1893, n. sp.

Forficula auricularia, embryology; HEYMONS, SB. Ges. naturf. Berlin, 1893, p. 127.

F. circinata, Algeria, FINOT, Bull. Soc. ent. France, 1893, p. xxviii; *F. barroisi*, Syria, BOLIVAR, p. 477, Rev. biol. Nord France, v; *F. cabreræ*, Canaries, BOLIVAR, p. 47, Act. Soc. Espan. xxii; *F. ? smithi*, Mexico, BORMANS, p. 11, pl. ii, fig. 16, Biol. Centr.-Amer. Orthoptera : n. spp.

- Labia bilineata*, pl. i, figg. 15 & 16, *chalybea*, fig. 17, *arcuata*, figg. 18-20, figured, Biol. Centr.-Amer. Orthoptera.
- L. championi*, Panama, BORMANS, p. 7, pl. i, fig. 21, Biol. Centr.-Amer. Orthoptera, n. sp.
- Neolobophora ruficeps*, pl. ii, figg. 7 & 8, *bogotensis*, fig. 9, figured; Biol. Centr.-Amer. Orthoptera.
- Opisthocosmia americana*, Mexico, BORMANS, pl. i, figg. 22 & 23, p. 8, Biol. Centr.-Amer. Orthoptera, n. sp.
- Psalis thoracica*, ♀ figured, Biol. Centr.-Amer. Orthoptera, pl. i, fig. 7, *gagatina*, ♂ ♀, figg. 5 & 6.
- Sparatta nigrina*, pl. i, figg. 11 & 12, *schotti*, fig. 14, *pelvimetra*, var. *rufina*, fig. 13, figured; Biol. Centr.-Amer. Orthoptera.
- Sphingolabis* recharacterised, p. 11, *S. taniata*, pl. ii, figg. 17 & 18, *californica*, fig. 20, figured; Biol. Centr.-Amer. Orthoptera.
- Spongophora brunneipennis*, pl. ii, figg. 1-3, *pygmæa*, figg. 4 & 5, figured; Biol. Centr.-Amer. Orthoptera.
- S. rogersi*, Costa Rica, BORMANS, p. 8, pl. ii, fig. 6, *t. c.*; *S. assiniensis*, W. Africa, BORMANS, p. 170, Ann. Soc. ent. France, 1893: n. spp.

BLATTIDÆ.

- Revised classification; BRUNNER, Ann. Mus. Genov. (2) xiii, pp. 9-12.
- Revision of the tribe *Heterogamiens*; SAUSSURE, Rev. Suisse Zool. i, pp. 289-318.
- Monograph of the *Blattidæ* of Australia and Polynesia; TEPPER, Tr. R. Soc. S. Austral. xvii, pp. 25-126. A new family of fossorial habits is defined.
- The Centr.-American forms monographed, with sketch of a classification of the family, nomenclature of wing-veins and areas, &c.; SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera, pp. 13, &c., pls.
- Geoscapheusidæ*, n. fam., anterior legs fossorial, cf. *Geoscapheus*.
- Blattidæ* of Indiana described; BLATCHLEY (80).
- ¹*Abrodiata*, n. g., near *Phyllodromia*, p. 20, for *A. modesta*, n. sp., Birma, p. 21, pl. i, fig. 5; BRUNNER, Ann. Mus. Genova (2) xiii.
- ²*Achroblatta*, n. g., for *Blatta luteola*, Blanch.; SAUSSURE, Soc. ent. 1893, p. 67, and Biol. Centr.-Amer. Orthoptera, p. 100, pl. vi, fig. 12.
- ³*Anamesia*, n. g. *Polyzosteriæ*, p. 69, for *A. lambii*, *eastii*, p. 70. *lindsayi*, p. 71, *frenchii*, p. 72, n. spp., Australia; TEPPER, Tr. R. Soc. S. Austral. xvii.
- Anaplecta mexicana*, pl. iv, figg. 1 & 2, *fallax*, fig. 7, *fulgida*, fig. 16, figured; SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera.
- A. fulva*, Birma, BRUNNER, p. 12, Ann. Mus. Genova (2) xiii; *A. peruviana*, *mozu*, pl. iv, figg. 3 & 4, p. 23, *major*, fig. 6, Peru, *replicata*, fig. 12, *grandipennis*, fig. 5, Brazil, p. 25, *albomarginata*, *parvipennis*, Mexico, *domestica*, Guatemala, p. 26, *alaris*, Peru, *decipiens*, pl. iii,

- fig. 5, pl. iv, figg. 10 & 11, Mexico, *elliptica*, pl. iii, fig. 2, pl. iv, fig. 8, p. 27, *dohrniana*, pl. iii, fig. 3, pl. iv, fig. 15, p. 28, Guatemala, *jansoni*, pl. iii, fig. 4, pl. iv, fig. 9, Nicaragua, *flabellata*, pl. iii, fig. 1, pl. iv, figg. 13 & 14, Central America, p. 29, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera, n. spp.
- † *Anisogamia*, n. g., p. 315, for *A. tamerlana*, n. sp., Turcomania, p. 316 ; SAUSSURE, Rev. Suisse Zool. i.
- † *Anisopygia*, n. g., for *A. jocosicluna*, n. sp., Guatemala ; SAUSSURE, p. 57, Soc. ent. 1893, and Biol. Centr. Amer. Orthoptera, pp. 49 & 50, pl. i, figg. 25 & 26.
- Apolyta quadripunctata*, p. 45, *humeralis*, *pallida*, *decorata*, p. 46, Australia, TEPPER, Tr. R. Soc. S. Austral. xvii, n. spp.
- † *Archimandrila*, n. g., for *Blabera marmorata*, and *deplanata* ; SAUSSURE, Soc. ent. 1893, p. 67, and Biol. Centr.-Amer. Orthoptera, p. 116, pl. v, fig. 18.
- † *Ataxigamia*, n. g., near *Heterogamia*, for *A. tatei*, n. sp., S. Australia ; TEPPER, p. 123, Tr. R. Soc. S. Austral. xvii.
- † *Atemeleta*, n. g., *Periplanetides*, for *A.* n. sp., Ceylon ; BRUNNER, p. 34, Ann. Mus. Genova (2) xiii.
- † *Batta*, n. g., near *Temnopteryx*, for *B. epilamproides*, n. sp., Kangaroo I. ; TEPPER, p. 40, Tr. R. Soc. S. Austral. xvii.
- Blabera* : table of the species ; SAUSSURE, p. 117, Biol. Centr.-Amer. Orthoptera. *B. trapezoidea*, figured, pl. v, figg. 26-31, *t. c.*
- B. rufescens*, Cuba, pl. v, fig. 22, *scutata*, Brazil, fig. 24, p. 119, *thoracica*, Panama, fig. 25, *immacula*, Brazil, fig. 23, p. 120, SAUSSURE, Biol. Centr.-Amer. Orthoptera, n. spp.
- Blaptica obscura*, Brazil, SAUSSURE, p. 121, Biol. Centr.-Amer. Orthoptera, n. sp.
- Blatta alluaudi*, W. Africa, BOLIVAR, p. 171, Ann. Soc. ent. France, 1893 ; *B. nahua*, pl. iv, figg. 19-21, p. 42, *azteca*, *alaris*, p. 43, Mexico, *fraterna*, Nicaragua, p. 44, *maya*, p. 45, *chichimecha*, p. 46, pl. iv, fig. 22, Mexico, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera, n. spp.
- † *Cacoblatta*, n. g., *Bluberinæ*, for *C. scabra*, n. sp., Panama ; SAUSSURE, p. 68, Soc. ent. 1893, and p. 122, pl. v, fig. 19, Biol. Centr.-Amer. Orthoptera.
- † *Caloblatta*, n. g., with *C. bicolor*, *tricolor*, n. spp., Central America ; SAUSSURE, Soc. ent. 1893, p. 57, also redescribed, *bicolor*, *tricolor*, pl. iii, figg. 11 & 13, pp. 33 & 34, Biol. Centr.-Amer. Orthoptera.
- † *Calhypnorna*, n. subg. of *Hypnorna* ; SAUSSURE & ZEHNTNER, p. 87, Biol. Centr.-Amer. Orthoptera.
- † *Calolampra*, n. g., *Epilamprinæ*, for *C. brevitarsis* and *bispinosa*, n. spp., Central America ; SAUSSURE, p. 58, Soc. ent. 1893, and Biol. Centr.-Amer. Orthoptera, p. 67, pl. iv, fig. 39, & pl. iii, fig. 26.
- † *Capucina*, n. g., *Panchlorinæ*, for *C. cucullata*, n. sp., Nicaragua ; SAUSSURE, Soc. ent. 1893, p. 67, and Biol. Centr.-Amer. Orthoptera, p. 102, pl. vi, fig. 13.

- Ceratinoptera diaphana*, figured, pl. iii, figg. 27-29, Biol. Centr.-Amer. Orthoptera.
- C. lutea*, N. America, SAUSSURE & ZEHNTNER, p. 48, Biol. Centr.-Amer. Orthoptera, n. sp.
- Chorisonoura loftyensis*, S. Australia, TEPPER, p. 115, Tr. R. Soc. S. Austral. xvii; *C. anomala*, pl. ii, figg. 23 & 24, *dimidiaticornis*, Peru, *texensis*, N. America, p. 80, *flavipennis*, pl. ii, fig. 21, p. 81, *teniata*, fig. 22, p. 82, Mexico, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera: n. spp.
- ¹*Comptolampra*, n. g., for *C. liturata*, de Haan; SAUSSURE, p. 58, Soc. ent. viii.
- Corydia elegans*, Birma, BRUNNER, p. 39, Ann. Mus. Genova (2) xiii, n. sp.
- ¹*Drymoplaneta*, n. g., near *Periplaneta*, p. 109, for *D. communis*, p. 110, *submarginata*, p. 111, *obscuripes*, *subbifasciata*, p. 112, n. spp., Australia; TEPPER, Tr. R. Soc. S. Austral. xvii.
- ¹*Dyscologamia*, n. g., p. 297, for *D. cesticalata*, p. 297, *nepalensis*, p. 300, E. India, *capensis*, S. Africa, p. 301, n. spp., including also *H. capucina*, Br., and *Corydia carunculigera*, Gerst.; SAUSSURE, Rev. Suisse Zool. i.
- Ectobia nicaensis*, egg-case described; AZAM, p. 186, Ann. Soc. ent. France, 1893.
- Epilampra crassa*, pl. iv, fig. 37, *conspersa*, fig. 38, figured, Biol. Centr.-Amer. Orthoptera.
- E. marginata*, pl. i, fig. 9, *lævis*, p. 28, *imitans*, fig. 10, *marmorata*, p. 29, Birma, BRUNNER, Ann. Mus. Genova (2) xiii; *E. fraserensis*, p. 59, *paula*, p. 60, *aspera*, p. 62, *obscura*, p. 64, *atra*, p. 65, Australia, TEPPER, Tr. R. Soc. S. Austral. xvii; *E. imitatrix*, p. 63, *fallax*, p. 64, pl. iv, fig. 36, Brazil, *caraibea*, Cuba, p. 65, *latifrons*, S. America, p. 66, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera: n. spp.
- ¹*Exedra*, n. g., *Perispherides*, for some species from Madagascar; BRUNNER, p. 41, Ann. Mus. Genova (2) xiii.
- E. sacalava*, Madagascar, BRANCSIK, p. 175, pl. xi, fig. 6, Jahresh. Ver. Trensens. xv & xvi, n. sp.
- Eurycotis vittifrons*, *quadrisquamata*, pl. iv, fig. 40, Guatemala, *flavipennis*, Cuba, p. 71, *subalata*, S. America, p. 72; SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera.
- ¹*Geoscapheus*, n. g., for *G. robustus*, n. sp., S. Australia; TEPPER, p. 68, Tr. R. Soc. S. Austral. xvii.
- ¹*Hemiblabea*, n. g., for *H. manca*, Porto Rico, pl. v, fig. 20, *granulata*, Mexico, fig. 21, n. spp., SAUSSURE, p. 68, Soc. ent. 1893, and Biol. Centr.-Amer. Orthoptera, pp. 121 & 122.
- ¹*Heminyctobora*, n. subg. of *Nyctobora*; SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera, p. 55.
- ¹*Hemipterota*, n. g., for *H. punctipes*, n. sp., Peru, SAUSSURE, p. 67, Soc. ent. 1893, and Biol. Centr.-Amer. Orthoptera, p. 83, pl. ii, fig. 25.
- Hemithyrocera indica*, India, SAUSSURE, Soc. ent. viii, p. 57, n. sp.
- Heterogamia dohrniana*, China, p. 309, SAUSSURE, Rev. Suisse Zool. i, n. sp.

- Holocompsa collaris*, figured, pl. iii, fig. 34, Biol. Centr.-Amer. Orthoptera.
H. zapoteca, pl. iii, fig. 33, *tolteca*, fig. 35, p. 109, *binotata*, fig. 32, p. 110, Guatemala; SAUSSURE, *t. c. n. spp.*
- Homæogamia capucina*, p. 39, pl. i, fig. 17, Birma, BRUNNER, Ann. Mus. Genova (2) xiii; *H. azteca*, Mexico, SAUSSURE, Rev. Suisse Zool. i, p. 296, and Biol. Centr.-Amer. Orthoptera, p. 106, pl. v, figg. 4 & 5, *bolliana*, Texas, R. S. Z. l. c., B. C. A. fig. 3, and p. 107, *apacha*, Chihuahua, R. S. Z., l. c., and B. C. A. pl. iii, fig. 20, p. 107 : n. spp.
- Hypnorna blanda*, Brazil, pl. iii, figg. 17-19, *H. (Calhypnorna) pulchella*, fig. 16, p. 87, *amæna*, figg. 14 & 15, p. 88, Panama, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera, n. spp.
- Ipisoma*, n. g., near *Latindia*, p. 172, for *I. coleopratum*, n. sp., W. Africa, p. 173; BOLIVAR, Ann. Soc. ent. France, 1893.
- Ischnoptera uhleriana*, pl. iii, figg. 21-23, *consobrina*, fig. 24, figured, Biol. Centr.-Amer. Orthoptera.
- I. multiramosa*, p. 23, pl. i, fig. 8, *fusca*, *modesta*, p. 24, Birma, BRUNNER, Ann. Mus. Genova (2) xiii; *I. annulata*, p. 51, *manicata*, *anastomosa*, *parallela*, p. 53, *contraria*, *obscura*, p. 54, Australia, TEPPER, Tr. R. Soc. S. Austral. xvii; *I. inæqualis*, N. America, pl. vi, figg. 14-17, *conformis*, Nicaragua, pl. iii, fig. 25, p. 37, *inca*, Guatemala, pl. iv, fig. 23, p. 38, *nana*, Nicaragua, p. 39, *annulicornis*, Guatemala, *divisa*, *bolliana*, N. America, p. 40, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera : n. spp.
- Knephasia*, n. g., near *Epilampra*, p. 99, for *K. medilinea*, n. sp., S. Australia, p. 100; TEPPER, Tr. R. Soc. S. Austral. xvii.
- Latindia dohrniana*, pl. v, fig. 7, *cucullata*, fig. 9, Guatemala, *inca*, Peru, fig. 8, p. 111, *delicatula*, Guatemala, fig. 10, *pusilla*, Peru, p. 112, *tolteca*, Mexico, p. 113, SAUSSURE, Biol. Centr.-Amer. Orthoptera, n. spp.
- Leptozosteria*, n. g., near *Platyzozeria* for *L. prima*, n. sp., Central Australia; TEPPER, p. 96, Tr. R. Soc. S. Austral. xvii.
- Loboptera halmaturina*, Kangaroo I., *duodecimsignata*, S. Australia, p. 36, *circumcincta*, Kangaroo I., p. 37, TEPPER, Tr. R. Soc. S. Austral. xvii, n. spp.
- Megaloblatta rufipes*, figured and noticed; SAUSSURE, p. 57, pl. v, figg. 15-17, Biol. Centr.-Amer. Orthoptera.
- Nyctobora azteca*, Guatemala, pl. iv, fig. 34, *N. (Heminyctobora) truncata*, Mexico, fig. 33, SAUSSURE & ZEHNTNER, p. 56, Biol. Centr.-Amer. Orthoptera, n. spp.
- Panclhora thalassina*, Guatemala, p. 93, *acolhua*, Mexico, p. 95, *punctum*, p. 96, *fraterna*, p. 97, Central America, *montezuma*, p. 98, *latipennis*, Guatemala, pl. v, fig. 2, *cribrosa*, Panama, fig. 1, p. 99, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer., n. spp.
- Panesthia antennata*, *incerta*, Tenasserim, p. 50, *brevipennis*, Amboina, *lobipennis*, p. 51, *inermis*, Ceylon, *bengalica*, Silhet, p. 52, *integra*, E. India, *ferruginipes*, hab. ?, *celebica*, Celebes, p. 53, *birmanica*, Tenasserim, p. 54, BRUNNER, Ann. Mus. Genova (2) xiii, n. spp.

- Paralatiindia peruviana*, pl. v, figg. 11-14, *mancella*, fig. 6, Peru, p. 114, SAUSSURE, Biol. Centr.-Amer. Orthoptera, n. spp.
- Paratropa bilunata*, *biolleyi*, Panama; SAUSSURE & ZEHNTNER, p. 60, Biol. Centr.-Amer. Orthoptera, n. spp.
- Pellita*, n. g., for *Derocalymma porcellio*, Gerst.; BRUNNER, p. 42, Ann. Mus. Genova (2) xiii.
- Pelmatosilpha marginalis*, Grenada, BRUNNER, p. 603, pl. lii, fig. 2, P. Zool. Soc. London, 1893; *P. villana*, Panama, pl. iv, figg. 41 & 42, p. 73, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera : n. spp.
- Periplaneta americana*, development of male armour; PEYTOUREAU, C.R. Ac. Sci. xvii, p. 293 : of female; PEYTOUREAU, t. c. p. 749. *P. orientalis*, found in peat in Schleswig-Holstein; SCHÄFF, Zool. Anz. xvi, p. 17.
- P. assiniensis*, W. Africa, BOLIVAR, p. 172, pl. i, fig. 1, Ann. Soc. ent. France, 1893; *P. valida*, pl. i, fig. 13, *gracilis*, fig. 14, Birma, BRUNNER, p. 36, Ann. Mus. Genova (2) xiii; *P. rufa*, p. 101, *obscura*, p. 107, *scabriuscula*, *provisionalis*, p. 108, Australia, TEPPER, Tr. R. Soc. S. Austral. xvii : n. spp.
- Perisphæria rufipes*, Grenada, BRUNNER, p. 604, pl. lii, fig. 3, P. Zool. Soc. London, 1893, n. sp.
- Phoraspis bicolor*, Central America, SAUSSURE & ZEHNTNER, p. 61, Biol. Centr.-Amer. Orthoptera, n. sp.
- Phylodromia bisignata*, pl. i, fig. 1, *aliena*, p. 15, *fuliginosa*, fig. 2, *lugubris*, fig. 13, p. 16, *birmanica*, fig. 4, p. 17, *subtilis*, *unicolor*, *punctulata*, p. 18, *marmorata*, *vicina*, p. 19, *immunda*, p. 20, Birma, BRUNNER, Ann. Mus. Genova (2) xiii; *P. notata*, Grenada, BRUNNER, p. 602, pl. lii, fig. 1, P. Zool. Soc. London. 1893 : n. spp.
- Plana*, n. g., near *Panesthia dilatata*, Saus.; BRUNNER, p. 46, Ann. Mus. Genova (2) xiii.
- Platyzoisteria armata*, *rufo-fusca*, p. 84, *pseudatrata*, p. 86, *avocaensis*, *scabrella*, p. 88, *pseudocastanea*, p. 89, *trifasciata*, *balteata*, p. 91, *latizona*, *ardrossanensis*, p. 92, Australia, TEPPER, Tr. R. Soc. S. Austral. xvii, n. spp.
- Plectoptera krugi*, Antilles, *picta*, pl. iii, fig. 9, *circumcincta*, Mexico, p. 85, *pulicaria*, fig. 8, Panama, *circumdata*, pl. iii, fig. 10, pl. iv, fig. 17, Guatemala, p. 86, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera, n. spp.
- Polyzoisteria obscuroviridis*, *iridicolor*, p. 73, *oculata*, *pubescens*, p. 75, *mitchelli* (Angas), p. 78, *bagoti*, p. 79, *subnobilis*, p. 81, Australia, TEPPER, Tr. R. Soc. S. Austral. xvii, n. spp.
- Pseudoglomeris*, n. g., type *Perisphæria glomeris*, Sauss., p. 42, and including *P. fornicata*, pl. i, fig. 18, p. 43, *planiuscula*, *vicina*, fig. 19, p. 44, n. spp., Birma; BRUNNER, Ann. Mus. Genova (2) xiii.
- Pseudolampra*, n. g., near *Epilampra*, p. 96, for *P. punctata*, p. 97, *rothei*, *ornata*, p. 98, n. spp., Australia; TEPPER, Tr. R. Soc. S. Austral. xvii.

- Pseudophyllodromia venosa*, figured and described, p. 47, pl. iii, fig. 30, Biol. Centr.-Amer. Orthoptera.
- P. albinervis*, Grenada, BRUNNER, p. 602, P. Zool. Soc. London, 1893, n. sp.
- ² *Rhiconoda*, n. g. *Epilamprides*, for *R. rugosa*, Birma, *spinulosa*, Java, n. spp.; BRUNNER, p. 31, Ann. Mus. Genova (2) xiii.
- R. reflexa*, Nicaragua, SAUSSURE & ZEHNTNER, p. 68, pl. iv, fig. 35, Biol. Centr.-Amer. Orthoptera, n. sp.
- Salganea ceylonica*, Ceylon, p. 46, *ternatensis*, Ternate, *amboinica*, Amboina, p. 47, BRUNNER, Ann. Mus. Genova (2) xiii, n. spp.
- Stilopyga sinuata*, Birma, BRUNNER, p. 35, Ann. Mus. Genova (2) xiii, n. sp.
- ¹ *Temnelytra*, n. g., near *Temnopteryx*, p. 38, for *T. harpuri*, p. 39, n. sp., Kangaroo I.; TEPPER, Tr. R. Soc. S. Austral. xvii.
- Temnopteryx texensis*, N. America, p. 52, pl. iii, fig. 31, *nitida*, Mexico, pl. iv, figg. 31 & 32, *guatemalæ*, figg. 27 & 28, p. 53, *fissa*, figg. 29 & 30, *major*, N. America, p. 54; SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera, n. spp.
- Theganopteryx pilosella*, Peru, *T. (Pseudectobia) subpectinata*, Guatemala, pl. iv, fig. 18, *antiguensis*, Antilles, p. 17, *intermedia*, Peru, p. 18, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera, n. spp.
- Thyrsocera ferruginea*, pl. i, fig. 6, *major*, fig. 7, p. 22, *communis*, p. 23, Birma, BRUNNER, Ann. Mus. Genova (2) xiii; *T. aurantiaca*, Panama, p. 32, pl. iii, figg. 6 & 7, SAUSSURE & ZEHNTNER, Biol. Centr.-Amer. Orthoptera : n. spp.
- Zetobora sublobata*, Guatemala, SAUSSURE, p. 102, Biol. Centr.-Amer. Orthoptera, n. sp.

MANTIDÆ.

- Revision of the system of classification; BRUNNER, pp. 54-58, Ann. Mus. Genova (2) xiii.
- Ameles heldreichi*, and *nana*, notes on; BOLIVAR, p. 480, Rev. biol. Nord France, v.
- Bisanthe ornatipennis*, W. Africa, BOLIVAR, p. 174, Ann. Soc. ent. France, 1893, n. sp.
- Deroplatys freyi*, Madagascar, BRANCSIK, p. 178, pl. iv, fig. 3, Jahresh. Ver. Trencsen. xv, n. sp.
- Eremiaphila spinulosa*, Algeria, KRAUSS, p. xcv, Jahresh. Ver. Württemb. 1893, n. sp.
- ² *Galapagia*, n. g., near *Musonia*, p. 7, for *G. solitaria*, n. sp., Galapagos Is., p. 8, pl. i, figg. 2 & 3; SCUDDER, Bull. Mus. Harvard, xxv.
- Heterochæta lemoroï*, Algeria, FINOT, Bull. Soc. ent. France, 1893, p. xxix, n. sp.
- Hierodula (Sphodromantis) freyi*, Madagascar, BRANCSIK, p. 177, pl. ix, fig. 1, Jahresh. Ver. Trencsen. xv; *H. multispinosula*, p. 68, *latipennis*, p. 69, pl. ii, fig. 22, Birma, BRUNNER, Ann. Mus. Genova (2) xiii : n. spp.

- Iridopteryx marmorata*, Birma, BRUNNER, p. 65, pl. ii, fig. 20, Ann. Mus. Genova (2) xiii, n. sp.
- Mantis religiosa*, observations on decapitated ; DUBOIS, p. 205, Ann. Soc. Linn. Lyon, xl.
- M. nobilis*, Bhamò, BRUNNER, p. 70, pl. ii, fig. 23, Ann. Mus. Genova (2) xiii, n. sp.
- Pachymantis nitida*, Tenasserim, BRUNNER, p. 72, pl. ii, fig. 24, Ann. Mus. Genova (2) xiii, n. sp.
- Parastagmatoptera lobipes*, ♀ described ; BRUNNER, p. 605, pl. lii, fig. 4, P. Zool. Soc. London, 1893.
- Pseudempusa*, n. g., *Vatides*, p. 73, for *P. pinnapavonis*, n. sp., Birma, BRUNNER, p. 75, pl. ii, fig. 25, Ann. Mus. Genova (2) xiii.
- Tarachomantis*, n. g., near *Tenodera*, p. 176, for *T. brunneri*, n. sp., Madagascar, p. 177, pl. x, fig. 1 ; BRANCSIK, Jahresh. Ver. Trencsen. xv.
- Tenodera platycephala*, Birma, BRUNNER, p. 67, pl. ii, fig. 21, Ann. Mus. Genova (2) xiii, n. spp.

PHASMATIDÆ.

- Revision and tabulation of the classification ; BRUNNER, Ann. Mus. Genova (2) xiii, pp. 76-81.
- Agondasoidea*, n. g., for a part of *Necroscia*, Westw. ; BRUNNER, p. 84, t. c.
- Arvanoidea*, n. g., for a part of *Necroscia*, Westw. ; BRUNNER, p. 84, t. c.
- Aschipsasma fusco-signatum*, Pegù, BRUNNER, p. 101, t. c., n. sp.
- Calvisiu atrosignata*, Birma, BRUNNER, p. 85, pl. iii, fig. 27, t. c., n. sp.
- Carausius granulatus*, Tenasserim, BRUNNER, p. 81, pl. ii, fig. 26, t. c., n. sp.
- Dajaca*, n. g., for a nondescript insect from Borneo ; BRUNNER, p. 99, t. c.
- Damasippoides*, n. g., p. 181, for *D. xanthostictus*, n. sp., p. 182, pl. iv, fig. 5 ; BRANCSIK, Jahresh. Ver. Trencsen. xv.
- Entoria? bilobata*, Bhamò, BRUNNER, p. 90, pl. iii, fig. 30, Ann. Mus. Genova (2) xiii, n. sp.
- Gratidia verruculosa*, Birma, BRUNNER, p. 94, t. c., n. sp.
- Hyrtacus lancettifer*, Madagascar, BRANCSIK, p. 179, pl. ix, fig. 2, Jahresh. Ver. Trencsen. xv, n. sp.
- Marmessoidea*, n. g., *Necroscides*, p. 85, for *M. marginata*, n. sp., Pegu, p. 86, pl. iii, fig. 28 ; BRUNNER, Ann. Mus. Genova (2) xiii.
- M. sumatrensis*, Sumatra, BRANCSIK, p. 201, pl. xi, fig. 11a, Jahresh. Ver. Trencsen. xv, n. sp.
- Medaura stali*, Pegu, BRUNNER, p. 94, pl. iv, fig. 34, Ann. Mus. Genova (2) xiii, n. sp.
- Orobia lucubensis*, Madagascar, BRANCSIK, p. 180, pl. iv, fig. 2, Jahresh. Ver. Trencsen. xv, n. sp.
- Paraclitummus*, n. g., for *P. lineatus*, p. 91, pl. iv, fig. 31, *concisus, proeductus*, p. 92, n. spp., Birma, BRUNNER, Ann. Mus. Genova (2) xiii.

- ^ *Paraclonaria*, n. g., *Clitumnides*, for two species from Central Africa (not described); BRUNNER, p. 89, *t. c.*
- ^ *Parapachymorpha*, n. g., p. 95, for a part of *Pachymorpha*, and including *P. nigra*, pl. iv, fig. 35, *spinosa*, fig. 36, p. 96, n. spp., Birma, BRUNNER, *t. c.*
- ^ *Rhampophasma*, n. g., *Clitumnides*, p. 92, for *R. modestum*, n. sp., Birma, p. 93, pl. iv, fig. 32, BRUNNER, *t. c.*
- ^ *Sipylodea*, n. g., type *Necroschia sipylus*, Westw., p. 86, and including *S. vittata*, n. sp., Birma, p. 87, pl. iii, fig. 29; BRUNNER, *t. c.*
- ^ *Tirachodea*, n. g., *Bacterides*, for *Phib. hypharpax*, *triarchus*, and *Cyphocrania tampyris*, Westw.; BRUNNER, p. 83, *t. c.*
- ^ *Xeranthrix*, n. g., near *Prisopus*, p. 182, for *X. nossibianus*, n. sp., Madagascar, p. 183, pl. iv, fig. 1; BRANCSIK, Jahresh. Ver. Trencsen. xv.

GRYLLIDÆ.

- Descriptions of the *Gryllidæ* of Indiana; BLATCHLEY, P. Indiana Ac. 1891, pp. 126-144.
- ^ *Alluaudia*, n. g., p. 181, near *Platyblemmus*, for *A. flavopicta*, n. sp., W. Africa, p. 183; BOLIVAR, Ann. Soc. ent. France, 1893.
 - ^ *Alluaudiella*, n. n. to replace *Alluaudia*; BOLIVAR, p. cccx, Bull. Soc. ent. France, 1893.
 - ^ *Amusurgus*, n. g., *Trigonidiides*, for *A. fulvus*, n. sp., Birma, pl. vi, fig. 78; BRUNNER, p. 212, Ann. Mus. Genova (2) xiii.
 - Apterogryllus deplanatus*, Birma, BRUNNER, p. 197, Ann. Mus. Genova (2) xiii, n. sp.
 - Brachytrypus caviceps*, W. Africa, KARSCH, p. 148, Berlin ent. Zeitschr. xxxviii, n. sp.
 - Calyptotripus binotatus*, Madagascar, BRANCSIK, p. 199, pl. x, fig. 12, Jahresh. Ver. Trencsen. xv, n. sp.
 - Cycloptilum erraticum*, Galapagos Is., SCUDDER, p. 23, pl. iii, figg. 6 & 7, Bull. Mus. Harvard, xxv, n. sp.
 - Cyrtoxiphus gilvus*, p. 162, *contaminatus*, *furvus*, p. 163, W. Africa, KARSCH, Berlin. ent. Zeitschr. xxxviii, n. spp.
 - ^ *Dionymus*, n. g., *Encopterida*, for *D. calcaratus*, n. sp., Birma, pl. vi, fig. 79; BRUNNER, p. 213, Ann. Mus. Genova (2) xiii.
 - Ectatoderus pallidegeniculatus*, Bhamò, BRUNNER, p. 201, pl. vi, fig. 71, Ann. Mus. Genova (2) xiii, n. sp.
 - Euscirtus planiceps*, W. Africa, KARSCH, p. 166, Berlin. ent. Zeitschr. xxxviii; *E. hova*, Madagascar, BRANCSIK, p. 199, pl. x, fig. 11, Jahresh. Ver. Trencsen. xv : n. spp.
 - ^ *Ganoblemmus*, n. g., p. 154, for *G. rasilis*, n. sp., W. Africa, p. 155, KARSCH, Berlin. ent. Zeitschr. xxxviii.
 - Gryllodes kerkennensis*, N. Africa, FINOT, p. cclii, Bull. Soc. ent. France, 1893; *G. microcephalus*, W. Africa, BOLIVAR, p. 181, Ann. Soc. ent.

- France, 1893; *G. hiulcus*, W. Africa, KARSCH, p. 152, Berlin. ent. Zeitschr. xxxviii; *G. nigrifrons*, pl. vi, fig. 68, p. 199, *mandibularis*, fig. 69, p. 200, Birma, BRUNNER, Ann. Mus. Genova (2) xiii : n. spp.
- Gryllotalpa vulgaris*, habits; DECAUX, p. cccxli, Bull. Soc. ent. France, 1893.
- Gryllus syriacus*, Mount of Olives, BOLIVAR, p. 488, Rev. biol. Nord France, v; *G. pachycephalus*, W. Africa, KARSCH, p. 200, Ent. Nachr. xix; *G. latifrons*, p. 150, *adustus*, *ambiguus*, p. 151, W. Africa, KARSCH, Berlin. ent. Zeitschr. xxxviii; *G. galapageius*, Galapagos Is., SCUDDER, p. 22, pl. iii, fig. 8, Bull. Mus. Harvard, xxv : n. spp.
- Heterotrypus maculosus*, W. Africa, KARSCH, p. 203, Ent. Nachr. xix; *H. laqueatus*, W. Africa, KARSCH, p. 164, Berlin. ent. Zeitschr. xxxviii : n. spp.
- Liphoplus fasciatus*, Birma, BRUNNER, p. 202, pl. vi, fig. 72, Ann. Mus. Genova (2) xiii, n. sp.
- Lissotrachelus*, n. g., near *Scleropterus*, p. 204, for *L. castaneus*, *ferrugineo-notatus*, pl. vi, fig. 74, p. 205, Birma, *ater*, Borneo, p. 206, n. spp.; BRUNNER, Ann. Mus. Genova (2) xiii.
- Loxoblemmus truncatus*, Birma, p. 200, pl. vi, fig. 70, BRUNNER, Ann. Mus. Genova (2) xiii, n. sp.
- Metrypus claudicans*, p. 610, pl. lii, fig. 5, *heros*, p. 611, fig. 6, Grenada, BRUNNER, P. Zool. Soc. London, 1893, n. sp.
- Nemobius mayeti*, Algeria, FINOT, p. cclii, Bull. Soc. ent. France, 1893; *N. dumosus*, W. Africa, KARSCH, p. 147, Berlin. ent. Zeitschr. xxxviii; *N. nigrosignatus*, Birma, BRUNNER, p. 196, pl. vi, fig. 67, Ann. Mus. Genova (2) xiii : n. spp.
- Oecanthus macer*, W. Africa, KARSCH, p. 203, Ent. Nachr. xix; *O. macer*, *comptulus*, W. Africa, KARSCH, p. 161, Berlin. ent. Zeitschr. xxxviii : n. spp.
- Ornebius collatatus*, p. 156, *castigatus*, p. 157, W. Africa, KARSCH, Berlin. ent. Zeitschr. xxxviii, n. spp.
- Paratrigonidium*, n. g., near *Cyrtoxiphus*, p. 208, for *P. nitidum*, pl. vi, fig. 75, *castaneum*, Birma, *fasciatum*, Java, p. 209, *vittatum*, Birma, p. 210, pl. vi, fig. 76, n. spp.; BRUNNER, Ann. Mus. Genova (2) xiii.
- Pentacentrus tenellus*, W. Africa, KARSCH, p. 201, Ent. Nachr. xix; *P. tenellus*, W. Africa, KARSCH, p. 157, Berlin. ent. Zeitschr. xxxviii : n. spp.
- Phæophyllacris gymnica*, W. Africa, KARSCH, p. 159, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Piestoxiphus simiolus*, W. Africa, KARSCH, p. 162, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Platyblemmus batnensis*, *luctuosus*, Algeria, FINOT, p. ccliii, Bull. Soc. ent. France, 1893, n. sp.
- Podogryllus*, n. g., near *Cophogryllus*, p. 153, for *P. desultorius*, n. sp., W. Africa, p. 154, KARSCH, Berlin. ent. Zeitschr. xxxviii.

- Podoscirtus modestus*, Grenada, BRUNNER, p. 610, P. Zool. Soc. London, 1893, n. sp.
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- ⁵*Hoplidostylus*, n. g., *Pseudophyllides*, for *H. argillatus*, n. sp., W. Africa, KARSCH, p. 138, Berlin. ent. Zeitschr. xxxviii.
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- ⁵*Nesacia*, n. g., *Pseudophyllinæ*, for *Agræcia cooksoni*, Butl., figured, pl. iii, figg. 9 & 10 ; SCUDDER, p. 20, Bull. Mus. Harvard, xxv.
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- ✓ *Amesotropis*, n. g., near *Ochrilidia*, p. 66, for *A. valga*, n. sp., W. Africa,
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- ✓ *Azelota*, n. g., *Acridiides*, for some unnamed species from Australia ;
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gascar, BRANCSIK, p. 193, pl. xii, fig. 3, Jahresh. Ver. Trencsen. xv :
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- ✓ *Charagotettix*, n. g., *Tettigide* for *C. lucubensis*, n. sp., Madagascar ;
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- ¹*Christa*, n. g., *Truxalides*, p. 75, for *C. virgata*, *flavolineata*, p. 77, *manca*, p. 78, n. spp., W. Africa, and including *Gymnbothrus varians*, Karsch; KARSCH, Berlin. ent. Zeitschr. xxxviii.
- ¹*Chloriscina*, n. g., p. 130, near *Rubellia* for *C. unicolor*, n. sp., Birma, p. 131, pl. v, fig. 51; BRUNNER, Ann. Mus. Genova (2) xiii.
- ¹*Chortoicetes*, n. g., *Tryxalides*, for some unnamed species; BRUNNER, p. 123, Ann. Mus. Genova (2) xiii.
- ¹*Chrostheipus*, n. n., to replace *Apomala*, Stål *nec* Serv.; BRUNNER, p. 137, Ann. Mus. Genova (2) xiii.
- ¹*Closteridea*, n. g., *Truxalinae* for *C. bauri*, n. sp., Galapagos Is., pl. i, figg. 4 & 5; SCUDDER, p. 9, Bull. Mus. Harvard, xxv.
- ¹*Coloradella*, n. g., *Tryxalides*, for some unnamed N. American species; BRUNNER, p. 123, Ann. Mus. Genova (2) xiii.
- Coptacra anguliflava*, W. Africa, KARSCH, Berlin. ent. Zeitschr. xxxviii, n. sp.
- Coptotettix latifrons*, pl. v, fig. 44, *acuteterminatus*, Birma, BRUNNER, p. 112, Ann. Mus. Genova (2) xiii, n. spp.
- ¹*Coryphosima*, n. g., *Truxalides*, for *C. brevicornis*, n. sp., W. Africa, KARSCH, p. 72, Berlin. ent. Zeitschr. xxxviii.
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- ¹*Dendrotettix*, n. g., near *Caloptenus*, p. 254, for *D. longipennis*, Texas, n. sp., p. 255; RILEY, Insect Life, v.
- ¹*Desmopleura*, n. g., near *Aptenopedes*, for *D. concinna*, n. sp., Galapagos Is., pl. ii, figg. 2 & 4; SCUDDER, p. 19, Bull. Mus. Harvard, xxv.
- Dracotettix plutonius*, California, BRUNER, p. 267, North Amer. Fauna, vii, n. sp.
- Duronia versicolor*, *deflorata*, Birma, BRUNNER, p. 126, Ann. Mus. Genova (2) xiii, n. spp.
- Egnatius cærulans*, Algeria, KRAUSS, p. xcv, Jahresh. Ver. Wurttemb. 1893, n. sp.
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- ¹*Epeisactus*, n. g., *Mastacides*, for an unnamed species from Guatemala; BRUNNER, p. 115, Ann. Mus. Genova (2) xiii.
- Epistaurus aberrans*, Bhamò, BRUNNER, p. 160, pl. v, fig. 55, Ann. Mus. Genova (2) xiii, n. sp.
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- Euprepocnemis nobilis*, Madagascar, p. 195, pl. xi, fig. 10, *phronusa*, Mozambique, p. 196, pl. xii, fig. 6, BRANCSIK, Jahresh. Ver. Trensens. xv, n. spp.

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- [↓]*Fenestra*, n. g., *Tryxalides*, for an unnamed species from Buenos Aires; BRUNNER, p. 120, Ann. Mus. Genova (2) xiii.
- Gavialidium birmanicum*, Birma, BRUNNER, p. 104, pl. v, fig. 37, Ann. Mus. Genova (2) xiii, n. sp.
- [↓]*Gelastorhinus*, n. g., group *Mesopes*, p. 157, for *G. albolineatus*, n. sp., Birma, p. 158, pl. v, fig. 54; BRUNNER, Ann. Mus. Genova (2) xiii.
- Gerenia intermedia*, p. 161, pl. v, fig. 56, *abbreviata*, p. 162, Birma, BRUNNER, Ann. Mus. Genova (2) xiii, n. spp.
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- [↓]*Halmenus*, n. g., near *Pezotettix*, p. 17, for *H. robustus*, n. sp., Galapagos Is., p. 18, pl. i, figg. 6 & 7; SCUDDER, Bull. Mus. Harvard, xxv.
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- [↓]*Hypochlora*, n. g., for *Pezotettix acutipennis* and *speciosa*, Scudd.; BRUNNER, p. 145, Ann. Mus. Genova (2) xiii.
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- Mazarredia inæqualis*, p. 106, pl. v, fig. 39, *convergens*, fig. 40, p. 107, *lati-vertex*, fig. 41, p. 108; Birma, BRUNNER, Ann. Mus. Genova (2) xiii, n. spp.
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- [↓]*Oxyolena*, n. g., *Tryxalides*, for *O. mucronata*, n. sp., W. Africa, pp. 58 & 57; KARSCH, Berlin. ent. Zeitschr. xxxviii.
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- ⁴ *Paraidemona*, n. g., for *Pezotettix punctatus* and *pilosus*, Stål; BRUNNER, p. 145, Ann. Mus. Genova (2) xiii.
- ⁵ *Paraeuprepocnemis*, n. g., near *Euprepocnemis*, for some unnamed species from the East; BRUNNER, p. 151, Ann. Mus. Genova (2) xiii.
- ¹ *Paralichroplus*, n. g., for some species of *Pezotettix*; BRUNNER, p. 145, Ann. Mus. Genova (2) xiii.
- Parapleurus fasciatus*, Birma, BRUNNER, p. 127, Ann. Mus. Genova (2) xiii, n. sp.
- Paratettix durus*, W. Africa, KARSCH, p. 119, Berlin. ent. Zeitschr. xxxviii; *P. interruptus*, p. 109, *hirsutus*, pl. v, fig. 43, *semihirsutus*, p. 110, Birma, BRUNNER, Ann. Mus. Genova (2) xiii : n. spp.
- ¹ *Paratylotropidia*, n. g., near *Pezotettix*, for an unnamed insect from Texas; BRUNNER, p. 147, Ann. Mus. Genova (2) xiii.
- Penichrotus leptotes*, Madagascar, BRANCSIK, p. 186, pl. xii, fig. 1, Jahresh. Ver. Trencsen. xv, n. sp.
- ⁴ *Phaulacridium*, n. g., *Acridiides*, for some unnamed species from Australia; BRUNNER, pp. 151 & 216, Ann. Mus. Genova (2) xiii.
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- ¹ *Pseudostauronotus*, n. g., *Fryxalides*, species not mentioned; BRUNNER, p. 123, Ann. Mus. Genova (2) xiii.
- ¹ *Pterotillus*, n. g. (*Pygostolus*, Karsch, *olim*), with *P. miniatulus*, n. sp., W. Africa, p. 108; KARSCH, Berlin. ent. Zeitschr. xxxviii.
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- ¹ *Rhabdoplea*, n. g., p. 69, *Truxalides*, for *R. munda*, p. 70, *mira*, p. 71, *angustula*, p. 72, n. spp., W. Africa; KARSCH, Berlin. ent. Zeitschr. xxxviii.
- ¹ *Rhamphacrida*, n. g., *Opomalides*, p. 114, for *Ischnacrida kraussi*, Bol.; KARSCH, Berlin. ent. Zeitschr. xxxviii.
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- ⁴*Trigoniza*, n. g., *Acridiides*, for some unnamed species from New Zealand; BRUNNER, p. 141, Ann. Mus. Genova (2) xiii.
- Trilophidia cinnabarina*, Madagascar, BRANCSIK, p. 187, Jahresh. Ver. Trencsen. xv, n. sp.
- ⁴*Tritropis*, n. g., for *Stropis tricarinata*, Stål; BRUNNER, p. 140, Ann. Mus. Genova (2) xiii.
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XIV. ECHINODERMA.

BY

F. A. BATHER.

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INTRODUCTION.

I. TITLES.—The total of 288 includes 54 from literature published before 1892, 102 from publications of 1892,* and 134 representing the work of 1893. The list is still incomplete, since many publications anterior to 1894, and known to contain Echinoderm literature, had not arrived at any library in London so late as September, 1894.

Under each title, references have been given to all Abstracts and Reviews of any importance that were known to the Recorder. References are also given to all Abstracts and Reviews of Echinoderm literature that were published in 1893. Such references are under the names of the authors of the papers reviewed, but are not numbered in the series.

Most of the titles are followed by certain figures in square brackets. These refer to the various divisions of the Subject- and Systematic Indices. For instance, under title (6) the following—[II, B, ii, a : D, ii; iv : F, iv, b. III, A. IV, D.] informs the reader that references

* The Record for 1892 was admittedly incomplete.

to this paper will be found first in Division II.—Biology, Subheading—Morphology, ii subject—variation, a, special case—in form ; then under Subheading—Bionomics, subjects, ii—special habits, and iv—feeding; next under Subheading—Auxology, iv—Asteroidea, b—brepic stages. Secondly, in Division III.—Distribution, Subheading A—Geographical. Thirdly, in Division IV.—Systematic, Subheading D—Asteroidea. Thus the contents of a paper can easily be discovered. References to the systematic index are only given when new genera and species are described or alterations made in nomenclature.

II. BIOLOGY.—The Index under this head is as complete as lies in the Recorder's power. For example: it is believed that every case of deviation from the normal symmetry mentioned in this mass of literature will be found indexed on pp. 35, 36. Other modes of variation have been as carefully attended to, and the same principle has governed all the rest of the index.

The Section F, which in previous Records bore the subheading EMBRYOLOGY, now includes all phases of the Life-history, from the first formation of the gonads to the death of the individual. It is therefore necessary to adopt for its subheading the previously proposed term AUXOLOGY.

III. DISTRIBUTION.—In the Geographical Index the order is from N. to S. down the Atlantic, then round Australia, northwards through the Malay Archipelago and adjacent seas, and then from S. to N. up the Pacific.

IV. SYSTEMATIC.—This Index is complete, with certain exceptions noted in List of Titles. Reference to this Index, in combination with the cross-references to other sections given under Titles, will put the student on the track of everything said about any particular species in all the 288 papers here recorded.

This Index contains 316 new species, distributed as follows:—*Holothuroidea*, 27; *Echinoidea*, 124; *Asteroidea*, 38; *Ophiuroidea*, 9; *Crinoidea*, 106; *Cystidea*, 4; *Blastoidea*, 8. There are also many new genera and new varieties, and, especially among Holothurians, an appalling number of *nomina nuda*.

A very large proportion of the new species of *Echinoidea* come from the Cretaceous and Tertiary rocks of France, while the bulk of the new species of *Crinoidea* are, as usual, furnished by the Carboniferous rocks of North America.

This list of new species is most probably imperfect; but those authors, at any rate, have no right to complain who either decline to indicate which of their species are new (*e.g.*, British Museum Catalogues), or obscure the fact by affixing to the name of the species their own name or that of a friend, often with a wrong date (*e.g.*, many French writers), or who describe species as "n. sp." which have already been described months before (*e.g.*, Dr. Hartlaub). On this point read what the Recorder for *Insecta* says on his page 3.

Throughout the record, the Recorder has merely taken facts and names

as he found them, without expressing an opinion as to their validity ; he has, however, done his best to discover and quote the published opinions of others. The few remarks within square brackets are inserted to prevent confusion, and are the only evidences of personality that the Recorder has permitted himself.

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This is practically a preliminary notice of (3).
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For preliminary notice, see AGASSIZ, Zool. Rec. 1891. Abstracts, J. R. Micr. Soc. 1892, p. 377 ; by O. JAEKEL, N. Jahrb. Min. 1893, i, pp. 562 & 563 ; in LUDWIG (158).
3. —. 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. II. General Sketch of the expedition of the "Albatross," from February to May, 1891. Bull. Mus. Harvard, xxiii, No. 1, 89 pp., 22 pls. (Feb. 1892). [II, D, v, c, 3. III, A, i ; iii.]
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* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

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(7) External branchiæ; PERRIER (213) p. 826; KENT (135) p. 43.

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(iii) **Bibliography**:—*Crinoidea* of Gotland; BATHER (11).—Mesozoic *Echinoderma* of the United States; CLARK (36) pp. 15–20.—Iowa *Blastoidea* (p. 219), *Crinoidea* (p. 266), *Echinoidea* (p. 294), other *Echinoderma* (p. 291); KEYES (140).

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(c) **Formation of Gonads**:—PERRIER (213) p. 830.—Gonads derived from Amœbocytes of lymphatic (ovoid) gland in *Asteroidea*, *Ophiuroidea*, and *Crinoidea*; CUÉNOT (53).—Spermatogenesis and description of spermatozoa in all classes of recent Echinoderms; FIELD (83); CUÉNOT (57): the same compared with that of Mammals; MOORE (194).—Oögenesis; CUÉNOT (57).

(d) **Oviposition**:—the time of, in *Toxopneustes variegatus*, *Hippoonœ esculenta*, *Ophiocoma æthiops*, *Ophiothrix orsterii*?, in Kingston Harbour, Jamaica; FIELD (82).

(e) Larval stages :—Cleavage of Echinoderm ova compared with that of *Amphioxus*; WILSON (273).—Bilateral symmetry of larva independently acquired in the different classes; KENNEL (132) p. 70.—The preoral lobe in Echinoderms; SEELIGER (241) p. 409: as an organ of fixation; WILLEY (272) p. 331.—Adaptive modifications of the free-swimming larval forms contrasted with simple non-swimming larvæ; PERRIER (213) p. 185.—Comparison of Tornaria of *Balanoglossus* with the Echinoderm larva; MORGAN (195) pp. 431–447.

(f) Tissue-formation :—Development of Mesoblast; GREENOUGH (101).—Formation of stereom by skeletogenous cells in *Echinoderma* generally; CHUN (34): and in *Echinoidea* particularly; THEEL (260).

(ii) HOLOTHUROIDEA :—(a) Ova :—large in *Benthodytes sanguinolenta*; LUDWIG (156) p. 180.

(b) Larval Stages :—Habitat of embryos; KENT (135) p. 229.

(c) Tissue-formation :—Growth of spicules, variant methods, in *Cucumaria montagu*; NORMAN (204) p. 472.

(d) Senile characters :—in spicules of *Synapta digitata*; MARENZELLER (164) p. 18.

(iii) ECHINOIDEA :—(a) Formation of Gonads :—Spermatogenesis; PICTET (218).—Early development and structure of ovum in *Sphaerechinus*; SCHNEIDER (237) p. 46.

(b) Larval stages :—Maturation, impregnation and segmentation of ovum, development of blastula, cells with plasmatic processes and sensory (?) cilia, of gastrula, formation of mesenchyme (with general discussion), the formation of calcareous deposits, development of pluteus and of young urchin, especially of spines, spheridia and teeth, and of dorsal plate from rod of pluteus; THEEL (260).—Segmentation in *Echinus microtuberculatus*, and teratological development of archenteron and mesoblast; PENARD (210).—Normal development of skeleton in pluteus of *Sphaerechinus*; HERBST (118) p. 194.

(c) Brephic and Neanic stages :—of *Echinocyamus affinis*, *Coptosoma pellati*, *Circopeltis baicherei*, *Arachniopleurus arenatus*; COTTEAU (44): of *Echinothrix desori* (p. 362), *Asthenosoma varium* (p. 364), *Salmacis rarisipina* (p. 370), *Laganum depressum* (p. 375); LORIOU (154): of *Diplopodia renevieri* (p. 61), and stages of growth in *Holaster lutissimus* (p. 91); LAMBERT (145): of *Micraster gauthieri*, compared with adult; PARENT (206) p. 13.

(iv) ASTEROIDEA :—(a) Larval stages and origin of organs :—Development of dorsal organ, genital organs, described in *Asterina gibbosa*, and compared with *Amphiura squamata*; MACBRIDE (161).—Segmentation, origin of mesenchyme, mesoderm, and vaso-peritoneal vesicle in *Asterias glacialis*, compared with other Echinoderms; RUSSO (229) p. 125.—Development of Bipinnaria in *Asterias glacialis*; RUSSO (229) p. 131.

(b) Brephic stages :—of *Nymphaster florifer*, *Zoroaster angulatus*, *Z. carinatus*; ALCOCK (6) pp. 94, 105 & 107.—Blood-vascular system in young *Asterias rubens*; CHADWICK (30).

(v) *OPHIUROIDEA* :—(a) General description ; FJELSTRUP (84) pp. 17–21.

(b) Formation of Gonads :—in *Amphiura squamata* ; RUSSO (230) p. 16.—Extrusion of ova in *Ophiopus arcticus* ; GRIEG (106) p. 17.—*Ophiopus* dies after its first and only extrusion of ova ; MORTENSEN (197) p. 526.

(c) Larval stages and origin of organs :—Segmentation, origin of germinal layers, vaso-peritoneal vesicles, water-vascular system, ovoid gland, skeleton, and nervous and digestive systems in *Amphiura squamata* ; RUSSO (230).—Embryonic development of genital organs, ovoid gland, axial and aboral sinuses in *Amphiura* ; MACBRIDE (159) ; CUÉNOT (59).—Apical system in *Ophioglypha nodosa* (p. 6), *Gorgonocephalus agassizi* (p. 10), and *G. lincki* (p. 11) ; GRIEG (105).

(d) Brephic and neanic stages :—of *Gorgonocephalus agassizi* ; GRIEG (106) p. 35 : of *Ophiothrix punctolimbata* ; LORIOI (154) p. 416.

(vi) *CRINOIDEA* :—(a) Formation of Gonads :—Oö- and spermatogenesis in *Bathycrinus carpenteri*, *Antedon petasus*, *A. proluxa*, and *A. eschrichti* ; DANIELSSEN (61) pp. 17–19.—Time and manner of oviposition in *Antedon* ; SEELIGER (241) p. 162.

(b) Larval stages :—Complete account of development of *Antedon rosacea* from ovum to cystid stage ; SEELIGER (241).

(c) Brephic and neanic stages :—Muscular articulation in brachials of young *Bathycrinus carpenteri* becomes syzygial in adult ; DANIELSSEN (61) p. 10.—Growth of stem in *Crinoidea* ; AGASSIZ (2) pp. 56–65.—Distal columnals of *Bathycrinus carpenteri* are in young formed of upper and lower halves united by syzygy ; DANIELSSEN (61) p. 3.—Neanic stages of *Gissocrinus verrucosus* ; BATHIER (11) p. 172.

(vii) **Experimental investigation** :—Of early development of Echinoids, by chemical alteration of medium, fusion of two or more embryos into one individual (pp. 459 & 483), fission of one ovum into two individuals (p. 468), feeble development of skeleton, &c. ; HERBST (116) : similar investigation with Lithia-salts continued ; HERBST (118) : with chemical reagents on unfertilized eggs of *Sphærechinus* ; HERBST (117) : of segmentation in eggs of *Arbacia*, by salination of water ; LOEB (151) : by shaking, pressure, and salination, & of *Asterias* by shaking ; eggs of *Asterias forbesi* fertilized successfully with sperm of *Arbacia punctulata* ; MORGAN (196) : of segmentation of egg of *Echinoidea* by division of material ; DRIESCH (67) : by pressure, alteration of temperature and fragmentation ; DRIESCH (68) ; same continued and further development ; DRIESCH (70) : of ova of *Sphærechinus granulatus* and *Echinus microtuberculatus* by pressure ; relations of Ectoderm and Entoderm ; DRIESCH (69).—Driesch criticised ; BRAEM (26).

Fertilisation and segmentation of enucleated ova of *Echinoidea* ; BOVERI (25).—Conditions of keeping living larvæ of *Echinocyamus* (p. 3), different physiological reaction of ova from different environments (p. 6) ; THEEL (260).

III.—DISTRIBUTION.

A.—GEOGRAPHICAL.

(i) GENERAL.

Geographical and bathymetric distribution of living *Echinoderma*, with lists of species, giving range in depth ; WALTHER (268) pp. 296–328.

Comparison of deep-water *Echini* in Panamic and Caribbean districts ; AGASSIZ (3) p. 80.

(ii) ATLANTIC.

(a) North : (1) Arctic Europe,—Spitzbergen, *Ctenodiscus*, *Asterias glacialis*, Ophiurids, *Strongylocentrotus droebachiensis*, *Echinus norvegicus* ; COUTEAUD (51) p. 150.

(2) Scandinavian Waters,—Norway, Trondhjem Fjords ; NORDGAARD (201) : simple list of species of all classes ; NORMAN (203) pp. 346 & 349.—Bergen Fjords, names of species ; APPELLÖF (8).—W. coast of Norway, list of Echinoderms dredged in July 1891 ; BUCKLEY in HERDMAN (120).

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Baltic, eastern, *Asteracanthion rubens*, *Ophioglypha albida* ; KOJEVNIKOV (143) pp. 141 & 154.

(3) British area,—Horizontal, vertical, and topographical distribution of Echinoderms ; BELL (16) pp. 175–187 ; for special distribution of species, see under names of species in body of same work.

Moray Firth, *Asteroidea* ; SCOTT (240).—Coast of Scotland, *Astronyx loveni*, details and causes of distribution ; SMITH (251).—Firth of Forth, SCOTT (238).

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Channel Is., list of *Echinoidea* ; SINEL in SHARP (242) p. 64.—Pas-de-Calais, various Echinoderms ; HALLEZ (112) p. 278.

(4) Main Ocean,—List of Crinoids and Echinoids as far as lat. 42° N. ; DANIELSSEN (61, 62) : *Ophiuroidea* ; GRIEG (106).—Greenland, W. Coast, and Labrador, Ophiurids ; GRIEG (105).—North Atlantic, coast of Spain, and Azores, Holothurians, especially *Holothuria tremula*, *H. verrilli*, *Stichopus regalis*, *Pseudostichopus occultatus*, *Cucumaria abyssorum*, *C. montagui*, *Thyone inermis*, *Synapta digitata* at 150 metres, and *Chiridota abyssicola*, n. sp., at 2870 metres ; MARENZELLER (164).—Concarneau, *Cucumaria koellikeri* ; MARENZELLER (167).—Localities of Holothurians dredged by the "Hirondelle" ; MARENZELLER (163) : of *Asteroidea* ; GUERNE (110).—New Brunswick, *Asterias forbesi*, *Molpadia turgida*, and *Chirodota tigillum*, added to list ; GANONG (91).—Sargasso Sea, larvæ of littoral Asteroids, apparently thirty days old, found 1000 sea-miles from E. coast of Atlantic, and 3000 from W. coast, whence they probably came ; HENSEN (115) p. 25.

(5) Mediterranean,—Eastern, various Echinoderms ; STEINDACHNER (254) p. 445.—*Luidia paucispina*, *Pentagonaster hystericis*, *Gnathaster mediterraneus*, *Pseudostichopus occullatus*, *Kolga ludwigi*, n. spp., *Ophioglypha carnea*, *Holothuria intestinalis*; MARENZELLER (165).—Cartagena, *Asterias glacialis*, *Echinaster sepositus*; MEISSNER (179).—Sardinia, list of Echinoderms ; EFISIO (73) pp. 252 & 253.

(b) Central and South : (1) Jamaica, Kingston Harbour, principal Echinoderms ; FIELD (82).

(2) W. coast of Africa, list of *Echinoderma* and affinities of fauna ; STUDER (256) pp. 21 & 22.—Cape of Good Hope, list of *Echinoderma* dredged ; STUDER (256) pp. 53 & 54.—Cape Town, *Linckia multiforis*, *Asterina penicillaris*; MEISSNER (179).

(3) Fernando Noronha, *Echinoidea* ; RIDLEY (222) p. 559.

(4) Kerguelen, *Cucumaria*, *Semperia*, *Chirodota*, *Trochostoma*, *Psolus*, *Thyone*, *Cidaris*, *Echinus*, *Hemiaster*, *Schizaster*, *Ophiogona*, *Ophioglypha*, *Ophiocten*, *Ophiocomis*, *Amphiura*, *Ophiacantha*, *Ophiomyxa*, *Gorgonocephalus*, *Pedicellaster*, *Asterius*, *Echinaster*, *Gnathaster*, *Porania*, *Leptotyphaster*, *Luidiaster*, *Pteraster*, *Retaster* ; STUDER (256) pp. 137, 142, & 163.

(5) W. Australia, Dirk Hartog I., *Antedon*, *Ophiocreas*, *Ophiuropsis*, *Pentagonaster* ; STUDER (256) p. 184.

(iii) PACIFIC AND ADJACENT OCEANS.

(a) Australia : Sydney, *Antedon macronema* ; Queensland, *Antedon tenera*, *Actinometra parvicirra*, *A. pectinata*, Bowen, *Antedon nematodon*, *A. afra* ; HARTLAUB (113).—Barrier Reef, *Holothuroidea* ; KENT (133, 135).—Torres Straits, *Antedon monacantha*, *A. tenera* ; HARTLAUB (113).—Sahul Bank, *Antedon longicirra*, *A. wood-masoni*, n. sp., *A. patula* and *Metacrinus interruptus*; BELL (17).

New Guinea, Galewo Straits, Asteroids and Ophiuroids ; STUDER (256) p. 233 : several species of Echinoids, Asteroids, and Ophiuroids already known from Indian Ocean ; MARTENS (171).

(b) Malay Archipelago : (1) Bay of Amboyna,—*Cidaris metularia*, *Rhabdocidaris annulifera*, *R. imperialis*, *Echinothrix desori*, *Diadema setosum*, *Asthenosoma varium*, *Salmacis rarispina*, *Tripneustes variegatus*, *Echinometra lucunter*, *Heterocentrotus mamillatus*, *Laganum depressum*, *Arachnoides placenta*, *Metulia muculosa*, *Maretia planulata*, *Astropecten polyacanthus*, *Luidia maculata*, *Pentaceros turritus*, *Pentaceropis obtusatus*, *Culcita grex*, *Asterina cepheus*, *A. exigua*, *Linckia miliaris*, *Ophiidiaster purpureus*, *Acanthaster echinites*, *Echinaster eridanella*, *Ophiopezella luetkeni*, n. sp., *Pectinura septemspinosa*, *P. gorgonia*, *P. infernalis*, *Ophiolepis cincta*, *Ophioplocus imbricatus*, *Ophiactis sexradia*, *O. brocki*, n. sp., *Amphiura duncani*, *Ophiocnida picteti*, n. sp., *Ophiocoma scolopendrina*, *O. erinaceus*, *Ophiarachna affinis*, *Ophiarthrum elegans*, *Ophiomastix annulosa*, *O. caryophyllata*, *Ophiothrix longipeda*, *O. comata*, *O. galatea*, *O. bedoti*, n. sp., *O. picteti*, n. sp., *O. propinqua*, and others previously recorded from Amboyna ; LORIOU (154). *Antedon brocki*, *A. affinis*, *A. ludovici*,

A. crassipinna, *A. clara*, *A. oxyacantha*, *A. spinipinna*, *A. imparipinna*, *A. brevicuneata*, *A. elongata*, *A. perspinosa*, *A. nana*, *Actinometra divaricata*, *A. bennetti*, *A. regalis*, *A. coppingeri*, *A. pectinata*, *A. typica*; HARTLAUB (113).

(2) Rest of Archipelago.—New Britain, *Antedon finschi*, *A. tenuipinna*; Ruck Is., *Actinometra fimbriata*, *A. pulchella*; Java, Noordwachter Eiland, *Antedon bella*; Pulo Edam, *Actinometra gracilis*; Lombok, *Actinometra parvicirra*; Sumatra, Atjeh, *Antedon milberti*; Singapore, *Antedon martensi*, *A. palmata*, *A. flagellata*; HARTLAUB (113).

(c) Indian Ocean: (1) Deep waters, *Pararchaster*, *Pontaster*, *Dytaster*, *Persephonaster*, *Pseudarchaster*, *Porcellanaster*, *Styracaster*, *Hyphalaster*, *Astropecten*, *Dipsacaster*, n. g., *Pentagonaster*, *Milteliphaster*, n. g., *Dorigona*, *Nymphaster*, *Paragonaster*, *Mediaster*, *Anthenoides*, *Palmipes*, *Chaetaster*, *Zoroaster*, *Marsipaster*, *Hymenaster*, *Cribrella*, *Dictyaster*, *Pedicellaster*, *Asterias*, *Brisinga*, *Freyella*; ALCOCK (6).

(2) Bay of Bengal,—*Dipsacaster pentagonalis*, n. sp., *Calliaster mamillifer*, n. sp., *Astroschema flosculus*, n. sp., *Echinolampas castanea*, n. sp., *Brissoopsis oldhami*, n. sp., *Lovenia gregalis*, n. sp., and others; ALCOCK (5).—*Antedon bengalensis*, *A. kraepelini*; HARTLAUB (113).

(3) African coast & Islands,—Mauritius, *Cidaris curvatispinis*, n. sp.; BELL (19).—Mozambique Channel, *Georisia ornata*, n. sp.; PERRIER (212).—Wapoo, *Antedon huyferi*; HARTLAUB (113).—Madagascar, *Parasalenia gratiosa*; MEISSNER (182).—Zanzibar, *Goniiodiscus sanderi*, n. sp., *Pentaceros muricatus*, *Asterina cepheus*; MEISSNER (179).—Cape Town and Zanzibar, *Echinoidea*; MEISSNER (181).

(4) Red Sea,—Holothurians; HEROUARD (121).—Various Echinoids; BOUTAN (24) iv, pp. 212, 352, & v, p. 53.—MAZZETTI (177).—*Antedon palmata*; Koseir, *A. klunzingeri*; HARTLAUB (113).

(d) Main Ocean: (1) Polynesia and S. America,—*Gymnasterias valvulata*, from Lord Howe's I., not from Lord Hood's I.; BELL (18) p. 28.—Anachorete Is., various *Echinoderma* (pp. 234 & 235), New Mecklenberg (p. 248), Neu-Pommern (p. 256), E. Australia (pp. 260–269), Magellan Str. (pp. 281, 283, 285–289, & 292), Timor (p. 216), Dampier Archipelago (pp. 191–197); STUDER (256).

(2) Islands N. of Equator, — Fiji Is., *Actinometra parvicirra*, *A. stelligera*; Ovalau, *Antedon imparipinna*; Tonga Is., *Antedon palmata*, *A. imparipinna*, *A. serripinna*, *A. nana*, *Actinometra parvicirra*; Samoa, *Actinometra stelligera*; HARTLAUB (113).

(3) S. America,—Callao and Tahiti, Echinoids; MEISSNER (181).—Callao, *Heliaster helianthus*, *Stichaster aurantiacus*, *Echinaster cylindricus*, *Asterina chilensis*, *Luidia bellonæ*; MEISSNER (179).—Chili, list of *Echinoidea*; PHILIPPI (217).

(4) Caroline Is.,—Mortlock Is., *Antedon monacantha*, *Actinometra parvicirra*, *A. maculata*; Ponape, *A. parvicirra*; HARTLAUB (113).

(5) Philippines,—Cebu Is., *Antedon erinacea*; near Philippines, Palau Is., *A. andersoni*; HARTLAUB (113).

(6) China Sea,—*Actinometra solaris*, *Antedon crassipinna*, *A. impari-*
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pinna, *Actinometra macrobrachius*; Formosa, *A. multiradiata*; HARTLAUB (113).

(7) Eastern Pacific, — Holothurians, with new genera *Synallactes*, *Mesites*, *Meseres*, *Scotodeima*, *Laetmophasma*, *Capheira*, *Pelagothuria*, and *Sphaerothuria*; LUDWIG (156).

Panamic region, deep-sea Echinoids, *Cystechinus*, *Aspidodiadema*, *Urechinus*, *Pourtalesia*, *Schizaster*, *Salenia*, and some *Oidaride*; Ophiuroids, a few Ophiurans, *Ophiocreas*, *Sigsbeia*; Asteroids, abundant, *Freyella*, *Hymenaster*, *Astrogonium*, *Asterina*, and *Archasteride*; Holothuroids, *Elasipoda*, *Peniagone*, *Benthodytes*, *Euphronides*; Crinoids, *Calamocrinus*; AGASSIZ (3) p. 77.—Gulf of California, Echinoids, *Schizaster*, new genus allied to *Palaeopneustes*, *Cystechinus*, *Pourtalesia*; Ophiuroids, *Ophiomusium*, *Ophiocreas*; Asteroids, *Brisinga*, *Cribrella*, *Astropecten*; Holothuroids, *Elasipoda*, *Cucumaria*, *Trochostoma*, *Benthodytes*, *Euphronides*; AGASSIZ (3) p. 78.

(8) Japan, — *Antedon conifera*, *A. japonica*, *A. multiradiata*; HARTLAUB (113).—Echinoids; MEISSNER (181).—Yokohama, *Asterias amurensis*, *A. torquata*, *Astropecten scoparius*, *Luidia limbata*, *Asterina pectinifera*; Inland Sea, *Astropecten latespinosus*, n. sp.; MEISSNER (179).

(9) N. E. Pacific, — Coast of British Columbia, *Strongylocentrotus franciscanus*; WHITEAVES (270) p. 133.

B.—GEOLOGICAL.

(i) GENERAL.

Summary of fossil *Echinoderma* of France, with localities; MEUNIER (183).

(ii) CAINOZOIC.

(a) **General**:—Distribution of *Astropecten*; SACCO (233) p. 745.—Pianosa in Tyrrhene Sea, *Echinoidea*; SIMONELLI (245).—(P), Turkestan, *Austinocrinus erckerti*; ROMANOVSKII (223) p. 85.—Coro, W. Indies, *Scutella*; ERNST (75) p. 339.—Australia, — *Echinoidea*, for new species see under *Psammechinus*, *Coptechinus*, *Fibularia*, *Progonolampas*, and *Cyclaster*; BITTNER (21) pp. 368 etc., and TATE (257): *Echinolampas morgani*, n. sp., and *Galeraster australis*, n. g. & sp.; COTTEAU (39) pp. 546–548.

(b) **Pliocene**:—Piedmont, *Astropecten* and *Ophiotrix*; SACCO (233).—E. Pyrenees, *Cidaris tribuloides*; COTTEAU (42) p. 736.—Mexico, *Echinocyamus altavillensis*, *Clypeaster meridanensis*, *C. crustulum*; AGUILERA (4) p. 43.—(?), New Guinea, *Temnechinus* and *Peronella*; ETHERIDGE (76) p. 691.

(c) **Miocene**:—Angles in Gard, France, *Pentacrinus*, cf. *Gustaldii*; SINARD (247).—Kralitz in Mähren, *Echinoidea* and *Asteroides*; TOULA (265) pp. 291 & 292.—(Helvetian), of Rhone basin, *Echinoidea*; DEPÉRET (64).—(Middle Miocene), Maine-et-Loire, *Echinolampas dumasi*, n. sp.; COTTEAU (46) p. 353.—Sinai, two *Echinoidea*; ROTHPLETZ (224) p. 103.—Ilheu da Cal, Porto Santo, Madeira Archipelago, *Clypeaster altus*;

COTTER (49) p. 235.—Ilha de Santa Maria, Azores, *Clypeaster altus* ;
COTTER (50) p. 259.

(d) **Eocene** :—*Clypeastroïda* ; COTTEAU (40).—*Cidaridæ*, list of species ; COTTEAU (43).—Localities and complete species of *Scutellina*, *Echinocyamus*, *Leuita*, *Thagaster*, *Fibularia*, *Cidaris*, *Rhabdocidaris*, *Porocidaris*, *Salenia*, *Coptosoma*, *Cyphosoma*, *Leiosoma*, *Circopeltis*, *Micropeltis*, *Gagara*, *Coelopleurus*, *Baueria*, *Echinopsis*, *Hebertia*, *Rhabdopleurus*, *Arachniopleurus*, *Triplacidia*, *Leiopedina*, *Echinopedina*, *Sphaerechinus*, *Psammechinus*, *Micropsina*, *Parasalenia*, also species of *Maretria*, *Euspatangus*, *Tuberaster*, *Echinocardium*, *Sarsella*, and *Breyfia* ; COTTEAU (44).—(Upper Eocene), Biarritz ; *Cidaris felicia*, n. sp. ; COTTEAU (42).—E. Balkans, *Echinocyamus subcaudatus* ; TOULA (264) p. 450.—Vicentino, Italy, *Brissospatangus vicentinus*, n. sp. ; MAZZETTI (176).—Victoria, localities of *Echinoidea* and *Antedon breviceps* ; TATE & DENNANT (258) p. 225.—(Passage from Cretaceous couches à *Echinanthus*), Pyrenees, *E. heberti*, *E. carinatus*, *E. pouechi*, *E. ataxensis*, *E. rayssacensis*, *E. gracilis*, and other species of *Echinanthus*, *Horiolampas*, *Conoclypeus*, *Micraster*, *Hemiaster*, *Echinocorys*, and *Strictechinus* ; ROUSSEL (226).

(iii) MESOZOIC.

(a) **General** :—*Echinodermata* of United States ; CLARK (36), *passim* and special table on p. 94.

(b) **Cretaceous** :—N. Germany, *Cidaridæ* and *Salenidæ* (pp. 143, 203, & 209), and Regular Echinoids (p. 214) ; SCHLUETER (236).—*Epiaster* (?) sp. indet., in Glen Rose beds, Texas ; HILL (122) p. 21.—(Upper Cretaceous), Haute-Garonne, *Strictechinus pouechi*, n. sp. ; COTTEAU (42) p. 738.—Angoulême, horizons and localities of numerous Echinoids and *Pentacrinus carinatus* ; ARNAUD (9).—*Micraster aff. aturicus et heberti* ; FALLOT (77).—(Pyrope beds), Bohemia, *Antedon pyrope*, n. sp. ; ZAHALKA (277).—(Upper Desert Sandstone), *Micraster sweeti*, n. sp. ; ETHERIDGE (76) p. 559.—(Upper Cretaceous), Mexico, *Salenia prestensis*, *Pseudocidaris saussurei*, *Pseudodiadema malbosi* ?, *Cyphosoma texana*, *C. aquitanicum*, *Holcetypus castilloi*, *Lanieria lanieri*, *Pyrina parryi*, *Toxaster elegans*, *Heteraster texanus*, *Enallaster mexicanus*, *E. delgadoi*, *Micraster* sp. ?, *Linthia* sp., *Ananchytes sulcatus* ?, *Macropneustes*, sp. ? ; AGUILERA (4) p. 26.—(Danien), Rivières near Tercis (Landes), *Dipneustes aturicus*, n. g. & sp. ; COTTEAU (41).—Villagrains in Aquitaine, (Senonian) *Micraster aturicus*, *Echinocorys heberti*, *Echinoconus raulini*, (Danien) *Echinocorys vulgaris (acuminati, var.)*, *Echinoconus gigas*, also other Echinoids of less importance ; FALLOT (78) pp. 353–355.—(Senonian).—Lezennes, d'Éstrée-Blanche, and Roisel, N. France, *Micraster beonensis*, *M. gauthieri*, and other species of *Micraster*, *Echinocorys*, *Echinoconus*, *Holaster*, and *Cidaris* ; PARENT (208) : all species of *Hemipneustes* ; COTTEAU (38) : France, *Circopeltis peroni*, n. sp. ; COTTEAU (39) p. 537 : Vernasso near Friuli, *Cidaris papillata* ; TOMMASI (262) p. 1115 : Tunis, *Pentacrinus peroni*, n. sp., *Balano-crinus africanus*, n. sp. ; LORIOLO (153) : Algeria, *Hemiaster* and *Hemipneustes*, n. sp., *Echinobrissus subsitifensis* ; FICHEUR (81) pp. 419–421.—

(Upper Senonian, Lower Campanian), Charente-Inférieure, *Thylechinus* and *Cyphosoma rejaudryi*, n. spp.; COTTEAU (46) p. 349.—(Middle Dordognian), Charente Inférieure, *Salenia cylindrica*, n. sp., of Dordogne, *Orthechinus boreau*, n. sp.; COTTEAU (46) pp. 346 & 350.—(Upper Senonian) Dordogne, *Hemipneustes arnaudi*, n. sp.; COTTEAU (42) p. 733.—(Hippurite Chalk) France, *Cidaris bausetensis*, n. sp.; COTTEAU (39) p. 545.—(Santonian) France, *Salenia radians*, n. sp.; COTTEAU (39) p. 543.—(Zones of *Micraster* and *Epiaster*) Boulonnais, *M. breviporus*, *M. cortestudinarium*, *M. corbovis*, *M. normanniæ*, *M.* n. sp., *Cardiaster granulatus*, *Cyphosoma* sp., and other *Echinoidea*; PARENT (207).—(Zone of *Micraster cortestudinarium*) near Lille, *Micraster gauthieri*, n. sp., *M. cayesi*, n. sp., *M. lucailli*, n. sp., *M. coranginum*, var.; (Zone of *M. breviporus*), *M. sanctaemauræ*, *M. normanniæ*, *Echinoconus lezennensis*, n. sp.; PARENT (206).—(Zone of *M. cortestudinarium*) Lille, *Micraster gosseleti*, n. sp.; CAYEUX (29).—(Zone of *M. breviporus*), *Echinoidea*; CAYEUX (28).—(Turonian) Silesia, *Cidaris* sp., cf. *subvesiculosa*, *Micraster cortestudinarium*; MICHAEL (184) p. 242.—(Cenomanien),—Artois, N. France, various *Echinoidea*, names only; PARENT (209): Silesia, *Cidaris vesiculosa* and *C. reussi*; MICHAEL (184) p. 240: Algeria, *Hemiasperter gabriellii* and *H. proclivis*, *Heterodiadema libycum*, *Codiopsis domi*, &c.; FICHEUR (81) pp. 411 & 412: rocks of Lebanon, proved of this age by *Echinoidea*; COTTEAU (47, 48): Sinai, various *Echinoidea*; ROTHPLETZ (224) p. 103.—(Priesener Schichten) Bohemia, *Antedon fischeri*, *Cidaris sceptrifera*, *C. subvesiculosa*, *Phymosoma radiatum*, *Micraster de lorioli*, *Holaster placenta*?, *Hemiasperter regulusanus*, *Cupulaster pauper*, *Stellaster coombii*, *Ophioglypha? pulcherrima*; FRIČ (89) pp. 22, 61, & 109.—(Kieslingwalder Gestein) Silesia, *Cardiaster cotteanus*, *Schizaster roemeri*, *Asterias schulzii*; LANGENHAN & GRUNDEY (147) p. 8.—(Aptian, Albian, Cenomanian, Sononian, Maestrichtian) Central Pyrenees and Corbières, lists of *Echinoidea*; ROUSSEL (225).

Lower Cretaceous.—(Berriasschichten) Margofelalpen and "Auf der Schöni," Switzerland, *Cidaris alpina*; MOESCH, (192) p. 7.—(Rolling Downs Formation), *Pentacrinus australis*; ETHERIDGE (76) p. 439.—(Gault) Artois, N. France, *Catopygus*, cf. *cylindricus*, *Cidaris gaultina*, *C. cf. salevensis*, *C. vesiculosa*; PARENT (209).—(Neocomian) Spain, *Cidaris pyrenaica*; COTTEAU (39) p. 542: Balkans, *Pentacrinus neocomiensis* and *Pyrina* sp.; VANKOV (266) p. 97: Somaliland, *Toxaster collegnoi*, *Pygaulus kelleri*, *P. barthi*; MAYER-EYMAR (175) p. 261.—(Aptien, Sables ferrugineux) Grandpré, France, *Cidaris plexa*, n. sp., *Goniocidaris furringdonensis*, *G. arduennensis*, n. sp., *Diplopolia renevieri*, *Polydiadema cotteau*, n. sp., *Hemidiadema rugosum*, *Peltastes lardy*, *Discoides peroni*, n. sp., *Phyllobrissus cerceleti*, *Holaster latissimus*, *Echinospatangus breyni*; LAMBERT (145).

(c) **Jurassic**:—Caucasus, see under *Acrochordocrinus*, *Pentacrinus*, and *Rhabdocidaris*; NEUMAYR & UHLIG (198).—Mexico, *Millericrinus polyclonus*, *Cidaris submarginata*, *Acrocidaris nobilis*; AGUILERA (4) p. 17.—(Upper Jurassic) Poland, *Apiocrinus milleri*, *Pentacrinus desori*, *P. ambly*

scalaris, *Sphaeraster punctatus*, *Cidaris coronata*, *C. propinqua*, *C. florigemma*, *C. filograna*, *C. abichi*, *Rhabdocidaris remus*, *R. suevica*, *R. nobilis*, *R. caprimontana*, *Stomechinus aroviensis*, *Hyboclypeus* sp., *Echinobrissus goldfussi*, *Collyrites thermanum*, *Dysaster siliceus*; SEMIRADZKI (244) pp. 142-144.—(Tithonian) Crimea, *Phyllocrinus verrucosus*, n. sp., and Echinoid fragments; RETOWSKI (221) p. 288: Algeria, at Soubella and Teniet-Afghan, *Holectypus afer*, *Infraclypeus thalebensis*, *Metaporhinus convexus*, *Collyrites carinata*; FICHEUR (81) p. 401.—(Kimmeridgian and Oxfordian, Katrol and Chareo Groups) Cutch, India, *Cidaris* sp., *Rhabdocidaris* sp., *Pseudocidaris unigranulatus*, n. sp., *Pseudodiadema cutchensis*, n. sp., *Stomechinus* sp., *Holectypus sarthacensis*, *Collyrites dorsalis*, *C.*, cf. *bicordata*, *Pygorhytis tumulus*, n. sp.; GREGORY (102) p. 2: of Kahlberg, near Echte, Germany, list of *Echinoidea*; SMITH (250) p. 346.—(Sequanian, Couches de Ste. Verene) Oberbuchsiten, Switzerland, *Cidaris florigemma*, *C. blumenbachi*, *C. coronata*, *Diplocidaris gigantea*, *Hemicidaris intermedia*, *Acrocidaris nobilis*, *Apiocrinus meriani*, *Pentacrinus desori*, *Balanocrinus sigmaringensis*; GREPPIN (104) pp. 99 & 105.—(Oxfordian) Brünn, *Pentacrinus briareus*, with *P. subteres*, *P. cingulatus*, and *Eugeniocrinus hoferi*; ZIMMERMAN (279).

(Oolite, Nattheim-kalk) Swabia, *Solanocrinus* and *Eugeniocrinus*; ENGEL (74).—(Middle and Upper Oolites) Yorkshire, lists of Echinoderms; FOX-STRANGWAYS (87), I, pp. 276, 302, 314, 322, 324, 334, 340, 347, 355, 359, 363, 377, and II, pp. 193-199.—(Lower Oolites) Yorkshire, lists of Echinoderms; FOX-STRANGWAYS (87), I, pp. 152, 177, 209, 214, 249, 264, and II, pp. 144-146.—(Between Bajocian and Bathonian) Maine-et-Loire, *Pedina grossouvrei*, n. sp.; COTTEAU (46) p. 344.—(Stufenstein) Switzerland, *Cidaris filograna* and *C.* sp.; MOESCH (192) pp. 27 & 28.—(Inferior Oolite, Untere Hauptrogenstein) near Basle, contains banks of *Cainocrinus andreae*; *Terebratula maxillata* beds are rich in *Hemicidaris langrunensis*; Discoideen-mergel or Cornbrash contains *Holectypus depressus*, *Echinobrissus clunicularis*, and *Clypeus sinuatus*; GREPPIN (103).

(d) Lias :—England and Wales, except Yorkshire, general list of Echinoderms; WOODWARD (276) pp. 369 & 370.—Yorkshire, lists of Echinoderms; FOX-STRANGWAYS (87), I, pp. 37, 45, 49, 53, 60, 79, 84, 126, 130, and II, pp. 32-36.—(Toarcian) May in Calvados, *Hemicidaris bigoti*, n. sp.; COTTEAU (46) p. 345: Dives in Calvados, *Pentacrinus basaltiformis* and *Eugeniocrinus deslongchampsii*; LIPPMANN & DOLLFUS (150) p. 390.—(Middle Lias) Lothringen, *Pentacrinus basaltiformis*, *P. subsulcatus*, *P. oceani*, *Extracrinus subangularis*; STUBER (255): (?) Kurremölla in Scania, *Pentacrinus* and *Cidaris*; MOBERG (190) pp. 23-27.—(Lower Lias) Lothringen, *Pentacrinus psilonoti*, *P. tuberculatus*, *Cyclocrinus hausmanni*, *Cidaris martini*, *C.*, cf. *itys*, *Pseudodiadema minutum*; STUBER (255): Swabia, *Pentacrinus angulati*, n. sp., and *Ophiura turneri*, n. sp., &c.; ENGEL (74): Gamchilücke, Switzerland, *Pentacrinus tuberculatus*; MOESCH (192) p. 35: Ugliancaldo and Resti, Italy, *Pentacrinus*; FUCINI (90) p. 294: Calabria, *Echinoid* spines and *Pentacrinus* columnals; GRECO (100) p. 79.

(e) **Rhaetic**:—Montagna di Cetona, Italy, *Hemicidaris* and *Cidaris* spines; SIMONELLI (246) p. 243.

(iv) PALÆOZOIC.

(a) **General**:—Cornwall, various ill-determined Crinoids; COLLINS (37) p. 49.

(b) **Trias**:—Saxony, list of fossils; GEINITZ (96) 190.—(Muschelkalk) *Holocrinus*; JAEKEL (126).—Recoaro, *Ophioglypha granulata*; NEVIANI (200).—(Muschelkalk, Gorasdzher Schichten) Chorulla, Upper Silesia, *Encrinus*, sp.; MICHAEL (185).—(St. Cassian beds) S. Tyrol, species of *Encrinus*, *Pentacrinus*, *Cidaris*, and *Rhabdocidaris*; OGILVIE (205) p. 50.

(c) **Permian**:—Saxony, list of fossils; GEINITZ (96) p. 178.

(d) **Permo-Carboniferous**:—Queensland, species doubtfully referred to *Actinocrinus*, *Platycrinus*, *Stemmatocrinus*, *Poteriocrinus*, *Mesoblastus*, *Granatocrinus*, *Tricelocrinus*, and *Archæocidaris*; ETHERIDGE (76) pp. 207-213.

(e) **Carboniferous**:—*Palechinus sphaericus*, forming a bed at Chanxhe and Comblain-au-Pont, Belgium; LOHSE (152).—Turkestan, *Cyathocrinus stellatus*, *Poteriocrinus maschatensis*, *Platycrinus hieroglyphicus*, *Rhodocrinus tuberculatus*, n. spp., mostly columnals; ROMANOVSKII (223) pp. 81-85.—(Lower Carboniferous) Donegal, *Homotachus*; SOLLAS (253).—Character of Crinoid faunas in the rocks of Iowa; KEYES (139) pp. 61-67.

(Coal Measures) Missouri, *Hydreionocrinus subsinuatus* (p. 40), *H. noduliferus* (p. 41), *H. crassidiscus* (p. 43), *H. granuliferus* (p. 44), *Ulocrinus blairi* (p. 57), *U. occidentalis* (p. 58), *Æsiocrinus angulatus* (p. 59), *Eupachycrinus parvus* (p. 60), n. spp., MILLER & GURLEY (188).

(Kaskaskia Group) Indiana, *Zecrinus bellulus* (p. 34), Virginia, *Z. obesus* (p. 35), Illinois, *Z. nitidus* (p. 36), Indiana, *Scaphiocrinus martinensis* (p. 38), *Onychocrinus parvus* (p. 52), Kentucky, *Granatocrinus spheroidalalis* (p. 65), n. spp., MILLER & GURLEY (188).

(St. Louis Group) Indiana, *Melonites indianensis* (p. 5), Kentucky, *Oligoporus sulcatus* (p. 8), *Batocrinus lyonanus* (p. 18), Missouri, *Hydreionocrinus sanctiludovici* (p. 40), Illinois, *Talarocrinus trijugis* (p. 45), n. spp., MILLER & GURLEY (188).

(Keokuk Group) Missouri, *Oligoporus blairi* (p. 6), *O. bellulus* (p. 7), Indiana, *Actinocrinus gibsoni* (p. 10), Illinois, *A. angustatus* (p. 11), Iowa, *Cyathocrinus andersoni* (p. 30), Indiana, *C. tumidulus* (p. 31), *C. signatus*, (p. 32), *Barycrinus formosus* (p. 33), *Scaphiocrinus arrosus* (p. 39), Kentucky, *Forbesocrinus pyriformis* (p. 47), Indiana, *Taxocrinus crawfordsvillensis* (p. 49), *Goniasteroidocrinus lyonanus* (p. 55), n. spp., MILLER & GURLEY (188).—Missouri, n. spp. of *Agelacrinus*, *Platycrinus*, *Batocrinus*, Indiana, n. spp. of *Rhodocrinus*, *Steganocrinus*, *Batocrinus*, *Eretmocrinus*, *Cyathocrinus*, *Scaphiocrinus*, *Barycrinus*, Kentucky, *Ichthyocrinus*; MILLER (187).—Iowa, *Eupachycrinus orbicularis* (p. 31); WHITFIELD (271).

(Burlington Group) Iowa, *Batocrinus laura* (p. 17), *Eretmocrinus attenuatus* (p. 18), other Crinoids and one Blastoid previously described

by Hall from this locality, and *Batocrinus bisbrachiatus*, n. sp. (p. 13); WHITFIELD (271): *Actinocrinus arrosus* (p. 15), *A. plagosus* (p. 16), *Eretmocrinus casedayanus* (p. 17), *Strotocrinus venustus* (p. 26), Illinois, *Actinocrinus erraticus* (p. 14), *Granatocrinus winslowi* (p. 66), n. spp.; MILLER & GURLEY (188): *Teleiocrinus ægilops* (p. 20), Missouri, *Batocrinus oblatu*s (p. 12); WHITFIELD (271): *Batocrinus altiusculus* (p. 20), *B. aspratilis* (p. 21), *B. scyphus* (p. 23), *B. latus* (p. 24), *B. aquabilis* (p. 25), n. spp.; MILLER & GURLEY (188): n. spp. of *Actinocrinus*, *Dorycrinus*, *Batocrinus*; MILLER (187): *B. shepardi*, n. sp.; ROWLEY (228).

(Kinderhook Group) Missouri, *Blairocrinus spinosulus*, n. sp., p. 28; MILLER & GURLEY (188).

(Chouteau Limestone) Missouri, n. spp. of *Platycrinus*, *Actinocrinus*, *Blairocrinus*, *Agaricocrinus*; MILLER (187).—*Platycrinus allophylus*, *P. insolens*, *Blairocrinus*, *Granatocrinus roemeri*, and *G. sp.*; ROWLEY (227).—*G. mutabilis*, n. sp.; ROWLEY (228).

(f) Devonian:—(Hamilton Group) Missouri, *Melocrinus gregeri*, *Taxocrinus concavus*, n. spp.; ROWLEY (228).

(Upper Helderberg Group) Kentucky, *Nucleocrinus greenei* (p. 62), Kentucky and Ohio, *N. venustus* (p. 63), n. spp.; MILLER & GURLEY (188).

(Lower Oriskany) New York, *Edriocrinus sacculus*; BEECHER & CLARKE (14).

(Lower Devonian, Hauptquarzit) Klostergrunde in Harz, *Ctenocrinus*; KAYSER (131) p. 67. Haupt-Kahleberggrandstein, Harz, *Aspidosoma*; HALFAR (111A).

(g) Silurian:—Gotland, the *Crinoidea Inadunata* compared with those of England and America; BATHER (11), *passim* and esp. pp. 6 & 15.—Stratigraphy of Central Bohemia with special reference to Crinoids and Cystids, of which many nomina nuda are quoted; JAHN (127).

(Niagara Group) Indiana, n. spp. of *Holocystis*, *Æthocystis*, *Stribalocystis*, *Stephanocrinus*, *Saccocrinus*, *Cylicocrinus*, *Melocrinus*, *Gazacrinus*, *Cyphocrinus*; MILLER (187).—Tennessee, *Eucalyptocrinus wortheni*, n. sp.: MILLER & GURLEY (188) p. 53.

IV.—SYSTEMATIC.†

(A.)—ECHINODERMA IN GENERAL.

General classification; AGASSIZ (2) p. 8: the following is given by PERRIER (213) pp. 846-864:—

- I. Sub-series *Palæoechinodermata*: I Class, *Cystidea*; II Class, *Blastoidea*.
 II. Sub-series *Neoechinodermata*: 1. Branch, *Anangia*; I Class, *Stelleroïda* (= *Asteroïda*); II Class, *Ophiuroïda*; 2. Branch, *Angiophora*; I Class, *Crinoïda*; II Class, *Echinoïda*; III Class, *Holothurides*.

† 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.

The chief divisions diagnosed ; BELL (16) p. 12 : see also Zool. Rec. 1891, BELL (5) p. 46.

(B.)—HOLOTHUROIDEA.

- † *Holothurian* ?, intestine, preserved fossil ; FRIČ (89) p. 114.
- Actinopyga echinites*, characters of living animal, p. 236, *A. lecanora*, ditto, p. 235, *A. mauritiana*, ditto, pp. 229 & 236, *A. obesa*, ditto, p. 235 ; KENT (135).
- A. mamillata*, p. 56 [see under *Holothuria mammifera*], *A. polymorpha*, p. 236, Great Barrier Reef, KENT (135), n. spp.
- Anapta fallax*, Lamp. ; STUDER (256) p. 287.
- Ancyroderma spinosum*, nomen nudum ; LUDWIG (156) p. 185.
- Benthodytes* ; AGASSIZ (3) pp. 77, 79, 83, & 84. *B. gelatinosa*, Walsh, referred to *Palopatides*, p. 178, *B. incerta*, nomen nudum, p. 179, *B. sanguinolenta*, Theel, anatomical details corrected, p. 180 ; LUDWIG (156). *B. (?) typica*, Theel, Azores ; MARENZELLER (164) p. 12.
- B. janthina*, between Pico and São Jorge, Azores, 2870 metres, MARENZELLER, Bull. Soc. Zool. France, xvii, p. 64, and (164) p. 10, n. sp.
- Bohadschia argus*, colour and commercial value, photo from life ; KENT (135) p. 56.
- ‡ *Capheira*, n. g. of *Elasipod*, and *C. sulcata*, nomen nudum ; LUDWIG, Zool. Anz. xvi, p. 181.
- Caudina californica*, nomen nudum ; *op. cit.* p. 185.
- Chirodota contorta*, Ludw., p. 287, *C. punaensis*, Semp., p. 215 ; STUDER (256). † *C. sp.* ; WOODWARD (276) p. 370. *C. studeri*, Theel, distribution ; STUDER (256) pp. 140, 163, 283, & 285. *C. tigillum*, Selenka ; GANONG (91) p. 58.
- C. abyssicola*, Azores, 2870 metres, MARENZELLER (164) p. 19, and (163) p. 65, n. sp.
- Colochirus*, see *Pentacta*. *C. anceps*, colour and habits of feeding ; KENT (135) p. 241. *C. (?) andersoni*, Lamp. ; BELL (16) p. 46. *C. australis*, Ludw. ; STUDER (256) p. 192. *C. dispar*, Lamp., *C. inornatus*, Marenz., pp. 191, 192, 193 ; STUDER (256). *C. lacazei*, Hér., see *Cucumaria montagui*. *C. quadrangularis*, Less., p. 191, *C. tuberculosus*, Quoy Gaim., colour varying with locality, p. 191 ; STUDER (256).
- Cucumaria*, Forbes ; AGASSIZ (3) pp. 79 & 83, BELL (16) p. 35. *C. abyssorum*, Theel, the var. *hyalina* and *grandis* are young and old respectively ; LUDWIG (156) p. 184 : Azores, 2870 metres, var. approaching var. *hyalina* ; MARENZELLER (164) p. 14. *C. andreossi*, Farran ; BELL (16) p. 41. *C. crocea*, Less., brood-pouches, distribution ; STUDER (256) pp. 140 & 163. *C. frondosa*, Gunn. ; BELL (16) p. 39, NORDGAARD (201) pp. 5, 10 : spermatogenesis ; CUÉNOT (57).
- C. fucicola*, F. & G. ; BELL (16) p. 40. *C. hispida*, Barr. ; BELL (16) p. 38. *C. hyndmani*, Thomps. ; BELL (16) p. 36 : off coast of Spain ; MARENZELLER (164) p. 14. *C. koellikeri*, Semp. ; MARENZELLER (167) : spicules described and distinguished from *C. montagui* ; NORMAN (204) p. 472. *C. lacazei*, Herouard, see *C. montagui*.

- C. lactea*, F. & G.; BELL (16) p. 38: var. ?; PETERSEN (216) p. 39. *C. lefevrii*, Barrois, referred to *C. koellikeri*; MARENZELLER (167): see also *C. montagui*. *C. leonina*, Semp.; STUDER (256) p. 283 & 285. *C. montagui*, Flem., Pico Fayal, Azores, 130 metres, discussed and compared with *Colochirus lacazei*; MARENZELLER (164) p. 15, and (167): redescribed while *C. lefevrii*, *Semperia drummondi*, (?) *Thyone portlocki*, and (?) *C. lacazei* are referred to it; NORMAN (204) p. 469. *C. nigra* (Couch), Kinahan, see *Holothuria forskahli*. *C. planci*, Gmel.; BELL (16) p. 37: spermatogenesis; FIELD (83): alimentary canal; FRENZEL (88) p. 93: abnormal regeneration; LUDWIG (155): with *Ophryotrocha* as inquiline; MONTICELLI (193) p. 250. *C. pentacles*, Mont.; BELL (16) p. 37, PETERSEN (216) p. 39, STUDER (256) p. 29: teratological; TOPSENT (263). *C. serrata*, Theel, distribution; STUDER (256) p. 163.
- Deima*; AGASSIZ (3) p. 84. *D. pacificum*, nomen nudum; LUDWIG (156) p. 180.
- Euphronides*; AGASSIZ (3) pp. 77, 79, & 84.
- E. tanneri*, *E. verrucosa*, E. Pacific, LUDWIG Zool. Anz. xvi, p. 179, n. spp.
- Georisia*, n. g., type *G. ornata*, n. sp., Mozambique Channel, a bilateral and caudate Psolid; PERRIER, C.R. Ac. Sci. cxvi, p. 557: a syn. of *Psolidium* (teste LUDWIG).
- Holothuria*, Goldf.; BELL (16) p. 48. *H. albiventer*, Semp., spicules figured, includes *H. bowensis*, Ludwig, *H. aculeata*, Semper, and *H. modesta*; HEROUARD (121) p. 135. *H. argus*, Jaeg., characters of living animal; KENT (135) p. 237: extrusion of Cuvierian organs; STUDER (256) pp. 234 & 248. *H. aspera*, Bell; BELL (16) p. 50. *H. atra*, Jäg.; STUDER (256) pp. 191 & 234: habits and commercial value, characters of living animal; KENT (135) pp. 55, 121, & 238. *H. botellus*, characters of living animal; KENT (135) p. 238. *H. catanensis*, Grube, see *H. forskahli*. *H. coluber*, Semper, Barrier Reef, Queensland; KENT (133) pl. ii, fig. 1: colour and commercial value, photo from life, habits; KENT (135) pp. 56, 121, & 238. *H. edulis*, characters of living animal; KENT (135) p. 237. *H. forskahli*, Delle Ch.; MARENZELLER (167): redescribed and name restored for *H. nigra*, Auctt.; NORMAN, Ann. Nat. Hist. (6) xii, p. 409. *H. fusco-cinerea*, characters of living animal; KENT (135) p. 237. *H. impatiens*, Forskal; HEROUARD (121) p. 134: characters of living animal; KENT (135) p. 237. *H. intestinalis*, A. & R.; BELL (16) p. 48, NORDGAARD (201) pp. 5 & 10, STEINDACHNER (254) p. 446: E. Mediterranean; MARENZELLER (165) p. 66. *H. ludwigi*, Lamp.; STUDER (256) p. 256. *H. maculata*, Brandt, Suez, spicules figured; HEROUARD (121) p. 133. *H. nigra*, auctt.; BELL (16) p. 49, GARS-TANG (92) p. 335: parasitic Gregarines; MINCHIN (189) p. 281: referred to *H. forskalii*; MARENZELLER (167). *H. pardalis*, Selenka, spicules figured, includes *H. martensi*, *juvenis* of Semper; HEROUARD (121) p. 134. *H. poli*, D.-Ch., with *Anoplodium pusillum* as inquiline; MONTICELLI (193) p. 250: spermatogenesis; FIELD (83). *H.*

- sanctorii*, Della Chiaje, discussed; MARENZELLER (164) p. 7. *H. sp.*; FIELD (82) p. 83. *H. tremula*, Gunn.; BELL (16) p. 49, NORDGAARD (201) p. 5: N. of Spain; MARENZELLER (164) p. 9. *H. tubulosa*, Gmel.; EFISIO (73) p. 253: ovum described; CRETY (52): alimentary canal; FRENZEL (88) p. 87: parasitic Gregarines; MINCHIN (189) p. 291: with *Ctenodrilus* as inquiline; MONTICELLI (193) p. 250. *H. vagabunda*, Semper, Barrier Reef, Queensland; KENT (133) p. 5: characters of living animal; KENT (135) p. 237: STUDER (256) p. 234. *H. verrilli*, Theel, 1300 metres, Azores, fully described and figured; MARENZELLER (164) p. 7. *H. vitiensis*, characters of living animal; KENT (135) pp. 238 & 239.
- H. boutani*, Red Sea, HEROUARD, Arch. Zool. exp. (3) i, p. 132; *H. calcarea* [syn. of *H. fusco-cinerea*] and *H. hystrix* [syn. of *Stichopus variegatus*], Barrier Reef, Queensland, KENT (133) p. 5; *H. leutiginosa*, Pico-Fayal, Azores, 130 metres, MARENZELLER (164) p. 6, also (163) p. 64; *H. leopardus* [syn. of *H. argus*], KENT (133) pl. i, fig. 2; *H. mamifera* [same as *Actinopyga mamillata*, q.v.], KENT (133) p. 4, and (135) pp. 236 & 240; *H. marmorata*, Barrier Reef, Queensland, KENT (135) p. 237; *H. polymorpha*, ditto, KENT (133) p. 5; *H. rugosa* [syn. of *Actinopyga obesa*], ditto, *loc. cit.*; *H. sanguinolenta*, ditto, KENT (135) pp. 56 & 237: n. spp.
- Kolga ludwigi*, between Cerigo and Candia, and S. of C. Malea, 755-1292 metres, MARENZELLER, SB. Ak. Wien, cii, Abth. 1, p. 68, and in STEINDACHNER (254) p. 446, n. sp.
- Laetmogone theeli*, E. Pacific, LUDWIG, Zool. Anz. xvi, p. 180, n. sp.
- Laetmophasma*, n. g. of *Elasipod*, with type *L. fecundum*, n. sp., E. Pacific; LUDWIG, Zool. Anz. xvi, p. 181.
- Lophothuria*; AGASSIZ (3) p. 80.
- Meseres*, n. g. of *Aspidochirote*, with type *M. macdonaldi*, nomen nudum; LUDWIG, Zool. Anz. xvi, p. 179.
- Mesites*, n. g. of *Aspidochirote*, with type *M. multipes*, nomen nudum; *loc. cit.* [The name *Mesites* is preoccupied for a Cystid by Hoffmann, 1866, as well as in various other branches of Zoology.]
- Molpadia turgida*, Verrill; GANONG (91) p. 58.
- Mulleria agassizi*; FIELD (82) p. 83.
- Ocnus brunneus*; GARSTANG (92) p. 335.
- Oneirophanta affinis*, nomen nudum; LUDWIG (156) p. 180.
- Orphnurgus*; AGASSIZ (3) p. 84.
- Palopatides agassizi*, Theel, referred to *P. confundens*; LUDWIG (156) p. 178. *P. suspecta*, nomen nudum; *loc. cit.*
- Pannychia moseleyi*, Theel, n. var. *henrici*, name only; *op. cit.* p. 180.
- Pelagothuria*, n. g., with type *P. natatrix*, n. sp., E. Pacific, free-swimming and pelagic; LUDWIG, Zool. Anz. xvi, p. 183.
- Pelagothuridae*, n. fam.; *op. cit.* p. 182.
- Peniagone*; AGASSIZ (3) pp. 77 & 84. *P. intermedia*, nomen nudum; *P. vitrea*, Theel, *setosa*, n. var., E. Pacific; LUDWIG (156) p. 181.
- P. azorica*, between Pico and São Jorge, Azores, 2870 metres, MARENZELLER, Bull. Soc. zool. France, xvii, p. 64, and (164) p. 12, n. sp.

- Pentacta* has priority over *Colochirus*, not over *Cucumaria*; MARENZELLER (164) p. 14.
- Phyllophorus*, Ludw.; BELL (16) p. 46. *P. aculeatus*, nomen nudum; LUDWIG (156) p. 183. *P. drummondi*, Thomps.; BELL (16) p. 47. *P. frauenfeldi*, Ludw.; HEROUARD (121) p. 136. *P. pellucidus*, Düb. & Kor.; BELL (16) p. 46.
- Pseudocucumis acicula*, fusion of two individuals; LUDWIG (155).
- Pseudostichopus*, Theel, rediagnosed, and *P. mollis*, Theel, 1823 fathoms, E. Pacific; LUDWIG (156) p. 178.
- P. occultatus*, n. sp., Benghazi, Cerigo, Candia, W. of Milo, near Anti-Milos, 415-1503 metres, also C. Finisterre; MARENZELLER, SB. Ak. Wien, cii, Abth. 1, p. 68: W. of C. Finisterre, about 400 metres, figured; MARENZELLER (164) p. 10.
- Psolidium*, rediagnosed, with *P. gracile* and *P. panamense*, nomina nuda; LUDWIG (156) p. 184.
- Psolinus brevis*, Forbes, referred to *Cucumaria montagui*; MARENZELLER (167).
- Psolus*, Oken; BELL (16) p. 44. *P. antarcticus*, Phil.; STUDER (256) p. 283. *P. brasiliensis*, Theel., referred to *Psolidium*; LUDWIG, Zool. Anz. xvi, p. 184. *P. diomedæ*, nomen nudum, loc. cit. *P. ephippiger*, Wyv.-Thoms., distribution; STUDER (256) p. 163. *P. fabricii*, Düb. & Kor.; BELL (16) p. 45. *P. incertus*, Theel, distribution; STUDER (256) p. 163. *P. phantapus*, Strussenf.; BELL (16) p. 44, PETERSEN (216) p. 38. *P. poriferus*, Stud., distribution; STUDER (256) p. 163. *P. squamatus*, Kor.; NORDGAARD (201) pp. 5 & 10.
- P. digitatus*, p. 184, *P. pauper*, p. 183, E. Pacific, LUDWIG, Zool. Anz. xvi, n. spp.
- Psychropotes*; AGASSIZ (3) p. 84.
- P. dubiosa*, *P. raripes*, E. Pacific, LUDWIG, Zool. Anz. xvi, p. 179, n. spp.
- Rhopalodina lageniformis*, Gray, mud of Congo mouth, translucent; STUDER (256) pp. 21 & 30.
- Scotoanassa gracilis*, E. Pacific, LUDWIG, Zool. Anz. xvi, p. 182, n. sp.
- † *Scotodeima*, n. g. of *Elasipod*, with type *S. setigerum*, nomen nudum; LUDWIG, Zool. Anz. xvi, p. 181.
- Semperia drummondi*, Herouard, see *Cucumaria montagui*. *S. dubiosa*, Semp.; STUDER (256) p. 288. *S. parva*, Ludw., distribution; STUDER (256) p. 140 & 163.
- ‡ *Sphærothuria*, n. g. of *Dendrochirote*, with type *S. bitentaculata*, nomen nudum; LUDWIG (156) p. 184.
- Stichopus chloronotus*, characters of living animal, and commensal worm; KENT (135) pp. 235 & 240. *S. natans*, M. Sars (?); BELL (16) p. 51. *S. regalis*, Cuv., spermatogenesis; FIELD (83): off coast of Spain, 134 to 248 metres; MARENZELLER (164) p. 9, and STEINDACHNER (254) p. 446. *S. selenkæ*, Barrois, see *Holothuria forskahli*. *S. tizardi*, Theel; BELL (16) p. 51. *S. variegatus*, Lamp.; STUDER (256) pp. 234, 248, & 256: characters of living animal; KENT (135) pp. 57, 226, & 234.

- S. lutea*, Great Barrier Reef, KENT (135) p. 235, n. sp.
- ¹ *Synallactes*, n. g. of *Aspidochirote*, with type *S. aenigma*, nomen nudum, and *S. alexandri*, nomen nudum; LUDWIG, Zool. Anz. xvi, p. 178.
- Synallactina*, n. subfam., for *Synallactes*, *Pseudostichopus*, *Paelopatides*, *Mesites* (Ludw.), and *Meseres*; *op. cit.* p. 179.
- Synapta*, Esch.; BELL (16) p. 32. *S. abyssicola*, Theel, *pacifica*, n. var., E. Pacific; LUDWIG (156) p. 186. *S. besseli*, Jaeg., characters of living animal; KENT (135) p. 241: changing of shape; STUDER (256) pp. 234, 240, & 256. *S. buski*, McIntosh, BELL (16) p. 34. *S. digitata*, Mont.; *loc. cit.*, STEINDACHNER (254) p. 446, STUDER (256) p. 30: parasitic Gregarine and Copepod; CUÉNOT (60): alimentary canal; FRENZEL (88) p. 85: off coast of Spain, 248 metres, variation in spicules figured; MARENZELLER (164) p. 17: with Nematode and *Ctenodrilus* as inquilines; MONTICELLI (193) pp. 248-250. *S. inhaerens*, O. F. Müll.; BELL (16) p. 33, PETERSEN (216) p. 38, STUDER (256) p. 30: ovum described; CRETY (52): parasitic Gregarines, Ciliate Infusorian, Trematode, Rotifer, Tardigrade, and Copepod; CUÉNOT (60): oögenesis; CUÉNOT (57): with Nematode and *Ctenodrilus* as inquilines; MONTICELLI (193) pp. 248-250. *S. kefersteini*, Sch., parasitic Copepod; VOIGT (267). *S. reciprocans*, Forsk., redescribed; HEROUARD (121) p. 137. *S. reticulata*, Semp., on stem of Gorgonids; STUDER (256) p. 192. *S. sp.*, habitat mangrove roots, coral slabs, sand; FIELD (82) p. 83.
- Thyone*, Semp.; BELL (16) p. 41. *T. castanea*, Lamp.; STUDER (256) p. 192; *T. elegans*, Norm., *T. flexus*, Hodge; BELL (16) p. 43. *T. fusus*, O. F. Müll.; BELL (16) p. 42. *T. iuermis*, Hell., Azores, 130-180 metres, includes *T. aurantiaca*, Costa, and *T. elegans*, Norm.; MARENZELLER (164) p. 17. *T. mirabilis*, Ludw.; STUDER (256) p. 192. *T. muricata*, Stud., distribution; *op. cit.* p. 163. *T. portlocki*, Forbes, see *Cucumaria montagui*. *T. raphanus*, Düb. & Kor.; BELL (16) p. 42. *T. recurvata*, Theel, distribution, p. 163, *T. sacellus*, Selenka, p. 192, *T. theeli*, Lamp., p. 192; STUDER (256).
- Thyonidium commune*, Forbes; PETERSEN (216) p. 39. *T. hyalinum*, Forbes; PETERSEN (216) p. 38.
- Trochostoma*; AGASSIZ (3) pp. 79, 80, & 83. *T. granulatum* and *T. intermedium*, nomina nuda; LUDWIG (156) p. 185. *T. violaceum*, Stud., distribution; STUDER (256) p. 163.

(C.)—ECHINOIDEA.

- † *Acrocidaris nobilis*, Agass.; AGUILERA (4) p. 18, GREPPIN (104) p. 99. *Acrocladia mammillata*, Lam., *A. trigonaria*, Klein; STUDER (256) p. 248.
- † *Acrosalenia*:—*A. banburiensis*, Wright, *A. minuta*, Buckm., *A. parva*, Wright; WOODWARD (276) p. 369. *A. sp.*; FOX-STRANGWAYS (87) II, p. 144.
- Aërope*; AGASSIZ (3) p. 81.
- Amblymeustes grossularia*, Stud.; STUDER (256) p. 267.

- † *Amblypygus lorioli*, Pianosa, SIMONELLI (245) p. 222, n. sp.
Ananchites, the proper spelling of *Ananchytes*; LAMBERT (146) p. 94.
† *Ananchytes sulcatus*?, Goldf.; AGUILERA (4) p. 27.
† *A. ovalis*, Middle Marl bed, Upper Cretaceous, Vincentown, N. J., CLARK,
Bull. U. S. Geol. Surv. No. 97, p. 74, n. sp.
† *Anthobrissus cerceleti*, Pomel, see *Phyllobrissus cerceleti*.
† *Arachniopleurus*, Duncan, defined, p. 598; *A. arenatus*, d'Arch., sp., re-
described, with young stage, p. 599; *A. reticulatus*, Dunc. & Slad.,
p. 602; *A. vilanovaæ*, Cott., sp., p. 603: COTTEAU (44).
Arachnoides placentu, Linn.; LORIOLO (154) p. 376, STUDER (256) p. 181.
Arbacia alternans, Trosch., ova in ambulacra, p. 281; *A. dufresni*, Blainv.,
colour; STUDER (256) p. 289. *A. nigra*, Mol. sp., Callao, with vari-
ations in anal plates; MEISSNER (181) p. 184. *A. punctulata*, Desm.,
multiple genital and madreporic pores; JANET (128): experiments
on eggs; MORGAN (196): also STUDER (256) p. 22. *A. pustulosa*,
Gray; STUDER (256) p. 22: spermatogenesis; FIELD (83). *A.*
spathuligera, Val. sp., Callao, with variations in anal plates;
MEISSNER (181) p. 184.
Arbaciadae, apical system; AGASSIZ (2) p. 77.
† *Archabocidaris*, sp., Gympie Beds, Queensland; ETHERIDGE (76) p. 213.
Aspidodiadema; AGASSIZ (3) pp. 77 & 80.
Asthenosoma, Grube; BELL (16) p. 143, AGASSIZ (3) pp. 80 & 83. *A.*
hystrix, W. Thoms.; BELL (16) p. 143. *A. varium*, Grube, detailed
description of two perfect specimens, and of a young also (?) of
this species; LORIOLO (154) p. 364.
Astriclypeus manni, Verrill sp.; MEISSNER (181) p. 185.
Astropyga elastica, Stud.; STUDER (256) pp. 248 & 256.
† *Australanthus*, n. g., type *Cassidulus longianus*, Greg.; BITTNER, SB.
Ak. Wien, ci, Abth. i, p. 350.
† *Baueria*, Noetl., defined and discussed, p. 573; *B. geometrica*, Noetl.,
p. 577; *B. rousseli*, Cott. sp., redescribed, p. 574: COTTEAU (44).
† *Bothriocidaris*, apical system; AGASSIZ (2) p. 72.
† *Botriopygus alabamensis*, Clark, redescribed and now first figured; CLARK
(36) p. 60. *B. nanclasi*, Senonian of Angoulême; ARNAUD (9) p. 27.
Breynia, Desor, defined; COTTEAU (44) p. 670. *B. australasiae*, Leach;
STUDER (256) pp. 192 & 194. † *B. meslei*, ascribed to Gauthier, 1893,
perhaps n. sp., Eocene, Djebel-Trozza, Tunis; COTTEAU, Pal. Franc.
Ech. Tert. ii, p. 671.
Brissopsis, Agass. ; BELL (16) p. 172, AGASSIZ (3) p. 281. *B. lyrifera*,
Forbes; BELL (16) p. 172, DANIELSSEN (62) p. 5, PETERSEN (216)
. p. 42: great numbers on W. Coast of Scotland; SCOTT (238)
p. 50. † *B. sismondaæ*, Agass., Helvetian of Rassuen, Rhone Basin;
DÉPÉRET (64) p. 448.
B. oldhami, B. of Bengal, 753 fathoms; ALCOCK, J. Asiat. Soc. Bengal,
lxii, p. 174, n. sp.
† *Brissospatangus vicentinus* [Eocene?], of Vicentino, Italy; MAZZETTI,
Atti Soc. Modena (3) x, n. sp.

Brissus maculatus, Klein ; STUDER (256) p. 235. *B. unicolor*, Klein ; STUDER (256) p. 22, SIMONELLI (245) p. 221.

†*Calymne*, Wyv.-Thoms. ; LAMBERT (146) p. 98.

†*Cardiaster*, Forbes, discussed ; LAMBERT (146) p. 96. *C. cinctus*, Morton sp., redescribed ; CLARK (36) p. 75. *C. cotteanus*, Cretaceous, Silesia ; LANGENIAN & GRUNDEY (147) p. 8. *C. granulatus*, Forbes ; PARENT (207) p. 317 : Senonian of Angoulême ; ARNAUD (9) p. 29. *C. latissimus*, see *Holaster*. *C. marticensis*, Cott., referred to *Hemipneustes* ; COTTEAU (38) p. 9 : discussed ; LAMBERT (146) p. 95. *C. tenuiporus*, Cott. & Trig., referred to *Hemipneustes* ; COTTEAU (38) p. 10. *C. tertiaris*, Greg. ; BITTNER (21) p. 360 : referred to *Holaster* ; LAMBERT (146) p. 94. *C. transversus*, Cott., Senonian of Angoulême ; ARNAUD (9) p. 25. *C. zignoi*, d'Orb., referred to *Oulaster* ; LAMBERT (146) p. 97.

†*Cassidulus*:—*C. abruptus*, Conrad, p. 92 ; *C. æquoreus*, Morton, redescribed, p. 68 ; *C. florealis*, Morton sp., redescribed, p. 66 : CLARK (36).—*C. longianus*, Greg., type of new genus, *Australanthus* ; BITTNER (21) p. 350. *C. micrococcus*, Gabb, redescribed and now first figured, p. 69 ; *C. porrectus*, Clark, ditto, and locality corrected from Mississippi to Ripley group of Eufaula, Alabama, p. 72 ; *C. stantoni*, Clark, redescribed and now first figured, p. 73 ; *C. subconicus*, ditto, p. 71 ; *C. subquadratus*, Conrad, redescribed, p. 70 ; CLARK (36).

†*Catopygus*, cf. *cylindricus*, Desor ; LAMBERT in PARENT (209) p. 218.

†*C. elegans*, Laube, type of new genus *Tristomanthus* ; BITTNER (21) p. 355. *C. loveni*, Stud. ; STUDER (256) p. 55. †*C. oviformis*, Conrad, redescribed ; CLARK (36) p. 64. †*C. pusillus*, Clark, ditto and now first figured ; *op. cit.* p. 65. †*C. tenuiporus*, L. Agass., discussed ; LAMBERT (146) p. 71.

†*Cibaster*, Pomel, discussed ; LAMBERT (146) p. 96.

Cidaride, apical system ; AGASSIZ (2) p. 74.

Cidaris, Leske ; AGASSIZ (3) p. 80, BELL (16) p. 139 : defined and discussed ; COTTEAU (44) p. 395. †*C. abichi*, Moesch ; SIEMIRADZKI (244) p. 143. †*C. acanthica*, Fritsch ; COTTEAU (44) p. 449. †*C. acicularis*, d'Arch., redescribed ; COTTEAU (44) p. 434. †*C. alata*, Agass. ; OGILVIE (205) p. 50 : Boll, non Münt., perhaps = *C. hagenowi*, Desor ; SCHLUETER (236) p. 14. †*C. alpina*, Cott. ; MOESCH (192) p. 7. †*C. amalthei*, Quenst. ; FOX-STRANGWAYS (87) II, p. 32, WOODWARD (276) p. 369. †*C. attenuata*, Cott., redescribed ; COTTEAU (44) p. 414. †*C. avenionensis*, DesM. ; SIMONELLI (245) p. 233, DEPÉRET (64) p. 448, TOULA (265) p. 291. †*C. belone*, Agass., redescribed ; COTTEAU (44) p. 421. †*C. bietsi*, Koch ; *op. cit.* p. 446. †*C. biformis*, Münt. ; OGILVIE (205) p. 51. †*C. blumenbachi*, Münt. ; GREPPIN (104) p. 99, SMITH (250) p. 346. †*C. braunii*, Desor ; OGILVIE (205) p. 50. †*C. buchi*, Münt. ; *op. cit.* p. 51. †*C. cervicornis*, Schaur. ; COTTEAU (44) p. 443. †*C. clavigera*, König ; CAYEUX (28) p. 118. †*C. coronata*, Schloth. ; GREPPIN (104) p. 99, SIEMIRADZKI (244) p. 142. †*C. crateriformis*,

Gümbel, redescribed, includes *C. raulini*; COTTEAU (44) p. 408. †*C. cretosa*, Mant., referred to *Stereocidaris sceptrifera*; SCHLUETER (236) p. 110. †*C. decorata*, Münst.; OGILVIE (205) p. 50. †*C. dixonii*, Cott., referred to *Tylocidaris strombecki*; SCHLUETER (236) p. 43. †*C.*, cf. *domeriensis*, Menegh., Lower Lias, Calabria; GRECO (100) p. 79. †*C. dorsata*, Braun; OGILVIE (205) p. 50. †*C. dumortieri*, Wright; WOODWARD (276) p. 369. †*C. edwardsi*, Wright; *loc. cit.* and FOX-STRANGWAYS (87) II, p. 32. †*C. excelsa*, Dunc. & Slad.; COTTEAU (44) p. 450. †*C. farringdonensis*, Wright, see under *Goniocidaris*. †*C. fasciculata*, Klipst.; OGILVIE (205) p. 50. †*C. filograna*, Agass.; MOESCH (192) p. 27, SIEMIRADZKI (244) p. 143. †*C. flexuosa*, Münst.; OGILVIE (205) p. 50. †*C. florigemma*, Phill.; GREPPIN (104) p. 99, FOX-STRANGWAYS (87) II, p. 193, SIEMIRADZKI (244) p. 142, SMITH (250) p. 346. †*C. gaultina* Forbes; LAMBERT in PARENT (209) pp. 218 & 222. †*C. ghrdenensis*, new name doubtfully proposed for spines doubtfully referred to *Dorocidaris pseudopistillum*; SCHLUETER (236) p. 80. †*C. gervasiana*, Sorignet; COTTEAU (44) p. 440. †*C. glandaria*, Fraas; COTTEAU (47, 48). †*C. gourdoni*, Cott., see *C. pomeli*. †*C. gracilis*, Slad.; BELL (16) p. 142. †*C. halaensis*, d'Arch.; COTTEAU (44) p. 448. †*C. hausmanni*, Wissm.; OGILVIE (205) p. 50. †*C. hirsuta*, Marcou, discussed and figured; SCHLUETER (236) p. 7. †*C. hirudo*, Sorign.; CAYEUX (28) p. 118. †*C. hollandei*, Cott.; SIMONELLI (245) p. 232. †*C. hungarica*, Pavay, redescribed; COTTEAU (44) p. 443. †*C. ilminsterensis*, Wright; WOODWARD (276) p. 369. †*C. infrateriarius*, Queest.; COTTEAU (44) p. 444. †*C. interlineata*, d'Arch., redescribed; *op. cit.* p. 428. †*C.*, cf. *itys*, d'Orb.; STUBER (255) p. 79. †*C. janus*, Fritsch; COTTEAU (44) p. 448. †*C. jouannetti*, DesM., Senonian of Angoulême; ARNAUD (9) p. 25. †*C. klipsteini*, Desor; OGILVIE (205) p. 50. †*C. lacrymula*, Dunc. & Slad.; COTTEAU (44) p. 449. †*C. liagova*, Münst., †*C. linearis*, Münst.; OGILVIE (205) p. 50. †*C. longicollis*, Fritsch; COTTEAU (44) p. 448. †*C. lorioli*, Cott., redescribed; *op. cit.* p. 415. †*C. loveni*, Cott., referred to *Rhabdocidaris*; *op. cit.* p. 462. *C. lutkeni*, Lor., see *Rhabdocidaris annulifera*. †*C.*, cf. *mamillata*, Cott., figured; SCHLUETER (236) p. 141. †*C. martini*, Cott.; STUBER (255) p. 79. †*C. mayeri*, Lor., redescribed; COTTEAU (44) p. 442. †*C. membranipora*, Stud. sp., sexual dimorphism, protection of ova, distribution; STUBER (256) pp. 143, 149, & 163. †*C. mespilum*, Desor sp., redescribed; COTTEAU (44) p. 441. *C. metularia*, Lam.; LORIOL (154) p. 360. †*C. mezzaana*, Laube, referred to *Rhabdocidaris*; COTTEAU (44) p. 461. †*C. mortoni*, Conrad; *op. cit.* p. 448. †*C. munsteri*, Sis.; SIMONELLI (245) p. 233. †*C. muricata*, F. A. Roem., discussed and distinguished from *C. hirsuta*, figured; SCHLUETER (236) p. 9. †*C. nahalakensis*, Lor.; CLARK (36) p. 93. †*C. navillei*, Cott., referred to *Rhabdocidaris*; COTTEAU (44) p. 464. †*C. nummulitica*, Sism.; *op. cit.* p. 400. †*C. oosteri*, Laube, redescribed; *op. cit.* p. 417. †*C. opipara*, Dunc. & Slad.; *op. cit.* p. 450.

C. papillata, Leske; BELL (16) p. 139: spine only; TOMMASI (262) p. 1115. †*C. parastadifera*, Schafh.; OGILVIE (205) p. 51. †*C. perornata*, Forbes, double genital pores; JANET (128). †*C. polyacantha*, Reuss.; TOULA (265) p. 291. †*C. pomeli*, Cott., redescribed, includes *C. gourdoni*; COTTEAU (44) p. 404. †*C. poresesdiensis*, Koch.; *op. cit.* p. 445. †*C. prionata*, Agass., redescribed; *op. cit.* p. 436. †*C. propinqua*, Goldf.; SIEMIRADZKI (244) p. 142. †*C. pseudoserrata*, Cott.; TOULA (265) p. 291. †*C. punctata*, F. A. Roem., described and figured; SCHLUETER (236) p. 10. *C. purpurata*, W. Thoms.; BELL (16) p. 141. †*C. pyrenaica*, Cott., redescribed; COTTEAU (39) p. 542. †*C. raulini* Cott., see *C. crateriformis*. †*C. reussi*, Geinitz; MICHAEL (184) p. 240. †*C. rimatus*, Quenst., erroneously quoted as *C. rimosus*, and referred to *Temnocidaris danica*; SCHLUETER (236) p. 125. †*C. roemeri*, Wissm.; OGILVIE (205) p. 50. †*C. sabaratensis*, Cott., redescribed; COTTEAU (44) p. 398. †*C. cf. sulevensis*, Desor; LAMBERT in PARENT (209) p. 225. *C. savignyi*, Aud. sp., habits of life and sense organs; BOUTAN (24) p. 212, pl. vii. †*C. scampicei*, Taramelli; COTTEAU (44) p. 444. †*C. sceptrafrera*, Mant.; CAYEUX (28) p. 119: figured, FRIČ (98) p. 109: double genital pores; JANET (128). †*C. scrobiculata*, Braun; OGILVIE (205) p. 51. †*C. semiaspera*, d'Arch., see *C. subularis*. †*C. semicosta*, Münst.; OGILVIE (205) p. 50. †*C. seminota*, Sorignet; COTTEAU (44) p. 439. †*C. smithi*, Wright; FOX-STRANGWAYS (87) II, p. 194. †*C.* sp.; GREGORY (102) p. 3. †*C.* sp., Lias, Kurrömölla in Scania, spines only; MÖBERG (190) pp. 26 & 27. †*C. spileccensis*, Dames; COTTEAU (44) p. 444. †*C. spinigera*, Dames, redescribed; *op. cit.* p. 419. †*C. spinosa*, Boll., discussed, and distinguished from *C. spinosissima*, Agass.; SCHLUETER (236) p. 15: also OGILVIE (205) p. 50. †*C. splendens*, Morton, detached plates redescribed; CLARK (36) p. 33. †*C. striata*, Hutton; COTTEAU (44) p. 447. †*C. striatogranosa*, d'Arch., redescribed; COTTEAU (44) p. 432. †*C. striatula*, Marck, spines described; SCHLUETER (236) p. 13. †*C. subcylindrica*, d'Arch., redescribed; COTTEAU (44) p. 430. †*C. submarginata*, Félix; AGUILERA (4) p. 18. †*C. subnobilis*, Münst.; OGILVIE (205) p. 51. †*C. subprionata*, Rouault, redescribed; COTTEAU (44) p. 438. †*C. subserrata*, d'Arch., redescribed; *op. cit.* p. 426. †*C. subsimilis*, Münst.; OGILVIE (205) p. 50. †*C. subularis*, d'Arch., redescribed, includes *C. semiaspera*; COTTEAU (44) p. 422: var.; TOULA (265) p. 288. †*C. subvesiculosa*, d'Orb., Senonian of Angoulême; ARNAUD (9) p. 29: also FRIČ (89) p. 109. †*C.* sp., *cf. subvesiculosa*, Goldf.; MICHAEL (184) p. 243. †*C. taramellii*, Cott., redescribed; COTTEAU (44) p. 412. †*C. tessurata*, Menegh.; SIMONELLI (245) p. 228. *O. thouarsi*, Val., boring holes; FEWKES (80). †*C. tribuloides*, Lam., Pliocene of E. Pyrenees, spines only; †COTTEAU (42) p. 736: also FIELD (82) p. 83, STUDER (256) pp. 22 & 48. †*C. trigona*, Münst., †*C. triserrata*, Laube; OGILVIE (205) p. 50. †*C. verneuilli*, d'Arch.; COTTEAU (44) p. 447. †*C. veronensis*, Quenst.; *op. cit.* p. 445. †*C. vesiculosa*, Goldf.; MICHAEL

- (184) p. 240, PARENT (209) p. 229. †*C. vilanova*, Cott.; COTTEAU (44) p. 446. †*C. vincenti*, Cott.; *op. cit.* p. 445. †*C. walcotti*, Clark, redescribed and now first figured; CLARK (36) p. 37.
- †*C. (Pseudocidaris) baltica*, Upper Senonian, Seeland and Rügen, founded on spines, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5, p. 16. †*C. baussetensis*, Upper Hippurite Chalk, near Bausset, Var; COTTEAU, Mem. Soc. zool. France, iii, p. 545; †*C. californicus*, Jurassic, Taylorsville, California, founded on spines only, CLARK, Bull. U. S. Geol. Surv. No. 97, p. 36; *C. curvatispinis*, Mauritius, BELL (19) Tr. Zool. Soc. London, xiii, p. 303; †*C. felicie*, Upper Eocene of Biarritz, spine only, COTTEAU, Mem. Soc. zool. France, v, p. 735; †*C.*, n. sp., aff. *filograna*, Dogger, Erzplatz, Switzerland; MOESCH (192) p. 28. †*C. gigas*, n. sp. (?), name doubtfully given to some plates from Maestrichtian in Museum für Naturkunde, Berlin; SCHLUETER, Abl. Preuss. geol. Landesanst. Heft 5, p. 142. †*C. grossouvrei*, Montlaur, Ariège, COTTEAU, Pal. franc., Ech. Tert. ii, p. 402; †*C. hautevillensis*, Middle Eocene, Hauteville, Manche, *op. cit.* p. 410; †*C. lariana*, based on *C. verticillata*, Stopp., non Lam., Rhaetic, Poggio Piana, Italy, spines only, SIMONELLI, Mem. Acc. Bologna (5) ii, p. 243; †*C. matronensis* [ascribed to de Loriol, but apparently n. sp.], Middle Eocene, Damery, near Épernay, COTTEAU, Pal. franc., Ech. Tert. ii, p. 440. †*C. plexa*, Aptien, Grandpré, LAMBERT, Bull. Soc. géol. (3) xx, p. 38; †*C. rejaudryi* [ascribed to Arnaud, but apparently n. sp.], geological horizon not stated, Atlas Bocage in Charente-Inférieure, spine only, COTTEAU, Mem. Soc. zool. France, v, p. 734; †*C. royanensis*, n. sp., name without diagnosis for specimens figured by Cotteau, Pal. franc., Terr. Crét. tab. 1057, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5, p. 110; †*C.* n. sp., plates only, Neocomian, N. Germany, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5, p. 12; †*C. taylorensis*, Jurassic, Taylorsville, California [the name should therefore be *C. taylorsvilensis*], p. 35, †*texanus*, Washita, formation of the Comanche series, Lower Cretaceous, Bexar co., Texas, p. 36, CLARK, Bull. U.S. Geol. Surv. No. 97 : n. spp.
- †*Circopeltis*, Pomel, defined and discussed; COTTEAU (44) p. 508 : redescribed; COTTEAU (39) p. 537.
- C. baicherei*, Middle Eocene, Montazels and Conques, in Aude, with young stages, p. 510, *C. bouillei*, Eocene, near Biarritz, founded on *Cyphosoma pellati*, Bouillé, p. 513, *C. garginense*, Upper Eocene, near Biarritz, p. 515, COTTEAU, Pal. franc., Ech. Tert. ii; *C. peroni*, Senonian, Le Castelet, Var; COTTEAU, Mem. Soc. zool. France, iii, p. 537 : n. spp.
- Clypeaster*; AGASSIZ (3) p. 80. †*C. aegyptiacus*, Wright; SIMONELLI (245) p. 223. †*C. altus*, Lam.; COTTER (49) p. 235, and (50) p. 259, SIMONELLI (245) p. 224. †*C. crustulum*, Mich.; AGUILERA (4) p. 43. †*C. gibbosus*, Serres; SIMONELLI (245) p. 226. †*C. gippslandicus*, M'Coy; BITTNER (21) p. 347. †*C. humilis*, Agass.; 1893. [VOL. XXX.]

- MAZZETTI (177). †*C. intermedius*, Desm., Helvetian of Rhone basin; DEPÉRET (64) p. 436. †*C. meridanensis*, Mich.; AGUILERA (4) p. 43. †*C. partschii*, Mich.; ZHĪVKOVICH (278) p. 99. *C. scutiformis*, Gm.; STUDER (256) pp. 216 & 235. *C. subdepressus*, Agass.; STUDER (256) p. 22, FIELD (82) p. 84.
- †*C. paretoi*, SIMONELLI (245) p. 226, n. sp.
- †*Clypeolampas ovum*, Senonian of Angoulême; ARNAUD (9) p. 28.
- †*Clypeus*:—*C. michelini*, Wright sp.; FOX-STRANGWAYS (87) II, p. 144. *C. sinuatus*, in Discoideen-mergel near Basle; GREPPIN (103). *C. subulatus*, Young & Bird, sp.; FOX-STRANGWAYS (87) II, p. 194.
- †*Codiopsis doma*, Desor; FICHEUR (81) p. 412.
- †*Coelopleurus*, Agass., defined and discussed, p. 544; *C. agassizi*, d'Arch., redescribed, p. 564; *C. coronalis*, Leske ex Klein, redescribed, p. 550; *C. delbosi*, Desor, redescribed, p. 552; *C. infulatus*, Morton sp., p. 571; *C. paucituberculatus*, Greg.; *C. radiatus*, Agass., redescribed, p. 546, COTTEAU (44). *C. rousseli*, Cott., see *Baueria*. *C. tournoueri*, Cott., redescribed, with variations, and now first figured, p. 556; *C. vetherelli*, Forbes, p. 571; *C. zadduchi*, Noetl., p. 572; COTTEAU (44).
- C. douvillei*, Middle Eocene of Eure and Manche, COTTEAU, Pal. franc., Ech. Tert. ii, p. 549; *C. isabella*, geological horizon not stated, Gulp in Barcelona, COTTEAU, Mem. Soc. zool. France, v, p. 741, distinguished from *C. coronalis*, COTTEAU (45); *C. munieri*, Upper Eocene, La Gourépe, Basses-Pyrénées, COTTEAU, Pal. franc., Ech. Tert. ii, p. 568 : n. spp.
- †*Collyrites*:—*C. ?* sp.; RETOWSKI (221) p. 288. *C. bicordata*, Leske, sp.; FOX-STRANGWAYS (87) II, p. 194. *C.*, cf. *bicordata*, Leske; GREGORY (102) p. 9. *C. carinata*, Desm.; FICHEUR (81) p. 401. *C. dorsalis*, Agass. & Desor.; GREGORY (102) p. 8. *C. thermarum*, Moesch; SIEMIRADZKI (244) p. 144.
- †*Coptechinus*:—*C. lineatus*, n. sp., but probably same as *Ortholophus lineatus*, Duncan, Tertiary, Australia; BITTNER, SB. Ak. Wien, ci, Abth. 1, p. 338. *C. pulchellus*, Tertiary, Australia, *op. cit.* p. 342 : both species are referred to *Paradoxechinus novus*, TATE (257) p. 191: n. spp.
- †*Coptosoma*, Desor, defined and discussed, p. 486; *C. archiaci*, Sism., p. 501; *C. atacicum*, Cott., redescribed, p. 490; *C. blanggianum*, Desor sp., p. 502; *C. cribrum*, Agass. sp., redescribed, p. 487; *C. haimeii*, Desor, p. 503; *C. macrostoma*, Dunc. & Slad. sp., p. 504, COTTEAU (44). *C. mortoni*, Lor. sp.; CLARK (36) p. 51. *C. pellati*, Cott. sp., redescribed, with young stages; COTTEAU (44) p. 492. *C. sanperi*, Cott. sp.; *op. cit.* p. 504. *C. speciosum*, Clark, redescribed and now first figured; CLARK (36) p. 52. *C. tertiarium*, Lehon sp.; COTTEAU (44) p. 503. *C. undatum*, Dunc. & Slad. sp.; *op. cit.* p. 505.
- C. monzense*, p. 499, and *C. pentagonale*, p. 498, Middle Eocene, Monze, Montagne d'Alaric, Aude, *C. rousseli*, Middle Eocene, Saint-Martin, Montagne-Noire, Aude, p. 495; COTTEAU, Pal. franc., Ech. Tert. ii : n. spp.

- † *Corculum*, Pomel, discussed; LAMBERT (146) p. 97.
- † *Cyclaster lycoperdon*, Tertiary, Australia, BITTNER, SB. Ak. Wien, ci, Abth. 1, p. 360; it is syn. of *C. archeri*, Ten.-Woods, TATE (257) p. 193 : n. sp.
- † *Cyphosoma*:—*C. amelia*, Cott., p. 25, *C. arnaudi*, Cott., p. 29, Senonian of Angoulême; ARNAUD (9). *C. atacicum*, Cott., see *Gagara*. *C. aquitanicum*, Cott.; AGUILERA (4) p. 26. *C. blanggianum*, Desor sp., see *Coptosoma*. *C. cotteaui*, p. 28, *C. desmoulinsi*, p. 29, Senonian of Angoulême; ARNAUD (9). *C. engolismense*, Arnaud, apical system described and compared with that of other *Cyphosomata* and of *Gauthieria*; COTTEAU (42) p. 731: from Turonian of Angoulême compared with *C. archiaci*, Cott.; ARNAUD (9) p. 18. *C. macrostoma*, Dunc. & Slad., see *Coptosoma*. *C. magnificentum*, Senonian of Angoulême; ARNAUD (9) pp. 27 & 28. *C. noquesi*, Cott., referred to *Gagara atacica*; COTTEAU (44) p. 525. *C. pellati*, Cott., see *Coptosoma*. *C. pellati*, Bouillé, see *Circepeltis bouillei*. *C. pulchellum*, referred to *Orthechinus*; COTTEAU (46) p. 351. *C. radiatum*, Sorignet, and *C. sp.*; PARENT (207) p. 317. *C. saemannii*, Danian of Angoulême; ARNAUD (9) p. 34. *C. tertarium*, Lehon, see *Coptosoma*. *C. texanum*, Roem.; AGUILERA (4) p. 26. *C. undatum*, Dunc. & Slad., see *Coptosoma*. *C. verneuili*, Danian of Angoulême; ARNAUD (9) pp. 34 & 41.
- C. rejaudryi* [ascribed to Arnaud, but apparently] n. sp., Lower Campanian of Floirac in Charente-Inférieure; COTTEAU, Mem. Soc. zool. France, vi, p. 349.
- † *Cystechinus*, A. Agass.; AGASSIZ (3) pp. 77, 79, 81, & 83, LAMBERT (146) p. 98.
- † *Diadema arenatum*, d'Arch., see *Arachniopleurus*. † *D. desori*, Reuss; TOULA (265) p. 291. † "*D.*, cf. *desori*, Reuss," Futterer, is synonym of *D. nanum*; SANDBERGER (234). *D. setosum*, Desm.; STUDER (256) pp. 22, 248, & 256, LORIOLE (154) p. 363: protection by spines; FIELD (82) p. 83: protection afforded by spines, respiratory bladder, blue eye-spots; KENT (135) p. 42: see also under *Cidarid savignyi*. † *D. variolare*, Agass., see *Diplopodia renevieri*.
- † *Diademopsis*, cf. *globulus*, Agass., Lower Lias, Calabria; GRECO (100) p. 79.
- † *Diplocidarid*:—*D. desori*, Wright; WOODWARD (276) p. 370. *D. gigantea*, Agass.; GREPPIN (104) p. 99.
- † *Diplopodia*:—*D. hilli*, Clark, originally referred to *Pseudodiadema*, now redescribed and first figured; CLARK (36) p. 50. *D. texanum* [should be *texana*], Roem. sp., previously referred to *Cyphosoma* and *Pseudodiadema*, now first referred to this genus, also thought to include *Echinus bolivarii*, d'Orb., redescribed; CLARK (36) p. 48. *D. malbosii*?, Desor; AGUILERA (4) p. 26. *D. renevieri*, Cotteau sp., described with its varieties and young, and literary history discussed; LAMBERT (145) p. 58.
- † *Dipneustes*, n. g., with type *D. aturicus*, n. sp., Danian of Rivières, near Tercis (Landes); COTTEAU, C.R. Ac. Sci. cxiv, p. 891.

- †*Discoidea* :—*D. cylindrica*, Lam. sp., perignathic girdle ; DUNCAN & SLADEN (71). *D. occidentale*, Gabb ; CLARK (36) p. 93.
- †*Discoides*, Klein, 1734, name maintained instead of *Discoidea*, Gray, and held to cover the unnecessary *Pithodia*, Pomel, and *Echinites*, Duncan ; LAMBERT (145) p. 77.
- D. peroni*, Aptian, Grandpré, with varr. *D. decoratus*, Barrois, and *D. conicus*, Barrois, and variations in madreporite, LAMBERT, Bull. Soc. géol. (3) xx, p. 78, n. sp.
- †*Dochmostoma*, Duncan, limited ; LAMBERT (146) p. 69.
- Dorocidaris*, AGASSIZ (3) p. 80. †*D. coronoglobus*, Quenst. sp., spines described and figured ; SCHLUETER (236) p. 66. †*D.*, cf. *hirudo*, Signoret, Lower Senonian, Hannover ; *op. cit.* p. 74. *D. papillata*, Leske ; DANIELSSEN (62) p. 6, STEINDACHNER (254) p. 446, †SIMONELLI (245) p. 228, †TOULA (265) p. 291 : dorsal organ ; LEIPOLDT (148) p. 602 : colour ; STUDER (256) pp. 22 & 29. †*D.*, cf. *perornata*, Forbes sp., Lower Turonian of Fleischer Camp, near Salzgitter, p. 67 ; †*D. pistillum*, Quenst., spines described, p. 84 ; †*D. cf. pseudopistillum*, Cott., discussed, p. 76 ; †*D. subvesiculosa*, d'Orb. sp., discussed and considered not to occur in N. Germany, p. 67 ; †*D. vesiculosa*, Goldf. sp., described, figured, and discussed, p. 57 ; SCHLUETER (236).
- †*D. essnensis*, Cenomanian, Essen, separated from *Cidaris vesiculosa*, p. 61, †*D. herthae*, Upper Senonian, Rügen, p. 81, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5 : n. spp.
- †*Dysaster siliceus*, Quenst. ; SIEMIRADZKI (244) p. 144.
- †*Echinanthus ataxensis*, Cott. ; †*E. carinatus*, Cott., p. 12 ; †*E. gracilis*, Cott., redescribed from more perfect specimens, p. 13 ; †*E. heberti*, Cott., †*E. pouechi*, Cott., p. 12 ; †*E. ruyssacensis*, Cott., p. 13, ROUSSEL (226). *E. rosaceus*, Gr. ; FIELD (82) p. 84. †*E. subhemisphericus*, Ebert, referred to *Tristomanthus* ; BITTNER (21) p. 355.
- Echinarachnius mirabilis*, Barnes sp. ; MEISSNER (181) p. 185.
- †*Echinites*, see *Discoides*.
- †*Echinobrissus* :—*E. clunicularis*, Lhwyd sp. ; FOX-STRANGWAYS (87) II, p. 144 : in Discoideen-mergel, near Basle ; GREPPIN (103). *E. damesi*, Struckm. ; SMITH (250) p. 346. *E. dimidiatus*, Phill. sp. ; FOX-STRANGWAYS (87) II, p. 195. *E. expansus*, Clark, redescribed and now first figured ; CLARK (36) p. 61. *E. goldfussi*, Desor ; SIEMIRADZKI (244) p. 144. *E. orbicularis*, Phill. sp. ; FOX-STRANGWAYS (87) II, p. 144. *E. scutatus*, Lam. sp. ; *op. cit.* p. 195. *E. subsitifensis*, Per. Gauth. ; FICHEUR (81) p. 421. *E. texanus*, Clark, redescribed and now first figured ; CLARK (36) p. 62.
- Echinocardium*, Gray ; BELL (16) p. 168. *E. (Amphidetus) ovatum*, Leske ; DANIELSSEN (62) p. 5. *E. australe*, Gray sp. ; MEISSNER (181) p. 185. *E. cordatum*, Penn. ; BELL (16) p. 169, PETERSEN (216) p. 41 : parasitic Gregarine ; CUÉNOT (60). †*E. depressum*, Agass., Helvetian of Rhone Basin ; DEPÉRET (64) p. 436. †*E. dubium*, Per. & Gauth., redescribed ; COTTEAU (44) p. 665. *E.*

- flavescens*, Müll. sp.; BELL (16) p. 171, PETERSEN (216) p. 41, SCOTT (240) p. 82. *E. mediterraneum*, Gray; EFISIO (73) p. 253. †*E. nummuliticum*, Per. & Gauth., redescribed; COTTEAU (44) p. 662. *E. pennatifidum*, Norm.; BELL (16) p. 170.
- †*Echinoconus* :—*E. gigas*, Cott., p. 354, *E. raulini*, d'Orb., p. 353; FALLOT (78).
- E. lezennensis*, Senonian (zone of *Micraster breviporus*), Lezennes, near Lille; PARENT, Ann. Soc. géol. Nord. xx, p. 18, n. sp.
- †*Echinocorys*, Breyn., discussed; LAMBERT (146) p. 97. *E. gibbus*, Agass.; CAYEUX (28) p. 119, PARENT (207) p. 317. *E. heberti*, Seunes, p. 353, *E. vulgaris*, Breyn., p. 354; FALLOT (78).
- Echinocrepis*; AGASSIZ (3) p. 81.
- Echinocyamus*, Van Phels.; BELL (16) p. 160: redescribed and discussed; COTTEAU, Pal. franc., Ech. Tert. ii, p. 348. †*E. affinis*, Desm. sp., redescribed, with variations and young stages; *op. cit.* p. 368. †*E. alpinus*, Agass.; *op. cit.* p. 375. †*E. altavillensis*?, Agass.; AGUILERA (4) p. 43. *E. angulosus*, Leske; DANIELSEN (62) p. 6. †*E. biarritzensis*, Cott.; COTTEAU (44) p. 374. †*E. cambouensis*, Cott., redescribed; *op. cit.* p. 360. *E. crispus*, nomen nudum; MAZZETTI (177). †*E. dacicus*, Pavay; COTTEAU (44) p. 375. †*E. dumasi*, Cott., redescribed; *op. cit.* p. 357. *E. elegans*, nomen nudum; MAZZETTI (177). †*E. gracilis*, Cott.; COTTEAU (44) p. 377. †*E. inflatus*, Defr. sp., redescribed; *op. cit.* p. 351. †*E. lorioli*, Cott., redescribed; *op. cit.* p. 364. †*E. nummuliticus*, Dunc. & Slad.; *op. cit.* p. 377. †*E. propinquus*, Galeotti sp.; *op. cit.* p. 376. †*E. pomeli*, Cott., redescribed; *op. cit.* p. 366. *E. pusillus*, O. F. Müll.; BELL (16) p. 160, EFISIO (73) p. 252, PETERSEN (216) p. 41, STUDER (256) p. 22, †SIMONELLI (245) p. 228: development; THEEL (260). †*E. rotundus*, Dunc. & Slad.; COTTEAU (44) p. 378. †*E. subcaudatus*, Desm. sp., redescribed, with variations; *op. cit.* p. 371. †*E. cf. subcaudatus*, Agass., rounded var., Eocene, S.W. of Strandsee of Burgas, Balkans; TOULA (264) p. 450. †*E. vasseuri*, Cott., redescribed; COTTEAU (44) p. 362.
- †*E. cassellensis*, Middle Eocene of Cassel, Nord, p. 356, †*E. morleti*, Middle Eocene, Anvers, Seine-et-Oise, p. 354, COTTEAU, Pal. franc., Ech. Tert. ii: n. spp.
- Echinodiscus auritus*, Leske sp.; MEISSNER (181) p. 185, MAZZETTI (177), LORIOL (154) p. 375: Red Sea; BOUTAN (24) p. 352. *E. biforis*, Red Sea; BOUTAN (24) p. 352.
- †*Echinolampus angulatus*, Mer.; SIMONELLI (245) p. 232. †*E. gambi-ensis*, Ten.-Woods; TATE (257) p. 193. *E. hellei*, Val.; STUDER (256) p. 21. †*E. hemisphaericus*, Agass.; DEPÉRET (64) p. 448. †*E. hoffmanni*, Desor; SIMONELLI (245) p. 222. †*E. ovalis*, St. Vinc. sp., six-rayed with two anterior ambulacra and other modifications; COTTEAU (42) p. 740. †*E. cf. posterocrassa*, Greg., Tertiary, Australia; BITTNER (21) p. 356.
- E. castanea*, Bay of Bengal, 11 fathoms, ALCOCK, J. Asiat. Soc. Bengal,

- lxii, p. 173 ; †*E. dumasi*, Middle Miocene of Montigné Briand and Langeais in Maine-et-Loire, COTTEAU, Mem. Soc. zool. France, vi, p. 353 ; †*E. morgani*, Tertiary, Mt. Gambier, Australia, COTTEAU, Mem. Soc. zool. France, iii, p. 546 : n. spp.
- Echinometra lucunter*, Blainv. sp., habits of life ; BOUTAN (24) p. 213 : borings ; STUDER (256) pp. 192, 216, 248, & 260 : Leske sp., Tahiti ; MEISSNER (181) p. 184 : Leske non Linn., criticising Loven's use of the name ; LORIOU (154) p. 373. *E. macrostoma*, Lütke. ; STUDER (256) p. 21. *E. subangularis*, DesM., habitat natural holes ; FIELD (82) p. 83 : colour, bore into augite-lava ; STUDER (256) pp. 17 & 22. *E. vanbrunti*, A. Ag., boring holes ; FEWKES (80).
- Echinoneus semilunaris*, Lam. ; FIELD (82) p. 84.
- †*Echinopelina*, Cott., defined, and *E. gacheti*, Desm. sp., redescribed ; COTTEAU (44) pp. 619 & 620.
- †*Echinopsis*, Agass., defined and discussed ; COTTEAU (44) p. 577. *E. arenata*, d'Arch. sp., see *Arachniopleurus*. *E. elegans*, Desm. sp., redescribed, structure of poriferous plates, a pauci-granulate variety ; *op. cit.* p. 579. *E. libycus*, Lor. ; *op. cit.* p. 587. *E. pusilla*, F. A. Römm., referred to *Zeuglopleurus* ; SCHLUETER (236) p. 207.
- E. biarritzensis*, Upper Eocene, near Biarritz, p. 585, *E. degrangei*, Middle Eocene of Plassac in Gironde, p. 583, COTTEAU, Pal. franc., Ech. Tert. ii : n. spp.
- †*Echinospatagus breyniisi*, d'Orb., redescribed ; LAMBERT (145) p. 93. †*E. collignoi*, see *Toxaster*.
- Echinostrephus molare*, A. Agass. ; STUDER (256) p. 216.
- Echinothrix desori*, Agass., a small specimen described ; LORIOU (154) p. 362.
- Echinothuria*, apical system ; AGASSIZ (2) p. 77.
- Echinus*, Agass. ; BELL (16) 145. *E. acutus*, Lam. ; BELL (16) p. 146 : a parasitic Turbellarian ; CUÉNOT (60). *E. alexandri*, Dan. & Kor., redescribed and figured ; DANIELSSEN (62) p. 1. *E. angulosus*, Leske sp., variation in colour ; MEISSNER (181) p. 184. †*E. bolivarii*, d'Orb., see *Diplopodia texanum*. *E. diadema*, Stud., distribution ; STUDER (256) pp. 149 & 163. *E. elegans*, Düb. & Kor. ; BELL (16) p. 154, DANIELSSEN (62) p. 4. *E. esculentus*, Linn. ; BELL (16) p. 152, DANIELSSEN (62) p. 4, EFISIO (73) p. 252, PETERSEN (216) p. 39, NORDGAARD (201) pp. 5 & 10 : very depressed form ; SCOTT (238) p. 49 : depressed and lofty vars. ; SCOTT (339). *E. flemingi*, Forbes ; DANIELSSEN (62) p. 4, NORDGAARD (201) pp. 5 & 10. †*E. glandarius*, Fraas, see *Cidaris*. †*E. leymeriei*, Cott., see *Sphaerechinus*. *E. magellanicus*, Phil. ; STUDER (256) pp. 283 & 285. *E. margaritaceus*, Lam. ; STUDER (256) pp. 288 & 289. *E. melo*, Lam. ; EFISIO (73) p. 252. *E. microstoma*, W. Thoms. ; BELL (16) p. 149. *E. microtuberculatus*, Blainv., segmentation and development experimentally investigated ; DRIESCH (68, 69, 70) and HERBST (116, 118) : development ; PENARD (210) : alimentary canal ; FRENZEL, (88) p. 101 : spermatogenesis ; FIELD (83). *E. miliaris*, Gmel. ; BELL (16) p. 150,

- PETERSEN (216) p. 40: amoebocytes; CUÉNOT (54) p. xi. *E. norvegicus*, Düb. & Kor.; BELL (16) p. 147, PETERSEN (216) p. 40, STEINDACHNER (254) p. 446: distribution, compared with *E. varispinus*, Sars.; DANIELSSEN (62) p. 3: variations in Mediterranean form; MARENZELLER (166) p. 66. *E. pileolus*, Lam.; EFISIO (73) p. 252. *E. spatangus*, Linn., see *Metalia maculosa*. *E. sphaera*, Müll., a parasitic Turbellarian; CUÉNOT (60): see also *E. esculentus*.
- †*Enallaster*:—*E. delgadoi*, de Lor.; AGUILERA (4) p. 26. *E. mexicanus*, Cott.; *loc. cit.* *E. texanus*, Room. sp., redescribed, and held to include *E. peruvianus*, Gabb, and possibly *Spatangus columbianus*, Lea; CLARK (36) p. 78.
- E. obliquatus*, Fredericksburg formation of Comanche series, Lower Cretaceous, Austin and Glen Rose, Texas, CLARK, Bull. U.S. Geol. Surv. No. 97, p. 79, n. sp.
- †*Entomaster*, Gauthier, discussed; LAMBERT (146) p. 95.
- †*Eocidaris keyserlingi*, Gein.; GEINITZ (96) p. 178.
- †*Eodiadema granulata*, Dunc.; WOODWARD (276) p. 370.
- †*Epiaster*:—*E. brevis*, Schlüt., Senonian of Angoulême; ARNAUD (9) p. 27. *E. elegans*, Shum. sp., redescribed; CLARK (36) p. 80. *E.* (?) sp. indet.; HILL (122) p. 21. *E. whitei*, Clark, redescribed, equals *Toxaster elegans*, Conrad non Shumard; CLARK (36) p. 82.
- †*Euspatangus*:—*E. cossoni*, Gauth., redescribed, p. 649; *E. croizieri*, Cott., variation in tubercles, pp. 639 & 655; *E. cruciatus*, Pompl sp., redescribed, p. 642; *E. hagenmulleri*, Per. & Gauth., redescribed, p. 645; *E. meslei*, Gauth., redescribed, p. 653; COTTEAU (44). *E. murrayensis*, Laube; BITTNER (21) p. 365. *E. prevosti*, Desor sp.; COTTEAU (44) p. 639. *E. rotundus*, Dunc.; BITTNER (21) p. 365. *E. subrostratus*, Per. & Gauth., redescribed; COTTEAU (44) p. 647.
- E. biarritzensis*, p. 656, and *E. vidali*, p. 640, Eocene near Biarritz, COTTEAU, Pal. franc., Ech. Tert. ii: n. spp.
- Fibularia*, Lam., redescribed and discussed; *op. cit.* p. 390. †*F. lorioli*, Thom. & Gauth., redescribed; *op. cit.* p. 391. *F. ovulum*, Lam.; EFISIO (73) p. 252. *F. volva*, Agass.; STUDER (256) p. 181.
- †*F. gregata*, n. sp., with n. var. *orbiculus*, p. 347, and †*F. tatei*, n. sp., p. 348, Tertiary, Australia; BITTNER, SB. Ak. Wien, ci, Abth. 1. But TATE (257) p. 192, says *F. gregata* is very variable, and includes the other two forms.
- Fibularidæ*, discussed; COTTEAU (44) p. 385.
- †*Gagaria*, Duncan, defined and discussed, p. 523; *G. atacica*, Cott. sp. redescribed, p. 525; *G. biarritzensis*, Cott. sp., ditto, p. 533; *G. frossardi*, Cott. sp., p. 543; *G. lusseri*, Desor sp., p. 540; *G. mokattanensis*, Cott. sp., p. 541; *G. nummulitica*, Cott. sp., redescribed, p. 536; *G. orbigny*, Cott. sp., ditto, p. 537; *G. superba*, Dames sp., p. 541; *G. venustula*, Dunc. & Slad. sp., p. 543; *G. vilanova*, Cott. sp., p. 542; COTTEAU (44).
- G. gauthieri*, p. 532, & *G. pegoli*, p. 528, Middle Eocene of Aude, COTTEAU, Pal. franc., Ech. Tert. ii: n. spp.

- †*Galeaster*, Seunes, maintained; LAMBERT (146) pp. 84 & 96.
- †*Galeola*, Klein, a subgenus of *Echinocorys*; LAMBERT (146) p. 97.
- †*Galeraster*, n. g., with type *G. australiae*, n. sp., Eocene, Mt. Gambier, Australia; COTTEAU, Mem. Soc. zool. France, iii, p. 548: referred to *Echinoneidæ*; LAMBERT (146) p. 85.
- †*Gauthieria*, apical system compared with that of *Cyphosoma*; COTTEAU (42) p. 732. *G. radiata*, Sorign. sp., discussed and figured; SCHLUETER (236) p. 201.
- †*Glyphocyphus rugosus*, see *Hemidiadema rugosum*.
- †*Glypticus hieroglyphicus*, Goldf. sp.; FOX-STRANGWAYS (87) II, p. 196.
- Goniocidaris*; AGASSIZ (3) p. 80. *G. canaliculata*, Agass.; STUDER (256) pp. 287 & 288. †*G. farringtonensis*, Wright sp., redescribed; LAMBERT (145) p. 39.
- †*G. arduennensis*, Aptian, Grandpré, LAMBERT, Bull. Soc. geol. France (3) xx, p. 44, n. sp.
- †*Goniophorus lunulatus*, Agass., redescribed; SCHLUETER (236) p. 155.
- †*Goniopygus*:—*G. menardi*, Agass.; ROTHPLETZ (224) p. 103. *G. royanus*, Danian of Angoulême; ARNAUD (9) p. 41. *G. zitteli*, Clark, redescribed and now first figured; CLARK (36) p. 53.
- †*Guettaria*, Gauthier, discussed; LAMBERT (146) p. 96.
- †*Hagenowia*, Dunc., probably one of the *Pourtalesidæ*; *loc. cit.*
- †*Hebertia*, Michelin, defined, p. 588; *H. meridanensis*, Cott., redescribed, p. 594; *H. parisiensis*, Mich., redescribed, p. 589; *H. sentisiana*, Desor, p. 593; COTTEAU (44).
- Hemiaster*; AGASSIZ (3) p. 81. †*H. californicus*, Clark, redescribed and now first figured; CLARK, Bull. U. S. Geol. Surv. No. 97, p. 90. *H. cavernosus*, Phil., sexual dimorphism, protection of ova, colonial habit; STUDER (256) pp. 142, 163, & 287. †*H. cubicus*, Desor; ROTHPLETZ (224) p. 103. †*H. dalli*, Clark, redescribed and now first figured; CLARK (36) p. 89. †*H. exoavatus*, Senonian of Angoulême; ARNAUD (9) p. 29. †*H. gabrielis*, Per. & Gauth.; FICHEUR (81) p. 411. †*H. humphreysanus*, Meek & Hayden, redescribed; CLARK (36) p. 88. †*H. kreuchelensis*, Per. & Gauth.; ROTHPLETZ (224) p. 103. †*H. latigrunda*, Per. & Gauth., 4-rayed specimen; COTTEAU (39) p. 540. †*H. ligeriensis*, Senonian of Angoulême; ARNAUD (9) p. 29. *H. mentzii*, A. Agass.; STUDER (256) p. 22. †*H. moulinsanus*, Danian of Angoulême; ARNAUD (9) pp. 35 & 42. †*H. nasutululus*, Sorignet; FALLOT (78) p. 361: Danian and Senonian of Angoulême; ARNAUD (9) pp. 27, 28, 29, 35, & 42. †*H. parastatus*, Morton sp., redescribed; CLARK (36) p. 83. †*H. planedecivis*, Greg., redescribed and figured; BITTNER (21) p. 366. †*H. proclivis*, Per. & Gauth.; FICHEUR (81) p. 411. †*H. prunella*, Desor, abnormal disappearance of fasciole and development of semicircular grooves in posterior region; COTTEAU (42) p. 737: Danian of Angoulême; ARNAUD (9) p. 35. †*H. regulusanus*, d'Orb., figured; FRIÉ (89) p. 112. †*H. sp.*; TOMMASI (262) p. 116. †*H. stella*, Morton sp., redescribed and held to include *H. wetherbyi*, de Lor., and *H.*

- incrassatus*, Clark; CLARK (36) p. 84. †*H. stella* (*angustipneustes*), Des., Senonian of Angoulême; ARNAUD (9) p. 25. †*H. texanus*, Roem., redescribed and held to include *H. americanus*, Giebel, and possibly *Periaster australis*, Gabb; CLARK (36) p. 86. †*H. ungula*, Morton sp., redescribed; CLARK (36) p. 85.
- †*H. calvini*, Shoal Creek Limestone, top of Comanche series, Lower Cretaceous, Travis Co., Texas, CLARK, Bull. U. S. Geol. Surv. No. 97, p. 90, n. sp.
- †*Hemicidaris*:—*H. hoffmanni*, F. A. Roem.; SMITH (250) p. 346. *H. intermedia*, Flem. sp.; FOX-STRANGWAYS (87) II, p. 196, SMITH (250) p. 346, GREPPIN (104) p. 99. *H. langrunensis*, in *Terebratulata maxillata*-beds near Basle; GREPPIN (103). *H.*, cf. *oblique-lineata*, Stopp. sp., spines only; SIMONELLI (246) p. 243. *H.* sp., Lower Lias, Calabria; GRECO (100) p. 79.
- H. bigoti*, Toarcian of May in Calvados, COTTEAU, Mem. Soc. zool. France, vi, p. 345; *H. intumescens*, Jurassic, Taylorsville, California, CLARK, Bull. U. S. Geol. Surv. No. 97, p. 44 : n. spp.
- †*Hemidiadema*, re-diagnosed and maintained, and *H. rugosum*, Agass., redescribed from fresh material; LAMBERT (145) p. 68.
- †*Hemipedina*:—*H. bechei*, Brod., *H. bowerbanki*, Wright; WOODWARD (276) p. 370. *H. corallina*, Wright; FOX-STRANGWAYS (87) II, p. 196. *H. etheridgei*, Wright, *H. jardini*, Wright; WOODWARD (276) p. 370. *H. struckmanni*, Dames; SMITH (250) p. 346. *H. tomesi*, Wright; WOODWARD (276) p. 370, FOX-STRANGWAYS (87) II, p. 32. *H. woodwardi*, Wright; FOX-STRANGWAYS (87) II, p. 145.
- †*Hemipneustes*, Agass., described and discussed; COTTEAU (38) p. 1 : discussed; LAMBERT (146) pp. 79 & 95. *H. africanus*, Desh.; COTTEAU (38) p. 7. *H. cotteaudi*, Lambert, compared with *H. arnaudi*; COTTEAU (42) p. 734 : syn. of *H. tenuiporus*; COTTEAU (38) p. 10. *H. delectrei*, Coq.; COTTEAU (38) p. 8. *H.*, cf. *delectrei*, Danian of Angoulême; ARNAUD (9) p. 35. *H. italicus*, Manzoni, a doubtful form; LAMBERT (146) p. 95. *H. leymeriei*, Héb.; COTTEAU (38) p. 8. *H. marticensis*, Cott. sp.; *op. cit.* p. 9. *H. pyrenaicus*, Héb., p. 8; COTTEAU (38), FALLOT (78) p. 358. *H. semistriatus*, d'Orb. sp.; COTTEAU (38) p. 9. *H. striato-radiatus*, Leske; *op. cit.* p. 7. *H. tenuiporus*, Cott. sp., discussed; *op. cit.* p. 10.
- H. arnaudi*, Upper Senonian of Sergeac in Dordogne; COTTEAU, Mem. Soc. zool. France, v, p. 733, *H. oculatus*, Upper Senonian, Ciply, COTTEAU, Mem. Soc. malac. Belgique, xxv, p. 4 : n. spp.
- †*Heteraster texanus*, Roem.; AGUILERA (4) p. 26.
- Heterocentrotus mamillatus*, Agass.; LORIOI (154) p. 374.
- †*Heterocidaris wickensis*, Wright sp.; FOX-STRANGWAYS (87) II, p. 145.
- †*Heterodiadema libycum*, Cott.; FICHEUR (81) p. 412.
- †*Heteropneustes*, Pomel, emended; *H. cotteaudi*, Pomel, and *H. semistriatus*, Pomel, referred to *Hemipneustes*; LAMBERT (146) p. 95.
- Hipponoë esculenta*, A. Agass., protection; FIELD (82) p. 83, STUDER (256) p. 22. *H. variegata*, Leske, carries sea-weed to protect ova; STUDER (256) p. 235.

- †*Holaster*, Agass., discussed; LAMBERT (146) p. 94. *H. australie*, Duncan, referred to *Lampadocorys*; *op. cit.* p. 97. *H. latissimus*, Agass., redescribed, stages of growth, and monstrosity; LAMBERT (145) p. 89. *H. placenta*, ? Agass., figured; FRIČ (89) p. 111. *H. planus*, Agass., varieties; CAYEUX (28) p. 119: discussed, type of new genus *Sternotaxis*; LAMBERT (146) p. 74. *H. pyriformis*, Per. & Gauth., referred to *Lampadocorys*; *op. cit.* p. 97. *H. semistriatus*, d'Orb., referred to *Hemipneustes*; COTTEAU (38) p. 9. *H. simplex*, Shum., redescribed and held to include *H. comanchesi*, Marcou; CLARK (36) p. 76.
- Holaster*, Craie glauconifère de Bohéries, Aisne, CAYEUX (28) p. 119, n. sp.
- †*Holectypus*:—*H. afer*, Per. & Gauth.; FICHEUR (81) p. 401. *H. castilloi*, Cott.; AGUILERA (4) p. 26. *H. corallinus*, d'Orb.; SMITH, (250) p. 346. *H. depressus*, Leske; FOX-STRANGWAYS (87) II, pp. 145 & 196: in Discoideen-mergel, near Basle; GREPPIN (103). *H. oblongus*, Wright; FOX-STRANGWAYS (87) II, p. 196. *H. planatus*, Roem., redescribed, held to include *H. planus*, and possibly *H. castilloi*; CLARK (36) p. 58. *H. sarthacensis*, Cott.; GREGORY (102) p. 7. ? *H. simplex*, Shum.; CLARK (36) p. 93. *H. turonensis*, Senonian of Angoulême; ARNAUD (9) p. 29.
- Homolampas*; AGASSIZ (3) p. 81.
- †*Homotoechus*, n. g. for reception of *Archaeocidaris hartiana*, Baily, Lower Carboniferous, Donegal, the name of which is [unwarrantably] changed to *H. hartii*: SOLLAS, P. Dublin Soc. vii, p. 152.
- †*Hyboclypeus agariciformis*, Forbes; FOX-STRANGWAYS (87) II, p. 145. †*H.*, sp. ind.; SIEMIRADZKI (244) p. 144.
- †*Infraclypeus thulebensis*, Per. & Gauth.; FICHEUR (81) p. 401.
- †*Infulaster*, Hag., discussed; LAMBERT (146) p. 96. *I.* sp., Bohéries, Aisne; CAYEUX (28) p. 119.
- †*Jeronia*, Seunes, discussed; LAMBERT (146) p. 98.
- Laganum depressum*, Less.; STUDER (256) p. 181: young, LORIOL (154) p. 375. *L. fragile*, nomen nudum; MAZZETTI (177).
- †*Lampadaster*, Cott., discussed; LAMBERT (146) p. 97.
- †*Lampadocorys*, Pomel, discussed; *loc. cit.* p. 97.
- †*Lanieria lanieri*, d'Orb.; AGUILERA (4) p. 26.
- †*Leiocidaris*:—*L. australie*, Dunc., referred to *Cidaris striata*; COTTEAU (44) p. 447. *L. hemigranosus*, Shum. sp., details described and figured; CLARK (36) p. 38. *L. salviensis*, Cott., described from N. Germany; SCHLUETER (236) p. 26.
- L.* (?) *hilsii*, Neocomian, Achim, Brunswick, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5, p. 28, n. sp.
- †*Leiopedina*, Cott., defined and discussed, p. 612; *L. samusi*, Pavay, redescribed, p. 616; *L. tallavignesi*, Cott., redescribed, p. 613; COTTEAU, Pal. franc., Ech. Tert. ii.
- †*Leiosoma*, Cott., defined and discussed; *loc. cit.* p. 505. *L. biarritzense*, Cott., see *Micropeltis*. *L. tournoueri*, Cott.; FALLOT (78) p. 361.
- L. bahezei*, Eocene, Poble de Roda, in Aragon, COTTEAU, Pal. franc., Ech. Tert. ii, p. 506, n. sp.

- †*Lenita* and *L. patellaris*, Leske sp., redescribed ; COTTEAU (44) p. 378.
- †*Linthia* :—*L.* sp., AGUILERA (4) p. 26. *L. tumidula*, Clark, redescribed and now first figured ; CLARK (36) p. 91.
- L. alymensis*, Cretaceous ?, Turkestan, ROMANOVSKII (223) p. 154, n. sp.
- Lovenia elongata*, Gray ; STUDER (256) p. 193 : Red Sea ; BOUTAN (24) p. 352.
- L. gregalis*, Bay of Bengal, 475 fathoms, ALCOCK, J. Asiat. Soc. Bengal, lxii, p. 175, n. sp.
- †*Macropneustes* sp. ; AGUILERA (4) p. 27.
- Marelia*, AGASSIZ (3) p. 81. †*M. grignonensis*, Desmar. sp., variety from Plateau du Four ; COTTEAU (44) p. 636. *M. planulata*, Lam. ; LORIOU (154) p. 377.
- †*M. savini*, Middle Eocene of Vallée du Trapel in Aude ; COTTEAU, Pal. franc., Ech. Tert. ii, p. 637, n. sp.
- †*Melonites* : apical system ; AGASSIZ (2) p. 73.
- †*M. indianensis*, St. Louis Group, Indiana, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 5, n. sp.
- Meoma ventricosum*, Lütke ; FIELD (82) p. 84, STUDER (256) p. 22.
- Metalia africana*, Verrill ; STUDER (256) pp. 21 & 27. *M. maculosa*, Gmel. ; LORIOU (154) p. 376.
- †*Metaporhinus convexus*, Cott. ; FICHEUR (81) p. 401.
- †*M. minensis*, Corallian, Tiarct, Algeria ; GAUTHIER, C.R. Ass. Franc. 1889 (2) p. 435, n. sp.
- †*Micraster* :—*M. aturicus*, Héb. ; FALLOT (78) p. 353. *M.*, aff. *aturicus* et *heberti* ; FALLOT (77). *M. beonensis*, Gauthier, found in N. of France ; PARENT (208) p. 22. *M. breviporus*, Agass., Craie glauconifère, and Craie a cornus, N. France, special varieties described and figured ; CAYEUX (28) pp. 120 & 135 : var., PARENT (207) p. 315. *M. brevis*, var. *turonensis*, Des., Senonian of Angoulême ; ARNAUD (9) pp. 25 & 27. *M. coranguinum*, var., Senonian, Lille ; PARENT (206) p. 18. *M. corbovis*, Forbes ; PARENT (207) p. 315 : var., PARENT (208), p. 23. *M. cor-testudinarium*, Agass. ; CAYEUX (28) p. 120, MICHAEL (184) p. 243 : var., PARENT (207) p. 315. *M. lorioli*, Novak, figured ; FRIČ (89) p. 110. *M. etheridgei*, Johnston, referred to *Monostychia* ; TATE (257) p. 192. *M. laxoporus*, Senonian of Angoulême ; ARNAUD (9) pp. 27 & 29. *M. normannia*, Bucaille ; PARENT (207) p. 316 : in Chalk with *M. cor-bovis*, Haut-Boulonnais ; PARENT (206) p. 21. *M. sancta-mauræ*, Gauthier, from zone of *M. breviporus*, Cambrésis, near Lille ; PARENT (206) p. 20. *M.* sp. ; AGUILERA (4) p. 26.
- M. bucailli* [? by error for *bucaillei*], p. 15, *M. cayeuxi* [? by error for *cayeuxi*], p. 13, *M. gauthieri*, p. 10, and (208) p. 23, Senonian, Lille, PARENT, Ann. Soc. géol. Nord. xx ; *M. gosseleti*, Chalk, zone of *M. cor-testudinarium*, Ronchin, near Lille, CAYEUX, Ann. Soc. géol. Nord. xvii, p. 180 ; *M.*, Cretaceous, zone of *Epiaster brevis*, Dannes, Boulonnais, PARENT, Ann. Soc. géol. Nord. xx, p. 316 ; *M.*, Craie glauconifère de Quiévy, CAYEUX (28) p. 120 ; *M. sweeti*, Desert

Sandstone, Upper Cretaceous, Maryborough, Queensland, ETHERIDGE (76) p. 559 : n. spp.

†*Micropedina*, cf. *olisiponensis*, Forbes ; ROTHPLETZ (224) p. 103.

†*Micropeltis*, Pomel, defined and discussed ; COTTEAU, Pal. franc., Ech. Tert. ii, p. 517. *M. biarritzensis*, Cott., sp., redescribed and now first figured ; *op. cit.* p. 519.

M. vidali, Middle Eocene, Biarritz, *op. cit.* p. 521, n. sp.

†*Micropsina*, n. g., with type, *M. laudoni*, n. sp., Eocene, near Grignon, in Seine-et-Oise and Mouchy-le-Chalet in Oise ; COTTEAU, *op. cit.* p. 629.

†*Micropsis* :—*M. biarritzensis*, Cott., *M. frossardi*, Cott., *M. nummulitica*, Cott., *M. orbigny*, Cott. ; see *Gagaria*. *M. samperi*, Cott., see *Coptosoma*. *M. tremadesi*, Cott., referred to *Gagaria vilanovæ* ; COTTEAU (44) p. 542. *M. venustula*, Dunc. & Slad., see *Gagaria*.

Moira ; AGASSIZ (3) p. 81.

†*Monostychia australis*, Laube, discussed and figured ; BITTNER (21) p. 345. †*M. etheridgei*, Johnston sp. ; TATE (257) p. 192.

Neolampas and *N. rostellata*, A. Agass. ; BELL (16) p. 162.

†*Nucleolites* :—*N. cerceleti*, Desor, see *Phyllobrissus cerceleti*. *N. minor*, Desor sp. ; FALLOT (78) p. 361. *N. subcarinatus*, Goldf., referred to *Tristomanthus* ; BITTNER (21) p. 355.

†*Offaster*, Desor, discussed, p. 97 ; *O. globulosus*, de Lor., doubtfully referred to *Physaster*, p. 92 ; LAMBERT (146).

†*Oligoporus blairi*, p. 6, Keokuk Group, Missouri, *O. bellulus*, p. 7, ditto, *O. sulcatus*, p. 8, St. Louis Group, Kentucky, MILLER & GURLEY, Bull. Ill. Mus. iii : n. spp.

†*Oolaster*, Laube, maintained ; LAMBERT (146) p. 97.

†*Opisopneustes*, Gauthier, discussed ; *op. cit.* p. 96.

†*Orthechinus boreau*, Middle Dordonian of Maurens in Dordogne ; COTTEAU, Mem. Soc. zool. France, vi, p. 350 [ascribed to Arnaud, but apparently n. sp.].

†*Ortholophus lineatus*, Duncan, referred to *Paradoxechinus novus* ; TATE (257) p. 191 ; see also *Coptechinus*.

†*Orthopsis miliaris*, Cott., Danian and Senonian of Angoulême ; ARNAUD (9) pp. 41 & 25.

†*Palæchinus elegans* and *P. sphaericus*, McCoy, apical system ; AGASSIZ (2) p. 73. *P. sphaericus* as a rock-former ; LONEST (152).

Paleopneustes ; AGASSIZ (3) pp. 81 & 83.

†*Paradoxechinus novus*, Laube, described and figured ; BITTNER (21) p. 344 : very variable, and includes *Coptechinus lineatus* and *C. pulchellus*, Bittn. ; TATE (257) p. 191.

Parasalenia, A. Agass., defined and discussed ; COTTEAU (44) p. 631.

†*P. fontannes*, Cott., Helvetian of Grand Vallet in Rhone basin ; DÉPÉRET (64) p. 433. *P. gratiosa*, A. Agass., Madagascar, with 4 anal plates ; MEISSNER (182).

†*P. gosseleti*, Eocene of Cassel, Nord. ; COTTEAU, Pal. franc., Ech. Tert. ii, p. 633, n. sp.

†*Pedina* :—*P. sublaevis*, Agass. ; SMITH (250) p. 346.

- P. grossouvrei*, between Bajocian and Bathonian, near Loudun, Maine-et-Loire, COTTEAU, Mem. Soc. zool. France, vi, p. 344, n. sp.
- † *Pedinopsis pondi*, probably from the lower portion of the Austin chalk, Upper Cretaceous, Onion Creek, Travis Co., Texas, CLARK, Bull. U. S. Geol. Surv., No. 97, p. 57, n. sp.
- † *Pellastes* :—*P. clathratus*, Agass. sp., redescribed; SCHLUETER (236) p. 148. *P. cf. heliophorus*, Agass. sp., Senonian, Baltic provinces; *op. cit.* p. 152. *P. lardyi*, Desor sp., redescribed, with varieties and young; LAMBERT (145) p. 76. *P. meyeri*, Desor sp., and *P. punctatus*, Agass., referred to *P. stellulatus*, Agass.; *op. cit.* pp. 75 & 76. *P. stellulatus*, Agass. sp., redescribed; SCHLUETER (236) p. 145.
- † *Periaster australis*, Gabb, see *Hemiaster texanus*.
- † *Peronella decagonalis*, Lesson sp., New Guinea; ETHERIDGE (76) pp. 692 & 697.
- Phormosoma*, W. Thoms.; AGASSIZ (3) pp. 79, 80, & 83, BELL (16) p. 143. *P. placenta*, W. Thoms.; BELL (16) p. 144. *P. uranus*, W. Thoms.; BELL (16) p. 145.
- Phylacanthus baculosa*, spines covered with algæ; BOUTAN (24) p. 53.
† *P. sindensis*, Dunc. & Slad., referred to *Rhabdocidaris*; COTTEAU (44) p. 464.
- † *P. tirsiger*, SIMONELLI (245) p. 234, n. sp.
- † *Phyllobrissus cerceleti*, Desor sp., redescribed, and systematic position discussed; LAMBERT (145) p. 84.
- † *Phymosoma radiatum*, Schl.; FRIČ (89) p. 109.
- † *Pithodia*, see *Discoides*.
- Plagirchinus*, Pomel, rejected; COTTEAU (44) p. 632.
- † *Plagiochasma*, Pomel, syn. of *Trematopygus*, d'Orb.; LAMBERT (146) p. 69.
- † *Plesiocorys*, Pomel, rejected; LAMBERT (146) p. 94.
- † *Pleurocidaris regalis*, Goldf. sp., redescribed and discussed; SCHLUETER (236) p. 136.
- † *Pliolampas meslei*, Cott., Helvetian of Valduc; DEPÉRET (64) p. 448.
- † *Polydiadema*, discussed and defended; LAMBERT (145) p. 48. *P. bonei*, Forbes sp., Upper Greensand, Warminster, distinguished from *Tiarella michelini* at same locality; LAMBERT (145) p. 58.
- P. cotteani*, Aptian, Grandpré; LAMBERT, Bull. Soc. geol. France (3) xx, p. 54, n. sp.
- † *Porocidaris*, Desor; AGASSIZ (3) p. 80: defined and discussed; COTTEAU (44) p. 465. *P. anomala*, Dunc. & Slad.; COTTEAU (44) p. 478. *P. (?) lingualis*, Desor, discussed; SCHLUETER (236) p. 134. *P. pseudo-serrata*, Cott. sp., redescribed; COTTEAU (44) p. 474. *P. schmideli*, Münst. sp., redescribed; *op. cit.* p. 468. *P. tuberculosa*, Mich.; *op. cit.* p. 478.
- P. cretacea*, name doubtfully given to spine-fragment, Upper Senonian, Rügen, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft. 5, p. 131, n. sp. (?)
- Pourtalsia*; AGASSIZ (3) pp. 77, 79, & 83. *P. jeffreysii*, A. Agass.; DANIELSSEN (62) p. 5.

- † *Progonolampas*, n. g., with type *P. novae-hollandiae*, n. sp., Tertiary, Australia; BITTNER, SB. Ak. Wien, ci, Abth. 1, p. 359: syn. of *Echinolampas posterocrassus*, Greg; TATE (257) p. 193.
- † *Psammechinus*, Agass., defined; COTTEAU (44) p. 624. *P. biarrizensis*, Cott., redescribed; *op. cit.* p. 625. *P. cingulatus*, Clark, redescribed and now first figured; CLARK (36) p. 55. *P. dubius*, Agass.; ROTHPLETZ (224) p. 103. *P. gravesi*, Desor; COTTEAU (44) p. 628. *P. homocypthus*, Des.; SIMONELLI (245) p. 228. *P. mouilis*, Desm.; SIMONELLI (245) p. 232, TOULA (265) p. 291. *P. orbigny*, Cott., see *Gagaria*. *P. spade*, Des.; SIMONELLI (245) p. 228. *P. woodsi*, Laube, redescribed and figured, with n. var. *fasciger*, Tertiary, Australia; BITTNER (21) p. 335: very variable, and includes var. *fasciger* and *P. humilior* of Bittner; TATE (257) p. 191.
- P.* (?) *humilior*, Tertiary of Australia, BITTNER, SB. Ak. Wien, ci, Abth. 1, p. 337; synonym of *P. woodsi*, TATE (257) p. 191: n. sp.
- † *Pseudananchis*, Pomel, maintained; LAMBERT (146) p. 97.
- † *Pseudocidaris saussurei*, de Lor.; AGUILERA (4) p. 26. † *P. thurmanni*, Et.; SMITH (250) p. 346.
- † *P. unigranulata*, Jurassic, Cutch, GREGORY, Pal. Ind., ser. ix, vol. ii, Pt. 1, p. 3, n. sp.
- † *Pseudodiadema*:—*P. depressum*, Agass. sp.; FOX-STRANGWAYS (87) II, p. 145. *P. diatretum*, Morton sp., redescribed; CLARK, Bull. U. S. Geol. Surv. No. 97, p. 46. *P. hemisphericum*, Agass.; FOX-STRANGWAYS (87) II, p. 197. *P. lobatum*, Wright; WOODWARD (276) p. 370. *P. malbosii* ? Desor; AGUILERA (4) p. 26. *P. mammillatum*, F. A. Roem.; SMITH (250) p. 346. *P. minutum*, Buckm. sp.; STUBER (255) p. 105. *P. moorei*, Wright; WOODWARD (276) p. 370. *P. pentagonum*, McCoy sp.; FOX-STRANGWAYS (87) II, p. 145. *P. renevieri*, Cott., see *Diplopodiu renevieri*. *P. roemeri*, Clark, a synonym of *P. texanum*; CLARK (36) p. 47. *P.* sp.; GREGORY (102) p. 7. *P. slateri*, Blake; FOX-STRANGWAYS (87) II, p. 32. *P. tenue*, Desh.; ROTHPLETZ (224) p. 103. *P. texanum*, Roem. sp., redescribed; CLARK (36) p. 47. *P. vagans*, Phill. sp.; FOX-STRANGWAYS (87) II, p. 145. *P. versipora*, Wright; FOX-STRANGWAYS (87) II, p. 197.
- P. cutchensis*, Jurassic, Cutch, GREGORY, Pal. Ind., ser. ix, vol. ii, Pt. 1, p. 5; *P. emersoni*, Jurassic, Taylorsville, California, CLARK, Bull. U. S. Geol. Surv. No. 97, p. 45: n. spp.
- † *Pseudoholaster*, Pomel, discussed and emended; LAMBERT (146) p. 94.
- † *Psilosoma*, Pomel, validity discussed; COTTEAU (46) p. 351.
- † *Pygaster semisulcatus*, Phill. sp., p. 146; † *P. umbrella*, Agass., p. 197; FOX-STRANGWAYS (87) II.
- † *P. welschi*, Corallian, Taret, Algeria, GAUTHIER, C.R. Ass. Franc. 1889 (2) p. 433, n. sp.
- † *Pygaulus barthi*, p. 262, and † *P. kelleri*, p. 261, Neocomian, Somaliland, MAYER-EYMAR, Vierteljahrschr. Ges. Zurich, xxxviii: n. spp.
- † *Pygorhytis*, Pomel, emended and restricted to species with a floscelle; GREGORY, Pal. Ind., ser. ix, vol. ii, Pt. 1, p. 10.

- P. tumulus*, Jurassic, Cutch, *op. cit.* p. 11, n. sp.
- †*Pygurus*:—*P. geometricus*, Morton sp.; CLARK (36) p. 92. *P. hausmanni*, Koch & Dunk. sp.; FOX-STRANGWAYS (87) II, p. 197. *P. jurensis*, Marcou; SMITH (250) p. 346. *P. pentagonalis*, Phill. sp., p. 197, *P. phillipsi*, Wright, p. 198; FOX-STRANGWAYS (87) II.
- †*Pyrina*:—*P. flava*, Arnaud, with buccal plates; COTTEAU (39) p. 539. *P. parryi*, Hall; AGUILERA (4) p. 26: redescribed; CLARK (36) p. 59. *P. sp.*, Cretaceous, Balkans; VANKOV (266) p. 97.
- †*Radiocyphus villanovæ*, Cott., referred to *Arachniopleurus*; COTTEAU (44) p. 603.
- Rhabdocidaris*, Desor, defined and discussed; COTTEAU (44) p. 451. *R. annulifera*, Lam., described, distinguished from *R. baculosa*, and extended over *Schleinitzia crenularis* and *Cidaris lukei*; LORIOLO (154) p. 360. †*R. caprimontana*, Desor sp.; SIEMIRADZKI (244) p. 143. †*R.*, *cf. cometus*, Boll, Upper Senonian, Rügen, spines only; SCHLUETER, (236) p. 23. †*R.*, *cf. cylindrica*, Quenst., Tuapse, Caucasus; NEUMAYR & UHLIG (198) p. 3. *R. imperialis*, Lm.; LORIOLO (154) p. 361. †*R. itula*, Laube sp., †*R. loveni*, Cott.; COTTEAU (44) p. 462. †*R. maxima*, Münst. sp.; FOX-STRANGWAYS (87) II, p. 146. †*R. mezzozana*, Laube sp.; COTTEAU (44) p. 461. †*R. moralina*, Cott.; WOODWARD (276) p. 370. †*R. navillei*, Cott. sp.; COTTEAU (44) p. 464. †*R. nobilis*, Goldf.; SIEMIRADZKI (244) p. 143. †*R.*, *cf. nobilis*, Münst., Schachdagh, Caucasus; NEUMAYR & UHLIG (198) p. 4. †*R. pouechi*, Cott., redescribed with variations; COTTEAU (44) p. 456. †*R. pseudojurassica*, Laube; COTTEAU (44) p. 460. †*R. ranikoti*, Dunc. & Slad.; COTTEAU (44) p. 463. †*R. remus*, Desor; SIEMIRADZKI (244) p. 143. †*R. sindensis*, Dunc. & Slad. sp.; COTTEAU (44) p. 464. †*R. sp.*; GREGORY (102) p. 3, FOX-STRANGWAYS (87) II, p. 32, RETOWSKI (221) p. 288. †*R. subcoronata*, Münst. sp.; OGILVIE (205) p. 51. †*R. suevica*, Desor; SIEMIRADZKI (244) p. 143. †*R. vidali*, Cott.; COTTEAU, Pal. franc., Ech. Tert. ii, p. 465. †*R. zitteli*, Lor.; *t. c.* p. 463.
- †*R. blancheti*, Upper Eocene near Biarritz, COTTEAU, Pal. franc., Ech. Tert. ii, p. 453; †*R. schloenbachi* (n. sp. ?), Neocomian, Sommerholze near Kniestedt, N. Germany, founded on spine-fragments, p. 20, †*R. triangularis*, Neocomian, Achim, Brunswick, founded on spines, p. 19, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5: n. spp.
- †*Rhabdopleurus*, n. g., based on *Glyphocyphus ataxensis*, which is redescribed; COTTEAU (44) pp. 594 & 595.
- †*Rhynchopygus marmini*, Danian of Angoulême; ARNAUD (9) pp. 35, 36, & 41.
- Rotula augusti*, Klein, crowd of young; STUDER (256) pp. 21 & 27. *R. rumpfi*, Klein; STUDER (256) p. 21.
- †*Salenia*, Gray; AGASSIZ (3) pp. 77 & 80: defined and discussed; COTTEAU (44) p. 479. *S. anthophora*, J. Müll., redescribed, figured, and discussed; SCHLUETER (236) p. 192. *S. arcolata*, Wahlb. sp.,

- discussed ; SCHLUETER (236) p. 174, see also *S. quenstedti*. *S. bellula*, Clark, redescribed and now first figured ; CLARK (36) p. 43. *S. blanfordi*, Dunc. & Slad.; COTTEAU (44) p. 485. *S. bommissenti*, Cott., referred to *S. anthophora* ; SCHLUETER (236) p. 192. *S. bourgeoisi*, Cott., in part referred to *S. maestrichtensis* ; SCHLUETER (236) p. 196 : Senonian of Angoulême ; ARNAUD (9) p. 27. *S. garciae*, Cott.; COTTEAU (44) p. 484. *S. granulosa*, Forbes, redescribed and figured ; SCHLUETER (236) p. 164. *S. heberti*, Cott., redescribed and figured, with measurements of 12 specimens ; SCHLUETER (236) p. 179. *S. liliputana*, Geinitz, referred to *S. petalifera* ; SCHLUETER (236) p. 160. *S. loveni*, Cott., discussed ; SCHLUETER (236) p. 175. *S. mamillata*, Cott., compared with *Peltastes lardyi* ; LAMBERT (145) p. 77. *S. pellati*, Cott., redescribed ; COTTEAU (44) p. 482. *S. petalifera*, Desmarest sp., redescribed, discussed, and a monstrosity figured ; SCHLUETER (236) p. 160. *S. prestensis*, Desor ; AGUILERA (4) p. 26. *S. scutigera*, Senonian of Angoulême ; ARNAUD (9) pp. 28 & 29. *S. tertiaria*, Tate, redescribed and figured ; BITTNER (21) p. 333. *S. texana*, Credner ; CLARK (36) p. 40. *S. tumidula*, Clark, redescribed and now first figured ; CLARK (36) p. 41. *S. trigonata*, Senonian of Angoulême ; ARNAUD (9) p. 28. *S. villanova* is syn. of *S. grasi* ; COTTEAU (42) p. 472.
- S. cylindrica* (ascribed to Arnaud, but apparently n. sp.), Middle Dordonian of Meschers in Charente-Inférieure, COTTEAU, Mem. Soc. zool. France, vi, p. 346 ; *S. duleaui*, Middle Eocene, Plassac near Blaye, COTTEAU, Pal. franc., Ech. Tert. ii, p. 480 ; *S. gehrdenensis*, Lower Senonian, Gehrden, S. Hannover, p. 170, *S. maestrichtensis*, Danian of Maestricht and Falkenberg, p. 196, *S. obnupta*, Upper Senonian, Berkum near Peine in Hannover, p. 190, *S. quenstedti*, new name for *S. areolata*, Quenst. non Wahlb., Lower Senonian, Quedlinburg, p. 176, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5 ; *S. radians*, Lower Santonian or Coniacian of Rousselières in Charente, COTTEAU, Mem. Soc. zool. France, iii, p. 543 ; *S. sigillata*, Upper Cretaceous Drift from Baltic, Potsdam, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5, p. 85 : n. spp.
- Suleniadæ*, apical system ; AGASSIZ (2) p. 78.
- Salmacis rarispina*, A. Agass. ; STUDER (256) p. 263 : description of a neanic specimen ; LORIOL (154) p. 370. *S. sulcata*, Agass. ; STUDER (256) p. 192. †*S. vanden-heckei*, Agass., see *Triplacidia*.
- †*Sarsella forbesi*, Dunc. ; BITTNER (21) p. 364. †*S. mauritanica*, Pomel, redescribed ; COTTEAU (44) p. 667.
- Schizaster*, Agass. ; BELL (16) p. 163, AGASSIZ (3) pp. 77, 78, & 82. *S. capensis*, Stud., colour ; STUDER (256) pp. 52 & 55. *S. fragilis*, Düb. & Kor. ; BELL (16) p. 164, DANIELSSON (62) p. 5. *S. moseleyi*, A. Agass., distribution ; STUDER (256) p. 163. †*S. parkinsoni*, Agass., Helvetian of Istres, Rhone Basin ; DEPÉRET (64) p. 454. *S. philippii*, Gray, colour ; STUDER (256) p. 288. *S. sp.*, alimentary canal ; FRENZEL (88) p. 103.

- †*S. roemeri*, Cretaceous, Silesia, LANGENHAN & GRUNDEY, Jahresb. d. Glatzer Gebirgs-Ver. x, p. 8, n. sp.
- Schleinitzia crenularis*, Stud., see *Rhabdocidaris annulifera*.
- †*Scutella paulensis*, Agass., var., Helvetian of Rhone Basin; DEPÉRET (64) p. 426. †*S.*, cf. *subrotunda*, Lam., Tertiary of Coro; ERNST (75) p. 339.
- †*Scutellina*, redescribed, p. 306; *S. concava*, Thomas & Gauthier, redescribed, p. 345; *S. dufouri*, Cott., redescribed, p. 311; *S. incisa*, Defr. sp., redescribed and removed from *Sismondia*, p. 322; *S. lenticularis*, Lam. sp., redescribed and discussed, with its variations, p. 315; *S. michelini*, Cott., p. 307, *S. obovata*, Agass., p. 326, *S. rotunda*, Galeotti sp., p. 335, *S. supera*, Agass., p. 339, redescribed; COTTEAU, Pal. franc., Ech. Tert. ii.
- †*S. blaviensis*, Eocene, Calcaire de Blaye, Soussans, Bruges and Gironde, p. 331, *S. besançonii*, Eocene of Fontenay and Cahaignes, Eure, p. 330, *S. bonissenti*, Middle Eocene of Hauteville, Manche, p. 324, *S. colvilmontana*, Middle Eocene of Oise and Eure, p. 343, *S. folium*, Eocene of Soussans, p. 333, *S. linderi*, Middle Eocene of Gironde, p. 313, *S. morgani*, Eocene, Mt. Gambier, Australia, p. 347, COTTEAU, Pal. franc., Ech. Tert. ii, n. spp.
- †*Sismondia incisa*, see *Scutellina*.
- Spatangidae*, morphological study of the plastron, and phylogenesis; LAMBERT (146).
- Spatangus*, Leske; BELL (16) p. 164. †*S.*, cf. *austriacus*, Laube; TOULA (265) p. 288. †*S. ocellatus*, Defr.; ROTHPLETZ (224) p. 103. *S. purpureus*, Leske; BELL (16) p. 165, DANIELSSEN (62) p. 5, PETERSEN (216) p. 42, SIMONELLI (245) p. 218, STEINDACHNER (254) p. 446. *S. raschi*, Loven; BELL (16) p. 167, DANIELSSEN (62) p. 5. *S.* sp., alimentary canal; FRENZEL (88) p. 102. *S.* sp. ?; EFISIO (73) p. 252. †*S. truncatus*, Goldf., referred to *Cibaster*; LAMBERT (146) p. 97.
- †*S. macraulax*, n. sp., SIMONELLI (245) p. 220.
- Spherechinus*, Desor; BELL (16) p. 158: structure of ovum; SCHNEIDER (237) p. 46. *S. granularis*, Lam.; BELL (16) p. 158: chemical stimulation of unfertilised eggs; HERBST (117): experimental investigation of development; DRIESCH (69, 68, 70), HERBST (116) 118): spermatogenesis; FIELD (83): alimentary canal; FRENZEL (88) p. 101: dorsal organ; LEIPOLDT (148) p. 595. †*S. leymeriei*, Cott. sp., redescribed and now first figured; COTTEAU (44) p. 623.
- †*Stegaster*, Pomel, em. Seunes, discussed; LAMBERT (146) p. 97.
- †*Stenonia*, Desor, discussed; LAMBERT (146) p. 98.
- †*Stercocidaris*:—*S.*, cf. *carteri*, Forbes sp., redescribed and figured, p. 86; *S. hirudo*, Sorign. sp., measurements of test, p. 99; *S. merceyi*, Cott. sp., redescribed and figured, p. 105; *S. punctillum*, Sorign. sp., discussed, p. 97; *S. reussi*, Gein. sp., redescribed and figured, p. 94; *S. scaptrifera*, König sp., redescribed and figured, p. 110; SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5.

- † *S. darupensis*, Upper Senonian, Darup and Coesfeld in Westphalia, p. 118, *hannoverana*, Cenomanian, Rethen in Hannover, p. 88, *silesiaca*, Turonian, Oppeln, in Silesia, p. 102, *subhercynica*, Turonian, Hannover and Harz, p. 91, SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5, n. spp.
- † *Sternotaxis*, n. g., with type *Holaster planus*; LAMBERT (146) p. 95.
- † *Stomechinus*:—*S. aroviensis*, Desor sp.; SIEMIRADZKI (244) p. 143. *S. bigranularis*, Lam. sp.; *S. germinans*, Phill. sp.: FOX-STRANGWAYS (87) II, p. 146. *S. gyratus*, Agass. sp.: FOX-STRANGWAYS (87) II, p. 198. *S. sp.*; GREGORY (102) p. 7.
- † *S. hyatti*, Jurassic, Taylorsville, California, CLARK, Bull. U. S. Geol. Surv. No. 97, p. 56, n. sp.
- > † *Strictechinus*, n. g., with type *S. pouechi*, n. sp., Upper Cretaceous, zone of *Echinanthus gracilis*, Haute-Garonne; COTTEAU, Mem. Soc. zool. France, v, p. 737.
- Strongylocentrotus*, Brandt; BELL (16) p. 155. *S. droebachiensis*, O. F. Müll.; BELL (16) p. 156, DANIELSSEN (62) p. 4, SCOTT (238) p. 49: boring habits; FEWKES (79), GANONG (91): variation in spines, *ib.*, p. 56: examples with eight pairs of pores in an arc; BUCKLEY in HERDMAN (120) p. 89. *S. franciscanus*, A. Agass., coast of British Columbia; WHITEAVES (270) p. 133. *S. lividus*, Lam.; BELL (16) p. 157, EFISIO (73) p. 252: sexual dimorphism in colour; BEDDARD (13) p. 255: a parasitic Turbellarian; CUÉNOT (60): physiology and histology of gut; FRENZEL (88) p. 95: early development chemically experimented on; HERBST (116). See also *Toxopneustes*.
- † *Taphraster*, Pomel, reduced to subgeneric rank; LAMBERT (146) p. 94.
- † *Tennechinus macleayana*, Ten.-Woods, New Guinea; ETHERIDGE (76) pp. 691 & 697. *T. scillæ*, nomen nudum; MAZZETTI (177).
- † *Temnocidaris baylei*, Cott., spines first described and figured; COTTEAU (46) p. 348: Danian of Angoulême; ARNAUD (9) p. 34. † *T. danica*, Desor sp., redescribed and figured; SCHLUETER (236) p. 125.
- Temnopterus hardwicki*, Gray sp., maintained; MEISSNER (181) p. 184.
- † *Thagaster* and *T. wetterlei*, Pomel, redescribed, with variations; COTTEAU (44) p. 386.
- † *Tholaster*, Seunes, discussed; LAMBERT (146) p. 97.
- † *Thylechinus rejaudryi* [ascribed to Arnaud, but apparently] n. sp., Lower Campanian of Fugeras in Charente-Inférieure; COTTEAU, Mem. Soc. zool. France, vi, p. 352.
- † *Tiarechinus*, homologies discussed; AGASSIZ (2) p. 80.
- † *Tiarella michelini*, Agass. sp., distinguished from *Polydiadema bonei*, q. v.; LAMBERT (145) p. 58.
- † *Toxaster collegnoi*, Sism., Somaliland; MAYER-EYMAR (175) p. 261. † *T. elegans*, Shum.; AGUILERA (4) p. 26.
- Toxopneustes droebachiensis*, Müll.; NORDGAARD (201) p. 10: variation and distribution; PETERSEN (216) p. 40. *T. pallidus*, G. O. Sars; NORDGAARD (201) pp. 5 & 10. *T. variegatus*, A. Agass., habitat algæ, protection; FIELD (82) p. 83. See also *Strongylocentrotus*.

- † *Trematopygus*, d'Orb., maintained; LAMBERT (146) p. 69. *T. crucifer*, Morton sp., redescribed; CLARK (36) p. 63.
- † *Triplacidia*, Bittner, defined and discussed, p. 605; *T. fraasi*, Lior. sp., p. 609; *T. lorioli*, Cott. sp., p. 611; *T. stachei*, Bittner, p. 610; *T. vandenheckei*, Agass. sp., redescribed, p. 606; *T. veronensis*, Bittner, p. 611; COTTEAU (44).
- Tripneustes variegatus*, Agass.; LORIOL (154) p. 373.
- † *Tristomanthus*, n. g., type *Catopygus elegans*, Laube; BITTNER, SB. Ak. Wien, ci, Abth. i, p. 355: should be *Studeria*; TATE (257) p. 192. *T. elegans*, Laube sp., discussed, specimen with four ambulacra; BITTNER (21) p. 352.
- Tripylus fragilis*, Düb. & Kor.; NORDGAARD (201) p. 10.
- † *Tuberaster*, defined and discussed, and *T. tuberculatus*, Per. & Gauth., redescribed; COTTEAU (44) p. 658.
- † *Tylocidaris*:—*T. asperula*, F. A. Roem. sp., spines described and figured, p. 41; *T. bowerbanki*, Forbes sp., p. 40; *T. clavigera*, König sp., described, figured, and discussed, p. 45; *T. strombecki*, Desor sp., spines described and figured, p. 43; *T. velifera*, Bronn sp., described and discussed, p. 31; SCHLUETER, Abh. Preuss. geol. Landesanst. Heft. 5. *T. gosa*, Lower Senonian, N. Germany, founded on spines, p. 52; *T. squamifera* (apparently a new name applied to certain spines from Chalk of Sweden, figured by Hisinger, Leth. Suec., tab. xxvi, fig. 5b), p. 52; *T. vexillifera*, Upper Senonian, Seeland, founded on spines, p. 54; SCHLUETER, Abh. Preuss. geol. Landesanst. Heft 5; n. spp.
- † *Urechinus*, A. Agass.; AGASSIZ, (3) pp. 77, 81, & 83, LAMBERT (146) p. 98.
- † *Zeuglopleurus*, Greg., discussed; SCHLUETER (236) p. 205.

(D.)—ASTEROIDEA.

- Classification of the Class; FERRIER (213) pp. 847–854.
- Acanthaster echinites*, Ellis & Sol., fifteen arms, of which three are not developed and the rest unequal, detailed description, separated from *A. ellisi*; LORIOL (154) p. 387. *A. ellisi*, Gr.; STUDER (256) pp. 248 & 256: see also *A. echinites*.
- Anthenea pentagonula*, Lam.; STUDER (256) pp. 192 & 193.
- Anthenoides sarissa*, Andaman Sea, 130–250 fms.; ALCOCK, Ann. Nat. Hist. (6) xi, p. 99, n. sp.
- Archaster typicus*, M. & T.; MARTENS (171) p. 184, STUDER (256) pp. 248 & 256: variations in *pedicellaria* and spines; LORIOL (154) p. 378.
- Aspidosoma tischbeinianum*, F. Roem., marginals; HALFAR (111A) p. 195.
- † *A. petalooides*, Simon., n. var. *goslariensis*, Lower Devonian, Haupt-Kahlebergsandstein of Goslar, Harz; HALFAR, Jahrb. preuss. Landesanst. xiii, p. 186.
- Asteracanthion rubens*, Linn.; NORDGAARD (201) p. 9: in Eastern Baltic; KOJEVNIKOV (143) p. 141.
- Asterias*, Norman; BELL (16) p. 97. *A. amurensis*, Lützk.; MEISSNER

- (179) p. 183. *A. antarctica*, Lützk.; STUDER (256) p. 285. *A. bellii*, Stud.; STUDER (256) p. 286. †*A. ? dubium*, Whitf.; CLARK (36) p. 31. *A. forbesi*, Verrill, ova fertilised by sperm of *Arbacia*; MORGAN (196): a southern sp. found in Oak Bay, New Brunswick; GANONG (91) p. 54: eye described; WATASE (269) p. 324. *A. fragilis*, Stud., autotomy; STUDER (256) p. 269. *A. glacialis*, Linn.; BELL (16) p. 98, MEISSNER (179) p. 183, PETERSEN (216) p. 43: madreporite compared with *Euspirocrinus*; BATHER (11) p. 112: digestion; CHAPEAUX (32): spermatogenesis; FIELD (83): early stages of development; RUSSO (229): six-rayed variation; ROBERTSON (223). *A. hartti*, Rathb., six or seven rays, two usually short; STUDER (256) p. 292. *A. hispida*, Penn.; BELL (16) p. 103: 18½ fms., Beaulieu Firth, Inverness; SCOTT (240) p. 81. *A. littoralis*, Stimpson sp., intense Prussian blue colour; GANONG (91) p. 55. *A. mazophorus*, Alcock & W.-M., redescribed; ALCOCK (6) p. 115. *A. membranacea*, Lam.; EFISIO (73) p. 252. *A. meridionalis*, Perr., colour, distribution; STUDER (256) pp. 144, 145, & 164. *A. muelleri*, Sars; BELL (16) p. 100, PETERSEN (216) p. 43: spontaneous division and regeneration; DANIELSEN (61) p. 12. *A. murrayi*, Bell; BELL (16) p. 103. *A. perrieri*, Smith, distribution; STUDER (256) pp. 140 & 164. *A. prisca*, Goldf., Brauner Jura *B*, Donzdorf, Swabia, figured; ENGEL (74) p. liii. *A. richardi*, Perr., normally six-armed in young; MARENZELLER (166) p. 66, and STEINDACHNER (254) p. 445. *A. rubens*, Linn.; BELL (16) p. 100, PETERSEN (216) p. 42: blood and water-vascular systems; CHADWICK (30): amœbocytes; CUENOT (54) p. xi: alimentary canal; FRENZEL (88) p. 105: var. *attenuata*, Hodge; BELL (16) p. 102: see also under *A. vulgaris*. *A. rugispina*, Stimps.; STUDER (256) p. 285 & 289. *A. rupicola*, Verrill, distribution; STUDER (256) pp. 144 & 164. †*A. schulzii*, Cretaceous, Silesia; LANGENHAN & GRUNDEY (147) p. 8. *A. studeri*, Bell, distribution; STUDER (256) pp. 148, 149, & 164. *A. sulcifera*, Val., colour; STUDER (256) pp. 281 & 289. *A. tenuispina*, Lam.; EFISIO (73) p. 252. *A. torquata*, Sladen, variant measurements; MEISSNER (179) p. 184. *A. vulgaris*, Stimpson, use for manure, eats oysters?, poisonous, warningly coloured?, monstrosities, regeneration, perhaps a syn. of *A. rubens*; GANONG (91) p. 49: eye described; WATASE (269) p. 324.
- Asterina*, Nardo; AGASSIZ (3) p. 77, BELL (16) p. 82. *A. cepheus*, Val.; MEISSNER (179) p. 187, STUDER (256) pp. 233 & 235: specimens from Amboyna, Mauritius, and Red Sea compared; LORIOLO (154) p. 383. *A. chilensis*, Lützk.; MEISSNER (179) p. 187. *A. exigua*, Lam.; LORIOLO (154) p. 384. *A. fimbriata*, Perr.; STUDER (256) p. 281. *A. gibbosa*, Penn.; BELL (16) p. 82: commensal Infusorian; CUENOT (60): development; MACBRIDE (161): see also under *Asteriscus verruculatus*. *A. marginata* (Val.), Perrier, referred to *A. stellifer*; BELL (18) p. 25. *A. pectinifera*, M. & T., *A. penicillaris*, Lm., MEISSNER (179) p. 187. *A. stellifer*, Möb., synonymy; BELL (18) p. 26.

- Asteriscus verruculatus*, M. Tr., young four-rayed; MARTENS (172).
- Asterodon*, syn. of *Odontaster*, q.v. *A. pedicillaris*, Perrier (pars), syn. of *Odontaster grayi*, q.v.
- Asteropsis capreensis*, Gasco, referred to *Marginaster*; MARENZELLER (166) p. 66.
- Astrogonium*, AGASSIZ (3) p. 77. *A. granulare*, Müll.; *A. phrygianum*, Parel.; NORDGAARD (201) pp. 5 & 10. *A. meridionale*, *A. miliare*, *A. paxillosum*: see *Odontaster*.
- Astronyx loveni*; SMITH (251).
- Astropecten*, Schultze; AGASSIZ (3) pp. 79 & 80, BELL (16) p. 66. *A. andromeda*, M. & T.; NORDGAARD (201) p. 9, PETERSEN (216) p. 44. *A. aurantiacus*, M. & T.; EFISIO (73) p. 252: alimentary canal; FRENZEL (88) p. 105: colour; HEIM (114). *A. bispinosus* (Otto), photographed alive; KOCH (141). †*A.*, cf. *bispinosus*, var., Pliocene, middle Astian of Bra, Piedmont; SACCO (233) p. 740. *A. capensis*, Stud., colour; STUDER (256) p. 53. †*A. claviformis*, Wright, p. 198, †*A. hastingia*, Forbes, p. 33; FOX-STRANGWAYS (87) II. *A. irregularis*, Penn.; BELL (16) p. 66: (?) young; STUDER (256) p. 28. †*A. leckenbyi*, Wright; FOX-STRANGWAYS (87) II, p. 146. *A. mesactus*, Slad.; STUDER (256) p. 292. *A. muelleri*, M. & T.; NORDGAARD (201) p. 9, PETERSEN (216) p. 44. †*A. orion*, Forbes; FOX-STRANGWAYS (87) II, p. 198. *A. pentacanthus*, Dell. Ch.; STUDER (256) p. 15: spermatogenesis; FIELD (83). *A. platyacanthus*, alimentary canal; FRENZEL (88) p. 104. *A. polyacanthus*, M. & T.; LORIOL (154) p. 379. †*A. rectus*, M'Coy, p. 198, †*A. scarburgensis*, Wright, p. 146; FOX-STRANGWAYS (87) II. *A. scoparius*, M. & T., MEISSNER (179) p. 188. *A. sp.*, Andaman Sea, 250 fms.; ALCOCK (6) p. 87: Tertiary, N. Italy, †SACCO (233) p. 742. *A. sphenoplax*, Bell; BELL (16) p. 68. *A. subinermis*, Phil.; STUDER (256) p. 28. †*A. suprajurensis*, Schill.; SMITH (250) p. 346. *A. variabilis*, Lütke; FIELD (82) p. 84. *A. velitaris*, v. Martens, colour; STUDER (256) pp. 192 & 194. †*A. verrucosus*, Heller; TOULA (265) p. 292.
- A. latispinosus*, Inland Sea, Japan, MEISSNER, Arch. Naturg. lviii (i), p. 188; †*A. taurolaevis*, based on *A. laevis*, Meneghini, non Desm., Helvetian of Italy, SACCO, Atti Ac. Torino, xxviii, p. 745: n. spp.
- Astrophyton* sp.; FIELD (82) p. 84.
- Bathybiaster*, Dan. & Kor., and *B. veaillifer*, W. Thoms.; BELL (16) pp. 69 & 70.
- Brisinga*, Asbj.; AGASSIZ (3) p. 79, BELL (16) p. 104. *B. andamanica*, Alcock & W.-M., redescribed; ALCOCK (6) p. 118. *B. coronata*, G. O. Sars; BELL (16) p. 105, STEINDACHNER (254) p. 445. *B. bengalensis*, Alcock & W.-M., redescribed; ALCOCK (6) p. 119. *B. endecacnemus*, Asbj.; BELL (16) p. 104. *B. insularum*, Alcock & W.-M., redescribed; ALCOCK (6) p. 117. *B. mediterranea*, Perrier, syn. of *B. coronata*; STEINDACHNER (254) p. 445.
- B. gunni*, off Konkan Coast, 559 fms., ALCOCK, Ann. Nat. Hist. (6) xi, p. 120, n. sp.

- Calliaster mamillifera*, Andaman Sea, about 250 fms., ALCOCK, J. Asiat. Soc. Bengal, lxii, p. 172, n. sp.
- Calliderma grayi*, see *Odontaster*.
- Chaetaster longipes*, Retz.; STUDER (256) p. 28: spermatogenesis; FIELD (83). *C. nodosus*, Perr., colour; STUDER (256) p. 17. *C. sp.*, Andaman Sea; ALCOCK (6) p. 101.
- Cheilaster*, [apparently a new generic name] and *C. fimbriatus*, Slad.; BELL (16) p. 81.
- Cheiraster gazellæ*, Stud., colour; STUDER (256) p. 197.
- Corethraster*, W. Thoms., and *C. hispidus*, W. Thoms.; BELL (16) p. 92.
- Cribrella*; AGASSIZ (3) p. 79. *C. antillarum*, Perr.; STUDER (256) p. 289. *C. oculata*, Linck, oögenesis; FIELD (83). *C. praestans*, Sladen, with variation in arms; ALCOCK (6) p. 112. *C. sanguinolenta*, Müll.; NORDGAARD (201) pp. 5 & 9, PETERSEN (216) p. 43: blood-vascular system; CHADWICK (30): eye described; WATASE (269) p. 324.
- Crossaster papposus*, Fabr. sp.; GANONG (91) p. 56.
- Ctenodiscus*, M. & T.; BELL (16) p. 64. *C. australis*, Lützk.; STUDER (256) pp. 287 & 289. *C. crispatus*, Retz.; BELL (16) p. 64, NORDGAARD (201) pp. 5 & 10.
- Calcita grex*, M. & T., description; LORIOLO (154) p. 382.
- †*Cupulaster pauper*, ascribed to Frič, but probably intended as n. sp., Cretaceous, Gastropod-bed 3, Priesen, Bohemia; FRIČ, Arch. Landesdf. Bohmen, ix, No. 1, p. 112.
- Cycethra simplex*, Bell; STUDER (256) p. 289.
- Dictyaster*, redefined, and *D. xenophilus*, Alcock & W.-M., redescribed; ALCOCK (6) p. 113.
- ‡*Dipsacaster*, n. g., no diagnosis, type *D. pentagonalis*, n. sp., Andaman Sea, 112 fms.; ALCOCK, J. Asiat. Soc. Bengal, lxii, p. 172: diagnosis and *D. sladeni*, n. sp., Andaman Sea, 250 fms.; ALCOCK, Ann. Nat. Hist. (6) xi, p. 87.
- Dorigona moebii*, Stud.; STUDER (256) p. 197.
- D. pentaphylla*, Andaman Sea, 271 fms., ALCOCK, Ann. Nat. Hist. (6) xi, p. 93, n. sp.
- Dytaster anacanthus*, Alcock & W.-M., redescribed, *D. exilis*, Sladen; ALCOCK (6) p. 80.
- Echinaster doriei*, De Filippi, redescribed and distinguished from *Asterias tenuispina*; MARCHISIO (162). *E. eridanella*, Val., 6 arms and 2 madreporites; LORIOLO (154) p. 391. *E. purpureus*, Gray, with 6 arms; MARTENS (171) p. 183. *E. sepositus*, Lam.; MEISSNER (179) p. 184: spermatogenesis; FIELD (83). *E. spinosus*; FIELD (82) p. 84. *E. spinulifer*, Smith, distribution; STUDER (256) pp. 144 & 164. *E. tribulus*, De Filippi, redescribed and distinguished from *Asterias tenuispina*; MARCHISIO (162).
- E. cylindricus*, Callao, Peru, MEISSNER, Arch. Naturg. lviii (i) p. 184, n. sp.
- Freyella*; AGASSIZ (3) p. 77. *F. benthophila*, Sladen, *F. tuberculata*, Sladen; ALCOCK (6) p. 121.

- Fromia monilis*, Val. ; STUDER (256) p. 233.
- Gnathaster*, syn. of *Odontaster*, q.v. *G. meridionalis*, Smith, distribution ; STUDER (256) p. 164. *G. pilulatus*, syn. of *Odontaster meridionalis*, q.v.
- G. mediterraneus*, W. of Milo, 834 m., MARENZELLER, SB. Ak. Wien, cii, Abth. 1, p. 68, also in STEINDACHNER (254) p. 445, n. sp.
- † *Goniaster bowerbanki*, Forbes, see *Metopaster*. *G. equestris*, Agass., see *G. phrygianus* and *Astrogonium phrygianum*. † *G. hunteri*, Forbes, see *Mitraster*. † *G. mammillata*, Gabb ; CLARK (36) p. 32. † *G. mantelli* and *G. parkinsoni*, Forbes, see *Metopaster*. *G. phrygianus*, Parel. ; PETERSEN (216) p. 44 ; variation in length of rays ; SCOTT (238) p. 49. † *G. rectilineus*, McCoy, referred to *Metopaster parkinsoni* ; SLADEN (248) p. 32. † *G. rugatus*, Forbes, see *Mitraster*. † *G. scrobiculatus*, Heller ; TOULA (265) p. 292. † *G. (?)* sp., Tunis ; PERON in LORIOLO (153) p. 392. † *G. sublunatus* and *G. uncatu*s, Forbes, see *Metopaster*. *G. verrucosus*, Gray ; STUDER (256) p. 52.
- Goniodiscus articulatus*, Lüttk. ex Linn., synonymy ; BELL (18) p. 27. "*G. gracilis*, Gray," a phantom species ; *loc. cit.* *G. singularis*, M. Tr., see *Odontaster*.
- G. saunderi*, n. sp., Zanzibar, four-rayed abnormality ; MEISSNER, Arch. Naturg. lviii (1) p. 185.
- Gymnasterias valvulata*, Perr., distribution ; BELL (18) p. 28.
- Gymnobrisinga sarsi*, Stud. ; STUDER (256) p. 149.
- Heliaster helianthus*, Lam. ; MEISSNER (179) p. 184.
- Henricia*, Gray, *H. sanguinolenta*, O. F. Müll., with vars. *abyssicola* and *curta*, Norm. ; BELL (16) pp. 95 & 97.
- Hippasteria phrygiana*, Parel. sp. ; GANONG (91) p. 56. *H. plana*, Linck. ; SCOTT (240) p. 82.
- Hippasterias*, Gray, and *H. phrygiana*, Parel. ; BELL (16) p. 76.
- Hymenaster*, W. Thoms. ; AGASSIZ (3) p. 77, BELL (16) p. 94. *H. giganteus*, Slad. ; BELL (16) p. 95. *H. nobilis*, W. Thoms. ; ALCOCK (6) p. 112. *H. pellucidus*, W. Thoms. ; BELL (16) p. 94.
- Hyphalaster tara*, Alcock & W.-M. ; ALCOCK (6) p. 86.
- Labidiaster radiosus*, Lüttk. ; STUDER (256) p. 286.
- Lasiaster* and *L. villosus*, Slad. ; BELL (16) p. 81.
- Leptoptychaster*, Smith, and *L. arcticus*, M. Sars ; BELL (16) p. 65. *L. kerguelensis*, Smith, distribution ; STUDER (256) pp. 140, 149, & 164.
- Linckia bouvieri*, Perr., colour ; STUDER (256) pp. 17 & 22. *L. laevigata*, brilliant colours ; KENT (135) p. 43, chromo plate xi. *L. miliaris*, Martens ; LORIOLO (154) p. 385, STUDER (256) pp. 233, 235, & 260. *L. multiforis*, Lam., with commensal snail ; MARTENS (171) p. 183 ; two madreporites, Cape Town ; MEISSNER (179) p. 185. *L.* sp., protective colour, autotomy and regeneration ; FIELD (82) p. 84. *L. typus*, see *L. miliaris*.
- Luidia*, Forbes ; BELL (16) p. 70. *L. bellonæ*, Lüttk. ; MEISSNER (179) p. 189. *L. clathrata* ? ; FIELD (82) p. 84. *L. ciliaris*, Johnst. ; BELL (16) p. 70. *L. limbata*, Sladen ; MEISSNER (179) p. 189. *L.*

- maculata*, M. & T., with nine unequal arms; LORIOI (154) p. 380.
 †*L. murchisoni*, Williams, see *Solaster murchisoni*. *L. sarsi*, Düb. & Kor.; BELL (16) p. 72, PETERSEN (216) p. 44. *L. savignyi*, Aud., Moray Firth; SCOTT (240) p. 82. *L. senegalensis*; FIELD (82) p. 84.
L. paucispina, W. of Candia, 755 m., S.E. of Cape Malea, 1292 m., MARENZELLER, SB. Ak. Wien, cii, Abth. i, p. 66, also in STEINDACHNER (254) p. 445, n. sp.
Luidiaster hirsutus, Stud., distribution; STUDER (256) pp. 146 & 164.
Marginaster capreensis, Gasco sp., vide sub. *Asteropsis*.
Marsipaster hirsutus, Sladen; ALCOCK, Ann. Nat. Hist. (6) xi, p. 112.
Mediaster roseus, Laccadive Sea, 750 fms., ALCOCK, Ann. Nat. Hist. (6) xi, p. 98, n. sp.
 † *Metopaster*, n. g., type *Goniaster parkinsoni*, Forbes, p. 31; *M. parkinsoni*, Forbes sp., rediagnosed and described, pedicellariæ on terminals, variations, p. 31; *M. bowerbanki*, Forbes sp., rediagnosed and described, p. 42; *M. mantelli*, Forbes sp., rediagnosed and described, p. 38; *M. sublunatus*, Forbes sp., discussed and doubted, p. 51; *M. uncatas*, Forbes sp., rediagnosed and described, p. 47; SLADEN (248).
M. cingulatus, Upper Chalk, Bromley, Kent, p. 53, *M. cornutus*, based on a figure, locality and horizon unknown, p. 55, *M. zonatus*, Upper Chalk, Bromley, Kent, p. 45, SLADEN, Pal. Soc. Mon. 1893, ii, n. spp.
Metrodina subulata, Gray, colour; STUDER (256) p. 195.
Mimaster and *M. tizardi*, Slad.; BELL (16) p. 78.
 † *Mitteliphaster*, n. g., and *M. wood-masoni*, n. sp., Andaman Sea, 230-290 fms.; ALCOCK, Ann. Nat. Hist. (6) xi, p. 91.
 † *Mitraster*, n. g., type *Goniaster hunteri*, Forbes, which is rediagnosed and described, variation, p. 57; *M. rugatus*, Forbes sp., rediagnosed and described, p. 63; SLADEN, Pal. Soc. Mon. 1893, ii.
Nardou tuberculata, Gray; LORIOI (154) p. 386.
Neomorphaster and *N. eustichus*, Slad.; BELL (16) p. 87.
Nepanthia brevis, Perr., colour; STUDER (256) p. 194.
Nymphaster, Slad.; BELL (16) p. 75. *N. basilicus*, Sladen, *N. protentus*, Sladen; ALCOCK, Ann. Nat. Hist. (6) xii, p. 95. *N. subspinosus*, Perr.; BELL (16) p. 75.
N. florifer, 130-250 fms., with young stages, p. 94, *N. nora*, 490 fms., p. 96, Andaman Sea, ALCOCK, Ann. Nat. Hist. (6) xi, n. spp.
Odinia, Perr., and *O. pandina*, Slad.; BELL (16) p. 105.
Odontaster, revised, with spp. *O. belli*, *O. dilatatus*, *O. elongatus*, *O. granulatus*, *O. grayi*, *O. hispidus*, *O. meridionalis*, *O. miliaris*, *O. paxillosus*, *O. pedicellaris*, *O. singularis*; BELL, P. Zool. Soc. London, 1893, p. 259.
Ophiaster fuscus, Gray, colour; STUDER (256) p. 195. *O. purpureus*, Perr., Amboyna; LORIOI (154) p. 385.
Oreaster nodosus, see *Pentaceros turritus*. *O. reticulata*, Lützk.; FIELD (82) p. 84.
 † *Palasterina ramseyensis*, Hicks; BOLTON (23) p. 105.
Palmipes, Agass.; BELL (16) p. 83. *P. membranaceus*, Retz., 50 fms., Moray Firth; SCOTT (240) p. 82. *P. placenta*, Penn.; BELL (16) p. 84.

- P. pellucidus*, Andaman Sea, 112 fms., ALCOCK, Ann. Nat. Hist. (6) xi, p. 100, n. sp.
- Paragonaster* sp., B. of Bengal; *op. cit.* p. 98.
- P. tenuiradiis*, B. of Bengal, 1748 fms., *op. cit.* p. 97, n. sp.
- Pararchaster semisquamatus*, Sladen; *op. cit.* p. 75.
- P. huddlestonii*, B. of Bengal, 1520 fms., p. 76, *P. violaceus*, Laccadive Sea, 1200 fms., p. 77, *op. cit.*, n. spp.
- Pedicellaster scaber*, Smith, distribution; STUDER (256) p. 164.
- P. atratus*, Andaman Sea, 240 fms., and B. of Bengal, 290 fms., ALCOCK, Ann. Nat. Hist. (6) xi, p. 114, n. sp.
- Pentaceros clavatus*, M. & T., synonymy; BELL (18) p. 27. *P. dorsatus*, Perr.; STUDER (256) p. 22. *P. hiulcus*, Gray; STUDER (256) p. 248. *P. muricatus*, Gray; MEISSNER (179) p. 187. *P. orientalis*, M. & T.; STUDER (256) p. 256. *P. turritus*, Linck, variation in colour, and rays; STUDER (256) p. 254: variations in surface characters not sexual; LORIOL (154) p. 380.
- Pentacropsis obtusatus*, M. & T., with four arms, variations in spines; LORIOL (154) p. 381.
- Pentagonaster*, Schultze; BELL (16) p. 73. *P. arcuatus*, Sladen; ALCOCK (6) p. 89. *P. bellii*, Stud.; STUDER (256) p. 285; see also *Odontaster*. *P. dilatatus*, see *Odontaster*. *P. granularis*, Retz.; BELL (16) p. 73. *P. greeni*, Bell.; BELL (16) p. 74. *P. intermedius*, Perrier; ALCOCK (6) p. 90. †*P. megaloplax*, Slad., description continued; SLADEN (248) p. 29. *P. meridionalis*, Smith; STUDER (256) p. 144. *P. paxillosus*, Bell non Gray, syn. of *Odontaster grayi*, q.v. *P. spinulosus*, Gray; STUDER (256) p. 216. *P. squamulosus*, Stud.; STUDER (256) p. 184. *P. tuberculatus*, Gray, colour; STUDER (256) p. 55.
- P. hystricis*, N. of Bengehazi, 680 m., N. of Candia, 943 m., S. of Cerigo, 620 m., MARENZELLER, SB. Ak. Wien, cii, Abth. i, p. 67: also in STEINDACHNER (254) p. 445; *P. investigatoris*, B. of Bengal, off Kistna Delta, 678 fms., p. 88, *P. pulvinus*, Laccadive Sea, off Mimni Koy, 1200 fms., p. 90, ALCOCK, Ann. Nat. Hist. (6) xi: n. spp.
- Persephonaster*, redefined, with *P. caelochiles*, Andaman Sea, 230 fms., ALCOCK, Ann. Nat. Hist. (6) xi, p. 84, n. sp.
- P. croceus*, Alcock & W.-M., redescribed; ALCOCK (6) p. 82. *P. rhodopeplus*, Alcock & W.-M., redescribed; *op. cit.* p. 83.
- †*Plumaster ophiuroides*, Wright; FOX-STRANGWAYS (87) II, p. 34, WOODWARD (276) p. 370.
- Plutonaster*, Slad., and *P. bifrons*, W. Thoms; BELL (16) p. 62, STEINDACHNER (254) p. 445. *P. pareli*, Düb. & Kor.; BELL (16) p. 63.
- Pontaster*, Slad.; BELL (16) p. 60. *P. hispidus*, Alcock & W.-M.; ALCOCK (6) p. 79. *P. mimicus*, Sladen; ALCOCK (6) p. 78. *P. tenuispinis*, Düb. & Kor. sp., redescribed and held to include *P. hebitus*, *P. limbatus*, and var. *platynota* of Sladen; BELL (15) & (16) p. 60.
- P. cribellum*, Laccadive Sea, 1200 fms., p. 78, *P. pilosus*, G. of Manaar, 597 fms., p. 79, ALCOCK, Ann. Nat. Hist. (6) xi, n. spp.

- Porania*, Gray; BELL (16) p. 79. *P. antarctica*, Smith, distribution; STUDER (256) pp. 140 & 164. *P. magellanica*, Stud.; STUDER (256) p. 281. *P. pulvillus*, O. F. Müll.; BELL (16) p. 79.
- Porcellanaster caeruleus*, W. Thomson; ALCOCK (6) p. 86.
- Pseudarchaster mosaicus*, Alcock & Mason, large specimen, Madras coast; ALCOCK (5) p. 171, and (6) p. 85.
- Psilaster*, Slad.; BELL (16) p. 68. *P. acuminatus*, Slad.; STUDER (256) p. 266. *P. andromeda*, M. & T.; BELL (16) p. 69.
- Pteraster*, M. & T.; BELL (16) p. 93. *P. affinis*, Smith, distribution; STUDER (256) p. 164. *P. miliaris*, O. F. M. sp.; GANONG (91) p. 56, *P. militaris*, O. F. Müll., with var. *prolata*, Slad.; BELL (16) p. 93. NORDGAARD (201) pp. 6, 9. *P. personatus*, Slad.; BELL (16) p. 94. *P. rugatus*, Slad., distribution; STUDER (256) p. 164.
- Retaster peregrinator*, Slad., distribution; STUDER (256) p. 164.
- Rhegaster* and *R. murrayi*, Slad.; BELL (16) p. 80.
- †*Stellaster coombii*, Forbes; FRIČ (89) p. 113.
- Solaster*, Forbes, and *S. endeca*, Linn.; BELL (16) pp. 88 & 90, NORDGAARD (201) pp. 5, 10, PETERSEN (216) p. 43: poisonous; GANONG (91) p. 56. *S. furcifer*, Düb. & Kor.; BELL (16) p. 91, NORDGAARD (201) p. 10. †*S. murchisoni*, Williams sp.; FOX-STRANGWAYS (87) II, p. 34, WOODWARD (276) p. 370. *S. papposus*, Fabr.; BELL (16) p. 89, GARSTANG (92) p. 335, PETERSEN (216) p. 43: var. *septentrionalis*, Slad.; BELL (16) p. 90.
- †*Sphaeraster punctatus*, Quenst.; SIEMIRADZKI (244) p. 142.
- Stichaster*, M. & T.; BELL (16) p. 85. *S. aurantiacus*, Mey.; MEISSNER (179) p. 184. *P. roseus*, O. F. Müll.; BELL (16) p. 85, NORDGAARD (201) p. 9.
- Styracaster armatus*, Sladen; *S. clavipes*, Alcock & W.-M.; *S. horridus*, Sladen; ALCOCK (6) p. 86.
- †*Tropidaster pectinatus*, Forbes; FOX-STRANGWAYS (87) II, p. 34, WOODWARD (276) p. 370.
- †*Uraster carinatus*, Wright; FOX-STRANGWAYS (87) II, p. 34. †*U. gaveyi*, Forbes; WOODWARD (276) p. 370. *U. glacialis*, see *Asterias*.
- Zoroaster*, W. Thoms.; BELL (16) p. 87. *Z. fulgens*, W. Thoms.; *op. cit.* p. 88.
- Z. alfredi*, Bay of Bengal, 599 and 1300 fms., Ann. Nat. Hist. (6) xi, p. 102, and (5) p. 173; *Z. angulatus*, Gulf of Manaar, 597 fms., and Laccadive Sea, 705 fms., with young stage, p. 105, *Z. barathri*, Bay of Bengal, 599 and 1520 fms., *op. cit.* (6) xi, p. 103, and *op. cit.* (5) p. 173, *Z. carinatus*, Andaman Sea, 130-250 fms., with young stage, p. 107, *Z. gilesi*, Andaman Sea, 500 fms., p. 108, *Z. planus*, Laccadive Sea, 1200 fms., p. 104, *Z. squameus*, Laccadive Sea, 1043 fms., p. 109, *Z. zea*, Laccadive Sea, 1200 fms., and Gulf of Manaar, 597 fms., p. 110, *op. cit.* (6) xi; ALCOCK: n. spp.

(E.)—OPHIUROIDEA.

Classification of the Class ; PERRIER (213) pp. 854-857.

† *Aeroura* : the generic validity discussed ; NEVIANI (200) p. 217. *A. brodiei*, Wright ; WOODWARD (276) p. 370. *A. granulata*, see under *Ophiura*.

Amphilepis norvegica, Ljungm., distribution ; GRIEG (106) p. 16.

Amphiura, Forbes, described ; BELL (16) p. 117, FJELSTRUP (84) p. 26.

A. bellis, var. *tritonis*, Hoyle ; BELL (16) p. 121. *A. borealis*, G. O. Sars ; BELL (16) p. 121 : distribution ; GRIEG (106) p. 15. *A. chiujei*, Forbes ; BELL (16) p. 117, FJELSTRUP (84) p. 27, PETERSEN (216) p. 46 : distribution ; GRIEG (106) p. 11. *A. congensis*, Stud., colour ; STUDER (256) pp. 22 & 30. *A. duncani*, Lym., described ; LORIOI (154) p. 404. *A. elegans*, Leach ; BELL (16) p. 119, GARS-TANG (92) p. 335, PETERSEN (216) p. 46 : distribution, GRIEG (106) p. 13. *A. eugenica*, Ljungm. ; STUDER (256) p. 287. *A. filiformis*, O. F. Müll. ; BELL (16) p. 119, FJELSTRUP (84) p. 27, PETERSEN (216) p. 45 : distribution ; GRIEG (106) p. 12. *A. modesta*, Stud., colour ; STUDER (256) p. 269. *A. securigera*, Düb. & Kor. ; BELL (16) p. 120. *A. sp.* ; FIELD (82) p. 84. *A. squamata*, Della Chiaje ; FJELSTRUP (84) p. 26 : development ; MACBRIDE (159), CUENOT (59), RUSSO (230). *A. studeri*, Lym., distribution ; STUDER (256) pp. 144, 145, & 164. *A. sundevalli*, M. & T., Greenland ; GRIEG (105) p. 9. *A. tomentosa*, Lym., distribution ; STUDER (256) p. 164.

† *Aspidura ludeni*, Hag. ; GEINITZ (96) p. 190.

Astronyx and *A. loveni*, M. & T. ; BELL (16) p. 136 : genital fissures, stomach, distribution ; GRIEG (106) p. 29.

Astroschema flosculus, Coral bank N. of Madras, 88 fms., ALCOCK, J. Asiat. Soc. Bengal, lxii, p. 173, n. sp.

Euryale aspera, Lam., colour ; STUDER (256) p. 195.

Gorgonocephalus, Lym. ; BELL (16) p. 137. *G. agassizi*, Stimps., Labrador, development of apical system ; GRIEG (105) p. 10 : growth, changes, distribution ; GRIEG (106) p. 35. *G. eucnemis*, M. & T. ; BELL (16) p. 138 : includes *G. malmgreni*, distribution ; GRIEG (106) p. 32. *G. lamärcki*, M. & Tr. sp., distribution ; GRIEG (106) p. 31. *G. lincki*, M. & T. ; BELL (16) p. 137 : development of apical system ; GRIEG (105) p. 11. *G. malmgreni*, Dan. & Kor., a variety of *G. eucnemis*, q.v. *G. pourtalesi*, Lym., distribution ; STUDER (256) pp. 149 & 164.

Ophiacantha, M. & T. ; BELL (16) p. 127. *O. abyssicola*, G. O. Sars ; BELL (16) p. 128, NORDGAARD (201) p. 5 : variations of spines, distribution ; GRIEG (106) p. 24. *O. bidentata*, Retz. ; BELL (16) p. 127 : distribution, Greenland and Labrador ; GRIEG (105) p. 10, and (106) p. 22. *O. fraterna*, Verrill, a variety of *O. bidentata* ; GRIEG (106) p. 22. *O. imago*, Lym., distribution ; STUDER (256) p. 164. *O. spectabilis*, G. O. Sars ; BELL (16) p. 128 : distribution ; GRIEG (106) p. 24. *O. stimulea*, Lym. ; STUDER (256) p. 273. *O.*

- vivipara*, Ljungm., distribution; STUDER (256) pp. 144, 149, 163, 283, & 288.
- Ophiactis*, Lützk., and *O. abyssicola*, M. Sars; BELL (16) pp. 122 & 123 : distribution; GRIEG (106) p. 16. *O. asperula*, Lützk.; STUDER (256) pp. 281, 283, & 285. *O. balli*, Thomps.; BELL (16) p. 123. *O. flexuosa*, Lym., colour; STUDER (256) p. 55. *O. incisa*, Martens, colour of seaweed on which it lives; STUDER (256) p. 248. *O. krebsi*, Lützk.; STUDER (256) p. 22. *O. sexradia*, Grube; STUDER (256) p. 192: detailed description, distinguished from *O. savigny* and others; LORIOLO (154) p. 398.
- O. brocki*, Amboyna, DE LORIOLO, Rev. Suisse Zool. i, p. 401, n. sp.
- Ophiarachna affinis*, Luetk., described and extended to *O. clavigera*, Brock; LORIOLO (154) p. 411.
- Ophiarthrum elegans*, Peters; LORIOLO (154) p. 413, STUDER (256) p. 235.
- Ophiobyrsa* and *O. hystrixis*, Lym.; BELL (16) p. 135.
- Ophiocantha*; AGASSIZ (3) p. 80.
- Ophiochiton*, Lym.; BELL (16) p. 114. *O. lymani*, Stud.; STUDER (256) pp. 175 & 182. *O. ternispinis*, Lym.; BELL (16) p. 114.
- Ophocnida*, Lym., and *O. brachiata*, Mont.; BELL (16) p. 116. *O. pilosa*, Lym.; STUDER (256) p. 192.
- O. picteti*, Amboyna, DE LORIOLO, Rev. Suisse Zool. i, p. 405, n. sp.
- Ophiocoma*, Agass., described; BELL (16) p. 128, FJELSTRUP (84) p. 29. *O. aethiops*; FIELD (82) p. 84. *O. erinaceus*, M. & T.; STUDER (256) pp. 216, 235, & 256: variations in measurements and surface characters; LORIOLO (154) p. 410. *O. nigra*, Abilg.; BELL (16) p. 129, FJELSTRUP (84) p. 29, GARSTANG (92) p. 335, PETERSEN (216) p. 47. *O. pica*, M. & T.; STUDER (256) p. 216. *O. pumila*, Lützk.; STUDER (256) p. 22. *O. scolopendrina*, Lam.; STUDER (256) pp. 235 & 248 : var. *alternans*, Martens, described; LORIOLO (154) p. 407. *O. sp.*: alimentary canal; FRENZEL (88) p. 110.
- Ophiocanis antarctica*, Lym., distribution; STUDER (256) p. 164.
- Ophiocreas*, AGASSIZ (3) pp. 78 & 82. *O. adhaerens*, Stud., colour; STUDER (256) p. 184.
- Ophiocten*, Lützk.; BELL (16) p. 113. *O. amitinum*, Lym., distribution, colour; STUDER (256) pp. 164, 283, & 288. *O. sericeum*, Forbes; BELL (16) p. 113: Greenland; GRIEG (105) p. 8: includes *Ophioglypha gracilis*, Sars, distribution; GRIEG (106) p. 9.
- Ophiocymbium cavernosum*, Lym., bursæ discussed; MORTENSEN (197) p. 508.
- Ophioderma antillarum*; FIELD (82) p. 84. †*O. ? bridgerensis*, Meek, see *Ophioglypha bridgerensis*. †*O. carinata*, Wright; FOX-STRANGWAYS (87) II, p. 33. †*O. egertoni*, Brod.; WOODWARD (276) p. 370. †*O. gaveyi*, Wright; WOODWARD (276) p. 370, and FOX-STRANGWAYS (87) II, p. 33. *O. longicauda*, M. & T.; EFISIO (73) p. 252: alimentary canal; FRENZEL (88) p. 110. †*O. milleri*, Phill. sp.; FOX-STRANGWAYS (87) II, p. 33, WOODWARD (276) p. 370. *O. tenuibrachiata*, Forbes; WOODWARD (276) p. 370.

Ophiogonu lavigata, Stud., colour, distribution; STUDER (256) pp. 146 & 163.

Ophioglypha, described; FJELSTRUP (84) p. 22. *O. affinis*, Lützk. sp.; FJELSTRUP (84) p. 24, PETERSEN (216) p. 45: colour-variation, distribution; GRIEG (106) p. 7. *O. albida*, Forbes; FJELSTRUP (84) p. 23, PETERSEN (216) p. 45, NORDGAARD (201) p. 6: alimentary canal; FRENZEL (88) pp. 90 & 108: in Eastern Baltic; KOJEVNIKOV (143) p. 141. *O. brevispina*, Smith, distribution; STUDER (256) pp. 140 & 163. †*O. bridgerensis*, Meek sp., redescribed; CLARK (36) p. 29. *O. carnea*, Lützk. sp., distribution; GRIEG (106) p. 6: E. Mediterranean; MARENZELER (165) p. 66, also in STEINDACHNER (254) p. 445. *O. carinata*, Stud., colour, distribution; STUDER (256) pp. 146, 147, 149, & 163. *O. ciliaris*, Hoffm., considered a var. of *O. sarsi*; GRIEG (105) p. 5. *O. ciliata*, Retz.; FJELSTRUP (84) p. 22, NORDGAARD (201) p. 6. *O. costata*, Lym., colour; STUDER (256) p. 53. *O. deshayesi*, Lym., distribution; STUDER (256) p. 163. *O. gracilis*, G. O. Sars, perhaps young of *Ophiocten sericeum*, q.v.; GRIEG (105) p. 9. †*O. granulata*, Benecke sp., redescribed and figured; NEVIANI (200) p. 215, see also under *Ophiura*. *O. hexactis*, Smith, brood-pouches, distribution; STUDER (256) pp. 143, 145 & 163. *O. lacertosa*, spermatogenesis; FIELD (83): photographed alive; KOCH (141). *O. nodosa*, Lützk., Greenland, variations in and development of apical system; GRIEG (105) p. 6. *O. robusta*, Ayres; FJELSTRUP (84) p. 24, PETERSEN (216) p. 45: Greenland, GRIEG (105) p. 6: distribution; GRIEG (106) p. 6. *O. sarsi*, Lützk., FJELSTRUP (84) p. 23, PETERSEN (216) p. 45: Greenland, GRIEG (105) p. 5: distribution, GRIEG (106) p. 4. *O. sp.*, swimming described; SLUITER (249) p. 181. *O. stellata*, Stud., colour; STUDER (256) pp. 192 & 194. *O. texturata*, Lam.; PETERSEN (216) p. 44: alimentary canal; FRENZEL (88) p. 109. *O. verrucosa*, Stud., distribution; STUDER (256) pp. 149 & 163.

†*O. ? pulcherrima*, ascribed to Frič, but probably intended as n. sp., Cretaceous, Priesener Schichten, Waldek, near Bensen, Bohemia; FRIČ, Arch. Landesdf. Bohmen, ix, No. 1, p. 114. †*O. texana*, Denison Beds of the Washita division of the Comanche series, Lower Cretaceous, 6 miles N. of Fort Worth, CLARK, Bull. U. S. Geol. Surv. No. 97, p. 30: n. sp.

Ophiogymna elegans, Ljungm.; STUDER (256) p. 256.

Ophiolepis affinis, Stud., protective colour; STUDER (256) pp. 22 & 28. *O. cincta*, M. & T.; LORIOLO (154) p. 398: var. *nigra*, Stud.; STUDER (256) pp. 233 & 248. †*O. leckenbyi*, Wright; FOX-STRANGWAYS (87) II, p. 146. †*O. murrayi*, Forbes sp.; FOX-STRANGWAYS (87) II, pp. 33 & 146. *O. paucispina*, M. & Tr.; STUDER (256) p. 22. †*O. ramsayi*, Wright; WOODWARD (276) p. 370.

Ophiomastix annulosa, M. & Tr.; LORIOLO (154) p. 413, STUDER (256) pp. 235, 248, 256, & 260: mode of feeding; KENT (135) p. 121. *O. caryophyllata*, Luetk.; LORIOLO (154) p. 414. *O. flaccida*, Lym.;

- STUDER (256) p. 233. *O. mixta*, Luetk., with claviform spines; LORIOI (154) p. 414.
- Ophiomusium*, Lym.; AGASSIZ (3) p. 78, BELL (16) p. 115. *O. flabellum*, Lym., and *O. pulchellum*, Lym., said not to belong to *Ophiomusium*, but no name proposed; MORTENSEN (197) p. 508. *O. lymani*, W. Thoms.; BELL (16) p. 115.
- Ophiomyxa*, M. & T.; BELL (16) p. 136. *O. brevispina*, Martens, described; LORIOI (154) p. 425: coloured like sponges, among which it lives; STUDER (256) p. 233. *O. flaccida*, Say, colour; STUDER (256) pp. 16 & 22. *O. serpentaria*, Lym.; BELL (16) p. 136. *O. vivipara*, Stud., distribution; STUDER (256) pp. 164 & 287.
- Ophionereis reticulata*; FIELD (82) p. 84.
- †*Ophiopege*, n. g., for *Protaster gregarius*, M. & W., Keokuk Group, Indiana; BOEHM, Zeitschr. geol. Ges. xlv, p. 159.
- Ophiopeza fallax*, see *Ophiopezella lutkeni*.
- Ophiopezella lutkeni*, pro *O. fallax*, Luetken, non Peters, Amboyna; LORIOI, Rev. Suisse Zool. i, p. 392, n. sp.
- Ophiopholis*, Lütke.; AGASSIZ (3) p. 80, FJELSTRUP (84) p. 28, BELL (16) p. 125. *O. aculeata*, Linn.; BELL (16) p. 125, FJELSTRUP (84) p. 28, NORDGAARD (201) p. 5, PETERSEN (216) p. 46; Greenland and Labrador, a racial var.; GRIEG (105) p. 9: distribution; GRIEG (106) p. 20.
- Ophiopleura borealis*, Dan. & Kor., radial shields described, distribution; GRIEG (106) p. 3.
- Ophioplocus imbricatus*, M. & T.; LORIOI (154) p. 398.
- Ophiopsila*, Forbes, and *O. annulosa*, Sars; BELL (16) p. 130.
- Ophiopus*, Ljung.; BELL (16) p. 124: maintained as a genus; MORTENSEN (197) p. 508. *O. arcticus*, Ljung.; BELL (16) p. 124: Greenland; GRIEG (105) p. 9: genital bursa, structure and extrusion of ova, distribution; GRIEG (106) p. 17: anatomical description; MORTENSEN (197).
- Ophiopyrgus saccharatus*, Stud., colour; STUDER (256) p. 273.
- Ophioscolex* and *O. glacialis*, M. & T.; BELL (16) p. 134: Greenland; GRIEG (105) p. 10: variation in colour and size, distribution; GRIEG (106) p. 27. *O. prolifer*, Stud., colour; STUDER (256) p. 269. *O. purpurea*, Düb. & Kor.; BELL (16) p. 134: distribution; GRIEG (106) p. 28.
- Ophiothamnus gracilis*, Stud.; STUDER (256) p. 196. *O. remotus*, Lym.; STUDER (256) p. 55. *O. vicarius*, Lym., bursæ discussed; MORTENSEN (197) p. 508.
- Ophiothrix*, M. & T., described; BELL (16) p. 130, FJELSTRUP (84) p. 25. *O. aristulata*; STUDER (256) p. 54. *O. comata*, M. & T.; LORIOI (154) p. 419. *O. echinata*, M. & T.; RUSSO (231): spermatogenesis; FIELD (83). *O. fragilis*, Abildg.; BELL (16) p. 131, FJELSTRUP (84) p. 25, PETERSEN (216) p. 47, NORDGAARD (201) p. 5, RUSSO (231): spermatogenesis; FIELD (83): distribution; GRIEG (106) p. 25:

- alimentary canal; FRENZEL (88) p. 109: parasitic Infusorian, Trematode, and Polychaet; CUÉNOT (60). *O. galatæe*, Luetk.; LORIOI (154) p. 420. *O. longipeda*, M. & T.; LORIOI (154) p. 415, STUDER (256) p. 278. *O. luetkeni*, W. Thoms.; BELL (16) p. 133. *O. martensi*, Lym.; STUDER (256) p. 216. *O. nereidina*, M. & T.; STUDER (256) p. 192. *O. orsteri*?, sexual dimorphism of colour; FIELD (82) p. 84. *O. pentaphyllum*; GARSTANG (92) p. 335. *O. petersi*, Stud., sexual distinction of colour; STUDER (256) p. 25. *O. plana*, Lym.; STUDER (256) p. 256. *O. propinqua*, Lym.; LORIOI (154) p. 425. *O. punctolimbata*, Martens; STUDER (256) p. 216: described and figured, also a young form; LORIOI (154) p. 416. *O. purpurea*, Martens; STUDER (256) p. 216. *O. rubra*, Ljungm., colour; STUDER (256) p. 17. *O. smaragdina*, Stud.; STUDER (256) p. 196. †*O. sp.*, Pliocene, Parana, Italy; SACCO (233) p. 744. *O. trilineata*, Lützk.; STUDER (256) p. 233. *O. triloba*, Martens; STUDER (256) p. 278.
- O. bedoti*, Amboyna, p. 420, *O. picteti*, Amboyna, = *O. cf. foveolata*, Brock, p. 423, LORIOI, Rev. Suisse Zool. i: n. spp.
- Ophiura*, Agass.; BELL (16) p. 106. *O. abyssicola*, Forbes, referred to *Ophiocten*; MARENZELLER (166) p. 66, also in STEINDACHNER (254) p. 445. *O. affinis*, Lützk.; BELL (16) p. 111. *O. albida*, Forbes; BELL (16) p. 108. *O. aurantiaca*, Verr.; BELL (16) p. 122. *O. ciliaris*, Linn.; BELL (16) p. 106. †*O. egertonii*, Brod., var. *angulati*, n. var. & non descript., Lower Lias, Swabia; ENGEL (74) p. li. †*O. granulata*, Benecke; BOEHM (22) p. 158. *O. robusta*, Ayres, and *O. sarsi*, Lützk.; BELL (16) p. 109. *O. signata*, Verr.; BELL (16) p. 110.
- †*O. turneri*, Lias β , Göppingen, Swabia [insufficiently described and no figure], ENGEL, Jahresh. Ver. Württemb. xlviii, p. lii, n. sp.
- †*Ophiurella columba*?, Blake; FOX-STRANGWAYS (87) II, p. 34. †*O. griesbachi*, Wright; BOEHM (22) p. 158.
- Ophiuropsis lymani*, Stud.; STUDER (256) p. 184.
- Pectinura gorgonia*, M. & T., and *P. infernalis*, M. & T.; LORIOI (154) p. 397. *P. semicincta*, Stud., colour; STUDER (256) pp. 16 & 22.
- P. septemspinosa*, M. & T., var. with undivided dorsal shields, described and figured; LORIOI (154) p. 395.
- †*Protaster gregarius*, M. & W., type of *Ophiopege*, n. g., q.v.; BOEHM, Zeitschr. geol. Ges. xlv.
- Sigsbeia*; AGASSIZ (3) pp. 78 & 83.

(F.)—CRINOIDEA.

A large number of names, apparently taken from the unpublished Vol. vii, Abth. ii, of Barrande's "Système Silurien du centre de la Bohême," are quoted in JAHN (127). As these names are at present without meaning, they are not entered here.

General classification discussed, with reference to *Plicatocrinidae* and *Saccocoma*; JAEKEL (125) p. 691. General classification and relation to other *Echinoderma*, the name *Palmatozoa*; AGASSIZ (2) pp. 7-12. Definition discussed; BATHER (11) p. 19.

† *Abacocrinus cappelleri*; BATHER (11) p. 4.

† *Acrochordocrinus amalthei*, Quenst. sp., Eisenoolith, Dsiroula in Imeretien, Caucasus; NEUMAYR & UHLIG (198) p. 3.

† *Actinocrinus clarus*, Hall, now first figured, p. 8; *A. eryx*, Hall, *A. glans*, Hall, now first figured and distinguished from *A. eryx*, p. 10; *A. limabrachiatus*, Hall, now first figured, arms only, p. 5; WHITFIELD (271). *A. lobatus*, Worthen non Hall, see *A. augustatus*. *A. opusculus*, Hall, now first figured, p. 9; *A. quarternarius*, Hall, now first figured, but only doubtfully distinguished from *A. proboscidiatus*, p. 7; *A. rusticus*, Hall, now first figured, but referred to *A. scitulus*, M. & W.; *A. scitulus*, M. & W., p. 10; *A. securis*, Hall, p. 6; *A. sexarmatus*, Hall, p. 6; WHITFIELD (271). *A. sp.*, Gympie Beds and Star Beds, Queensland; ETHERIDGE (76) p. 207. *A. sp.*, Carboniferous, Turkestan, portion of cup; ROMANOVSKII (223) p. 83. *A. thetis*, Hall, now first figured and distinguished from *A. sexarmatus* and *A. securis*; WHITFIELD (271) p. 6.

† *A. arrosus*, Burlington Group, Iowa, p. 15, *A. augustatus* [error for *angustatus*], nom. nov. for *A. lobatus*, Worthen non Hall, Keokuk Group, Illinois, p. 11, MILLER & GURLEY, Bull. Ill. Mus. iii; *A. blairi*, p. 35, *A. brittsi*, p. 36, Burlington Group, Sedalia, Mo., *A. chouteauensis*, Chouteau Limestone, Sedalia, Mo., p. 18, MILLER, Pal. Indiana, 1892; *A. erraticus*, Burlington Group, Illinois, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 14; *A. fossatus*, Burlington Group, Sedalia, Mo., MILLER, Pal. Indiana, 1892, p. 40; *A. gibsoni*, Keokuk Group, Indiana, p. 10, *A. plugosus*, Burlington Group, Iowa, p. 16, MILLER & GURLEY, Bull. Ill. Mus. iii; *A. sedaliensis*, Burlington Group, Sedalia, MILLER, Pal. Indiana, 1892, p. 16 : n. spp.

Actinometra bennetti, J. Müll., held to include *A. peroni*, p. 95; *A. brachiolata*, Lam., p. 107; *A. coppingeri*, Bell, variation in brachials, p. 101; *A. divaricata*, Carp., from Amboina, p. 94; *A. fimbriata*, Lam., variation in brachials and in joints, p. 102; *A. gracilis*, Hartl., redescribed and now first figured, p. 111; *A. macrobrachius*, Hartl., redescribed, p. 101; *A. maculata*, Carp., Mortlock Islands, p. 105; HARTLAUB (113). *A. multiradiata*, Linn. sp., from Amboina, Formosa, and Japan; *op. cit.* p. 103: colour; STUDER (256) pp. 194 & 195. *A. parvicirra*, J. Müll., two varieties distinguished, p. 96; *A. pectinata*, Retz. sp., albino, and arms without ambulacral groove, p. 107; HARTLAUB (113). *A. peroni*, Carp., see *A. bennetti*. *A. pulchella*, Pourt., redescribed and said to be identical with *Comatula echinoptera*, p. 105; *A. regalis*, Carp., variations in arms, p. 99; *A. solaris*, Lam., China Sea, p. 107; *A. stelligera*, Carp., variation in pinnules, p. 104; *A. typica*, Loven sp., variation in arms, p. 108; HARTLAUB (113).

- † *Aesiocrinus angulatus*, Coal Measures, Missouri, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 59, n. sp.
- † *Agaricocrinus*:—*A. americanus*, Roem., p. 26; *A. corrugatus*, Hall, p. 23; *A. excavatus*, Hall, now first figured and distinguished from *A. americanus* and others, p. 26; *A. ornotrema*, Hall, now first figured, p. 24; *A. pentagonus*, Hall, ditto, p. 25; *A. pyramidatus*, Hall, now first figured and distinguished (?) from *A. corrugatus*, p. 23; WHITFIELD (271).
- A. blairi*, p. 21, *A. chouteauensis*, p. 43, *A. germanus*, p. 42, Chouteau Limestone, Sedalia, Mo., *A. sampsoni*, Chouteau Limestone, Chouteau Springs, Mo., p. 20; MILLER, Pal. Indiana, 1892, n. spp.
- † *Allagecrinus*, morphology; BATHER (11) p. 21.
- † *Ampheristocrinus*, systematic position; BATHER (11) p. 107.
- † *Amphoracrinus*:—*A. divergens*, Hall, type-specimen now first figured, p. 21; *A. inflatus*, Hall, now first figured and distinguished (?) from *A. spinobrachiatus*; *A. spinobrachiatus*, Hall, p. 22; WHITFIELD (271).
- † *Anomalocrinus*, morphology and systematic position; BATHER (11) pp. 20, 35, 41, & 60.
- Antedon*, de Frem.; BELL (16) p. 52: evolution; BATHER (10) p. 275, and HURST (124) p. 199. *A. acuticirra*, Carp., referred to *A. ludovici*; HARTLAUB (113) p. 29. *A. equipinna*, Carp., see *A. imparipinna*. *A. affinis*, Hartl., redescribed and now first figured, p. 25; *A. afra*, Hartl., redescribed and now first figured, p. 87; HARTLAUB (113). *A. amboinensis*, Hartl., see *A. brevicuneata*. *A. andersoni*, Carp., redescribed and figured, p. 78; *A. bella*, Hartl., redescribed and now first figured, with var. *brunnea*, n. var., Amboina, p. 43; *A. bengalensis*, Hartl., redescribed and now first figured, p. 19; HARTLAUB (113). *A. bifida*, Penn.; BELL (16) p. 54: development and orientation of stem; BATHER (11) p. 44: see also under *A. rosacea*. *A. bipartipinna*, Carp., doubtfully referred to *A. ludovici*; HARTLAUB (113) p. 29.
- † *A. breviceps*, Tate; TATE & DENNANT (258) p. 226; *A. brevicuneata*, Carp., redescribed with certain variations from the type-specimen, and held to include *A. amboinensis* and *A. similis*, p. 68; *A. brocki*, Hartl., redescribed and now first figured, p. 23; *A. clarae*, Hartl., ditto, p. 41; *A. conifera*, Hartl., ditto, p. 76; HARTLAUB (113). *A. conjungens*, Carp., see *A. imparipinna*. *A. crassipinna*, Hartl., redescribed and now first figured, p. 32; *A. elongata*, J. Müll., redescribed and figured, p. 71; *A. erinacea*, Hartl., redescribed and now first figured, p. 52; HARTLAUB (113). *A. eschrichti*, J. Müll.; BELL (16) p. 53: testes; DANIELSEN (6) pp. 19 & 23. *A. finschii*, Hartl., redescribed and now first figured; HARTLAUB (113) p. 47. † *A. fischeri*, Gein., = *Bourgueticrinus ellipticus*, root figured; FRIČ (89) p. 109. *A. flagellata*, J. Müll., redescribed and figured, p. 73; *A. hupferi*, Hartl., redescribed and now first figured, p. 88; *A. imparipinna*, Carp., redescribed and figured, and held to include *A. equipinna*, *A. conjungens*, and *A. protecta*, p. 63; *A. japonica*, Hartl., p. 84, *A. klunzingeri*, Hartl., p. 46, *A. kraepelini*, Hartl., p. 22, all redescribed and 1893. [VOL. XXX.]

- now first figured; HARTLAUB (113). *A. laevipinna*, Carp., see *A. milberti*. *A. lepida*, Hartl., referred to *A. palmata*; *op. cit.* p. 49. *A. longicirra*, P. H. Carp., variation in length of cirri; BELL (17) p. 339. *A. ludovici*, Carp., a variety from Amboina described and figured; HARTLAUB (113) p. 29. *A. macronema*, Müll., variation in first syzygy; *op. cit.* p. 78: lives attached to sea-weed; STUDER (256) p. 185. *A. martensi*, Hartl., re-described and figured for the first time, p. 21; *A. milberti*, J. Müll., held to include *A. laevipinna*, p. 81; *A. monacantha*, Hartl., p. 59, *A. nematodon*, Hartl., p. 27, *A. nana*, Hartl., p. 89, *A. oxyacantha*, p. 55, all re-described and now first figured; *A. palmata*, J. Müll., Red Sea, Singapore, and Tonga Is., re-described and figured, p. 49; HARTLAUB (113). *A. patula*, P. H. Carp., variation in brachials; BELL (17) p. 341. *A. perspinosa*, Carp., a variety from Amboina; HARTLAUB (113) p. 85. *A. petasus*, Düb. & Kor.; BELL (16) p. 57: testes, ovary; DANIELSSEN (61) pp. 19 & 23. *A. phalangium*, J. Müll.; BELL (16) p. 59, STEINDACHNER (254) p. 445: parasitic *Myzostoma*; PROUHO (220). *A. proluxa*, Slad.; BELL (16) p. 58: testes, ovary; DANIELSSEN (61) pp. 19 & 23. *A. protecta*, Hartl. ex Lütken M. S., see *A. imparipinna*. *A. quadrata*, Carp.; DANIELSSEN (61) p. 23. *A. rosacea*, Auctt.; GARSTANG (92) p. 335, STUDER (256) p. 22, CUÉNOT (58), and Oogenesis (57): abnormal; CHADWICK (31): alimentary canal; FRENZEL (88) p. 110: development and homologies; SEELIGER (241): see also *A. bifida*. *A. serripinna*, Carp., re-described and figured; HARTLAUB (113) p. 82. *A. similis*, Carp., see *A. brevicuneata*. *A. sp.*, great variation in colour; KENT (135) p. 43. *A. spinipinna*, Hartl., re-described and now first figured; HARTLAUB (113) p. 61. *A. tenella*, Retz.; BELL (16) p. 57, DANIELSSEN (61) p. 23, NORDGAARD (201) pp. 5 & 9. *A. tenera*, Hartl., re-described from specimens which were not fit to figure, p. 66; *A. tenuipinna*, Hartl., re-described and now first figured, p. 54; HARTLAUB (113).
- A. pyropa*, Pyrope Beds of Chodoulic, Bohemia, ZAHALKA (277); *A. wood-masoni*, Sahul Bank, N. Australia, BELL, J. Linn. Soc. xxiv, p. 340: n. spp.
- Apiocrinidæ*, proximal columnal; AGASSIZ (2) p. 51.
- †*Apiocrinus*, interbrachials compared with *Calamocrinus*, p. 37; tegmen compared with *Calamocrinus*, p. 40; stem, p. 47; AGASSIZ (2): origin of colour in fossils; BATHER (11) p. 151. *A. elegans*, Defrance, name restored to *A. parkinsoni*, Auctt., and *A. rotundus*, Mill.; BATHER in BOLTON (23) p. 104: variation in shape; BATHER (11) p. 28. *A. meriani*, Desor; GREPPIN (104) p. 99. *A. milleri*, Goldf.; SIEMIRADZKI (244) p. 142. *A. parkinsoni*, Schloth, see *A. elegans*. *A. polycyphus*, Desor sp.; FOX-STRANGWAYS (87) II, p. 198. *A. rotundatus* [error for *rotundus*], Miller, see *A. elegans*.
- †*Arachnocrinus*, validity disputed; BATHER (11) p. 168.
- †*Atelestocrinus*, systematic position; *op. cit.* p. 114.

- †*Austinocrinus erckerti*, see *Balanocrinus*.
- †*Bactrocrinus*: genus maintained, systematic position; type *B. fusiformis*, Schnur; BATHER (11) pp. 101-104.
- †*Baerocrinus*, morphology; *op. cit.* p. 21.
- †*Balanocrinus*:—*B. erckerti*, Dames, Tertiary?, Turkestan, columnals only; ROMANOVSKII (223) p. 85. *B. sigmaringensis*, Quenst.; GREPPIN, Abh. Schweiz. pal. Ges. xx, p. 100.
- B. africanus*, Senonian, Tunis, stem only; LORIOI (153) p. 391, n. sp.
- †*Barycrinus*, independence questioned; BATHER (11) p. 116. *B. sculptilis*, Hall, now first figured; WHITFIELD (271) p. 29.
- B. formosus*, Keokuk Group, Indiana, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 33; *B. stellifer*, Keokuk Group, Harrison co., Indiana, MILLER, Pal. Indiana, 1892, p. 46: n. spp.
- Bathycrinus*, orientation of stem; BATHER (11) p. 44. *B. carpenteri*, Dan. & Kor. sp., complete anatomical and histological description; DANIELSSEN (61).
- †*Batocrinus*, stem; AGASSIZ (2) p. 62. *B. æquibrachiatus*, var. *alatus*, Hall, now first figured, distinguished from *B. æquibrachiatus*, McChes., and compared with *B. asteriscus*; *B. asteriscus*, M. & W.; WHITFIELD (271) p. 11. *B. clypeatus*, Hall; WHITFIELD (271) p. 15. *B. icosidactylus* and *B. irregularis*, translation of the original description by Casseday, 1854; MILLER, Pal. Indiana, 1892, p. 23. *B. inornatus*, Hall, now first figured and distinguished (?) from *B. clypeatus*, p. 15; *B. laura*, Hall, p. 17, *B. lepidus*, Hall, p. 16, both now first figured; *B. oblatas*, Hall, now first figured, but referred (?) to *B. rotundus*, Yand. & Sh., p. 12; WHITFIELD (271).
- B. æquabilis*, p. 25, *altiusculus*, p. 20, *aspratilis*, p. 21, Burlington Group, Missouri, MILLER & GURLEY, Bull. Ill. Mus. iii; *B. bisbrachiatus*, Burlington Limestone, Iowa, WHITFIELD, Mem. Amer. Mus. Nat. Hist. i, p. 14; *B. blairi*, p. 39, *brittsi*, p. 33, *comparilis*, p. 32, Burlington Group, Sedalia, Mo., *B. decrepitus*, p. 34, Keokuk Group, Montgomery Co., Ind., *divalis*, Keokuk Group, Boonville, Mo., p. 22, MILLER, Pal. Indiana, 1892; *B. laetus*, Burlington Group, Missouri, p. 24, *lyonanus*, St. Louis Group, Kentucky, p. 18, *scyphus*, Burlington Group, Missouri, p. 23, MILLER & GURLEY, Bull. Ill. Mus. iii; *B. shepardii*, Burlington Limestone, Springfield, Mo., ROWLEY, Amer. Geol. xii, p. 305: n. spp.
- †*Belemnocrinus*, morphology; BATHER (11) p. 21.
- †*Blairocrinus*:—*B. sp.*; ROWLEY (227) p. 50.
- B. arrosus* and *B. bullatus*, Chouteau Limestone, Sedalia, Mo., MILLER, Pal. Indiana, 1892, p. 41; *B. spinosulus*, Chouteau Limestone, Missouri, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 28: n. spp.
- Botryocrinites*, defined; BATHER (11) p. 114.
- †*Botryocrinus*, rediagnosed, but independence questioned, pp. 114 & 116; *B. corallum*, Ang., considered as young of *B. ramosissimus*, p. 117; *B. crassus*, Whiteaves sp., p. 103; *B. cucurbitaceus*, Ang. sp., rediagnosed, true structure of arms and anal tube described, p. 120;

- B. nucleus*, Hall sp., p. 104; *B. polyxo*, Hall sp., p. 105; *B. ramossissimus*, Ang., rediagnosed, morphological description, senile stages, attack of parasites, p. 117; BATHER (11).
- †*Bourqueticrinus alabamensis*, de Lor.; CLARK (36) p. 25.
- †*Cainocrinus andreae*, de Loriol, in *Inferior Oolite*; GREPPIN (103).
- Calamocrinus*, AGASSIZ (3) p. 78. *C. diomedæ*, A. Agass., detailed description, comparison with other and especially with extinct Crinoids, and discussion of systematic position, remarkable figures of minute skeletal structure, and coloured plate of living animal; AGASSIZ (2).
- Calceocrinidæ*, redefined, literary history, morphological investigation, and evolution; BATHER (11) pp. 54-67.
- †*Calceocrinus*, rediagnosed, name discussed, detailed morphological description, evolution of genus and species; *op. cit.* pp. 21 & 54-67.
- O. articulatus*, Bill., see *Castocrinus*. *C. barrandei*, Walcott, see *Euchirocrinus*. *C. barrisi*, Worthen, p. 66; *C. bidentatus*, Ring., pp. 56-66; BATHER (11). *C. bradleyi*, M. & W., see *Halysiocrinus*. *C. clarus*, Hall sp.; *op. cit.* pp. 66 & 75. *C. chrysalis*, Hall, see *Euchirocrinus*. *C. contractus*, Ring., pp. 55 & 66. *C. dactylus*, Hall, syn. of *Halysiocrinus ventricosus*, pp. 63 & 66; *C. fletcheri*, Salter sp., pp. 66 & 74; *op. cit.* *C. furcillatus*, W. R. Bill. sp., see *Castocrinus*. *C. gotlandicus*, Ang., rediagnosed, detailed morphological description, pp. 70, 73, & 77; *C.*, cf. *gotlandicus*, Upper Silurian, Gotland, p. 81; *C. halli*, Ring., pp. 55, 57, & 66; BATHER (11). *B. indianensis*, S. A. Miller, see *Euchirocrinus*. *C. (?) lamellosus*, Hall sp.; *op. cit.* p. 66. *C. perplexus*, Shum., see *Halysiocrinus*. *C. radiculatus*, Ring., see *Euchirocrinus*. *C. robustus*, Worthen, see *Halysiocrinus*. *C. rugosus*, W. R. Bill., see *Castocrinus*. *C. stigmatus*, Hall sp., radial facet, pp. 56, 66, & 70; *C.*, cf. *tenax*, Upper Silurian, Gotland, p. 90; *C. typus*, Ring., pp. 56, 57, 65, & 66; BATHER (11).
- C. interpretes*, Klinteberg, Gotland, Upper Silurian, supplementary plates, stem, pp. 69, 75, 77, & 94, *C. nitidus*, Upper Silurian, Gotland, p. 91, *C. pinnulatus*, Upper Silurian, S. Gotland and Fårö, anal tube, pinnules, stem, pp. 71, 74, 76, 77, & 96, *C. pugil*, Upper Silurian, Follingbo, Gotland, supplementary plates, pp. 70 & 82, *C. tenax*, Upper Silurian, Gotland, supplementary plates, anal tube, stem, pp. 70, 71, 75, 77, & 88, *C. tucanus*, Upper Silurian, Gotland, supplementary plates, pp. 70 & 86, BATHER, Svenska Ak. Handl. xxv, No. 2 : n. spp.
- †*Callicrinus costatus*, His. sp.; *op. cit.* p. 11.
- Calycanthocrinus*, Follm., morphology; *op. cit.* pp. 21, 22, 26, 34.
- †*Carpocrinus ornatus*, Ang. sp.; *op. cit.* p. 4. †*C. simplex*, Phill. sp.; *op. cit.* pp. 4 & 11.
- †*Caryocrinus*, stem; AGASSIZ (2) p. 60.
- †*Castocrinus*, rediagnosed, morphology, and evolution, pp. 21, 56-63, 66, 72, & 75; *C. articulatus*, Bill. sp., p. 66; *C. billingsianus*, Ring., pp. 59, 60, & 66; *C. furcillatus*, W. R. Bill. sp., structure of cup, supplementary plates, pinnules, pp. 59, 60, 66, 70, & 71; *C. inæqualis*, E. Bill. sp., p. 66; *C. rugosus*, W. R. Bill. sp., pp. 59, 60, & 66; BATHER (11).

- †*Catillocrinus*, morphology and systematic position; *op. cit.* pp. 21, 22, & 61.
- †*Cheirocrinus* and *Chirocrinus*, syn. of *Euchirocrinus* and *Calceocrinus*; *op. cit.* pp. 55 & 67. *C. chrysalis*, Hall, see *Euchirocrinus*. *C. clarus*, Hall, see *Calceocrinus*. *C. gotlandicus*, syn. of *Calceocrinus gotlandicus* and *C. nitidus*; *op. cit.* pp. 77 & 91. *C. lamellosus*, Hall, see *Calceocrinus*. *C. nodosus*, Hall, syn. of *Halysiocrinus ventricosus*; *op. cit.* p. 66. *C. stigmatus*, Hall, see *Calceocrinus*. *C. truncatus*, Hall, see *Halysiocrinus*. *C. ventricosus*, Hall, see *Halysiocrinus*. *C. wachsmuthi*, M. & W., syn. of *Halysiocrinus ventricosus*; *loc. cit.*
- †*Closterocrinus*, systematic position; *op. cit.* p. 107.
- †*Coeliocrinus dilatatus*, Hall, now first figured; WHITFIELD (271) p. 33. *Comatula echinoptera*, Müll., see *Actinometra pulchella*.
- †*Corymbocrinus corolliferus*, His. sp.; BATHER (11) p. 12.
- †*Cotylederma*; WOODWARD (276) p. 369.
- †*Cremaocrinus*, Ulr., syn. of *Euchirocrinus*; *op. cit.* p. 56.
- †*Crotalocrinus*, Angelin's figures, p. 5; *C. pulcher*, His. sp. p. 12; *C. rugosus*, Miller sp., syn. of *C. verrucosus*, pp. 10, 12, & 13; *op. cit.*
- †*Ctenocrinus* sp.; KAYSER (131) p. 67, and Taf. ix, fig. 5.
- †*Cupressocrinus*, supposed infrabasals a columnal; BATHER (11) p. 20.
- †*Cyathocrinidae* and series *Cyathocrinites*, defined; *op. cit.* p. 126.
- †*Cyathocrinites corolliferus*, His., see *Corymbocrinus*. *C. pimatus*, Goldf.; *op. cit.* p. 12. *C. pulcher*, His., see *Crotalocrinus*.
- †*Cyathocrinus*, origin; BATHER (11) p. 153: stem; AGASSIZ (2) p. 57, *C. acinotubus*, Ang.; WOODS (274) p. 112: rediagnosed, with detailed morphological description; BATHER (11) p. 133. *C. alutaceus*, Ang. syn. of *C. acinotubus* and *C. ramosus*, pp. 133 & 146; *C. cora*, Hall, p. 127; *C. distensus*, Ang., rediagnosed and described, p. 141; *C. glaber*, Ang., rediagnosed and described, p. 138; *C. granulatus*, Ang., syn. of *Gissocrinus incurvatus*, p. 168; BATHER (11). *C. incurvatus*, Ang., see *Gissocrinus*. *C. laevis*, Ang., syn. of *C. ramosus* and *C. visbyensis*, pp. 130, 132, 146; *C. longimanus*, Ang., rediagnosed and discussed, morphological description, cause of colour, pp. 142 & 151; BATHER (11). *C. meekanus*, Shum. sp.; MILLER, Pal. Indiana, 1892, p. 44. *C. monilifer*, Ang., syn. of *C. visbyensis*, pp. 130 & 132; *C. muticus*, Ang., rediagnosed and described, p. 140; *C. polyxo*, Hall, referred to *Botryocrinus*, p. 105; BATHER (11). *C. ramosus*, Ang., rediagnosed and discussed, morphological description, cause of colour; *op. cit.* pp. 146-151: Schloth. sp.; GEINITZ (96) p. 179. *C.* (sp. 4) *squamiferus*, Salter MS., see *Gissocrinus squamifer*. *C. striolatus*, Ang., rediagnosed and described, p. 136; *C. vanhornei*, S. A. Mill., p. 127; BATHER (11). *C. viminalis*, Hall, type-specimen now first figured; WHITFIELD (271) p. 28. *C. waukoma*, Hall, p. 127; *C. zonatus*, Ang., senile stage of *C. ramosus*, pp. 146-148; BATHER (11).

- C. andersoni*, Keokuk Group, Iowa, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 30 ; *C. dianæ*, Upper Silurian, Slite, Gotland, BATHER, Svenska Ak. Handl. xxv, No. 2, p. 137 ; *C. gorbyi*, Keokuk Group, Gosport, Ind., MILLER, Pal. Indiana, 1892, p. 44 ; *C. signatus*, Keokuk Group, Indiana, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 32 ; *C. stellatus*, Carboniferous, Turkestan, columnals only ; ROMANOVSKII (223) p. 81 ; *C. tumidulus*, Keokuk Group, Indiana, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 31 ; *C. visbyensis*, near Wisby, Gotland, Lower Silurian, morphological description ; BATHER, Svenska Ak. Handl. xxv, No. 2, p. 130 : n. spp.
- †*Cyclocrinus hausmanni*, Roem. sp. ; STUBER (255) pp. 95, 98, & 116.
- †*Cylicocrinus*, n. g., type *C. canaliculatus*, n. sp., Niagara Group, St. Paul, Ind. ; MILLER, Pal. Indiana, 1892, p. 31.
- †*Cyphocrinus*, n. g., type *C. gorbyi*, n. sp., Niagara Group, St. Paul, Ind. ; MILLER, Pal. Indiana, 1892, p. 50.
- Decadocrinidae*, defined ; BATHER (11) p. 113.
- †*Deltacrinus*, Ulr., syn. of *Calceocrinus* ; *op. cit.* pp. 56, 57, & 67.
- Dendrocrinidae*, defined and discussed ; *op. cit.* p. 100.
- †*Dendrocrinus*, distinguished from *Homocrinus* ; *op. cit.* pp. 101–103 : stem ; AGASSIZ (2) pp. 57, 59, 60, & 62. *D. alternatus*, Hall. sp. ; BATHER (11) p. 103. *D. ancilla*, Hall, see *Homocrinus*. *D. angustatus*, M. & W. sp. ; *op. cit.* p. 103. *D.* (?) *cambrensis*, Hicks ; BOLTON (23) p. 105. *D. casei*, Meek, regeneration of arms ; FOERSTE (85). *D. gracilis*, Hall sp., p. 104 ; *D. nucleus*, Hall, referred to *Botryocrinus*, p. 104 ; *D. polydactylus*, Shum. sp., p. 105 ; BATHER (11).
- †*Dimerocrinus*, cause of colour ; *op. cit.* p. 151.
- †*Dorycrinus*, stem ; AGASSIZ (2) p. 62. *D. pendens*, Hall, now first figured, but referred (?) to *D. unicornis*, Ow. & Sh. ; WHITFIELD (271) p. 18. *D. tricornis*, Hall, now first figured and distinguished from *D. unicornis* ; WHITFIELD (271) p. 19.
- D. elegans*, Burlington Group, Sedalia, Mo. ; MILLER, Pal. Indiana, 1892, p. 17, n. sp.
- †*Ectenocrinus*, morphology, evolution, and systematic position ; BATHER (11) pp. 20, 35, 60, 74 : stem ; AGASSIZ (2) p. 57.
- †*Echidnis diluviana*, Montf. ; BATHER (11) p. 10.
- †*Edriocrinus sacculus*, Hall ; BEECHER & CLARKE (14).
- †*Enallocrinus scriptus*, His. sp. ; BATHER (11) pp. 12 & 13.
- †*Encrinites* :—*E. echidnoides*, Schloth., pp. 10 & 12 ; *E. flexibilis*, His., pp. 11 & 12 ; *E. flexilis*, His., pp. 10 & 12 ; *E. orthoceratoides*, Schloth. referred to *Crotalocrinus*, p. 10 ; BATHER (11).
- †*Encrinus*, arms only, allied to *E. liliiformis* and *E. aculeatus*, Muschelkalk, Ober-Schlesien ; MICHAEL, Zeitschr. deutsch. geol. Ges. xlv p. 500. *E. aculeatus*, Drey. ; GEINITZ (96) p. 190. *E. beyrichi*, Picard, see *Holocrinus*. *E. carnalli*, Beyr. ; GEINITZ (96) p. 190, *E. cassianus*, Laube ; OGILVIE (205) p. 50. *E. gracilis*, Wagner, referred to *Holocrinus wagneri* ; JAEKEL (126). *E. granulosus*

- Münst.; OGILVIE (205) p. 50. *E. liliiformis*, Lam.; GEINITZ (96) p. 190: stem; AGASSIZ (2) p. 58. *E. varians*, Münst.; OGILVIE (205) p. 50. *E. wagneri*, Ben.; GEINITZ (96) p. 190: tegmen; AGASSIZ (2) p. 42: see also *Holocrinus*.
- †*Eretmocrinus*:—*E. attenuatus* (Hall), W. & Sp., now first figured and described, and distinguished from *E. matuta*; *E. matuta*, Hall; WHITFIELD (271) p. 18.
- E. cassedayanus* (misprinted *lyonanus*), Burlington Group, Iowa, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 17; *E. praegravis*, Keokuk Group, Washington Co., Ind. [the Recorder is informed by Mr. A. C. Benedict, the finder and owner of the type-specimen, that it came from the Knobstone Group in Clark Co.], MILLER, Pal. Indiana, 1892, p. 37: n. spp.
- †*Eucalyptocrinus*, stem; AGASSIZ (2) p. 62. *E. regularis*, His. sp., p. 12; *E. rosaceus*, Goldf., pp. 12 & 14; BATHER (11).
- E. wortheni*, Niagara Group, Tennessee, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 53, n. sp.
- †*Euchirocrinus*, rediagnosed, name discussed, morphology, and evolution, pp. 21, 55–66, & 72; *E. barrandei*, Walcott sp., p. 66; *E. chrysalis*, Hall sp., pp. 56 & 66; *E. indianensis*, Miller sp., p. 66; *E. punctatus*, Ullr. sp., supplementary plates, pp. 66 & 69; *E. radiculatus*, Ring. sp., supplementary plates, tegmen, stem, pp. 66, 69, 70, & 75; BATHER (11).
- †*Eugeniocrinus deslongchampsii*, de Lor.; LIPPMANN & DOLLFUS (150) p. 390. †*E. hoferi*, Goldf.; ENGEL (74) p. 1, ZIMMERMANN (279) p. 129.
- †*Eupachycrinus orbicularis*, Hall, type-specimen now first figured; WHITFIELD (271) p. 31.
- †*E. parvus*, Coal Measures, Missouri, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 60, n. sp.
- †*Euspirocrinidae*, defined; BATHER (11) p. 107.
- †*Euspirocrinus*, Ang., rediagnosed, systematic position, pp. 107 & 108; *E. obconicus*, W. R. Bill., compared with *E. spiralis*, pp. 108, 110, & 113; *E. spiralis*, Ang., rediagnosed, morphological description of type and varieties, p. 108; BATHER (11).
- †*Extracrinus*:—*E. briareus*, Mill sp.; WOODWARD (276) p. 369. *E. britannicus*, Schloth sp.; *E. dichotomus*, McCoy sp.; FOX-STRANGWAYS (87) II, p. 35. *E. fossilis*, Blum., see *E.* and *Pentacrinus briareus*, and *E. britannicus*. *E. subangularis*, Mill sp.; FOX-STRANGWAYS (87) II, p. 35, STUBER (255) p. 151, WOODWARD (276) p. 369.
- †*Forbesiocrinus*, stem; AGASSIZ (2) pp. 58 & 60.
- F. pyriformis* [error for *piriformis*], n. sp., Keokuk Group, Kentucky, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 47.
- †*Gasterocoma*, morphology; BATHER (11) p. 21.
- Gazacrinidae*, n. fam.; MILLER, Pal. Indiana, 1892, p. 49.
- †*Gazacrinus*, n. g., type *G. inornatus*, Niagara Group, St. Paul, Ind.; MILLER, Pal. Indiana, 1892, p. 49.

- † *Gilbertsocrinus*, see under *Goniasteroidocrinus* and *Ollacrinus*.
- † *Gissoocrinus*, Ang., rediagnosed and discussed, phylogenetic position, p. 152; *G. arthriticus*, Ang., non Phill., referred to *G. typus* and *G. campanula*, pp. 155 & 160; Phill. sp., pp. 168 & 169; *G. elegans*, Ang., rediagnosed and discussed, p. 159; *G. incurvatus*, Ang. sp., ditto, morphological description, p. 168; *G. goniodactylus*, Phill. sp., and var., pp. 166 & 167; *G. macrodactylus*, Ang., rediagnosed and described, p. 165; *G. nudus*, Ang., a worn *G. typus*, pp. 153-156; *G. punctuosus*, Ang., referred to *G. typus* and *G. campanula*, pp. 153, 155, 158-161; *G. sp.*, Lower Silurian, Gotland, p. 173; *G. squamifer*, Salter MS., Gotland, p. 167; *G. tubulatus*, Ang., a worn *G. typus*, pp. 153-155; *G. umbilicatus*, Ang., rediagnosed and described, p. 163; BATHER (11).
- G. campanula*, Upper Silurian, Follingbo, Gotland, morphological description, p. 160, *G. typus*, ditto, p. 155, *G. verrucosus*, Pterygotus Bed, Upper Silurian, Wisby, Gotland, with young stages, p. 171, BATHER, Svenska Ak. Handl. xxv, No. 22, n. spp.
- † *Glyptocrinus*, stem, pp. 57, 58, 60 & 62: tegmen, p. 43; AGASSIZ (2). *G. baeri*, *dyeri*, and *neali*, roots; DYCHE (72).
- † *Gnorimocrinus loveni*, W. & Sp.; BATHER (11) p. 128.
- † *Goniasteroidocrinus lyonanus*, Keokuk Group, Indiana, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 55, n. sp.
- † *Gothocrinus*, n. g., with type *G. gracilis*, n. sp., Lower Silurian, Wamlingbo, Gotland; BATHER, Svenska Ak. Handl. xxv, No. 2, p. 114.
- † *Graphiocrinus tortuosus*, Hall, now first figured; WHITFIELD (271) p. 32.
- † *Halysiocrinus*, n. g. (ex Ulrich), type *Calceocrinus ventricosus*, morphology and evolution, pp. 21, 61, 65, 72, 74, & 75; *H. bradleyi*, M. & W. sp., *H. perplexus*, Shum. sp., *H. robustus*, Worthen sp., *H. tunicatus*, Hall sp., p. 67; *H. ventricosus*, Hall sp., morphology, systematic position, supplementary plates, pp. 62-66 & 70; BATHER (11).
- † *Haplocrinus*, morphology; *op. cit.* pp. 20, 25, & 60.
- † *Herpetocrinus*, rediagnosed, name discussed, detailed morphological position, evolution, and systematic position, pp. 21 & 36-46; *H. brachiatus*, Hall sp., rediagnosed, p. 46; *H. bridgeportensis*, Miller sp., pp. 37 & 45; *H. convolutus*, Hall sp., rediagnosed, structure of stem, Gotland, pp. 43 & 48; *H. fletcheri*, Salter, rediagnosed, with morphological description, pp. 38, 42, & 46; *H. gorbyi*, S. A. Mill. sp., p. 45; BATHER, Svenska Ak. Handl. xxv, No. 2.
- H. ammonis*, with vars. *bijugicirrus* and *alternucirrus*, Upper Silurian, Gotland and Dudley, pp. 46, 49, and text, fig. 12; *H. flabellucirrus*, Upper Silurian, Wisby and Follingbo, Gotland, structure of stem, pp. 43-46 & 51; *H. scolopendra*, described in error as n. sp., on p. 53, but referred to *Streptocrinus crotalurus*, on p. 175; BATHER, Svenska Ak. Handl. xxv, No. 2, n. spp.
- Heterocrinidæ*, redefined; *op. cit.* p. 35.
- † *Heterocrinus*, Hall, morphology, evolution, and systematic position; *op. cit.* pp. 20, 25, 26, 35, 60, 72, & 76: stem, AGASSIZ (2) pp. 57

- & 61: W. & Sp., non Hall, see *Ectenocrinus*. *H. articulatus*, Bill., see *Castocrinus*. *H. bellewillensis*, W. R. Bill., disappearance of right posterior arm; BATHER (11) p. 72. *H. inaequalis*, E. Bill., see *Castocrinus*. *H. simplex* and *subcrassus*, roots; DYCHE (72).
- †*Holocrinus*, W. & Sp., syn. of *Dadocrinus*; BATHER (11) p. 20: maintained and redescribed with species, *H. beyrichi*, Picard sp., and *H. wagneri*, Ben. sp.; JAEKEL (126).
- †*Homocrinus*, discussed and rediagnosed; BATHER (11) p. 101: stem; AGASSIZ (2) p. 60. *H. ancilla*, Hall sp., *H. alternatus*, Hall; BATHER (11) p. 103. *H. angustatus*, M. & W., see *Dendrocrinus*. *H. crassus*, Whiteaves, referred to *Botryocrinus*, *H. cylindricus*, Hall, p. 103; BATHER (11). *H. fusiformis*, see *Bactrocrinus*. *H. ? nanus*, Röm.; BATHER (11) p. 104. *H. nucleus*, Hall sp., see *Botryocrinus*. *H. parvus*, Hall; BATHER (11) p. 105. *H. polydactylus*, Shum., see *Dendrocrinus*. *H. ? proboscidualis*, Hall, *H. scoparius*, Hall; BATHER (11) p. 105.
- H. tenuis*, Lower Silurian, Bursvik, Gotland, BATHER, Svenska Ak. Handl. xxv, No. 2 p. 105, n. sp.
- †*Holocrinus*, morphology, p. 21; *H. dipentus*, Eichw. sp., pp. 102 & 104; BATHER (11).
- †*Hybocrinus*, morphology; BATHER (11) p. 21.
- †*Hydreionocrinus*:—*H. sanctiludovici*, Worthen, olim *Eupachyrcinus*, now first figured; MILLER & GURLEY, Bull. Ill. Mus. iii, p. 40.
- H. crassidiscus*, p. 43, *granuliferus*, p. 44, *noduliferus*, p. 41, *subsINUATUS*, p. 40, Coal Measures, Missouri, MILLER & GURLEY, Bull. Ill. Mus. iii, n. spp.
- Hyocrinus*, Thoms., described and discussed; JAEKEL (125) p. 650.
- †*Ichthyocrinus*, stem; AGASSIZ (2) pp. 59 & 60. *I. burlingtonensis*, Hall, now first figured; WHITFIELD (271) p. 36.
- †*I. greenii*, Keokuk Group, Muldrough Hill, Ky., MILLER, Pal. Indiana, 1892, p. 52, n. sp.
- †*Idiocrinus ventricosus*, orals ascribed to *Pisocrinus*; BATHER (11) pp. 24 & 175.
- Inadunata*, defined and discussed, p. 19; *Inadunata dicyclica*, new suborder founded and discussed, p. 100; *Inadunata monocyclica*, new suborder founded and discussed, p. 20; BATHER (11).
- †*Iocrinus*, morphology and systematic position; *op. cit.* pp. 21, 35, & 60.
- †*Isis entrocha*, His.; *op. cit.* p. 10.
- †*Lageniocrinus*, morphology; *op. cit.* p. 21.
- †*Lecanocrinus*, stem; AGASSIZ (2) p. 60.
- †*Lyriocrinus*, stem; *loc. cit.*
- †*Mariacrinus*, stem; *op. cit.* pp. 60 & 63.
- †*Marsupiocrinus radiatus*, Ang.; BATHER (11) p. 12.
- †*Marsupites* compared with *Antedon*; SEELIGER (241) p. 394.
- †*Mastigocrinus loreus*, Bather; WOODS (274) p. 112.
- †*Megistocrinus*, stem; AGASSIZ (2) p. 61.
- †*Melocrinus aequalis*, Niagara Group, St. Paul, Ind., MILLER, Pal.

- Indiana, 1892, p. 48 ; †*M. gregeri*, Hamilton Group, Callaway Mo., ROWLEY, Amer. Geol. xii, p. 303 : n. spp.
- Metacrinus interruptus*, P. H. Carp., Sahul Bank ; BELL (17) p. 339.
- †*Millericrinus* :—*M. echinatus*, Schloth. sp. ; FOX-STRANGWAYS (87) II, p. 199. *M. hausmanni*, Roem. ; WOODWARD (276) p. 369. *M. polyclonus*, Félix ; AGUILERA (4) p. 17. *M. pratti*, stem ; AGASSIZ (2) pp. 56 & 65.
- †*Mycocrinus*, morphology and systematic position ; BATHER (11) pp. 21, 22, & 60.
- †*Myclodactylus*, see *Herpetocrinus*. *M. gracilis*, Ang., discussed and part referred to *Gissocrinus macrodactylus*, pp. 40 & 165 ; *M. heterocrinus*, Ang., referred to *Herpetocrinus fletcheri*, p. 46 ; *M. interradians*, Ang., probably *Taxocrinus*, p. 40 ; BATHER (11).
- †*Myrtillocrinus*, supposed infrabasals a columnal ; *op. cit.* p. 20.
- †*Nanocrinus*, morphology ; *op. cit.* p. 21.
- †*Ohioocrinus*, morphology and systematic position ; *op. cit.* pp. 20 & 35.
- †*Ollacrinus papillatus*, Hall, now first figured ; WHITFIELD (271) p. 36.
- †*Onychocrinus*, stem ; AGASSIZ (2) p. 61.
- O. parvus*, Kaskaskia Group, Indiana, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 52, n. sp.
- †*Ophiocrinus*, Ang., see *Streptocrinus* : Charlesw., referred to *Herpetocrinus* ; BATHER (11) pp. 36–39.
- †*Orthoceratites echidnoides*, Montf., a crinoid stem ; *op. cit.* p. 10.
- †*Palæocrinus*, Bill., phylogenetic position ; *op. cit.* pp. 153, 164, & 174.
- †*Parisocrinus curtus*, Müll. sp. ; *op. cit.* p. 103.
- †“*Pendulocrinus*,” Aust. MS., syn. of *Calceocrinus* ; *op. cit.* pp. 57 & 67.
- Pentacrinus*, orientation of stem ; *op. cit.* p. 44 : stem ; AGASSIZ (2) p. 62.
- †*Pentacrinus* :—*P. amblyscalaris*, Thurm. ; SIEMIRADZKI (244) p. 142. *P. asteriscus*, Meek & Hayden, redescribed ; CLARK (36) p. 26. *P. australis*, Moore, Queensland, remarks by P. H. Carpenter & P. de Loriol ; ETHERIDGE (76) p. 439. *P. basaltiformis*, Mill. ; FOX-STRANGWAYS (87) II, p. 35, LIPPMANN & DOLLFUS (150) p. 390, STUBER (255) p. 151, WOODWARD (276) p. 369 : Middle Lias, Dsiroula and Katzki in Imeretien, Caucasus ; NEUMAYR & UHLIG (198) p. 3. *P.*, cf. *basaltiformis*, Mill., Lower Lias, Calabria ; GRECO (100) p. 80 : Lias, Kurremölla in Scania, columnals only ; MÖBERG (190) p. 24. *P. briareus*, Mill., from Oxfordian of Brünn ; ZIMMERMANN (279) : see under *Extracrinus fossilis*. *P. bryani*, Gabb, redescribed ; CLARK (36) p. 28. *P. carinatus*, Roem., Senonian of Angoulême ; ARNAUD (9) p. 25. *P. cingulatus* Münst. ; ZIMMERMANN (279) p. 129. *P. desori*, Thurm. ; GREPPIN (104) p. 100, SIEMIRADZKI (244) p. 142. *P. gastaldii*, Mich. ; SIMONELLI (245) p. 236. *P.*, cf. *gastaldii*, proves depth of Miocene Sea at Angles (Gard) ; SINARD (247). *P. goldfussi*, M'Coy ; WOODWARD (276), p. 369. *P. gracilis*, Charlesw., *loc. cit.* ; FOX-STRANGWAYS (87) II, p. 35. *P. interbrachiatus*, Blake ; *loc. cit.* *P. johnstoni* [? erroneously

- for *P. johnsoni*, which is syn. of *P. gracilis*], *P. jurensis*, Quenst.; WOODWARD (276) p. 369. *P. sp.*, Lias, Kurremölla in Scania; columnal only; MOBERG (190) p. 24. *P. laevigatus*, Münst.; OGILVIE (205) p. 50. *P. laevis*, Mill.; WOODWARD (276) p. 369. *P. milleri*, ? Aust.; FOX-STRANGWAYS (87) II, p. 35. *P. milleri*, Aust.; WOODWARD (276) p. 369. *P. neocomiensis*, de Lor., Balkans; VANKOV (266) p. 97. *P. oceani*, d'Orb.; STUBER (255) p. 169. *P. propinquus*, Münst.; OGILVIE (205) p. 50. *P. psilonoti*, Quenst.; FOX-STRANGWAYS (87) II, p. 35, STUBER (255) p. 71, WOODWARD (276) p. 369. *P. robustus*, Wright; *loc. cit.* *P. scalaris*, Goldf.; *loc. cit.*; FOX-STRANGWAYS (87) II, p. 36. *P. sp.*; *op. cit.* p. 199; FUCINI (90) p. 294: Tunis; PERON in LORIOI (153) p. 392. *P. subcrenatus*, Münst.; OGILVIE (205) p. 50. *P. subsulcatus*, Münst.; STUBER (255) p. 169. *P. subteres*, Goldf.; ZIMMERMANN (279) p. 129. *P., cf. subteroides*, Quenst., Lias, Kurremölla in Scania, columnals only; MOBERG (190) p. 25. *P. tirolensis*, Laube; OGILVIE (205) p. 50. *P. tuberculatus*, Mill.; FOX-STRANGWAYS (87) II, p. 36, MOESCH (192) p. 35, STUBER (255) pp. 79, 84, 95, 98, 105, & 116, WOODWARD (276) p. 369. *P. vulgaris*, Schloth.; FOX-STRANGWAYS (87) II, p. 146.
- P. angulati*, Lower Lias, "Angulatensandstein," Göppingen, Swabia [insufficiently described and no figure], ENGEL, Jahresh. Ver. Württemb. xlviii, p. xlvii; *P. ? patulus*, Lias, Kurremölla in Scania, columnals only, MOBERG, Svenska Ak. Handl. xxii, p. 23; *P. peroni*, Lor., Senonian, Tunis, stem only, LORIOI (153) p. 390; *P. whitei*, Jurassic, Utah, CLARK, Bull. U. S. Geol. Serv. No. 97, p. 27: n. sp.
- +*Pericbocrinus whitei*, Hall, now first figured; WHITFIELD (271) p. 27.
- +*Phimocrinus*, morphology; BATHER (11) pp. 20 & 21.
- +*Phyllocrinus verrucosus*, Tithonian of Theodosia in Krimea; RETOWSKI, Bull. Soc. Moscow, 1893, p. 289, n. sp.
- +*Pisocrinidae*, redefined; BATHER (11) p. 21.
- +*Pisocrinus*, rediagnosed, morphology and systematic position, pp. 21-27; *P. benedicti*, S. A. Mill., pp. 26 & 28; *P. campana*, S. A. Mill., pp. 26 & 27; *P. flagellifer*, Ang. syn. of *P. pilula*, p. 27; *P. gemmiformis*, S. A. Mill., pp. 26 & 28; *P. globosus*, var. of *P. gemmiformis*, p. 27; *P. gorbyi*, S. A. Mill., discussed, p. 27; *P. ollula*, Ang., rediagnosed and described, p. 32; *P. ornatus*, de Kon., syn. of *P. pilula*, p. 27; *P. pilula*, de Kon., rediagnosed, with morphological description, pp. 25-27; *P. piriformis*, Ring. sp., pp. 26-28; *P. pocillum*, Ang., rediagnosed, morphological description, p. 33; *P. tennesseënsis*, C. F. Röm. sp., pp. 23 & 26; BATHER (11).
- +*P. quinquelobus*, Niagara Beds, W. Tennessee, BATHER, Svenska Ak. Handl. xxv, No. 2, p. 27, n. sp.
- +*Platycrinus*, stem; AGASSIZ (2) pp. 58 & 60. *P. allophylus*; ROWLEY (227) p. 50. *P. clytis*, Hall, now first figured, p. 2; *P. corrugatus*, Ow. & Sh., p. 4; *P. discoideus*, Ow. & Sh., *P. elegans*, Hall, now first figured, *P. excavatus*, Hall, now first figured and distinguished from *P. discoideus*, p. 3; WHITFIELD (271). *P. insolens*, ROWLEY (227)

- p. 50. *P. scobina*, M. & W., now first figured, p. 2; *P. striobrachiatus*, Hall, now first figured and distinguished from *P. corrugatus*, p. 4; WHITFIELD (271).
- P. caducus*, Keokuk Group, Boonville, Mo., p. 13; *P. chouteauensis*, & *P. colletti*, p. 14, Chouteau Limestone, Sedalia, Mo., MILLER, Pal. Indiana, 1892; *P. hieroglyphicus*, Carboniferous, Turkestan, one radial (?) only, ROMANOVSKII (223) p. 83; *P. ? nux*, Middle series of Bowen R. Coalfield, Queensland, ETHERIDGE (76) p. 208 : n. spp.
- Plicatocrinidae*, redefined and described; JAEKEL, Zeitschr. geol. Ges. xliv, p. 620.
- †*Plicatocrinus*, Münst., rediagnosed and described; JAEKEL (125) p. 634.
P. fraasi, Zitt., figured and described; *op. cit.* p. 636. *P. hexagonus*, Münst., figured and described; *op. cit.* p. 640.
- P. tetragonus*, Oxfordian of Hansdorf, near Inowrazlaw, JAEKEL, Zeitschr. geol. Ges. xlv, p. 639, n. sp.
- †*Porocrinus* (of Dittmar), stem; AGASSIZ (2) p. 64.
- †*Poteriocrinus*, stem; AGASSIZ (2) pp. 59, 61, & 62. *P. alternatus*, Hall; BATHER (11) p. 103. *P. crassus*, Mill., Queensland; ETHERIDGE (76) p. 209. *P. curtus*, Müll., see *Parisocrinus*. *P. davisanus*, S. A. Mill., referred to *Decadocrinidae*; BATHER (11) p. 104. *P. fusiformis*, Röm., see *Bactrocrinus*. *P. gracilis*, Hall; BATHER (11) p. 104. *P. meekanus*, Shum., referred to *Cyathocrinus*; MILLER, Pal. Indiana, 1892, p. 44. *P. nanus*, Röm., referred to *Homocrinus*, *P. nettelrothanus*, S. A. Mill., a *Decadocrinid*; BATHER (11) p. 104.
- P. maschatensis*, Carboniferous, Turkestan, fragments only; ROMANOVSKII (223) p. 82; *P. ? smithii*, Gympie Beds, Queensland; ETHERIDGE (76) p. 209 : n. spp.
- †*Proclivocrinus*, Ring., syn. of *Euchirocrinus*; BATHER (11) pp. 56 & 66.
- †*Pycnosaccus scrobiculatus*, His. sp.; BATHER (11) p. 13.
- Rhizocrinus*, compared with *Antedon*; SEELIGER (241) p. 395 : orals, p. 45, proximal columnal, p. 55; AGASSIZ (2) : orientation of stem; BATHER (11) p. 44. *R. rawsoni*, locality corrected; AGASSIZ (2) p. 66.
- †*Rhodocrinus*, stem; AGASSIZ (2) p. 57. *R. sp.*, Carboniferous, Turkestan, columnals only; *R. verus*, Mill., Turkestan, columnals only; ROMANOVSKII (223) p. 84.
- †*R. benedicti*, Keokuk Group, Harrison Co., Ind., MILLER, Pal. Indiana, 1892, p. 15; *R. tuberculatus*, Carboniferous, Turkestan, columnals only, ROMANOVSKII (223) p. 85 : n. spp.
- †*Saccocoma*, Agass., described and discussed, p. 659; *S. pectinata*, Goldf., figured, pl. xxix; *S. tenella*, Goldf., figured, pls. xxix & xxx; JAEKEL (125).
- †*Saccocrinus*, tegmen, p. 43; stem, p. 60; AGASSIZ (2)
- †*S. benedicti*, p. 29, *howardi*, p. 30, Niagara Group, St. Paul, Ind., MILLER, Pal. Indiana, 1892, n. spp.
- †*Scalpellum sulcatum*, Auriv., described by Hisinger as "*Crinoidis columnæ fragmentum*"; BATHER (11) p. 12.

- †*Scaphiocrinus* :—*S. carinatus*, Hall, now first figured ; WHITFIELD (271) p. 31.
- S. arrosus*, Keokuk Group, Indiana, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 39 ; *S. lyoni*, Keokuk Group, Crawfordsville, Ind., p. 45, *maniformis*, Keokuk Group, Washington Co., Ind., p. 46, MILLER, Pal. Indiana, 1892 ; *S. martinensis*, Kaskaskia Group, Indiana, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 38 : n. spp.
- †*Sicyocrinus*, Ang., see *Botryocrinus*.
- †*Solanocrinus costatus*, Goldf., a crown from Swabia ; ENGEL (74) p. xlix.
- †*Steganocrinus benedicti*, Keokuk Group, Canton, Washington Co., Indiana, MILLER, Pal. Indiana, 1892, p. 27, n. sp.
- †*Stemmatocrinus* sp., Gympie Beds, Queensland ; ETHERIDGE (76) p. 208.
- †*Stephanocrinus cornetti*, Niagara Group, Madison, Ind., MILLER, Pal. Indiana, 1892, p. 12, n. sp.
- †*Stortingocrinus*, morphology ; BATHER (11) p. 21.
- †*Streptocrinus*, W. & Sp., discussed and rediagnosed, p. 122 ; *S. crotalurus*, Ang. sp., rediagnosed, morphological description, pp. 123 & 175 ; BATHER (11).
- †*Strotocrinus venustus*, Burlington Group, Iowa, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 26, n. sp.
- †*Stylocrinus*, morphology ; BATHER (11) p. 21.¹
- †*Symbathocrinus*, morphology and systematic position ; BATHER (11) pp. 20-22 & 25.
- Synbathocrinus tennesseënsis*, see *Pisocrinus*.
- †*Talarocrinus trijugis*, St. Louis Group, Illinois, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 45, n. sp.
- †*Taxocrinus*, stem ; AGASSIZ (2) pp. 62 & 64. *T. distensus*, Ang., distinguished from *Cyathocrinus distensus*, pp. 141 & 142 ; *T. ? interradialis*, Ang. sp. (*Myelodactylus* of Angelin), p. 40 ; BATHER (11). *T. juvenis*, Hall, now first figured ; WHITFIELD (271) p. 35. *T. oligoptilus*, Pacht sp., stem ; AGASSIZ (2) p. 58.
- T. colletti*, White (as var. of *T. multibrachiatus*, here raised to specific rank) ; MILLER & GURLEY, Bull. Ill. Mus. iii, p. 49 ; *T. concavus*, Hamilton Group, Callaway Co., Mo., ROWLEY, Amer. Geol. xii, p. 304 ; *T. crawfordsvillensis*, Keokuk Group, Indiana, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 49 : n. spp.
- †*Teleiocrinus agilops*, Hall, now first figured ; WHITFIELD (271) p. 20.
- †*Tetracrinus*, Münst., rediagnosed and described, p. 641 ; *T. moniliformis*, Münst., rediagnosed and described, p. 647 ; JAEKEL, Zeitschr. geol. Ges. xlv.
- †*T. langenhani*, Oxfordian of Hansdorf, near Inowrazlaw, *op. cit.* xlv, p. 648, n. sp.
- †*Thiolliericrinus*, CUÉNOT (58) : ancestor of *Antedon* ; BATHER (10) p. 276.
- †*Thysanocrinus*, colour of fossils ; BATHER (11) p. 151.
- †*Trematocrinus papillatus*, Hall, see under *Ollacrinus*.

- †*Triacrinus*, morphology and systematic position, pp. 21, 22, 25, 26, & 32; *T. depressus*, anal plate, p. 26; BATHER (11). *T. globosus*, Ring., see *Pisocrinus*. *T. pyriformis*, Ring., see *Pisocrinus pyriformis*.
- †*Uintacrinidae*, diagnosed; CLARK (36) p. 21.
- †*Uintacrinus socialis*, Grinn., diagnosed and fully described, with new details; CLARK, (36) p. 21.
- †*Ulocrinus blairi*, p. 57, *U. occidentalis*, p. 58, Coal Measures, Missouri, MILLER & GURLEY, Bull. Ill. Mus. iii : n. spp.
- †*Vasocrinus*, should it supplant *Botryocrinus*?; BATHER (11) pp. 114 & 116.
- †*Zecrinus*, stem; AGASSIZ (2) p. 58. *Z. scoparius*, Hall, now first figured and distinguished from *Z. troostanus*; *Z. troostanus*, M. & W.; WHITFIELD (271) p. 34.
- Z. bellulus*, Kaskaskia Group, Indiana, p. 34, *nitidus*, Kaskaskia Group, Illinois, p. 36, *obesus*, Kaskaskia Group, Virginia, p. 35, MILLER & GURLEY, Bull. Ill. Mus. iii, n. spp.

(G.)—†CYSTIDEA.

- †*Ethocystites*, n. g., with type *A. sculptus*, n. sp., Niagara Group, St. Paul, Ind.; MILLER, Pal. Indiana, 1892, p. 9.
- †*Agelacrinus blairi*, Keokuk Group, Boonville, Mo., MILLER, Pal. Indiana, 1892, p. 12, n. sp.
- †*Caryocystis granatum*, Wahlenb. sp.; BATHER (11) p. 11. *C. testudinaria*, Buch, non His.; *op. cit.* p. 12.
- †*Dendrocystites*, relations to later Echinoderms; SEELIGER (241) pp. 410 & 418.
- †*Echinosphera aurantium*, Gyll. sp.; BATHER (11) p. 12.
- †*Holocystis amplus*, Niagara Group, Madison, Ind., MILLER, Pal. Indiana, 1892, p. 8.
- †*Sphaeronis pomum*, Gyll. sp.; BATHER (11) p. 13.
- †*Sphaeronites granatum*, Wahlenb., see *Caryocystis*. *S. testudinarius*, His., referred to *Caryocystis granatum*; *op. cit.* p. 11.
- †*Stribalocystites gorbyi*, Niagara Group, St. Paul, Ind., MILLER, Pal. Indiana, 1892, p. 11, n. sp.

(H.)—†BLASTOIDEA.

- †*Granatocrinus roemeri*, G. sp.; ROWLEY (227) p. 50.
- †*G. mutabilis*, Chouteau Limestone, Curryville, Mo., ROWLEY, Amer. Geol. xii, p. 306; *G. sphaeroidalis*, Kaskaskia Group, Kentucky, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 65; *G. ? wachsmuthi*, Gympie Beds, Queensland, ETHERIDGE (76) p. 211; *G. winslowi*, Burlington Group, Illinois, MILLER & GURLEY, Bull. Ill. Mus. iii, p. 66 : n. spp.

- Mesoblastus* ? *australis*, Gympie Beds, Queensland, ETHERIDGE (76) p. 210
n. sp.
- Nucleocrinus greenei*, p. 62, *N. venustus*, p. 63, Upper Helderberg Group
Kentucky and Ohio, MILLER & GURLEY, Bull. Ill. Mus. iii, n. spp.
- Orophocrinus conicus*, W. & Sp., referred to *O. whitei*, Hall sp., p. 37;
O. whitei, Hall, now first figured, p. 36 ; WHITFIELD (271).
- Tricoelocrinus* ? *carpenteri*, Gympie Beds, Queensland, ETHERIDGE (76)
p. 212, n. sp.

XV. VERMES.

BY

FLORENCE BUCHANAN, B.Sc.

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5. —. Vergleich der Planktonproduction in verschiedenen Holsteinischen Seen. Ver. Ges. Freiburg, viii, pp. 70-88.
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I.—BIOLOGICAL.

I. GENERAL.

SPENGLER'S monograph on the *Enteropneusta* (231) deals with the morphology and ontogeny of the group.

Anatomy and histology of *Sipunculus indicus*; FISCHER (87), SHIPLEY (222): of *Ophryotrocha puerilis*; KORSCHOLT (136), BRAEM (39): of *Syllids*; MALAQUIN (162). Preliminary account of a new and aberrant *Sabellid*; GIARD (94). Anatomy of *Enchytraeids*; HESSE (116): of new genera and species of *Oligochaeta*; BEDDARD (7, 8), EISEN (83, 84), and BENHAM (11, 12): of *Sutroa*; BEDDARD (9): of Leeches; LEUCKART (143), pp. 535-73.

Anatomy and histology of Scandinavian Cestodes; LÖNNBERG (153): of *Tenia ursina*, n. sp.; V. LINSTOW (149): of *Caryophylleus mutabilis*; WILL (263): of Trematodes (3 species of *Monostomum*); WALTER (253): of *Distomum clavigerum*; NOACK (186). Anatomy and physiology of *Bilharzia*; BROCK (47). Anatomy of Exotic Nemertines; BÜRGER (55). Anatomy and histology of *Emea lacustris*; DU PLESSIS (196). Anatomy of Turbellarians of Black Sea; PÉREYASLAWZEWA (193): of a curious Turbellarian which cannot be classed decidedly with either Dendrocœls or Rhabdocœls; CHAPUIS (66).

Articles on *Eustrongylus* and *Filaria*; BLANCHARD (31). Anatomy of a *Trichosomum*; REIBISCH (203). Comparative anatomy of *Mermis* and *Gordius*; VILLOT (250).

Summary of current knowledge of the *Philodinida*; JANSEN, O. (132): of the *Gasterotricha*; WAGNER (251). Anatomy of *Cypricola parasitica*, n. sp.; DADAY (75): of other new Rotifers; BRYCE (48, 49, 50), WIERZEJSKI (260), WESTERN (257), ROUSSELET (211). List of new Rotifers since 1889; ROUSSELET (212).

2. INTEGUMENT.

Of *Enteropneusta*; SPENGL (231), pp. 577-588.

Of *Sipunculus indicus*; FISCHER (87). Histology of cutis and epidermis in *Lumbricus*; CERFONTAINE (64): of the Clitellum; COLE (70). Development of Setæ in *Syllids*; MALAQUIN (162).

Cuticle, Stäbchen and subcutaneous layer of cells in Cestodes; WILL (263). Cutaneous investment of Trematodes; MONTICELLI (172), appendix; WALTER (253), LOOSS (156). Integument and stinging organs of Turbellarians; PÉREYASLAWZEWA (193), pp. 1-31. Mechanism of the stinging cells; PENARD (192). Epidermis of a Turbellarian not ciliated; CHAPUIS (66).

Cuticle of Nematodes; COBB (67): of *Gordius*; JANDA (130), and CAMERANO (61): of *Mermis* and *Gordius* compared; VILLOT (250).

3. MUSCULAR SYSTEM.

Of *Enteropneusta*; SPENGL (231), pp. 457, 515, 555.

Histology of circular, longitudinal, aciform and setal-sac muscles of *Lumbricus terrestris*; CERFONTAINE (64). Muscles of *Lumbricus* and *Hirudo*; APÁTHY (3): those of *Enchrytraeids* shown to be cells of the Nematoid type; HESSE (116).

Muscles of Cestodes; WILL (263): of Nemertines; BÜRGER (55, 57): of Turbellarians; PÉREYASLAWZEWA, pp. 95-116. A sucker-like muscular mass in a Turbellarian; CHAPUIS (66).

Muscles of *Ascaris*; APÁTHY (3), compared with those of *Lumbricus* and *Hirudo*. Strength and resistance of muscles of *Gordius*; CAMERANO (59).

4. DIGESTIVE SYSTEM.

Alimentary canal and gill slits of *Enteropneusta*; SPENGL (231), pp. 453-512, 541-576.

"Rectal diverticula" of *Sipunculus* shown not to communicate with the lumen of the intestine; SHIPLEY (222). Development of jaws in *Ophryotrocha puerilis*; BONNIER, BRAEM, KORSCHLITZ. Jaws of Leeches; CROCKEWITZ (74). Alimentary canal of *Syllids* and the development of the permanent pharynx from the larval one; MALAQUIN

(162, 161). A *Sabellid* with anus close behind the mouth on the ventral surface; GIARD (94).

Alimentary canal and salivary glands (pp. 142-148) and pharynx (pp. 74-78) of Turbellarians; PÉREYASLAWZEWA.

Organ embedded in oesophagus and opening into dorsal wall of pharynx of Nematodes; HAMANN (109). ["Pharyngeal glands," see under Organs of Uncertain Function.]

Presence of anus in *Notops pygmaeus* and description of mastax; ROUSSELET (211). Substitution of the term "pharyngeal loop" for "oesophagus" in macrotrachelous *Callidinæ*; BRYCE (49).

5. BODY CAVITY AND ITS CONTENTS, PARENCHYME, &c.

Coelom of *Enteropneusta*; SPENGLER (231), pp. 456, 520-529, 533, 534, & 659.

Histology of Coelomic Epithelium of *Lumbricus*; CERFONTAINE (64): of *Ophelia*; SCHAEPPi (217). Coelomic corpuscles of *Ophelia*; SCHAEPPi (217): their formation in *Micronereis*; RACOVITZA (199).

Parenchyme of *Caryophyllæus* and other Cestodes; WILL (263): of Trematodes; WALTER (253), LOOSS (156), MONTICELLI (172). Black pigment in Parenchyme lacunæ of a *Distomum*; BILLET (19). Presence of ganglion cells in Parenchyme of *Distomum*; SCHUBERG (219) [see also under Nervous System]. Parenchyme, pp. 92-95, body cavity and its liquid, pp. 116-123, of Turbellarians; PÉREYASLAWZEWA (193). Division of body cavity in an *Asplanchna*; ROUSSELET (211).

6. EXCRETORY SYSTEM.

Nephridia and Chloragogen cells of *Ophelia*; SCHAEPPi (217): of *Nepheleis*; GRAF (101). Excretion of *Syllids*; MALAQUIN (161). Nephridia of *Nereis*; GOODRICH (99): of young *Arenicola*; BENHAM (13): of *Enchytraëids*; BOLSIVS (33): of a *Naid*; BENHAM (12): of *Sutroa*; BEDDARD (9): of Leeches; BOURNE (38), LEUCKART (144), and GRAF (101). Excretory nature (?) of "branchiæ" in Polychæts; BUCHANAN (52).

Excretory system of *Caryophyllæus*; WILL (263): of *Tænia*s and relation to other systems; STILES (233). Structure of end cells of excretory apparatus in a *Distomum*; SCHUBERG (218). Excretory system and apertures in *Bilharzia*; BROCK (47).

Contractile vesicle of Rotifers represented by a diverticulum full of Bacteria in a new *Floscularia*; WIERZEJSKI (260).

7. VASCULAR SYSTEM.

Of *Enteropneusta*; SPENGLER, (231) pp. 614-647.

Of *Ophelia*; SCHAEPPi (217): of young *Arenicola*; BENHAM (13): of *Enchytraëids*; HESSE (116). Arterial and venous blood of *Nepheleis*; GRAF (101).

8. RESPIRATORY ORGANS.

Gill slits of *Enteropneusta*; SPENGLER, (231) pp. 548-562.

Branchiæ of Polychæts, their nature, and functions other than respiratory in certain species; BUCHANAN, (52) pp. 443-448.

9. ORGANS OF UNCERTAIN FUNCTION.

"Rectal diverticula" of *Sipunculus* shown to be in connection with a system of lacunæ in the walls of the rectum; SHIPLEY (222). Branchia-like structures on a Polynoid; BUCHANAN (52). "Dorsal ciliated organ," probably the morphological equivalent of a gonaduct; GOODRICH (99). "Septal glands" of Enchytræids shown to secrete an adhesive material and to open eventually into the pharynx; HESSE (116). Glands of post-genital segments in Enchytræids; HESSE (116).

Laurer's canal of endoparasitic Trematodes; GOTO (100), LOOSS (155), both agree in homologising it with the vitello-intestinal canal of the ectoparasitic forms; but while GOTO homologises it also with the blind sheaths of *Amphilinea*, and maintains that it is unrepresented in multi-segmented Cestodes, LOOSS regards it as equivalent to the uterus of Cestodes. GOTO would homologise the uterus of Cestodes with that of *Amphilinea*, and with the vagina of ectoparasitic and the sheath of endoparasitic Trematodes. BILLET (19) describes the canal of Laurer opening to the exterior in *Distomum sinense*. A pair of spherical, rhythmically contracting organs described in *Bilharzia*, lying in the excretory system; BROCK (47).

Organs of uncertain function in Nematodes, pharyngeal glands, &c.; HAMANN (109): dorsal organ of *Diplogaster*; COBB (67).

10. NERVOUS SYSTEM.

Nervous system of *Enteropneusta*; SPENGLER, (231) pp. 590-612: of *Syllids*; MALAQUIN (162).

Sensory nerves of Polychæts; RETZIUS (215). Vesicular tissue of nerve-cord of *Sigalion* and head- and ventral-shield of *Lopadorhynchus* compared to notochord of *Amphioxus*; LWOFF (159).

Primitive character of nervous system of *Caryophyllæus*; WILL (263). Demonstration of peripheral ganglion cells by methylene-blue method in *Distomum* (2 spp.); BRANDES (40), SCHUBERG (218): and of the connection of their processes with muscle cells; BRANDES. SCHUBERG describes similar ganglion cells in the parenchyme. WALTER (253) regards certain large cells often thought to be ganglionic in the parenchyme as really only stages in development of the parenchyme. Nervous system of Nemertines; BÜRGER (55, 57): of Turbellarians; PÉREYASLAWZEWA, (193) pp. 37-56.

11. SENSE ORGANS.

Sensory nerve endings (spindle-shaped cells over whole surface of body, in mouth-cavity and pharynx, and dendritic cells at the base of the setæ), in *Nereis*, *Nephtys*, and *Lepidonotus*; RETZIUS (205).

Sense-organs of Nemertines; BÜRGER (57). Stiff bundles of setæ supplied with nerves in a Turbellarian; CHAPUIS (66).

Touch-organs in Turbellarians; PÉREYASLAWZEWA, (193) pp. 66-74.

Eyes: of *Alciopids*, embryology and histology; BÉRANECK (14): of *Clepsine*, showing their development from sensillæ; WHITMAN (259). Eyes of Turbellarians; PÉREYASLAWZEWA, (193) pp. 78-92.

Auditory organs: of *Alciopids*, showing their derivation from dorsal cirri; BÉRANECK (15). Otoliths of Turbellarians; PÉREYASLAWZEWA (193) pp. 56-66.

Nackenorgane: of *Syllids*; MALAQUIN (162). Lateral organs of a *Cerebratulus* unconnected with the ganglion; BÜRGER (55). Cephalic clefts of Turbellarians; PÉREYASLAWZEWA, (193) pp. 31-34.

Doubtful sense-organs, in brain of *Sipunculus*; SHIPLEY (218).

12. GENITAL SYSTEM.

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Hermaphrodite gland in an Oligochæt on one side, and other variations in the arrangement of Gonads; WOODWARD (267). Testes of *Sutroa*; BEDDARD (9).

Oogenesis: in *Ophryotrocha*; KORSCHULT (136), BRAEM (39): in *Micronereis*; RACOVITZA (199).

Spermatogenesis: in *Ophryotrocha*; KORSCHULT (136), BRAEM (39).

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Receptacle seminalis: formed by the modification of a dorsal cirrus in *Asterope candida*; APSTEIN (4).

Evacuation of eggs in *Micronereis*; RACOVITZA (199).

Genital system: of *Tænia*s; STILES (233): of *Caryophylleus*; WILL (263): of *Davainea* (ovary functioning as uterus), DIAMARE (80): of another species of *Davainea* (ovary functioning as shell gland); v. LINSTOW (149). [For canal of Laurer of Trematodes, see under Organs of Uncertain Function.] Eggs of *Geonemerles* and their mode of exit: DENDY (77). Reproductive organs of Turbellarians; PÉREYASLAWZEWA, (193) pp. 145-164. Spermatogenesis in Turbellarians; REPIACHOFF (204).

Development of germ-cells of *Ascaris megalcephala*, stages hitherto overlooked; v. WASIELEWSKI (255). Behaviour of chromatin in oogenesis and fertilization; ZOJA (269). Spermatogenesis, BRAUER (41).

Discovery of winter eggs of several species of *Callidina*; O. JANSON (132).

13. REPRODUCTION.

Sexual and asexual : of *Syllids* ; MALAQUIN (162) : of *Syllis ramosa* ; CORI (73) : of *Ctenodrilus* ; MONTICELLI (174). Hermaphroditism of *Ophryotrocha* ; KORSCHOLT (136), BRAEM (39). Description of male of *Micronereis variegata* ; RACOVITZA (199).

Neotenia in *Urogonimus cercatus* and *Archigetes sieboldi*, and the distinction of this process from Pædogogenesis ; MONTICELLI (172). Reproduction of *Geonemertes* ; DENDY (77). Asexual reproduction of Turbellarians ; PÉREYASLAWZEWA (193).

Discovery and description of male of *Filaria* in the Frog ; NABIAS & SABRZÈS (182) : of *Stephanoceros eichornii* ; WESTERN (257).

14. DEVELOPMENT, LIFE HISTORY, &c.

Development of different species of *Enteropneusta* ; SPENGLER, (231) pp. 363-446.

Cleavage and formation of germ-layers in Chordates compared with that in Annelids ; WILSON (266). Development of *Syllids* ; MALAQUIN (162) : of *Ophryotrocha* ; KORSCHOLT (136), BRAEM (39), BONNIER (34). A polytroch larva of a new genus of Polychæt ; KORSCHOLT (136). Post-larval stage of *Arenicola marina* ; BENHAM (13). Relation of regeneration to ontogeny in freshwater Oligochæts ; WAGNER (252).

Development and life-history of Tæniae ; v. LINSTOW (149) : of *Bilharzia* ; SONSINO (226, 227), BROCK (47), MOTY (177). Variations in form of embryo according to quality of water in which it is placed ; BROCK (47). Life-history of *Distomum hepaticum* ; LUTZ (158) : of *D. sinense* ; BILLET (19). Long cilia to embryo of *D. ovocaudatum* ; SONSINO (228, 225). Different forms, one moveable and two immoveable (of which one encapsuled), of *Tetracotyle typica* ; v. LINSTOW (148). Development of Nemertines, a critical revision ; BÜRGER (56). Introduction to comparative embryology of Turbellarians ; HALLEZ (107). Development of Turbellarians of Black Sea ; PÉREYASLAWZEWA, (193) pp. 164-187.

Formation of germinal layers in Nematodes ; JAMMES (129). Development of *Pseudalius inflexus* ; LIST (151) : of *Alantonema sylvaticum* (and life-history) ; v. LINSTOW (146) : of male and female of *Tylenchus radicola* ; COBB (67).

15. VARIATIONS IN SYMMETRY, NUMBER, COLOUR, &c.

Variations in the constitution of the somite in Leeches ; BLANCHARD (24 IX).

Spiral segmentation or intercalation of half segments : in Polychæts ; BUCHANAN (51) : in Leeches ; BLANCHARD (28, 24 XI, 26) : in Cestodes ; MONTICELLI (170), BARROIS (6), AHLBORN (1), BORK (36), STILES & HASSALL (234).

Other cases of asymmetry: in eyes of Leeches; BLANCHARD (22): in gonads of Oligochæts; WOODWARD (267): in branchiæ of a *Chloëia*, and tentacular cirri of a *Eunice*; BUCHANAN, (53) p. 175.

Bifurcation: of posterior portion of a *Lumbriculus*; CORI (73): of *Dasychone*; BUCHANAN (53); of a primary branchial ray of a *Branchionoma*; LO BIANCO (152). Double Tæniæ, resulting in triradiate forms; BARROIS (6), KÜCHEL (138). Bifurcate (or trifurcate) specimens of *T. saginata*; AHLBORN (1): of *Chapmannia tauricollis*; MONTICELLI (170).

Supernumerary gonads in Oligochæts; WOODWARD (267). A supernumerary cirrus on one side in a *Eunice*, and branchiæ in a *Chloëia*; BUCHANAN, (51) p. 175.

Variation in number: of anal appendages in *Polydora*; MESNIL (168). Individual variation in number of eyes of *Nepheleis*; BLANCHARD (24 xv): of hooks in *Tenia solium*, and their absence in individuals of *Hymenolepis acuta*; PARONA & PERUGIA (190 ii).

Colour: in Tæniæ, the cause of the black colour; NABIAS (181). Black pigment in a *Distomum*; BILLET (19). Colour variation and its significance in Nemeritines; RICHES (206): in *Cycloporus papillosus*; GAMBLE (93): in *Geoplana fletcheri*; DENDY (78).

Variations in form: of *Bilharzia* embryos; BROCK (47); of copulatory organ of *Promesostoma*; GAMBLE (93).

Individual variations: in different species of *Tetrastemma*; VERRILL (247), and RICHES (206): in *Eunice philocorallia*, n. sp.; BUCHANAN (53).

16. PHYSIOLOGY.

Absorption and excretion in *Syllids*; MALAQUIN (161). Chlorogogone of *Ophelia*; SCHAEFFI (217). Function of Clitellum of *Lumbricus*; COLE (70).

Physiology of *Bilharzia*; BROCK (47).

17. HABITS.

The two species of *Polydora* living on Oysters; CARAZZI (62): Polychæts of the Schleswig Holstein Oyster banks; MÖBIUS (169). On the homes and tubes of marine Annelids; MCINTOSH (160). Habits, colouring, and tubes of tubicolous Annelids of Gulf of Naples; LO BIANCO (152). *Eunice* inhabiting *Lophohelia*; BUCHANAN (53), MARENZELLER (165). *Ctenodrilus* in Holothurians; MONTICELLI (171). Leech-like parasites in American Cray-fish; MOORE, J. P. (176). Phosphorescent Earthworms of Berlin; MATZDORF (166). Habits of Earthworms; ROSA (207), SMITH (223). Prevention of blood coagulation by Leeches; CROCKEWIT (74). Tracks made by *Clepsine* in sand; WELTNER (256).

Longevity of adult *Bilharzia*; MOTY (177). Habits of British Nemeritines, and their relations to their surroundings; RICHES (206). Mode of

life of *Emea lacustris*; DU PLESSIS (196). Habits of British Turbellarians; GAMBLE (91, 93). Hardiness and scavenger habits of a Planarian; RASPAIL (201).

Habits of Nematodes associated with different plants; COBB (67): sugar-cane in particular; COBB (69). A Nematode embedded in the shell of a hen's egg; PAVESI (191). Polyhelminthosis of an *Echinorhynchus* in a Dolphin; PARONA (189).

Construction of lorica of *Brachionus*; THORPE (241): of tube of *Melicerta*; HELM (114). A free-swimming *Floscularia*; WIERZEJSKI (260). Seasonal appearance of Rotifers and their eggs in the Rhine; LAUTERBORN (140): in the Holstein Lakes; APSTEIN (5). List of symbiotic and parasitic Rotifers; DADAY (75).

18. THEIR PARASITES, COMMENSALS, &C.

Parasites (Protozoa, a young Distomum, a Nematode, and Copepods) of *Enteropneusta*; SPENGLER, (231) pp. 755 & 756. Gregarines of Polychaets; LÉGER (142). A proliferating cystic parasite of Earthworms; HASWELL & HILL (112). *Epistylis* commensal on neck gland of Holstein, Spanish, and Syrian, but not of French, *Glossiphonia bioculata*; BLANCHARD (22). Gregarines (encysted) in parenchyme of an *Amphiporus*; BÜRGER (55).

19. CLASSIFICATION.

SPENGLER (231) concludes that the Enteropneusta have no special affinities with the Chordata, the Nemertines, or Echinoderms, nor with the Annelids, except that the ancestors of both groups have to be sought in the Platyhelminthes. He accepts as the nearest allies of the Enteropneusta, *Cephalodiscus*, *Phoronis*, &c., but does not discuss the relationship of these to other animals.

The classification of the *Eunicida* as affected by the development of *Ophryotrocha*; BONNIER (34): of *Polydora* and its allies; MESNIL (168), CARAZZI (62): of the terrestrial *Oligochaeta*; EISEN (82, 83), ROSA (207, 208), BEDDARD (7, 8). Proposal to remove *Ctenodrilus* from the Chaetopods, and to regard it either as a primitive or a much degenerate Annelid; MONTICELLI (174).

The primitive nature of *Caryophyllus*; WILL (263). Classification of Nemertines; BÜRGER (57): of Turbellarians; HALLEZ (106). The accelism of the so-called "accelous" Turbellarians shown by development not to be a primitive characteristic, and the name *Pseudoacela* proposed for the group; PÉREYASLAWZEWA (193). Classification of Polyclads; BERGENDAL (17).

Classification of Rotifers; DADAY (75): of *Philodinida*; O. JANSON (132). Relationship of *Gastrotricha* to the *Rotifera*; WAGNER (251).

A new Mesozoon, and its relation to *Trichoplax*; MONTICELLI (173). The *Mesozoa* regarded as degenerate *Metazoa*, and the *Ctenophora* as primitive; THIELE (238).

20. METHODS AND EXPERIMENTAL OBSERVATIONS.

For staining sensory nervous system of Polychæts; RETZIUS (205). For preserving and staining *Polydora*; CARAZZI (62). For studying excretion in *Syllids*; MALAQUIN (161); in *Nepheleis*; GRAF (101). The advantages of hot and cold corrosive sublimate for preserving the muscles of *Ascaris* and *Hirudo*, respectively; APÁTHY (3).

The different effects of different preserving fluids on Cestodes; STILES & HASSALL, (234) p. 98.

For preserving and studying *Caryophyllæus*; WILL (263). Methylene-blue treatment of *Distomum*; BRANDES (40), SCHUBERG (218).

For studying anatomy of Nematodes; REIBISCH (203); germ cells of *Ascaris*; WASIELEWSKI (255), BRAUER (41).

For preserving Rotifers; ROUSSELET (213).

Experiments in producing black Tæniæ; NABIAS (181), cf. BILLET (19); in producing changes of form of *Bilharzia* embryos; BROCK (47); on feeding a Planarian; RASPAIL (201).

Effects of lowering the temperature below zero on the ripening and fertilization of the eggs of *Ascaris*; SALA (215). On the vital resistance of *Anguillula aceti* to different physical and chemical agencies; PALLECHI (188). Resistance of muscles of *Gordius*; CAMERANO (59).

Introduction of *Filaria* of Rabbit into Ferret; RAILLIET (200); of *Trichosoma* into Mouse; PARONA & PERUGIA (190 III).

21. MEDICAL NOTES.

Occurrence and effects of Cestodes, Trematodes, and Nematodes in Man; MÜHLMANN (179), LEUCKART (143). Worms producing an appearance of tuberculosis in beef and mutton; GILES (96). Diseases of domestic animals of Japan due to worms; JANSON (133).

Statistics of *Echinococci* of muscle; MÜLLER (180); and of Nematodes; HEISIG (113). Effects of *Distoma sinense*; MOTY (178). Longevity of *Bilharzia*; MOTY (177).

History of *Trichina* in Man; CERFONTAINE (63). Detection of *Trichina spiralis*; SHERMAN (221). Its introduction from a Rabbit into a Ferret; RAILLIET (200). Reflex meningitis caused by *Acaris lumbricoides*; BUGLIONI (54). Ecdysis of *Filaria sanguinis hominis* produced by viscosity of blood or, experimentally, by chilling the blood; MANSON (164). Its occurrence by day as much as by night; LAVARIN (141). Art. *Filariosis* in Grande Encyclopédie; BLANCHARD (31).

22. DISTRIBUTION OF PARASITIC FORMS ACCORDING TO THEIR HOSTS.

a. General.

PARONA (189) discusses parasitism in relation to hosts in general, and introduces the new terms "homopolyhelminthisis," for where there are many worms all of one species in one host, and "allopolyhelminthisis," where there are several different species.

Summary of recent work on animal parasites (Cestodes, Trematodes, Nematodes, and *Acanthocephala*) ; BRAUN (42). Enumeration of parasites (same groups) in Mammals, Birds, Reptiles, Amphibians, and Fish of Istria and the Mediterranean ; STROSSICH (235).

Synoptic tables for the identification of Tæniæ of Man and the domestic animals ; GALLI-VALERIO (90). Habitats of parasitic Trematodes of Man and the lower animals ; BRAUN (43). Cestodes and Trematodes of the Zoological Museum at Palermo, and their hosts ; MONTICELLI (170).

Nematodes parasitic in the alimentary canal of various fish, and fish-eating birds and mammals ; JÄGERSKIÖLD (128). Worms of the blood ; BLANCHARD (25).

b. *Man.*

Trematodes and Leeches ; LEUCKART (143). *Echinococci* in Man ; SANGALLI (216). *Bilharzia* ; SONSINO (227), and LEUCKART, (143) p. 519.

Statistical distribution of Nematodes among 230 people ; HEISIG (113). Embryos of *Filaria sanguinis* occurring both by day and night ; LAVARIN (141).

c. *Other Mammals.*

Anthropoid Apes : Cestodes compared with those of man and of the lower monkeys ; BLANCHARD (29). Cattle and sheep : Cestodes ; STILES & HASSALL (234) ; Cestode embryos simulating the appearance of Tuberculosis ; GILES (26). Sheep and rabbits : Cestodes and Nematodes, and their effect on the infected animal ; HUTCHINSON (123). Horse : Eggs of *Distomum* in lung ; WILLACH (264) : in liver ; RATZ (202). Abyssinian antelope : *Strongylus filaria* ; SETTI (220). Hungarian pig : *Cheiracanthus hispidus* ; v. LINSTOW (147). *Atherura armata* : *Oxyuris flagelloides*, n. sp. ; JÄGERSKIÖLD (128). Hyrax : Cestodes ; SETTI (220). Bear : Cestodes ; v. LINSTOW (149). Wolf : *Dochmius trigonocephalus* ; POSITANO-SPADA (197). *Herpestes* : *Cysticercus herpestes* and *Ascaris canis* ; SETTI (220). Cat : 2 species of *Dipylidium* ; DIAMARE (79) : an *Echinococcus* ; NEUMANN, G. (185) : 4 Cestodes, 3 Distomas, and an *Ascaris* ; BRAUN (44). Whales : 2 Cestodes ; LÖNNBERG (153 II). Bats : Cestodes (one in a species said to be frugivorous) ; PARONA & PERUGIA (190 II) : Distomas ; SONSINO (229), v. LINSTOW (148). Dolphin : an *Echinorhynchus* ; PARONA (189). Rabbit : a *Cœnurus* in the pericardium ; CONDORELLI-MANGERI (72). Mouse : a *Trichosoma* in liver ; PARONA & PERUGIA (190 III). Ferret : artificial introduction of *Trichina spiralis* of Rabbit ; RAILLIET (200). Otter : *Filaroides mustelærum* ; NEUMANN, R. (184). *Echidna* : a new species of *Tænia* ; THOMPSON (239).

d. *Birds.*

Angiostomum in lung of a Bird; STOSSICH (236). *Chapmannia tauricollis* in *Rhea*; MONTICELLI (170). *Distomum* in *Podiceps minor*; v. LINSTOW (148). In *Turdus merula* (Cestodes); v. LINSTOW (148).

Filarias of Duck; HAMANN (108). *Trichosomum* in œsophageal epithelium of a pheasant; REIBISCH (203). *Heterakis* embedded in shell of hen's egg; PAVESI (191). Echinorhynchi of Birds; CONDORELLI-FRANCAVIGLIA (71); a new species in *Mergus serrator*; OLSSON (187). Cysts of *E. magretti* outside trachea of *Lamprotornis chalybea*; SETTI (220).

e. *Reptiles.*

Angiostomum in lung of a reptile; STOSSICH (236). *Distomum* of Snakes; SONSINO (229): of Chameleon (3 unnamed species), and of *Chelone* (1 species); SONSINO (224). *Oxyuris paronai*, n. sp. of *Macrosclincus coctei*, Cape Verd Is.; v. LINSTOW (147).

f. *Amphibians.*

Angiostomum in 7 species of Amphibians; STOSSICH (236). *Distomum* in different parts of Frog; SONSINO (224).

Filaria of blood of Frog; NABIAS & SABRAZÈS (182).

g. *Fish.*

In Scandinavian freshwater fish: (Leeches, Trematodes, Cestodes, and *Acanthocephala*, and several larval forms); OLSSON (187). From Yellowstone National Park: Fish Entozoa; LINTON (150). In *Orthogoriscus mola* (3 species of *Distomum*); MONTICELLI (172). In *Lichia amia* (a new species of *Distomum*); STOSSICH (235). In *Lota vulgaris* of Germany (hydatids of *Bothriocephalus latus*; BRAUN (45). In *Raniceps niger*, (*Bothriocephalus neglectus*, n. sp.); LÖNNBERG (154). In *Thymallus vulgaris* (2 species of *Filaria* and an *Echinorhynchus*); v. LINSTOW (148): a Trematode; OLSSON (187). In *Ranzania truncata* (a new species of *Agamonema*); STOSSICH (235). In *Tetrodon stellatus* (a new species of *Ichthyonema*); JÄGERSKIÖLD (128). In *Leuciscus atrarius* (cysts of a *Distomum* sp.?) LINTON (150) p. 553. In a *Torpedo* (a Cestode); MONTICELLI (170). In a Selachian from Java (a new species of *Onchobothrium*); LÖNNBERG (154). In *Lamna cornubica* (2 Cestodes); LÖNNBERG (153 II). In *Coryphæna* from Hawai (a *Distomum*); LUTZ (157). In an unknown fish (*Bothriocephalus pellocephalus*, n. sp.); MONTICELLI (150). Fishes as intermediate hosts of Distomas of Cats; BRAUN (44).

h. *Molluscs.*

The 2 species of *Polydora* commensal on Oysters, and their effects on the Oysters ; CARAZZI (62).

Bucephalus in *Cardium* and *Mactra* ; HUET (122). Redia and Cercaria of *Distoma* in *Melania* ; LUTZ (157), BILLET (19).

i. *Crustaceans.*

Branchiobdella, or allied genus, ectoparasitic on American Crayfish ; MOORE, J. P. (176).

Cestode in liver of *Hyas aranea* ; VAULLEGEARD (246). Cysticercus of *T. microsoma* in *Cyclops agilis* ; ROSSETER (210).

Daphnia pulex as intermediate host of *Filaria* of Duck ; HAMANN (108).

Palæmonetes as a host for *Nectonema agile* ; WARD (254).

A Rotifer ectoparasitic on *Cypris incongruens* ; DADAY (75).

j. *Insects.*

A tailed cysticercoid of *Tenia serpentulus* in *Geotrupes silvaticus* ; v. LINSTOW (149). Larvæ of *Distomum endolobium* found in larva of *Anabolia*, *Ephemera*, and *Chloëon* (also in adult *Ephemera*) ; v. LINSTOW (148).

Nematodes of pharyngeal glands of Ants ; JANET (131). *Allantonema* in *Geotrupes* ; v. LINSTOW (146). *Asconema* in Cecidomyid Fly ; GIARD (95). A *Mermis* in pharyngeal gland of *Lasius flavus* ; JANET (131). A *Gordius* in *Phyllodromia* ; CAMERANO (61) : in *Mantis* ; CAMERANO (60) : in *Æthiomerus adelphus*, CAMERANO (60).

k. *Vermes.*

Young *Distoma* in proboscis and collar cavity of a *Balanoglossus* ; SPENGLER (231).

A proliferating cystic parasite in the Earthworm ; HASWELL & HILL (112).

l. *Echinoderms.*

2 Annelids, a new species of Rhabdocœl, and a Nematode in Holothurians of Naples ; MONTICELLI (171).

m. *Cœlenterata.*

A *Distomum* in *Beroë ovata* ; MONTICELLI (172).

n. *Plants.*

Plant diseases caused by *Aphalenchus* ; BOS (37). Nematode worms of banana, celery, lettuce, &c. ; COBB (67) : of sugar cane ; COBB (69).

II.—FAUNISTIC.

1. MARINE FORMS.

a. *Arctic Ocean.*

[Nothing.]

b. *Atlantic Ocean.*

Baltic: Turbellarians of E. Baltic (2 new species); BÖHMIG (32): of Swedish coast (2 new species and 1 new genus); BERGENDAL (16, 17).

North Sea.—Firth of Forth: *Lineus marinus*, Mont., and *Ammotrypane aulogaster*, Rthk.; SCOTT (219). *Brachionus tridens*, n. sp., in salt and brackish water, Scotland; HOOD (119). Free living Nematodes of North Sea and English Channel; DE MAN (163). Animals living on Schleswig Holstein oyster banks (11 Polychæts and a *Sagitta*); on Heligoland oyster banks (9 Polychæts, all different but one); MÖBIUS (169).

English Channel: Boulonnaise coast, *Syllideæ*; MALAQUIN (162): *Ophryotrocha*; BONNIER (34). Plymouth: 33 species of Nemertines, 4 new and 4 others new to Britain; RICHES (206): 56 species of Turbellarians, 4 new and 23 others new to Britain; GAMBLE (91, 92). Falmouth: Nematodes, including 13 species belonging to 12 genera, 9 species and 3 genera new; DE MAN (163).

Irish Sea: 15 species of Port Erin Nemertines; VANSTONE & BEAUMONT (245). A *Dinophilus*, *Spadella*, and *Myzostoma*; HERDMAN (115). Turbellarians of L. M. B. C. District, 27 species, 5 new to Britain (12 species the same as at Plymouth); GAMBLE (91, 93).

West Coast of Ireland: Polychæts of deep sea, including 1 new species and 1 new to Atlantic; BUCHANAN (53). *Notholca hoodi*, n. sp., at Westport; WESTERN (257).

Mediterranean: *Enteropneusta*; SPENGLER (231). Geographical distribution of Polychæts in Mediterranean, according to soil, depth, &c., including 3 new species and several others new to the Mediterranean or to the Bay of Naples; LO BIANCO (152). Polychæts of East Mediterranean in deep water, including 3 new species, 3 new to Mediterranean, and 12 species of Serpulids; v. MARENZELLER (165). 6 species of *Polydora*, CARAZZI (62); *Alciopids*, AFSTEIN (4). Bay of Naples: Free-living Nematodes, including 8 new species; COBB (68) pp. 390, 392, 399, 411, 416, 419: 2 new littoral species of Oligochæts (1 new genus); HESSE (116): Annelids, a Rhabdocæl and a Nematode in Holothurians; MONTICELLI (171): parasites in fish of Mediterranean; STOSSICH (235): a new Mesozoon; MONTICELLI (173). Gulf of Genoa: *Echinorhynchus* in a Dolphin; PARONA (189): a *Distomum* in *Beroë ovata*; MONTICELLI (172).

Black Sea: 46 species belonging to 16 genera, of Turbellarians, including 19 new species (and 3 new varieties) belonging to 10 genera, of which one (*Darwinia*) is new; PÉREYASLAWZEWA (193).

Gulf Stream : 2 remarkable pelagic Nemertines ; VERRILL (247).

E. coast of North America.—Off Cape Breton I. and Nova Scotia, a new species of *Balanoglossus* ; SPENGL (231) p. 297. Off coast of New England : Nemertines ; GIRARD (97) p. 244 ; VERRILL (247) (several new species) ; *Dinophilus* (2 new species) ; VERRILL (248) : Turbellarians ; GIRARD (97) pp. 188 & 223 ; VERRILL (249) (several new species).

Bahamas : a new species of *Ptychodera* (Enteropneusta) ; SPENGL (231) p. 185.

Mexico : a new species of Nemertine ; BÜRGER (55) p. 236.

W. coast of Africa : (5° 48' N., and 14° 20' W., at a depth of 2500 fath.), *Glandiceps abyssicola*, n. sp. (Enteropneusta) ; SPENGL (231) p. 266. An Alciopid (*Callizonu angelina*) ; APSTEIN (4).

Mouth of the Congo : *Eupolyodontes cornishii*, n. g. & sp. of Polychæt ; BUCHANAN (52).

Rio Janeiro : 2 new species of *Enteropneusta* ; SPENGL (231) pp. 126 & 192.

S. Georgia : Nemertines, including 10 new species ; BÜRGER (55).

c. *Indian Ocean.*

Red Sea : a new species of *Ptychodera* (Enteropneusta) ; SPENGL (231) p. 173. A *Cerebratulus* ; JOUBIN (134).

Mauritius : a new species of Nemertine ; BÜRGER (55), p. 230.

Ceylon : 2 new genera and species of Nematodes ; COBB, (68) pp. 391 & 420.

Java : Nemertines ; BÜRGER (55), pp. 236, &c.

d. *N. Pacific Ocean.*

Japan : *Balanoglossus sulcatus*, n. sp., SPENGL (231) ; *Laetmonice producta*, BUCHANAN (53).

Hawaii : *Distomum clavatum* in *Coryphaena*, LUTZ (157).

e. *S. Pacific Ocean.*

E. coast of Australia : a *Balanoglossus* from coast of N. S. Wales ; HILL, J. P. (117). 9 species of Nematodes from Port Jackson ; COBB (68), pp. 394, 401-409, & 415.

S. coast of Australia : a new species of Nematode from Port Adelaide ; COBB (68), p. 417.

W. coast of Australia : 2 new species of *Alciopids* ; APSTEIN (4), pp. 146-148.

Coast of Peru : a new species of *Schizocardium* (Enteropneusta) ; SPENGL (231), p. 216.

2. LAND AND FRESHWATER FORMS.

Geographical distribution of Earthworms ; ROSA (207, 208).

The restricted distribution of freshwater *Oligocheta* ; EISEN (85).

The existence of an antarctic continent, sending arms to New Zealand, Patagonia, and S. Africa, supported by the distribution of Earthworms; BEDDARD (10).

Geographical distribution of Cestodes of Cattle and Sheep; STILES & HASSALL (234).

a. Palæarctic Region.

The 5 species of freshwater Leeches in North Europe; BLANCHARD (24 x), including 2 new species belonging to a new genus *Placobdella*.

Jan Mayen: Lagune in north of island, 3 Rotifers only at all abundant; POUCHET (198).

Scandinavia: 90 species (10 new) and several larval forms: of parasitic Leeches (2 species), Trematodes (20 species), Cestodes (50 species), and *Acanthocephala* (18 species); OLSSON (187). W. of Sweden: a new *Bothriocephalus* in *Raniceps niger*; LÖNNBERG (154).

British Isles.—London neighbourhood: *Philodina commensalis*, n. sp.; WESTERN (257). Epping Forest: *Callidina pusilla*, n. sp.; BRYCE (49); *Metopidea parvula*, n. sp.; BRYCE (50); *Callidina longirostris*, Jansen; WESTERN (257, 258). Keston Common: *Floscularia pelagica*, n. sp.; ROUSSELET (211). Roehampton: *Rattulus bicornis*, n. sp.; WESTERN (257). Bognor: *Callidina cornigera*, n. sp.; BRYCE (49). Near Oxford: *Nais heterochæta*, n. sp.; BENHAM (12). Scotland: *Rattulus bicornis*, n. sp.; WESTERN (257); *Floscularia spinata* and *Polyarthra aptera*, n. spp.; HOOD (119); *Æcistes brevis*, n. sp. (Hood); ROUSSELET (211). Gareloch Head, N.B.: *Adineta clauda*, n. sp.; BRYCE (48). Ireland: two new species of Earthworms; FRIEND (89); *Rattulus bicornis*, n. sp.; WESTERN (257): 159 species of Rotifers, of which 23 (? 24) are new; GLASCOTT (98).

France: list of Turbellarians so far found in North of France; HALLEZ (106). Paris neighbourhood: Rotifers, *Chetonotus*, Nematodes and Planarians; CERTES (65). Lakes of French Jura: 6 pelagic Rotifers; GUERNE & RICHARD (103). Lakes of Hautes Pyrénées: 4 pelagic Rotifers; GUERNE & RICHARD (104). Near St. Jean de Luz (S. of France): a new and very large terrestrial Planarian; GRAFF (102), MATZDORFF (166). At Cazan (S. W. France): a new and very large species of Earthworm, *Allolobophora savignyi*; GUERNE & HORST (105).

Spain: 12 species of Leeches; BLANCHARD (28).

Azores: 2 species of Leeches; BLANCHARD (21).

Teneriffe: 2 species of *Microscolex*; UDE (244).

Cape Verd Islands: *Oxyuris paraoni* from *Macroscincus coctei*; V. LINSTOW (147).

Germany: Rotifers of the Rhine and its by-waters, 4 species and 2 genera said to be new; LAUTERBORN (139, 140). Plankton of the different Holstein Lakes according to season; APSTEIN (5). Great Lake of Plön: 13 Turbellarians (1 new), 5 Nematodes, 6 Leeches (1 undetermined), 5 Oligochæts, 37 Rotifers (7 new), 3 Gastrotricha; ZACHARIAS

(268) : Leeches ; BLANCHARD (23). Province Hannover : Enchytræids (5 species of *Fredericia*, 2 of *Enchytræus*, 3 of *Henlea*, 1 of *Buchholzia*, 1 of *Mesenchytræus*, 1 of *Pachydrius*, 1 of *Anachæta*) ; UDE (243) : *Philodina* from neighbourhood of Bremen ; JANSON (132) : on a mountain near Bückeberg, a *Geotrupes* infested by *Allantonema sylvaticum*, n. sp. ; v. LINSTOW (146). Berlin : phosphorescent Earthworms ; MATZDORFF (166). A new species of *Trichosoma* in German Pheasants ; REIBISCH (203).

Switzerland : Nematodes and Rotifers of 7 Lakes of the Rhone region (1 new species of Rotifer) ; IMHOF (125) : distribution of 15 species of Swiss Rotifers according to height of lakes above sea level ; IMHOF (126). Eurhyaline Rotifers in Alpine Lakes ; IMHOF (124). Lake of Geneva : Nemertines (*Emea lacustris*, n. g. & sp.) ; PLESSIS (195, 196). Lake of Champez : Nematodes (larvæ and an adult), 5 Rotifers (2 pelagic), *Ichthydium lurus*, Leeches (*Clepsine*) and Oligochæts (*Æolosoma*, sp.) ; STUDER (237). Lake of Brienz : *Cystobranchus* on Fish ; BLANCHARD (26).

Shores of Mediterranean : Parasites of Mammals, Birds, Reptiles, Amphibians, and Fish ; STOSSICH (235).

Italy.—Piedmont : Leeches, 8 species ; BLANCHARD (27). Freshwater Dendrocoels of North Italy (10 species belonging to 3 genera and 2 varieties) ; BORELLI (35). *Tenias* of Rome and its province ; ALESSANDRINI (2). Mt. Vesuvius and Pompei : 2 new species of *Dorylaimus* ; COBB (67), p. 45. Sardinia : *Hirudo troctina* (for the first time out of Africa) ; BLANCHARD (26).

Austria.—Carinthia : a *Xerobdella* at height of 1800 metres ; BLANCHARD (26). In the region between the Danube and Theiss, and beyond the Theiss, 25 species of Rotifers belonging to 15 genera (1 being *Chatonotus*, and 1 a new species) and a new species of Nematode ; DADAY (76) : *Cheiracanthus hispidus* in a Hungarian pig ; v. LINSTOW (147). Galicia : 3 species of *Gordius* (2 new) ; JANDA (130) : a non-sessile *Floscularia* near Krakau ; WIERZEJSKI (260).

Russia : Turbellarians of neighbourhood of Moscow ; KOSCHOWNIKOFF (137). Transcaucasia : *Limnatis niloticus* and other Leeches ; BLANCHARD (26).

Syria : 15 species of Earthworms (4 new of *Allolobophora*), all the old ones being palæartic species from the shores of the Mediterranean or further east, none from the Ethiopian Region or the South ; ROSA (209) : 7 (? 8 or 9) species of Leeches ; BLANCHARD (22, 30).

Japan : parasites of domestic animals (Cestodes, Trematodes, and Nematodes) ; JANSON (133).

b. Oriental Region.

China : 9 species of Rotifers (7 new, and 1 new genus, *Octotrocha*) ; THORPE (240).

Tonkin : a new freshwater Sabellid (*Caobangia billeti*, n. g. & sp.) and a new species of *Tubifex* (*T. contrarius*) ; GIARD (94) : *Distomum sinense*

in a coolie, with the *Melania* infested by *Caobangia* as its probable intermediate host; BILLET (19).

India : *Moniligaster indicus*, n. sp. ; BENHAM (11). Seebpore : *Perionyx intermedius*, n. sp. ; BEDDARD (8), p. 686.

Singapore and Penang : *Microdrilus saliens*, n. g. & sp. ; BEDDARD (8), p. 683.

Malay Archipelago : 33 species of *Perichata* (7 new) ; HORST (120). Sumatra : *Perichata urceolata*, n. sp. ; HORST (120). Java : *P. tjiboda* and *P. inflata*, n. spp. ; HORST (120), pp. 326 & 327 : *P. pusilla* and *parva*, n. spp., and *P. capensis*, Horst ; UDE (244), pp. 61-64 : *Microdrilus saliens*, n. g. & sp. ; BEDDARD (8), p. 683 : *Pæcilobdella granulosa* ; BLANCHARD (26). Borneo : *Perichata bosschia*, n. sp. ; HORST (120), p. 324 : *P. capensis*, Horst ; UDE (244), p. 61. Sumba : *P. variabilis*, n. sp., p. 319 ; East Flores, *P. falcata*, n. sp., and *P. ? sangirensis*, Mich., pp. 316 & 317 ; Groot Bastaard, *P. ? forbesii*, Bed. : HORST (120).

c. Australian Region.

Australia.—South Australia : *Geonemertes quinquilineata*, Fl. & Ham., and *G. fletcheri*, with var. *adelaidensis* ; DENDY (78) pp. 185-188. New South Wales : *Temnocephala*, *Craspedella*, n. g., and *Actinodactylella*, n. g. ; HASWELL (110, 111). Clarence River Sugar-canes : 30 species of Nematodes, all new but 4, and belonging to 14 genera, of which 3 are new ; COBB (69). Sydney : a tape-worm from *Echidna* ; THOMPSON (239) : 10 species of Nematodes, 9 (? 8) new, belonging to 7 genera ; COBB (67) pp. 12, 20, 21, 29, 36, 39, 44, & 53. Moss Vale : 3 species of Nematodes belonging to 3 genera ; COBB (67) pp. 11 & 33. Victoria : 22 species of *Perichata* (20 new) ; SPENCER (230). A *Temnocephala* from Gippsland ; HASWELL (110) p. 139.

Tasmania : 7 species of *Geoplana* (3 new and 1 new variety) ; DENDY (78) pp. 178-184.

New Zealand : Notes on Earthworms ; SMITH (223) : *Acanthodrilus*, 2 new species (pp. 675-677), *Octochætus*, n. g., with 2 new species, pp. 668-674 ; BEDDARD (8).

Fiji : 24 species (23 new) of Nematodes belonging to 11 genera, mostly attacking or found about the roots of the Banana plant ; COBB (67) pp. 8-10, 13-19, 20, 30, 34, 40-44, 45, 47, 51-53.

Sandwich Isles : A *Tænia* and 5 Nematodes in Man ; LUTZ (157). Cercaria of *Distomum hepaticum* in 5 Gastropods, and their distribution in the different islands of the group, according to the distribution of these hosts, there being more in Oahu and Kauai than in the others ; LUTZ (158).

d. Ethiopian Region.

N. E. Africa.—Shores of Red Sea : Parasites of the animals there, including several Cestodes, 3 new species Nematodes (in Mammals), and an *Echinorhynchus* in a bird ; SETTI (220).

W. Africa.—Lagos : *Pygmaeodrilus lacuum*, n. sp., p. 259, *Alvaina milsoni*, n. g. & sp., p. 271 ; BEDDARD (7) : *Benhamia crassa*, n. sp., BEDDARD (8) p. 681.

W. Central Africa.—Upper Congo : *Benhamia congica*, n. sp.; HORST (121). French Congo : *Gordius raphaelis*, n. sp., in *Phyllodromia*, and *G. verrucosus* in *Mantis*, CAMERANO (61).

E. and S. E. Central Africa.—Magila : *Polytorentus magilensis*, n. sp., BEDDARD (7) p. 243. Nyassaland : *Benhamia whytei*, n. sp., BEDDARD (8) p. 680.

S. Africa.—Durban : *Eudriloides durbanensis* and *Ilyogenia africana*, n. g. & sp., BEDDARD (8). *Taenia actinoides*, STILES & HASSALL (234).

Madagascar.—2 new species of *Gordius* from a *Mantis*, and from a *Conocephalid*; CAMERANO (60).

e. Neotropical Region.

Falkland Isles. — *Acanthodrilus falclandicus*, n. sp., BEDDARD (8) p. 678.

Patagonia.—A remarkable (unnamed) Turbellarian from Port Galagos; CHAPUIS (66).

Chili.—South : A terrestrial Leech (*Mesobdella*, n. g.) intermediate between *Glossophonidae* and *Hirudinidae*; BLANCHARD (20).

Brazil.—A new species of *Chordodes*; JANDA (130 II). A *Temnocephala* from branchial cavity of an *Ampullaria*; HASWELL (110). *Anteus teres*, n. sp., from Taquara (Rio Grande do Sul); UDE (244) p. 59.

Columbia.—*Anteus distinctus*, n. sp., from Antioquia; UDE (244) p. 58.

Central America.—*Ocnodrilus guatemalae*, *hendriei*, *limicola*, *rosae*, *contractus*, *agricola*, n. spp., EISEN (83) pp. 249, 251, 252, 254, 258, 262, & 265; a *Benhamia*, UDE (244). I. of Colon and Port Limon: an aquatic Oligochæt, *Furcularia tubiformis*, n. sp. and one other Rotifer; KING (135).

Trinidad.—3 species of *Dero*, 1 new; STIEREN (232).

Barbadoes.—*Trichochaeta barbadensis*, n. sp., BEDDARD (8) p. 701.

Martinique.—A species of subg. *Pæcilobdella*, the only one not Indo-Chinese or Malayan; BLANCHARD (26).

Jamaica.—*Trichochaeta hesperidum*, n. sp., BEDDARD (7) p. 252.

Bahamas.—*Moniligaster bahamensis*, n. sp., the first appearance of the genus in the New World; BEDDARD (8) p. 690.

f. Nearctic Region.

Presence of *Glossiphonia tessellata* as far North as *Anus glacialis*; BLANCHARD (24 XVIII).

Nemertines, Turbellarians, *Dinophilus* and *Balanoglossus*, of North America; GIRARD (97) pp. 157, 204, 233, 236, 297.

Branchiobdella of American Crayfish; MOORE, J. P. (176).

Mexico.—*Limnobdella mexicana*, n. g. & sp., BLANCHARD (26). *Ocnodrilus sonorae*, n. sp., EISEN (83) p. 251.

California.—Cape Region of Lower California: *Ocnodrilus beddardi*, n. sp., EISEN (83); *Kerria macdonaldi* and *zonalis*, n. spp., EISEN (84). Alameda: *Deltania benhami*, n. g. & sp., EISEN (86). S. Francisco Bay: *D. elegans* and *troyeri*, n. spp., EISEN (86). N. of San Francisco Bay: *Argilophilus marmoratus*, n. g. & sp., 2 varieties, one further north than the other; EISEN (86).

Oregon.—*Argilophilus marmoratus* (the northern variety); EISEN (86).

Yellowstone Park and Lake.—2 new species of Rotifers (*Monostyla* and *Conochylus*) and a Turbellarian; FORBES (88).

Illinois.—Danville: *Geodrilus singularis*, n. g. & sp. of *Acanthodrilidae*; UDE (244) p. 69.

Pennsylvania.—Near Philadelphia: *Bimastos*, a new aquatic Oligochæt; MOORE, H. J. (175).

Texas.—Cretaceous formation: *Serpula pataxiensis*, n. sp., HILL, R. T. (118).

Bermudas.—*Eudrilus erudiens*, n. sp., UDE (244) p. 71.

III.—SYSTEMATIC.

1.—HEMICHORDATA.

Monograph of the *Enteropneusta*; SPENGLER (231). 4 genera are recognized, viz:—

Balanoglossus, with 5 species: (i) *B. kuyfferi*, p. 268, (ii) *kowalewskii*, p. 309, (iii) *mereschkowskii*, p. 324, and (iv) *B. canadensis*, n. sp., from off Cape Breton, p. 297, and (v) *B. sulcatus*, n. sp., Japan, p. 347. It is proposed, p. 360, to make a new subgenus, *Dolicoglossus*, for the species (ii), (iii), & (v).

Glandiceps, n. g., with 3 species: *G. (B.) talaboti*, p. 223, *hacksi*, p. 244, and *abyssicola*, n. sp. (for the "Challenger" specimen from a depth of 2500 faths., off the W. coast of Africa), p. 266.

Ptychodera, Eschscholtz, with 9 species: (i) *P. (B.) minuta*, p. 17, (ii) *sarnienseis*, p. 91, (iii) *clavigera*, p. 137, (iv) *gigas*, p. 159, (v) *aurantiaca*, p. 164, (vi) *flava*, p. 190, and (vii) *P. aperta*, n. sp., Rio Janeiro, p. 126, (viii) *P. erythraea*, n. sp., Red Sea, p. 173, (ix) *P. bahamensis*, n. sp., Bahamas, p. 185. This genus it is proposed, p. 359, to regard as a separate family, *Ptychoderidae*, including the genera *Chlamydothorax*, n. g. (for spp. viii & ix), *Tauroglossus*, n. g. (for spp. vii, iii, iv, v, & vi), and *Ptychodera* proper (for spp. i & ii).

Shizocardium, n. g., with 2 species: *S. brasiliense*, n. sp., Rio Janeiro, p. 192, and *S. peruvianum*, n. sp., Peruvian coast, latitude of Pisco, p. 244.

A species (probably new) of *Balanoglossus* from New South Wales described briefly; HILL, J. P. (117).

[*Cephalodiscus*, *Rhabdopleura*, and *Phoronis* are referred to by SPENGLER (231) in their relationship to the *Enteropneusta*, pp. 735-738.]

2.—ANNELIDA [including *Gephyrea*, *Chaetopoda*, *Archannelida*,
and *Hirudinea*.]

A.—GEPHYREA.

Sipunculus indicus, anatomy and histology; FISCHER, Jahresber. Hamburg.
Anst. x, pp. 1-12; SHIPLEY, P. Zool. Soc. London, pp. 326-332.

B.—CHÆTOPODA.

a. POLYCHÆTA.

- Acoëtidae*: revision of family; BUCHANAN, Quart. J. Micr. Sci. xxxv,
pp. 433-446.
- Amphinome*: spiral metamerism in; BUCHANAN, *op. cit.* xxxiv, pp. 529-544.
- Apomatus globifer*, in the Mediterranean; MARENZELLER, Denk. Ak.
Wien, lx.
- Arenicola marina*: post-larval stage of; BENHAM, J. Mar. Biol. Ass. iii,
p. 48. *A. cristata*, in Mediterranean; LO BIANCO, Atti Acc. Napoli, v.
- Aricia cuvieri* distinguished from *A. fatida*; LO BIANCO, *t. c.* p. 24.
- Autolytus*; MALAQUIN (162).
- Bispira mariae*, n. sp., Mediterranean, LO BIANCO, *t. c.* p. 75.
- ↓ *Boccardia*, n. subg. for *Polydora polybranchia*; CARAZZI, MT. Stat.
Neapel, xi, p. 44.
- Brada parthenopeia*, n. sp., Mediterranean, LO BIANCO, *t. c.* p. 44.
- Callizona moebii*, n. sp., Mediterranean, APSTEIN, Arch. Naturg. lix, p. 147.
- ↓ *Caobangia*, n. g., with *C. billeti*, n. sp. An aberrant member of the
Sabellidae living in fresh water, probably the type of a new family,
with alimentary canal bent on itself, so that anus opens on ventral
surface close behind mouth; found in shells of *Melania* infested by
an alga, at Caobang, Tonkin; GIARD, C.R. Soc. Biol. v, pp. 473-476.
- Chloëia modesta*, Ehl., and *C. euglochis*, recognized as distinct species;
MARENZELLER, Denk. Ak. Wien, lx.
- Chloënea* of Kinberg and of M'Intosh not synonymous; MARENZELLER, *t. c.*
- Corynocephalus gazelle*, n. sp., W. coast of Australia; APSTEIN, Arch.
Naturg. lix, p. 148.
- Dasychone savignii* redescribed; BUCHANAN, P. Dublin Soc. viii, p. 177.
(*Euarche*) = *Eupanthalis*; BUCHANAN, Quart. J. Micr. Sci. xxxv, p. 442.
- Eunice floridana*, inhabiting corals of Mediterranean; MARENZELLER,
t. c. p. 33, ? = *E. philocorallia*, n. sp., from *Lophohelia prolifera*, off
the W. coast of Ireland; BUCHANAN, P. Dublin Soc. viii, p. 173.
- Eupanthalis*: redefinition of genus and its enlargement, so as to include
Euarche, and ♀ 1½ species of *Panthalis*; BUCHANAN, Quart. J. Micr.
Sci. xxxv, p. 442.
- ↓ *Eupolyodontes*, n. g. for *Polyodontes gulo*, Grube., and *E. cornishii*, n. sp.,
from mouth of Congo; BUCHANAN, *t. c.* p. 438.

- (*Eupompe*), referred to genus *Polyodontes*; BUCHANAN, *t. c.* p. 441.
- Eusyllis*. } MALAQUIN (162).
Exogone. }
- Halla parthenopeia*, spiral metamerism in; BUCHANAN, *op. cit.* xxxiv.
- (*Harpochata*, n. g., with *H. angulata*, n. sp., Polytrochous larva of; KORSCHOLT, Zeitschr. wiss. Zool. lvii.
- Laetmonice producta*, from W. coast of Ireland and from Japan; BUCHANAN, P. Dublin Soc. viii, p. 169. (*L. kinbergi*), Baird, = *L. filicornis*, Kbg., and distinguished from *L. kinbergi*, Ehl.; BUCHANAN, *t. c.* pp. 170-173.
- Laonome salmacidis*, Clp., with eyes on branchiæ; MARENZELLER, Denk. Ak. Wien. ix. p. 35.
- Magelona papillicornis*, in Mediterranean; LO BIANCO, Atti Acc. Napoli, v, p. 34.
- Micronereis variegata*, anatomy of male and female; RACOVITZA, C.R. Ac. Sci. cxvi, pp. 1390-1392.
- Nereis*: a new organ, "dorsal ciliated organ", in several species, and Nephridium of *N. diversicolor*; GOODRICH (99).
- (*Notophyllum alatum*), Lngghns., = *N. foliosa*, Sars; MARENZELLER, *t. c.*
- Ophelia radiata*: Chlorogogene, its nature and distribution, and the organs directly or indirectly concerned in its formation; SCHAEFFI (217).
- Ophryotrocha puerilis*: development of jaws in; BONNIER (34): eggs, sexual conditions, development, and points in the anatomy; KORSCHOLT (136) & BRAEM (39): its presence in Holothurians; MONTICELLI (171).
- (*Panthalis*) = *Polyodontes*, BUCHANAN, Quart. J. Micr. Sci. xxxv, p. 441.
- P. œrstedii*, in Mediterranean, described; MARENZELLER, Denk. Ak. Wien, ix, p. 28.
- Pholoe dorsipapillata*, n. sp., in Mediterranean; MARENZELLER, *t. c.* p. 30. (*P. brevicornis*), Panceri, = *Scalisetosus pellucidus*, Ehl.; *id. t. c.*
- Polydora*: revision of genus; CARAZZI, MT. Stat. Neapel, xi, pp. 4-45, MESNIL, C.R. Ac. Sci. cxvii, pp. 643-645. CARAZZI recognizes 10 species, of which 6 occur in the Mediterranean, and of these 2, *P. hoplura* and *P. ciliata*, are commensal on oysters, the one boring into the shell, and the other accumulating mud at the mouth of the shell and doing more damage to the oyster; another, *P. polybranchia*, forms the type of a new subgenus, *Boccardia*. *P. antennata*, var. *pulchra*, n. var., or (?) a hybrid of this species and *P. ciliata*, described, p. 26. MESNIL would include *Pygospio elegans*, and *Spio mecznikowianus* in the genus *Polydora*. He describes *P. giardi*, n. sp., and would include in it (?) *P. ciliata*, var. *minuta*, Lngghns., and the young specimen of *P. agassizii* of Marion & Bobretzky. He regards *P. hamata* and *P. hoplura* as distinct species, as opposed to CARAZZI, though *P. hoplura* may be only a variety of *P. ciliata*.
- Polyodontes*: definition and enlargement of genus, so as to include *Eupompe*, *Panthalis*, and *Acœetes*. (*P. gulo*), = *Eupolyodontes gulo*; BUCHANAN, Quart. J. Micr. Sci. xxxv, p. 441.

- Protula marioni*, n. sp., Mediterranean, MARENZELLER, Denk. Ak. Wien, lx, p. 36: a *Protula* with an operculum.
- Ranzania sagittaria*, Clap., presence of tentacles in; LO BIANCO, Atti Ac. Napoli, v, p. 39.
- Sabella crassicornis* in Mediterranean; LO BIANCO, t. c. p. 67. A new Sabellid [see *Caobangia*].
- † *Serpula palaxiensis*, n. sp., Cretaceous formation, Texas, HILL, R. T. (118).
- Stylaroides hirsutus*, n. sp., Bay of Naples, LO BIANCO, t. c. p. 42.
- Syllis*; MALAQUIN (162).
- Vanadis violacea*, n. sp. (loc. ?), and *studieri*, n. sp., W. Coast of Australia, APSTEIN, Arch. Naturg. lix, pp. 143-146.
- Vermilia agglutinata*, n. sp., E. Mediterranean, MARENZELLER, Denk. Ak. Wien, lx, p. 41. *V. multivaricosa* and *multicristata* distinguished from one another, t. c. p. 40.

b. OLIGOCHÆTA.

- A useful revision of the Lumbricids is given by ROSA, Mem. Acc. Torino, xliii, 4 genera (*Lumbricus*, *Allolobophora*, *Allurus*, and *Criodrilus*) being recognised and their species diagnosed. He also gives a list of species wrongly called *Lumbricus* and not belonging to the family at all. In Boll. Mus. Torino, viii, No. 151, he gives also the more important synonyms of each of the species diagnosed.
- The classification of the *Naidomorpha* is dealt with by STIEREN, SB. Ges. Dorpat, x, p. 103. He would divide the family into 3 sub-families of equal value, viz. :—
1. Cilionaididæ. Genus: *Aulophorus*.
 2. Branchinaididæ. Genera: *Chetobranchus*, *Alma*, and *Dero*.
 3. Naididæ. Genera: *Ophidonais*, *Bohemilla*, *Nais*, *Slavina*, *Stylaria*, *Pristina*, and *Naidina*.
- Acanthodrilus smithi* and *paludosus*, n. spp., New Zealand, *A. falcandicus*, n. sp., for a specimen previously referred to *A. georgianus*, Mich.; BEDDARD, P. Zool. Soc. London (1892), pp. 675-678. Some New Zealand species (*A. antarcticus*, *multiporus* and others) referred to new genus, *Octochætus*; BEDDARD, t. c.
- Allolobophora*: 49 species recognized, some of them with 2 or more sub-species; ROSA, Mem. Acc. Torino, xliii, pp. 424-465. *A. (Dendrobæna) semitica*, *A. (D.) byblica*, *samarigera*, and *A. patriarchalis*, n. spp., Syria, ROSA, Boll. Mus. Torino, viii, No. 160, pp. 3-9. *A. savignyi*, n. sp., S.W. of France, GUERNE & HORST, Bull. Soc. zool. France, xviii, p. 153.
- Allurus*: 6 species recognized; ROSA, Mem. Acc. Torino, xliii, pp. 465-470. *A. macrurus*, n. sp., Ireland, FRIEND, P. Irish Ac. ii, p. 461.
- ‡ *Alvania*, n. g. of *Eudrilidæ*, with *A. millsoni*, n. sp., Lagos; BEDDARD, Quart. J. Micr. Soc. xxxiv, p. 271.

- Anteus distinctus*, n. sp., Columbia, and *A. teres*, n. sp., Brazil, UDE, Z. wiss. Zool. lvii, pp. 58 & 59.
- Argilophilus*, n. g. of *Eudrilidæ*, with *A. marmoratus ornatus*, n. sp., Oregon, and *A. marmoratus papillifer*, n. sp., further south; EISEN, Zoe, iv, p. 253.
- Aulophorus*: remarks on genus; STIEREN, SB. Ges. Dorpat, x, p. 117.
- Benhamia*: definition of genus and comparison with the genus *Octochætus*; BEDDARD, P. Zool. Soc. London (1892), p. 671. *B. whytei*, n. sp., Nyassaland, *B. crassa*, n. sp., Lagos, BEDDARD, t. c. pp. 680 & 681. *B. congica*, n. sp., Upper Congo, HORST, Tijdschr. Nederland. Dierk. Ver. iv, pp. 67 & 68.
- Bimastos*, n. g., near Philadelphia, MOORE, H. J., Zool. Anz. xvi, p. 333.
- Criodrilus*: one species recognized; ROSA, Mem. Acc. Torino, xliii, p. 470.
- Ctenodrilus* [see under C.—ARCHANNELIDA].
- Deltania*, n. g. of *Eudrilidæ*, with *D. elegans*, *troyeri*, and *benhami*, n. spp., California; EISEN, Zoe, iv, pp. 251 & 252.
- Dendrobæna*. [See *Allolobophora*.]
- Dero*: definition of genus, recognition of 10 species, of which 3 occur in Trinidad, and description of *D. multibranchiata*, n. sp.; STIEREN, SB. Ges. Dorpat, x, pp. 107–114 & 121.
- Didymogaster silvaticus*, from Sidney, description; UDE, Z. wiss. Zool. lvii, p. 67.
- Eudriloides* “?” *durbanensis*, n. sp., Durban, anatomy; BEDDARD, P. Zool. Soc. London (1892), p. 696.
- Eudrilus erudriens*, n. sp., Bermudas, anatomy; UDE, t. c. p. 71.
- Geodrilus*, n. g. of *Acanthodrilidæ*, with *G. singularis*, n. sp., Illinois; UDE, t. c. p. 69.
- Geoscolecidæ*: revision of family; BEDDARD, Quart. J. Micr. Soc. xxxiv, p. 257.
- Gordiodrilus* not regarded as one of the *Ocnerodrilidæ*, but rather as forming a distinct family *Gordiodrilidæ*; EISEN, P. Calif. Ac. iii, p. 228.
- Ilyogenia*, n. g., with *I. africana*, n. sp., Durban; BEDDARD, P. Zool. Soc. London (1892).
- Kerria* not regarded as belonging to the *Acanthodrilidæ*, but rather as a member of one large group of Oligochæts, including also the genera *Ocnerodrilus*, *Gordiodrilus*, and *Pymæodrilus*; EISEN, P. Calif. Ac. iii, pp. 291–318. *K. macdonaldi* and *K. zonalis*, n. spp., California, EISEN, t. c. pp. 294 & 311.
- Lumbriculus variegatus*, with double tail; CORI, Lotos, xiv, p. 169.
- Lumbricus*: 6 true species recognized and diagnosed; enumeration of species wrongly so-called; ROSA, Mem. Acc. Torino, xliii. *L. papillosus*, n. sp., Ireland, FRIEND, P. Irish Ac. ii, p. 456.
- Megasclex templetonianus*, notes on; UDE, Z. wiss. Zool. lxvii, p. 65.
- Microdrilus*, n. g., with *M. saliens*, n. sp., Singapore, Java, Penang; BEDDARD, P. Zool. Soc. London (1892), p. 683.

- Moniligaster bahamensis*, n. sp., Bahamas, anatomy, BEDDARD, *t. c.* p. 690.
M. indicus, n. sp., India, BENHAM, Quart. J. Micr. Sci. xxxiv, p. 361, anatomy of genus and species.
- Nais heterocheta*, n. sp., near Oxford, BENHAM, *t. c.* p. 383.
- Ocnerodrilidæ*: revision of family; EISEN, P. Calif. Ac. iii, p. 228: its geographical distribution; EISEN, *t. c.* p. 291. 10 species (8 new ones) from California and Mexico described, *O. beddardi*, p. 230, *guatemalæ*, p. 249, *sonoræ*, p. 251, *hendrei*, p. 252, *rosæ*, p. 258, *contractus*, p. 262, and *agricola*, p. 265; EISEN, *t. c.* pp. 228-290.
- Octochaetus*, n. g., with *O. thomasi* and *O. huttoni*, n. spp., New Zealand, and including some New Zealand species previously referred to *Acanthrodrilus*; BEDDARD, P. Zool. Soc. London (1892), pp. 668-674.
- Pachydrilus litoreus*, n. sp., littoral species of Enchytræid at Naples, anatomy; HESSE, Z. wiss. Zool. lvii.
- Parenchytræus*, n. g. with *P. litteratis*, n. sp., littoral species of Enchytræid at Naples, anatomy; HESSE, *t. c.*
- Perichæta copelandi*, *obscura*, *sylvatica*, *hoggii*, *hallii*, *rubra*, *frenchii*, *steelii*, *lateralis*, *dendyi*, *lochensis*, *dubia*, *walhalla*, *alsophila*, *fielderi*, *frostii*, *goonmurk*, *yarraensis*, *tanjilensis*, n. spp., and 2 other species, Victoria, SPENCER, P. Soc. Victoria, v, pp. 1-26. *P. falcata*, *variabilis*, *teukatei*, *urceolata*, *bosschæ*, *tjibodæ*, *inflata*, n. spp., and *P. forbesii*, Bed. ?, *sangirensis*, Mich., Malay; HORST, Notes Leyden Mus. xv, pp. 316-329. *P. pusilla* and *parva*, n. spp., and *P. capensis*, Horst, Java; UDE, Z. wiss. Zool. lvii.
- Perionyx*: new diagnosis of genus, description of *P. intermedius*, n. sp., Seebpore, and notes on and definitions of 3 other species; BEDDARD, P. Zool. Soc. London (1892).
- Polytorentus magilensis*, n. sp., Magila (E. C. Africa), anatomy; BEDDARD, Quart. J. Micr. Sci. xxxiv, pp. 243-252.
- Pygmaodrilus lacuum*, n. sp., Lagos (W. Africa), anatomy; BEDDARD, *t. c.* p. 259.
- Siphonogaster*: notes on genus, showing it to belong to the *Geoscolecidæ*; *S. millsoni*, some points in the anatomy; BEDDARD, *t. c.* p. 264.
- Sutroa*: notes on the genus; BEDDARD, Tr. R. Soc. Edinb. xxxvii, p. 195.
- Trichochæta*, n. g., with *T. hesperidum*, n. sp., Jamaica; BEDDARD, P. Zool. Soc. London (1892), pp. 252-257.
- Tubifex contrarius*, n. sp., in the deserted tubes of a new Sabellid, Tonkin; GIARD, C.R. Soc. Biol. v.

C.—ARCHIANNELIDA.

- Branchiobdella*, or ? a new allied genus, the 4 species commensal on American Crayfish, including *B. illuminata*, *pulcherrima*, *instabilis*, n. spp.; MOORE, J. P., P. Ac. Philad. p. 419.

Ctenodrilidæ: removed from the *Chatopoda* and regarded as either very primitive or very degenerate Annelids; two genera in the family recognized, viz. :—

Ctenodrilus, Clp., with 2 species, *C. serratus* (= *pardalis*) and *C. parvulus* :

Zeppellinia, Vail., with 1 species, *Z. monostyla* : MONTICELLI, Boll. Soc. Napoli, vii, pp. 37–44.

Dinophilidæ of New England, *D. pygmaeus* and *D. simplex*, n. spp. ; VERRILL, Tr. Connect. Ac. viii, pp. 457 & 458. *D. simplex* may require to be placed in a new genus. *D. taniatus* at Port Erin; HERDMAN (115).

D.—HIRUDINEA.

BLANCHARD, C.R. Ac. Sci. cxvi, p. 446, shows the derivation of the *Glossiphonidæ* and *Hirudinidæ* from a common ancestor, from which the *Glossiphonidæ* have deviated less than the *Hirudinidæ*.

(*Batracobdella*) Vig., = *Glossiphonia algira*, Moq. Tand. ; BLANCHARD, An. Soc. Espan. xxii, pp. 243.

(*Blennobdella depressa*) = a young *Hamentaria* ; BLANCHARD (24 xiv).

Cystobranchnus respirans, Trosch, and *fasciatus*, Kollar, described ; BLANCHARD, Boll. Mus. Torino, viii, No. 145, pp. 1–5.

Dina blasei, in Spain, BLANCHARD (28) ; in Syria, BLANCHARD (22, 30) ; in the Azores, BLANCHARD (21).

Glossiphonia : 5 S. European species referred to genus *Placobdella* ; BLANCHARD (24 x). *G. algira*, in Spain ; BLANCHARD (28). *G. bioculata* and *tesselata*, in Syria ; BLANCHARD (22 & 30 respectively).

Hementaria ghilianii and *officinalis*, anatomy ; BLANCHARD, (26) pp. 7–23. (*H. mexicana*) = *H. officinalis* ; BLANCHARD, (26) p. 20.

(*Hirudo cylindrica*) Blanchard, = (*H. gemmata*) Blanchard, = (*H. brevis*) Grube, which forms the type of a new genus *Mesobdella*, with species *H. gemmata* ; BLANCHARD (24 xiii & viii). (*H. granulosa*) Sav., made the type of a new subgenus of *Limnatis* : *Pæcilobdella* which would include 6 other species also Malayan or Indo-Chinese and 1 species from Martinique ; (*H. quinquestriata*) Schmarda, referred to *Limnobdella*, n. g. : BLANCHARD, (26) p. 28. *H. troctina* in Europe ; BLANCHARD (28). *H. medicinalis* in Syria ; BLANCHARD (22, 30).

Limnatis nilotica, in Spain, BLANCHARD (28) ; in Syria, BLANCHARD (22, 30) ; in the Azores, BLANCHARD (21).

Limnobdella, n. g., for *L. mexicana*, n. sp., and including *L. (H.) quinquestriata*, Schmarda ; BLANCHARD, Boll. Mus. Torino, viii, No. 145, p. 29.

Lumbricobdella schaefferi, multiplication of annuli in ; BLANCHARD (24 ix).

Mesobdella, n. g., intermediate between the *Glossiphonidæ* and *Hirudinidæ*, with 1 species, *M. gemmata*, Blanch., for (*H. brevis*) Gr., (*cylindrica*), or (*gemma*) Blanch. ; BLANCHARD, Bull. Soc. zool. France, xviii, pp. 110 & 26.

Nephele: 8 species recognized in Piedmont, *N. atomaria* and *octoculata*, described; BLANCHARD (27). (*N. sexoculata*) Schn., = *N. octoculata* with anterior lateral eyes atrophied; BLANCHARD (24 xv). (*N. scriptura*) and (*N. crassipunctata*) Schn., = *N. atomaria*, Carena; BLANCHARD (24 xvi & xvii). Variations according to locality in *N. atomaria*; BLANCHARD, (27) pp. 4-8.

Piscicola perspicax and *lippa*, n. spp., from *Cottus quadricornis*, Scandinavia, OLSSON, Svenska Ak. Handl. xxv.

Placobdella, n. g., connecting *Glossiphonia* and *Hæmentaria*, with *P. raboti* and *P. guernii*, n. spp., and including 5 other species previously referred to the genus *Glossiphonia*; BLANCHARD, Bull. Soc. zool. France, xviii, p. 92. *P. (G.) carinata*, described, BLANCHARD, t. c. p. 104; *P. (G.) catinigera*, described, BLANCHARD, t. c. p. 98; both these species and the young of another one in Syria, BLANCHARD (22, 30).

Pæcilobdella, n. subg. of *Limnatis*, with *Hirudo granulosa*, Sav., as type, and including 6 other East Indian species and 1 W. Indian one; BLANCHARD, Boll. Mus. Torino, viii, No. 145, p. 28.

(*Theromyzon palleus*), Phil., = (probably) *Glossiphonia tessellata*; BLANCHARD, Bull. Soc. zool. France, xviii, p. 14.

3.—PLATYHELMINTHES.

A.—CESTODA.

Adult Forms.

STILES & HASSALL, Bull. No. IV of Dept. of Agric., Washington, give an index of specific names of (p. 103), the Cestodes of cattle and sheep, and group them into 3 genera, viz.:—*Moniezia*, Bl., *Thysanosoma*, Dies., and *Stilesia*, Railliet, n. g.

50 species from Scandinavian fish; OLSSON, Svenska Ak. Handl. xxv, pp. 1-41.

Abothrium rugosum, Rud.: anatomy and histology; LÖNNBERG, Svenska Ak. Handl. xxiv, No. 6, pp. 73-84.

Amabilia, n. g., for *Tænia lamelligera*, Owen; DIAMARE, Boll. Soc. Napoli, vii, pp. 10-12.

Amphityches urna, Gr. & Wagn., anatomy and histology; LÖNNBERG, Svenska Ak. Handl. xxiv, No. 6, pp. 9-47.

Andrya, n. g., for *Tænia marmoratæ*, Fröhl.; (RAILLIET 200A), STILES & HASSALL, t. c. p. 71.

Anoplocephala critica, Pagenst., and *A. ragazzi* (for Moniez's *Architænia hyracis* and his own *T. ragazzi*), in *Hyrax*, on shores of Red Sea; SETTI, Atti Soc. Ligustica, iv, pp. 13 & 15.

Archigetes sieboldii, Neotenia in; MONTICELLI (172).

Bertia. The different species occurring in the different anthropoid Apes; BLANCHARD (29), and the genus, with *Anoplocephala* and *Moniezia*, referred to one large group, *Anoplocephala*. SETTI, t. c. would alter the definition of the genus so as to include *Moniezia expansa*. NEUMANN, R., (183) would refer *T. ovilla* to the genus *Bertia*.

- Bothriocephalus pellocephalus*, n. sp., from an unknown fish; MONTICELLI, Nat. Sci. xii, p. 176. *B. motellæ* and *B. spinachie*, n. spp., from *Motella cimbria* and *Gasterosteus spinachia* respectively, Scandinavia; OLSSON, Svenska Ak. Handl. xxv. *B. neglectus*, n. sp., from *Raniceps niger*, W. of Sweden; LÖNNBERG, Bih. Svenska Ak. xviii. *B. punctatus*, Rud., anatomy and histology; LÖNNBERG, Svenska Ak. Handl. xxiv, No. 6, pp. 51-60. Its different varieties and description of *B. punctatus*, var. *motellæ*, from *Motella*; LÖNNBERG, Bih. Svenska Ak. xviii. [See also under *Diplogonoporus*.]
- Cenomorphus joyeuxi*, n. sp., from *Hyas aranea*; VAULLEGARD, Bull. Soc. Norm. (4) vii, pp. 23-26.
- † *Calyptrobothrium*, n. g., of *Tetrabothridæ*, with *C. riggi*, n. sp., from *Torpedo marmorata*; MONTICELLI, Natural. Sicil. xii, p. 179.
- Caryophyllæus mutabilis*, Rud., anatomy and systematic position; WILL, Z. wiss. Zool. lvi, pp. 1-39.
- † *Chapmannia*, n. g., for *Tenia tauricollis*, Chapm. (= *T. argentina*, Zech.), MONTICELLI, Natural. Sicil. xii, pp. 208-211.
- † *Cotugnia*, n. g., for *Tenia digonopora*, Pasq., and *T. bifuria*, v. Sieb.; DIAMARE, Boll. Soc. Napoli, vii, pp. 10-12.
- † *Ctenotaenia*, n. g., for *Dipylidium leuckarti* and *pectinatum*; (RAILLIET, 200A), STILES & HASSALL, t. c.
- Davainæa spinosissima*, n. sp., from intestine of *Turdus merula*; v. LINSTOW, Jena. Zeitschr. xxviii, pp. 336 & 337. *D. struthionis*, Hoult., anatomy and development; v. LINSTOW, Arch. mikr. Anat. xlii, p. 442. *D. tetragona*, Molin., functions of ovary in; DIAMARE (80).
- Dibothriorhynchus megalcephalus*, Rud., adult found; MONTICELLI, t. c.
- Dinobothrium septoria*, v. Ban., from *Lamna cornubica*, anatomy; LÖNNBERG, Svenska Ak. Handl. xxiv, pp. 25-28.
- Diplobothrium affine*, n. sp., from a whale, and *D. simile*, v. Ban., from *Lamna*, anatomy; LÖNNBERG, t. c. pp. 16-24.
- † *Diplogonoporus*, n. subg. of *Bothriocephalus* with 2 groups of gonads in each proglottid, for *D. balenoptera*, n. sp., from a whale; LÖNNBERG, t. c. pp. 4-16.
- Dipylidium*: redefinition of genus, DIAMARE, Rend. Acc. Napoli, viii, p. 123, with 2 new species, 1 (unnamed) in Italian domestic cat, the other, *D. pasqualei*, n. sp., DIAMARE, t. c. pp. 213-217, in the cat of Alexandria. *D. leuckarti* and *pectinatum* referred to *Ctenotaenia*, n. g., Raill., and *D. latissimum* to *Rhopalocephalus*, n. g., Raill., STILES & HASSALL, t. c.
- Hymenolepis moniezi*, n. sp., Par., from a bat (*Pteropus medius*) which said to be frugivorous; *H. acuta*, for *Taenia acuta*, Rud., armed and unarmed individuals occurring together in Italian bats, PARONA & PERUGIA, Atti Soc. Ligustica, iv, pp. 202-206.
- Ligula catostonii*, notes on; LINTON, Rep. U. S. Fish Comm. xvii, p. 546.
- Moniezia*. Summary of genus, and subdivision of it into 3 groups according to the form of the interproglottidal gland; anatomy of *M. planissima*, Stiles, pp. 15-26; of *M. oblongiceps*, n. sp., from a

Coassus from Trinidad, pp. 35 & 36; of *M. trigonophora*, n. sp. (for *T. expansa*, Curtis, ex parte, and McMurrich, and for *T. benedeni*, Neumann, ex parte), pp. 37-42; and 3 undetermined species, probably new; STILES & HASSALL (234). *M. alba*, Perr., and *M. denticulata*, Rud., both to be regarded as varieties of *M. expansa*, Rud.; SETTI, Atti Soc. Ligustica, iv, p. 8.

Monobothrium terebrans, n. sp., anatomy; LINTON, Rep. U. S. Fish Comm. xvii, pp. 548-552.

Monocotylides: anatomy; SAINT RÉMY, Rev. biol. Nord France, v, p. 45. *Onchobothrium schizacanthum*, n. sp., from a Selachian in Java, anatomy; LÖNNBERG, Bih. Svenska Ak. xviii.

Polycercus, a proliferating cystic parasite of the Earthworm, described, and its relationships discussed, the conclusion being arrived at that its nearest ally is *Staphylocystis*, and not *Echinococcus*; HASWELL & HILL, P. Linn. Soc. N.S. Wales, viii, pp. 365-375.

Ptychobothrium belones (Duj.), Lönnb.: anatomy; LÖNNBERG, Svenska Ak. Handl. No. 6, pp. 63-72.

³ *Rhopalocephala*, n. g., for *Dipylidium latissimum*, (RAILLIET, 200A), STILES & HASSALL (234).

⁴ *Stilesia*, n. g., for *Taenia globipunctata* and *T. centripunctata*; (RAILLIET, 200A), STILES & HASSALL, (234) pp. 73-82.

Taenia ursina, n. sp., from *Ursus arctus*, anatomy and life-history; LINSTOW, Arch. mikr. Anat. xlii, p. 442. *T. echinata*, n. sp., from *Lagopus alpina* and *T. secunda*, n. sp., from *Melis taxus*, Scandinavia, OLSSON, Svenska Ak. Handl. xxv. *T. echidnae*, n. sp., from *Echidna*, Sydney, THOMPSON, J. R. Micr. Soc. p. 297. *T. isomydis*, n. sp., from *Isomys abyssinicus*, Shores of Red Sea, SETTI, Atti Soc. Ligustica, iv, p. 10.

T. digonopora and *T. bifaria*, referred to a n. g. *Cotugnia*; *T. limeliger* to a n. g. *Amabilia*; DIAMARE (81 II). (*T. argentina*), Zsch., = *T. tauricollis*, to a n. g. *Chapmanvia*; MONTICELLI (170). *T. centripunctata* and *T. globipunctata*, to a n. g. *Stilesia*, Raill., *T. marmotae*, to a n. g. *Andrya*, Raill., *T. caprae*, Rud., to the genus *Moniezia*, and *T. actinoides* and *giardi* to the genus *Thysanosoma*, Dies.; STILES & HASSALL (234). *T. ovilla*: its position in classification; NEUMANN, R. (183). *T. microsona*, discovery of its cysticercus in *Cyclops agilis*; ROSSETER (210). *T. erostris*, Lönnb., notes on; LÖNNBERG, Bih. Svenska Ak. xviii, p. 11. *T. paranaei*, Moniez, in *Hyrax*; SETTI, t. c. *T. hyracis*, Pall., distinct from the *T. hyracis*, Pagenstecher, which = *Anoplocephala cortica*; SETTI, t. c. *Taenias* of Rome and its provinces; ALESSANDRINI (2). *T. saginata*: abnormalities in; AHLBORN (1), BARROIS (6), KÜCHEL (138), MONTICELLI (170). [See also under *Davainea*.]

Tetrarhynchus tetrabothrius, v. Ban., anatomy; LÖNNBERG, Svenska Ak. Handl. xxiv, No. 6, pp. 87-104.

Thysanosoma, Dies., genus re-established for *Taenia giardi* and *T. actinoides*; STILES & HASSALL, (234) pp. 55-70.

Trienophorus robustus, n. sp., from *Esoc lucius*, Scandinavia, OLSSON, t. c.

Cystic Forms.

In Scandinavian fish; OLSSON, Svenska Ak. Handl. xxv.

Cysticercus herpestes, n. sp., in *Herpestes*, SETTI, Atti Soc. Ligustica, iv, p. 4. *Cysticercus* of *Tenia microsoma* in *Cyclops*; ROSSETER (210). Tailed cysticercoid of *T. serpentulus* in *Geotrupes sylvaticus*; v. LINSTOW (149). *Echinococcus* of cat; NEUMANN, G. (185).

B.—TREMATODA.

MONTICELLI, Zool. Jahrb. Anat. vi, Suppl. iii, enters fully into the classification of the subfamily *Distomidae*, in which he would recognize 10 genera, viz.:—*Bilharzia*, *Cephalogonimus*, *Urogonimus*, *Distomum*, *Apoblemma*, *Echinostomum*, *Crossodera*, *Rhopalophorus*, *Podocotyle*, *Mesogonimus*. He gives a table to distinguish these, p. 154.

HASWELL (111) finds a new family for his *Actinodactylella*.

BRAUN, in Bronn's Klassen and Ordnungen des Thier-reichs, concludes his account of the digenetic Trematodes.

Twenty species of Trematodes from Scandinavia; OLSSON, Svenska Ak. Handl. xxv.

Accacoelum, n. subg., for *Distomum contortum*, R., *D. nigroflavum*, R. *D. microcotyle*, D., *D. pelagia*, Köll., and *D. calyptrocotyle*, n. sp.; MONTICELLI, t. c. p. 135.

Actinodactylella, n. g., for what was described last year as *Actinodactylus*, n. g. (Zool. Rec. 1892, Vermes, p. 66). It is now recognized as the type of a new family distinct from the *Temnocephaleæ*, and the specific name, *A. blanchardi*, n. sp., is added; HASWELL, Macleay Mem. Vol. pp. 152-159.

Amphistomum: diagnosis of the genus, and anatomy of *A. hominis*; LEUCKART, Paras. d. Menschen. n. ed., pp. 448-463.

Apoblemma: genus defined, 3 species figured and their description promised; MONTICELLI, t. c.

Bilharzia: genus defined; MONTICELLI, t. c., LEUCKART, t. c. pp. 464-468.

B. hæmatobia, anatomy; LEUCKART, t. c. pp. 468-506: development and life-history; SONSINO (226, 227), LEUCKART, pp. 506-528. Anatomy and physiology, and experiments on embryos; BROCK (47). Occurrence and clinical significance; LEUCKART, pp. 519-534.

Cephalogonimus: genus defined, and 3 species, *C. lenoiri*, Poir., *C. pellucidum*, Linst., and *C. ovatum*, R., described; MONTICELLI, t. c.

Craspedella, n. g., with *C. spenseri*, n. sp., from *Astacopsis bicarinatus*; HASWELL, Macleay Memorial Vol. p. 142.

Crossodera: genus defined; MONTICELLI, t. c.

Dactylodiscus borealis, n. sp., from *Thymallus borealis*, Scandinavia; OLSSON, t. c.

Didymozoon exocoeti, n. sp., for *Monost. filum*, G. Wagn.: diagnosis of genus and species; PARONA & PERUGIA, Atti Soc. Ligustica, pp. 198-201.

Distomum: anatomy, histology, and systematic; MONTICELLI, *t. c.* *D. calyptrocotyle*, n. sp., from *Beroë ovata*, of Gulf of Genoa, pp. 1-138; *D. macroporum*, n. sp., for (*D. macrocotyle*) Stoss, p. 133; *D. megalocotyle*, n. sp., previously described but not named from *Mustelis vulgaris* at Wimereux, foot-note p. 52; *D. bonnieri*, n. sp., on branchial arches of *Trigla gurnadus*, previously described as *D. varium*, Müll., pp. 180-184; *D. paronae*, n. sp., from *Seriola dumerilii*, p. 191; *D. teretiusculum*, n. sp., from *Solea klenii*, p. 193. *D. ercolanii*, n. sp., footnote p. 188, for "*D. signatum*, Duj." Ercol.; MONTICELLI, *t. c.* *D. italicum*, n. sp., from *Lichia amia*; STROSSICH, Boll. Soc. Adiat. xiv, p. 88. *D. albidum*, n. sp., from cats of Königsburg, BRAUN, Centr. Bakt. xiv, pp. 381-392 & 422-428. *D. (Echinost.) pungens*, n. sp., from *Podiceps minor*; *D. macrolaimus*, n. sp., from *Vesperugo pipistrellus*; v. LINSTOW, Jena. Zeitschr. xxviii, pp. 333-335.

Descriptions, with synonyms, of *D. richardii*, Lopaz, pp. 139-148, *D. fractum*, Rud., pp. 167-172, *D. capitellatum*, pp. 173-176, *D. fuscenscens*, R., pp. 177-179, *D. nigrovenosum*, Bellingham, pp. 185-189, *D. betencourti*, Mont., pp. 190 & 191; and figures, without description, of *D. contortum*, R., *D. fasciatum*, R., *D. filiferum*, R., *D. laticolie*, R., *D. macrocotyle*, Dies., *D. megastomum*, R., and *D. veliporum*, Crepl.; MONTICELLI, *t. c.* (Zool. Jahrb. Anat. vi, Suppl. iii). Descriptions and new hosts of *D. endolobium*, Duj., pp. 332 & 333, *D. erraticum*, R., pp. 335 & 336, *D. (Echinost.) echinatum*, p. 333, and *D. brachysoma*; v. LINSTOW, Jena Zeitschr. xxviii, pp. 328-341. 3 species from Chameleón, and *D. cymbiforme*, R., as the only species of *Chelone caretta*; SONSINO, Atti Soc. Toscana, p.-v. viii, pp. 183-190. *D. (Echinost.) trigonocephalum* in *Plecotus communis*, and *Distomas* in exotic snakes; SONSINO, P. Zool. Soc. London, pp. 496-500. *D. ovocaudatum*, notes on; SONSINO, Monit. Zool. ital. iv, p. 63, and Atti Soc. Toscana. *D. laureatum*, notes on; LINTON (150). *D. clavigerum*, R., anatomy and histology; NOACK (186). *D. sinense*; BILLET, C.R. Soc. Biol. v, pp. 506-510. *D. hepaticum*, life-history; LUTZ, Centrbl. Bakt. xiii, pp. 320-328.

(*D. simile*), Sons., = *D. horridum*, Leidy; SONSINO, Atti Soc. Toscana, p.-v. viii, pp. 215-217. (*D. campanulatum*), Ercol., referred to *D. truncatum*, Rud.; BRAUN (45). *D. macrostomum*, R., distinct from *D. erraticum*, R.; v. LINSTOW (148). [See also under *Accacelum*, *Monostomum*, and under *Young Forms*.]

Echinostomum: definition of genus and description of *E. cesticillus*, Molin, pp. 158-161; MONTICELLI, Zool. Jahrb. Anat. vi, Suppl. iii. *E. pungens*, n. sp., v. LINSTOW, Jena Zeitschr. xxviii. [See also under *Distomum*.]

Mesogonimus, definition of genus and enumeration of the 10 contained species; MONTICELLI, *t. c.*

Monostomum: full anatomy and histology of 3 species; WALTER, Zeitschr. wiss. Zool. lvi, pp. 189-235. (*M. filum*, Wagen.), placed in

the genus *Didymozoon*, and distinguished from the *M. filum*, Duj., which is a true *Monostomum*; PARONA & PERUGIA, Atti Soc. Ligustica, iv, pp. 198-201. (*M. hepaticum suis*), n. subsp., WILLACH (265), = stage in development of *Cysticercus tenuicollis* (Braun). *M. lentis*, v. Nordm., sp. dub., LEUCKART, Paras. d. Mensch. 2nd ed. pp. 445-448.

Podocotyle: definition of genus; MONTICELLI, Zool. Jahrb. Anat. vii.

Rhopalophorus: definition of genus; MONTICELLI, *t. c.*

Temnocephala comes and *dendyi*, n. spp., from *Astacopsis*, N. S. Wales and Victoria; *T. jheringii*, n. sp., from *Ampullaria*, Brazil, and *T. engawi*, n. sp., from *Engæus fissor*, Gippsland; HASWELL, Macleay Mem. Vol. pp. 134-139.

Tetracotyle typica, Dies.: 3 forms distinguished, one moveable, and two unmoveable, one being encapsuled; v. LINSTOW, *t. c.*

Urogonimus: definition of genus and description of *U. cercatus*, n. sp., pp. 162-166, and *U. macrostomum*, R.; MONTICELLI, *t. c.*

Young Forms.

Bucephalus haimeonus, found in *Cardium edule* and *Mactra solida*; HUET, Bull. Soc. Normand. vii, pp. 40 & 41.

Distomum: eggs and redia of a new species in lung of horse; WILLACH (264): eggs in liver of horse; RATZ (202). Peculiar redia and cercaria of a *Distomum* in *Melania*, which is possibly free-living when adult; LUTZ (158). Cercaria with bifid tail of *D. sinense* in *Melania*; BILLET (19). Cysts of *Distomum* sp. ? in *Leneiscus atrarius*; LINTON, (150) p. 553. Larvæ of *D. endolobium* in Insects; v. LINSTOW (148).

C.—NEMERTINEA.

Systematic of Nemertines; BÜRGER, Ver. deutsch. Zool. Ges. iii, pp. 24-27.

VERRILL, Tr. Connect. Ac. viii, pp. 382-456, describes and figures and gives the synonymy of a large number of marine Nemertines from New England, and he founds a new family, *Nectonemertida*, for two remarkable pelagic Nemertines found in the Gulf Stream, somewhat resembling *Sagitta* in form.

Amphiporus dissimulans, n. sp., Plymouth, RICHES, J. Mar. Biol. Soc. p. 10. *A. multisorus*, *heterosorus*, *tetrasorus*, pp. 393 & 394, *frontalis*, *mesosorus*, pp. 398 & 399, *cæcus*, p. 402, n. spp., and 13 other species, from coast New England, VERRILL, *t. c.* *A. spinosissima*, *A. spinosa*, and *A. cruciatus*, n. spp., S. Georgia, BURGER, Zool. Jahrb. Syst. vii, pp. 210-214. (*A. spectabilis*), Mc. Int., = *Drepanophorus rubrostriatus*, Hubr.; RICHES, *t. c.*

(*Borlasia quinquelineata*), Quoi & Gaim., = *Eupolia*; BÜRGER, Zool. Jahrb. Syst. vii.

- Carinella polymorpha* at Plymouth; RICHES, J. Mar. biol. Ass. iii. p. 5.
- Carinina grata*, Coast of New England; VERRILL, Tr. Connect. Ac. viii.
- Cephalothrix linearis*, Coast of New England; VERRILL, *t. c.*
- Cerebratulus steineni*, *C. subtilis*, *C. validus*, n. spp., S. Georgia, BÜRGER, Zool. Jahrb. Syst. vii, pp. 226–229. *C. boutani*, n. sp., Red Sea, JOUBIN, Rev. biol. Nord France, v, p. 67. Description of 4 species and 1 doubtful one from New England; VERRILL, *t. c.*
- Drepanophorus rubrostriatus*, at Plymouth; RICHES, *t. c.* *D. lankesteri*; VERRILL, *t. c.*
- ^ *Emea*, n. g. of *Enopla*, with *lacustris*, n. sp., L. of Geneva, anatomy and histology; DU PLESSIS, Rev. Suisse Zool. pp. 329–357.
- Emplectonema*: definition and synonymy of genus; VERRILL, *t. c.* p. 412, with description of *E. giganteum*.
- Eupolia mediolineata*, n. sp., Mauritius, *E. novemlineata*, n. sp., Java, and *E. mexicana*, n. sp., Mexico, BÜRGER, Zool. Jahrb. Syst. vii, pp. 230–236.
- ^ *Hyalonemertes*, n. g. of a new family, *Nectonemertidae*, with *H. atlantica*, n. sp., in the Gulf Stream; VERRILL, *t. c.* p. 451.
- Lineus bicolor*, p. 426, and 7 other species, 1 doubtful one, New England; VERRILL, *t. c.*
- Malacobdella*, 2 spp., New England, VERRILL, *t. c.* pp. 444 & 445.
- Micrura aurantiaca*, at Plymouth; RICHES, *t. c.* *M. dorsalis* and *rubra*, n. spp., pp. 429 & 430, and 3 other species from New England; VERRILL, *t. c.*
- ^ *Nectonemertes*, n. g. of a new family, *Nectonemertidae*, with *N. mirabilis*, n. sp., Gulf Stream; VERRILL, *t. c.* pp. 447–450.
- Nemertes candida*, at Plymouth; RICHES, *t. c.*
- Tetrastemma*: variations in the genus, and description of *T. nigrum*, *immutabile*, and *ambiguum*, n. spp., Plymouth; RICHES, *t. c.* pp. 14–20. Variations in *T. candida*, *dorsale*, and *vittatum*, and description of *T. roseum*, n. sp., p. 412, *T. vermiculus*, with *catenulatum*, n. var., p. 408, and *T. dorsale*, with *unicolor*, n. var., p. 410, and *T. elegans*, coast of New England; VERRILL, *t. c.* *T. amphiporoides*, *dubosi*, *gulliveri*, *hansi*, *antarcticum*, *vallidum*, *georgianum*, n. spp., S. Georgia; BÜRGER, Zool. Jahrb. Syst. vii.

D.—TURBELLARIA.

PÉREYASŁAWZEWA, in her monograph of the Turbellarians of the Black Sea, Zapiski Novoross. Obsch. xvii, 3, would substitute the name *Pseudoacæla* for *Acæla*, in consideration of the fact that the forms belonging to this group have a distinct gastric cavity in the embryo, and even in the adult the presence of pharynx and alimentary canal, as well as nervous system, can be demonstrated. She would therefore separate the marine Turbellarians into 3 groups as follows:—

- Pseudoacæla*, including the genera { *Schizoprora*, with 1 sp., pp. 204 & 205.
Aphanostoma, with 4 spp., pp. 205-213.
Convoluta, with 8 spp., pp. 214-230.
Darwinia, n.g., with 3 spp., pp. 230-242.
Macrostoma, with 3 spp., pp. 242-244.
Microstoma, with 1 sp., pp. 244-246.
Promesostoma, with 6 spp., pp. 246-255.
Proxenetes, with 2 spp., pp. 255-261.
- Rhabdocæla*, including the genera { *Hyporhynchus*, with 4 spp., pp. 261-268.
Macrorhynchus, with 6 spp., pp. 268-284.
Schultzia, with 2 spp., pp. 288 & 289.
Ophistoma, with 1 sp., pp. 284-289.
Acmastoma, with 1 sp., pp. 291-295.
Allostoma, with 1 sp., pp. 297-299.
- Alloicæla*, including the genera { *Monotus*, with 2 spp., pp. 299-303.
Plagiostoma, with 1 sp., pp. 295-297.

HALLEZ, Rev. Biol. Nord France, v, pp. 92-107, 135-158, & 165-197, publishes an elaboration of part of his paper on the classification of Turbellarians recorded last year [see Zool. Rec. 1892, *Vermes*, p. 13, HALLEZ (3), and p. 70].

CHAPUIS (66), describes a remarkable Turbellarian from Patagonia, of which he has only seen the male, though he has examined 80-100 specimens, and whose systematic position he cannot decide. It resembles the Dendrocœls in some respects, the Rhabdocœls in others.

BERGENDAL, Rev. biol. Nord France, v, finds a new family of Polyclades, the *Polypostiade*, belonging to the suborder *Acotytes*, for *Polypostia*, n.g., p. 366, and *Cryptocelis*, n.g., p. 237. It is most nearly allied to the family *Leptoplanidae*.

A new Turbellarian, from the Yellowstone Lake, is mentioned and very briefly described by FORBES, Bull. U. S. Fish Comm. xi.

VERRILL, Tr. Connect. Ac. viii, pp. 459-520, describes and figures, and gives synonymy of a number of species from the coast of New England.

Acrorhynchus bivittatus, v. Graaf, referred to genus *Macrorhynchus bivittatus*; PÉREYASLAWZEWA, Zapiski Novoross. Obshch. xvii, 3, p. 277.

Anoplodium pusillum, n. sp., from body cavity of *Holothuria poli*; MONTICELLI, Monit. Zool. ital. iii.

Aphanostoma for (*Proporus*, Schm.) *rubropunctata*, A. for (*Naidina*, Ulj.) *pulchella* and *sensitiva*; PÉREYASLAWZEWA, pp. 211-213. *A. aurantiacum* and *olivaceum*, n. spp. (pp. 509 & 510), and another species, coast of New England; VERRILL, t. c.

Automolus horridus, n. sp., Plymouth; GAMBLE, Quart. J. Micr. Soc. xxxiv, p. 491.

Bdelloura candida, Gir., described and figured, coast of New England; VERRILL, t. c. p. 499.

Convoluta elegans and *hipparhia*, n. spp., the latter with varieties *violacea* and *nigra*, n. varr., and *C. viridis*, n. sp., Black Sea; PÉREYASLAWZEWA, t. c. pp. 211-229. *C. paradoxa*, habits, &c.; GAMBLE (93).

- ¹ *Cryptocelides*, n. g., as type of a new family (*Cryptocelididae*) afterwards changed to *Polypostiadae* (p. 366), with *C. loveni*, n. sp.; BERGENDAL, Rev. biol. Nord France, v, pp. 237-241: in British Seas; GAMBLE (93), [see also *Polypostia* and *Typhlolepta*].
- Cryptocelis arenicola*, n. sp., North of France; HALLEZ, Rev. biol. Nord France, v, p. 150.
- Cycloporus maculatus*, n. sp., North of France; HALLEZ, t. c. p. 171. *C. papillosus*, and its variation in colour; GAMBLE (93).
- Cyrtomorpha subtilis*, v. Graaf, referred to n. g, *Darwinia*; PÉREYASLAWZEWA, Zapiski Novoross. Obsch. xvii, 3.
- ² *Darwinia*, n. g., with *D. albomaculata* and *D. variabilis*, n. spp., and including *Cyrtomorpha subtilis*, v. Graaf, Black Sea; PÉREYASLAWZEWA, t. c. pp. 230-242.
- Dendrocælum brandtii*, n. sp., and *D. brunneo-marginatum*, n. sp. (? = *Planaria affinis*, Oerst.), East Baltic; BÖHMIG, Ber. Komm. deutsch. Meere, vi (3), pp. 205 & 206.
- ³ *Discocelides*, n. g. of *Leptoplanide*, with *D. langi*, n. sp.; BERGENDAL, t. c. p. 241.
- Discocelis mutabilis* (Verr.), coast of New England; VERRILL, Tr. Connect. Ac. viii.
- Eurylepta maculosa*, n. sp., coast of New England; VERRILL, t. c. p. 495.
- ⁴ *Eustylochus*, n. g., for (*Planocera elliptica*) Girard; VERRILL, t. c.
- Fovia affinis*, and 2 varieties, coast of New England; VERRILL, t. c. p. 509.
- Geoplana diemenensis*, n. sp., p. 179, *G. mortoni*, n. sp., p. 181, *G. typhlops*, n. sp. (for a specimen he had previously referred to *G. alba*) p. 184, and *G. adæ*, Dendy, var. *fusca*, n. var., all from Tasmania; *G. munda* and *G. variegata*, Fl. & Ham., found there for the first time, and *G. tasmanica*, described; DENDY, P. Soc. Victoria, vi, pp. 178-189. *G. quinquelineata* and *G. fletcheri*, var. *adeluidensis*, described, from South Australia; DENDY, t. c.
- (*Girator bivittatus*), Ulj., = *Macrorhynchus bivittatus*; PÉREYASLAWZEWA, t. c. p. 277.
- Gunda graffii*, n. sp., East Baltic; BÖHMIG, Ber. Komm. deutsch. Meere, p. 205.
- ⁵ *Heterostylochus*, n. g., for *H. (Stylochoplana, Lang., Stylochus, Qfg.,) maculatus*; VERRILL, t. c. pp. 467 & 468 (footnote).
- Hyporhynchus piriformis* and *mirabilis*, n. spp., Black Sea; PÉREYASLAWZEWA, t. c. pp. 266 & 267.
- Imogine oculifera*, Gir., coast of New England; VERRILL, t. c.
- Leptoplana schizoporella*, n. sp., North of France; HALLEZ, Rev. biol. Nord France, v, p. 156. *L. virilis*, n. sp., p. 478, and *L. angusta*, n. sp., p. 485, and 3 other species from coast of New England; VERRILL, t. c.
- Macrorhynchus spiralis* and *dolichocephalus*, n. spp., Black Sea, and (*Prostomum*) *keffersteini*, Clp. (= *M. naegeli*) Graaf (*Girator* Ulj.), or (*Acrorhynchus*, Graaf) *bivittatus* referred to this genus; PÉREYASLAWZEWA, t. c. p. 275-277.

- Macrostoma gracil*, *megalogastricum*, and *ventriflavum*, n. spp., Black Sea ; PÉREYASLAWZEWA, t. c. pp. 243-246.
- (*Mesostomum ensifer*, Ulj.), referred to genus *Promesostoma* ; PÉREYASLAWZEWA, t. c. p. 249.
- (*Naidina*, Ulj., *pulchella* and *sensitiva*), referred to genus *Aphanostoma* ; PÉREYASLAWZEWA, t. c.
- Oligocladus sanguinolentus*, Isle of Man and Plymouth ; GAMBLE, P. Liverp. biol. Soc. vii, p. 170.
- Opistoma oculata*, n. sp., Black Sea ; PÉREYASLAWZEWA, t. c. p. 287.
- Plagiostoma elongatum* and *pseudomaculatum*, n. spp., GAMBLE, Quart. J. Micr. Soc. pp. 473 & 474. *P. pontica*, n. sp., Black Sea ; PÉREYASLAWZEWA, t. c. p. 295. *P. quadrioculatum*, n. sp., Greater Lake of Plön ; ZACHARIAS, Biol. Centralbl. xiii, pp. 377-382. *P. sulphureum*, Port Erin ; GAMBLE, P. Liverp. biol. Soc. vii, p. 162.
- Planaria alpina*, distribution, anatomy and systematic position ; BORELLI, Boll. Mus. Torino, viii, No. 137, pp. 1-10 : method of distribution ; GAMBLE, t. c. (*P. affinis*) Oerst., ? = *Dendrocaelum brunneo-marginatum* ; BÖHMIG, t. c. p. 150.
- (*Planocera elliptica*, Girard), referred to *Eustylochus*, n. g. ; VERRILL, t. c.
- Planoceropis*, n. subg. of *Planocera* with marginal ocelli ; VERRILL, t. c., with *P. nebulosa*, Girard, as type, coast of New England.
- Polycelis nigra*, var. *brunnea*, n. var., and *P. cornuta*, var. *brunnea*, n. var., N. Italy ; BORELLI, Boll. Mus. Torino, viii, No. 137, pp. 10 & 11.
- Polychærus caudatus*, Mark., New England, additions to anatomy ; VERRILL, t. c. p. 311.
- Polypostia*, n. g. of family previously (p. 237) called *Cryptocelididae*, but now changed to *Polypostiadeæ*, n. fam., with *P. similis*, n. sp., an acotyloous Polyclad with numerous male copulatory organs ; BERGENDAI, Rev. biol. Nord France, v, pp. 366-368.
- Procerodes ulvæ*, coast of New England, VERRILL, t. c. p. 506.
- Promesostoma bilineata*, p. 247, *pachydermum*, p. 250, and *pedicellatum*, n. spp., Black Sea ; *P.* (for *Mesostomum*, Ulj.) *ensifer*, p. 249, *P. minima*, as intermediate between this genus and *Proxenetes*, p. 254 ; PÉREYASLAWZEWA, t. c. *P. marmoratum*, notes on, and *P. lenticulatum*, new to Britain ; GAMBLE, P. Liverp. biol. Soc. pp. 155-157.
- (*Proporus rubropunctata*, Schm.), referred to genus *Aphanostoma* ; PÉREYASLAWZEWA, t. c. p. 211.
- Prosthiostomum gracile*, Gir., redescribed, from the coast of New England ; VERRILL, t. c. p. 497.
- (*Prostomum keffersteinii*, Clp.), referred to genus *Macrorhynchus* ; PÉREYASLAWZEWA, t. c. p. 275.
- Provortex rubrobacillus*, n. sp., Plymouth, GAMBLE, Quart. J. Micr. Soc. xxxiv, p. 469.
- Proxenetes paradoxus*, n. sp., Black Sea, PÉREYASLAWZEWA, t. c. p. 259.
- Rhynchodemus pyrenaicus*, n. sp., S. of France, v. GRAAF, Bull. Soc. zool. France, xviii, p. 122. *R. terrestris*, PISAROVIC & BABOR (194).

- Schultzia pothroides*, n. sp., p. 290, and *P. pellucida*, v. Graaf, var. *theodosica*, n. var., Black Sea; PÉREYASLAWZEWA, *t. c.*
- Stylochus frontalis*, n. sp., p. 465, and 2 other species, coast of New England; (*S. maculatus*) made type of n. g. *Heterostylochus*, p. 467: VERRILL, Tr. Connect. Ac. viii.
- Stylostoma sanguineum*, n. sp., N. of France, HALLEZ, *t. c.* p. 180.
- Trigonoporus dendriticus*, n. sp., p. 491, and another species from coast of New England; VERRILL, *t. c.*
- Typlocolax acuta*, as probably belonging either to the *Acala* or *Rhabdocala*, rather than to the *Dendrocalu*; VERRILL, *t. c.* p. 514.
- Typhlolepta caeca*, Oerst., ? = *Cryptocelides*; BERGENDAL, Rev. biol. Nord France, v, p. 241.

4.—NEMATODA, ACANTHOCEPHALA, AND CHÆTOGNATHA.

A.—NEMATODA [including *Mermithide* and *Gordiide*].

- Agamonema ranzanie*, n. sp., from cyst in wall of alimentary canal of *Ranzania truncata*, Mediterranean; STROSSICH, Boll. Soc. Adriatic, xiv, p. 86. *A. sp.* in muscles of body-wall of *Synapta*, in Mediterranean; MONTICELLI, Monit. Zool. Ital. iii, p. 248.
- Alaimus minor*, n. sp., roots of sugar-cane, N.S.W.; COBB, Agric. Gaz. N.S.W. iv, p. 824.
- Allantonema sylvaticum*, n. sp., in *Geotrupes sylvaticus* at Harl Mt. (near Bückeburg), development and life-history; v. LINSTOW, Centrbl. Bakter. xiv, p. 169.
- Angiostomum*: description of genus, and of its 5 contained species occurring in the lungs of a bird, a reptile, and 7 amphibians; STROSSICH, Boll. Soc. Adriatic, xiv, pp. 90-96.
- Aphelenchus longicaudatus* and *minor*, n. spp., banana plant, Fiji, and *A. microlaimus*, Cobb, Sydney, N.S.W.; COBB, Macleay Memorial Vol., pp. 53-58. *A. fragariae* and *A. ormerodis*, n. spp. (1891); BOS, Science, xxi, p. 59.
- Araeolaimus (Araeolaimoides) microphthalmus*, n. sp., Falmouth; MAN, Mém. Soc. zool. France, vi, p. 86.
- Ascaris megalcephala*: experimental observations on ripening and fertilisation of eggs; SALA (215): development of germ cells; WASIELEWSKI (255), BRAUER (41), and ZOJA (269). *A. canis* in *Ilerpestes*, on shore of Red Sea; SETTI, Atti Soc. Ligustica, iv, p. 15.
- Asconema* in the body-cavity of a Cecidomyid fly, and its history; GIARD, Boll. Soc. Ent. France, lxii, p. cccxi.
- Aulolaimus exilis*, n. sp. (♀ only), bananas, Fiji, COBB, Macleay Mem. Vol., p. 40.
- Bastania australis*, n. sp., Clarence river, N.S.W., COBB, Agric. Gaz. N.S.W. iv, p. 824.
- Bathylaimus*, n. g., with *B. australis*, n. sp., Port Jackson; COBB, P. Linn. Soc. N.S.W. viii, p. 409.

- ¹*Brachynema*, n. g., with *B. obtusa*, n. sp., sugar cane, N.S.W.; COBB, Agric. Gaz. N.S.W. iv, p. 811.
- Cephalobus similis* (young ♀) (? the type of a new genus), and *C. infestans* (♂ only), n. spp., COBB, Macleay Mem. Vol., pp. 39 & 40. *C. multicinctus*, n. sp., COBB, Agric. Gaz. N.S.W. iv, p. 829.
- ¹*Cephalonema*, n. g., with *C. longicauda*, n. sp., sugar cane, N.S.W.; COBB, t. c. p. 825.
- ¹*Chaolaimus*, n. g., with *C. pellucidus*, n. sp., sugar cane, N.S.W.; COBB, t. c. p. 821.
- Cheiracanthus hispidus*, Fedt., from stomach of Hungarian pig, anatomy; v. LINSTOW, Arch. Naturg. lix, p. 202.
- Chordodes*: systematic of genus; JANDA, Zool. Jahrb. Syst. vii. He would make it into a separate genus on a level with *Gordius* and *Nectonema*. He describes *C. brasiliensis*, n. sp., Brazil, and the males of several other species which were not previously known or inefficiently described.
- Chromadora poecilosoma*, n. sp., Falmouth, MAN, Mém. Soc. zool. France, vi, p. 96. *C. minima* and *C. musae*, n. spp., (immature ♀'s only), banana roots, Fiji, COBB, Macleay Mem. Vol., pp. 13 & 14. *C. minima* also in N.S.W., more detailed description, COBB, Agric. Gaz. N.S.W. iv p. 820. *C. minor*, n. sp., Port Jackson, COBB, P. Linn. Soc. N.S. Wales, viii, pp. 394-399.
- (*Chromogaster*), n. g., with *C. nigricans*, n. sp., Bay of Naples, and *C. purpurea*, n. sp., Adelaide, COBB, t. c. pp. 416 & 417. In a note he refers the genus to *Siphonolaimus*, de Man, q.v.
- ¹*Demonema*, n. g., with *D. rapax*, n. sp., Bay of Naples; COBB, t. c. p. 392.
- Diplogaster*: description of genus and 21 spp., with key. *D. parvus* (♂), *minor* (♀), and *minima*, n. spp., Fiji; *D. australis* (♀), and *D. graminum* (♂), n. spp. [or (?) = 1 n. sp. (♂ and ♀)], and *D. trichuris*, Sydney, N.S.W.; COBB, Macleay Mem. Vol., pp. 15-22.
- Dochnius trigonocephalus*, Duj., anatomy; POSITANO-SPADA (197).
- Dorylaimus exilis*, *obtusus* (♀ only), *longicollis* (♀), *perfectus*, *granuliferus* (♀), *labyrinthostoma* (♀), n. spp., bananas, Fiji; and *D. spiralis*, n. sp., (♀), carrots, N.S.W.; and *D. domus glauci*, n. sp., (♀), Pompeii, and *D. vesuvianus*, n. sp., Mt. Vesuvius; COBB, t. c. pp. 41-45. *D. minutus* and *subsibilis*, n. spp., sugar cane, N.S.W., COBB, Agric. Gaz. N.S.W. iv, p. 810.
- Enoplolaimus vulgaris*, n. sp., Falmouth, MAN, Mém. Soc. zool. France, vi, p. 119.
- Filaria uncinata*, of duck, with *Daphnia pulex* for intermediate host; HAMANN, Centrbl. Bakter. xiv, pp. 555-557.
- ¹*Fimbria*, n. g., with *F. tenuis*, n. sp., (♂ only) Ceylon, COBB, P. Linn. Soc. N.S. Wales, viii, p. 420.
- Gordius latrensis* and *speciosus*, n. spp., Galatia, JANDA, Zool. Jahrb. Syst. vii, pp. 596 & 597. *G. raphaelis*, n. sp., from *Phyllodromia* in French Congo, CAMERANO, Bull. Soc. zool. France, xviii, p. 213. *G. madagascariensis* and *G. pardalis*, n. spp., Madagascar, CAMERANO, Boll.

- Mus. Torino, viii, No. 148. *G. verrucosus*, Baird, revision needed; (*G. varius*) Leidy, ? = *G. tricuspoidatus*, Dufour; CAMERANO, Bull. Soc. zool. France. (*G. sp. ?*) Vejdowsky, = *G. pioltii*, Camer.; JANDA, t. c. Resistance of muscle of *G. pustulosus* and of *G. tolosanus*; CAMERANO, Boll. Mus. Torino, viii, No. 139. Anatomy of *Gordius* and *Mermis* compared; VILLOT, C.R. Ass. Franc. 1892, ii, p. 529.
- Heterakis inflexa*, embedded in egg-shell; PAVESI (191).
- Ichthyonema pellucidum*, n. sp., from *Tetrodon stellatus*; JÄGERSKIÖLD (128).
- Lasius*, n. g. for *L. contortus*, n. sp., Bay of Naples, and *L. longus* (♂), n. sp., Port Jackson; COBB, P. Linn. Soc. N.S. Wales, viii, pp. 404 & 405.
- Lecanocephalus*: Schneider's pore and "pharyngeal" glands; HAMANN, Zool. Anz. xvi, p. 432.
- Leptosomatium elongatum*, Bast., Falmouth; MAN, t. c. pp. 103-108.
- Mermis*: anatomy compared with that of *Gordius*; VILLOT, t. c. A *Mermis* in pharyngeal gland of *Lasius flavus*; JANET (131).
- Monhystera leptosoma*, n. sp., Falmouth, MAN, t. c. p. 83. *M. diplops*, *brevicollis*, *lata*, *setosissima*, *gracillima*, *australis*, n. spp., Port Jackson, COBB, P. Linn. Soc. N.S. Wales, viii, pp. 401-408. *M. insignis*, *pratensis*, *australis*, n. spp., sugar cane, N.S.W., COBB, Agric. Gaz. N.S. Wales, iv, pp. 823 & 824. Additions to anatomy of *M. rustica*, Bütschli; COBB, t. c. p. 822: its occurrence in Fiji I.; COBB, Macleay Mem. Vol., p. 30.
- Monochus*: description of genus and key to species, with *M. digiturus* (♀), *gymnolaimus* (♀), *minor* (immature ♀), n. spp., roots of bananas, Fiji; and *M. major*, n. sp., Moss Vale, N.S.W., *M. longicaudatus*, n. sp., on celery, Sydney, COBB, Macleay Mem. Vol., pp. 1-12. *M. intermedius* and *similis*, n. spp., sugar cane, N.S.W., COBB, Agric. Gaz. N.S.W., pp. 817 & 818.
- Nectonema agile*: the young parasitic, with *Palæmonetes* for a host; WARD, P. Amer. Ac. xxvii, p. 260.
- Neonchus*, n. g., with *N. longicaudata*, n. sp., sugar cane, N.S.W., COBB, Agric. Gaz. N.S.W. iv, p. 819.
- Oncholaimus albidus*, Bastian, Falmouth, MAN, t. c. pp. 108-112.
- Oxyuris paronai*, n. sp., from *Macroscinus coetei*, Cape Verd Is., v. LINSTOW, Arch. Naturg. lix, p. 201. *O. flagelloides*, n. sp., from *Atherura armata*, JÄGERSKIÖLD, Ak. Handl. Stockholm.
- Pelagonema*, n. g., with *P. simplex*, n. sp., Ceylon; COBB, P. Linn. Soc. N.S. Wales, viii, p. 390.
- Pelodora janeti*, n. sp., larvæ in pharyngeal glands of ants, adult free-living in detritus of ants' nest; JANET, C.R. Ac. Sci. cxvii, pp. 700-703.
- (*Peritrachelius*) not a distinct genus from *Ascaris*; JÄGERSKIÖLD (128).
- Platycoma*, n. g., with *P. cephalata*, n. sp., (♂), Bay of Naples; COBB, P. Linn. Soc. N.S. Wales, viii, p. 399.

- Plectus insignis*, n. sp., Moss Vale, N.S.W., COBB, Macleay Mem. Vol., p. 38. *P. minimus*, *pusillus*, *intermedius*, *cephalotus*, n. spp., sugar canes, N.S.W., COBB, Agric. Gaz. N.S.W. iv, pp. 826-828.
- Prismatolaimus australis*, n. sp., (♀), Moss Vale, N.S.W., and *P. intermedius*, Bütschli, ? ; COBB, Macleay Mem. Vol., pp. 37 & 38.
- Rhabditis australis*, n. sp., (♀), Sydney, *R. coronata*, n. sp., (♀), bananas, Fiji, and *R. sp.?* (young), COBB, *t. c.* pp. 29 & 30. *R. filiformis*, Bütschli, ?, and 2 other species, Sydney ; COBB, *t. c.* pp. 22-29. *R. simplex*, *minutus*, n. spp., sugar canes, N.S.W., COBB, Agric. Gaz. N.S.W. iv, pp. 830 & 831.
- ↙ *Siphonolaimus*, n. g., with *S. niger*, n. sp., Falmouth, MAN, Mém. Soc. zool. France, vi, pp. 99 & 100. *S. nigricans*, n. sp., Bay of Naples, and *S. purpurea*, n. sp., Port Adelaide, COBB, P. Linn. Soc. N.S. Wales, viii, pp. 416 & 417.
- ↓ *Solenolaimus*, n. g., with *S. obtusus*, n. sp., Bay of Naples ; COBB, *t. c.* p. 419.
- Spilophora parva*, *gracilicauda*, and *gracilicauda dolichura*, n. spp., Falmouth, MAN, *t. c.* pp. 89-94.
- Strongylus filaria*, Rud., in *Oreotragus saltator* on shores of Red Sea ; SETTI, (220) p. 16.
- ↓ *Synouchus*, n. g., with *S. fasciculatus*, and *hirsutus* (♂), n. spp., Bay of Naples ; COBB, *t. c.* pp. 411-413.
- ↓ *Thalassoalaimus*, n. g., with *T. tardus*, n. sp., Falmouth ; MAN, *t. c.* pp. 81 & 82.
- Thoracostoma figuratum*, Bast., n. sp., Falmouth, MAN, *t. c.* pp. 108-111.
- ↓ *Trefusia*, n. g., with *T. longocaudata*, n. sp., Falmouth, MAN, *t. c.* pp. 84 & 85.
- Trichosomum strumosum*, n. sp., from cesophageal epithelium of pheasant in different parts of Germany ; REIBISCH, Arch. Naturg. lix, pp. 331-340. Experimental introduction of a species into mouse ; PARONA & PERUGIA (190 III).
- ↓ *Tricoma*, n. g., with *T. cincta*, n. sp., having a segmented appearance, Bay of Naples ; COBB, P. Linn. Soc. N. S. Wales, viii, pp. 389-390.
- Triodontolaimus acutus*, Villot, Falmouth ; MAN, *t. c.* pp. 115-119.
- Tripyla* : description of genus and 12 species, with key : *T. minor*, n. sp., (♀), bananas, Fiji, and *T. tenuicauda*, n. sp., (♂), Sydney, N.S.W. ; COBB, Macleay Mem. Vol. pp. 31-36.
- Tylencholaimus limnophilus*, n. sp., between the Danube and Theiss, DADAY, Math. term. Ertes. Magyar Ak. xii, p. 39 (and pp. 13, 23, & 25). *T. ensiculiferus*, n. sp., (♀), bananas, Fiji, COBB, *t. c.* p. 47.
- Tylenchus granulatus* (♀), *similis* (♂), *multicinctus*, n. spp., Fiji, COBB, *t. c.* pp. 51 & 52. *T. setiferus*, *emarginatus*, *dihystera*, *minutus* (♂), and *uniformis*, n. spp., sugar canes, N.S.W., COBB, Agric. Gaz. N.S.W. iv, pp. 813-815. *T. radicola*, Greef, larvæ, and development of male and female ; COBB, Macleay Mem. Vol., pp. 48-51. *T. devastria*, and its synonyms ; COBB, *t. c.* p. 51.

B.—*ACANTHOCEPHALA*.

Echinorhynchus: 18 species in different fish of Scandinavia, with *E. gibber* (from *Muræna anguilla*) and *E. obovatus* (from *Mergus seruator*), n. spp., OLSSON, Sv. Ak. Handl. xxv. On 3 species in birds, CONDORELLI-FRANCAVIGLIA, (71) pp. 79–82. *E. capitatus*, v. Linst., as an instance of omopolielminthosis in *Globicephalus svineval*, Flow., Gulf of Genoa; PARONA (189). *E. magretti*, Par., cysts occurring outside the trachea of *Lamprotornis chalybea*, from Red Sea; SETTI (220). *E. tuberosus*, Yellowstone Park, notes on, LINTON, (150) p. 554. *E. claviceps*, as an instance of true pædogensis; MONTICELLI (172).

C.—*CHÆTOGNATHIA*.

[Nothing.]

5.—ROTIFERA, INCLUDING GASTROTRICHIDÆ.

DADAY, Termes. Fuzetek. xvi, pp. 72–80, deals with the systematic of Rotifers in general, and introduces a new family belonging to the order *Monogonota* for his *Cypridicola parasitica*, a peculiar form with single ovary, but paired genital apertures, and a foot gland which becomes the stalk gland, ectoparasitic on a *Cypris*.

Adinetide; BRYCE, J. Quekett Club, v, pp. 146–151.

Adineta clauda, n. sp., Gareloch Head, N.B., possibly the type of a new genus; BRYCE, J. Quekett Club, v, p. 150. *A. tuberculosa, barbata*, and *gracilis*, n. spp., N. Germany, JANSON, Abh. Ver. Bremen, xii, Suppl. pp. 69–73. *A. vaga*, 2 varr, *major* and *minor*, distinguished; BRYCE, *t. c.*

Anapas: remarks on the genus and on the species, *A. ovalis*, to which he would refer Lauterborn's (*Chromogaster testudo*); BERGENDAL, Ofv. Ak. Forh. 1, pp. 589–598.

Ascomorpha agilis and *amygdalum*, n. spp., Holstein (Greater Lake of Plön), ZACHARIAS, Biol. Centralbl. xiii, pp. 377–382.

Asplanchna priodonta, Gosse, from Plön, anatomy; ROUSSELET (211).

Bipalpus vesiculosus, in the Greater Lake of Plön; ZACHARIAS, *t. c.* Anatomy of female, with only a brief mention of the male; WIERZEJSKI & ZACHARIAS, Zeitschr. wiss. Zool. p. 236. Lauterborn's *Dictyoderma hypopus* referred to it; WIERZEJSKI & ZACHARIAS, Zool. Anz. xvi, p. 430. *B. lynceus*, Ehrb., defence of the name; WIERZEJSKI & ZACHARIAS, *t. c.* JÄGERSKIÖLD, Zool. Anz. xvi, p. 357, gives these 2 species as synonyms of his 2 species of *Gasterochiza*, q.v.

Brachionus tridens, n. sp., salt and brackish water, Scotland; HOOD, J. Quekett Club, v, p. 283. *B. rhenanus*, n. sp., Rhine, LAUTERBORN, Zool. Jahrb. Syst. vii, p. 269.

- Callidina pusilla*, n. sp., Epping Forest, and *C. cornigera*, n. sp., near Bognor, and remarks on the naming of other species and of their organs; BRYCE, J. Quekett Club, v, pp. 196-201. *C. longirostris*, vorax, and *ehrenbergii*, n. spp., N. Germany, JANSON, Abh. Ver. Bremen, xii, pp. 53-57. (*C. sordida*), n. sp., Epping Forest, WESTERN, J. Quekett Club, v, p. 159, = *C. longirostris*, Janson; WESTERN, t. c. p. 308.
- (*Chromogaster*), n. g., with (*C. testudo*), n. sp., Rhine, LAUTERBORN, t. c. p. 266, shown to = *Anapas ovalis*, BERGENDAL, Ofv. Ak. Forh. 1.
- Coclopus similis*, Wierzejski, ? = *Rathulus bicornis*, Western; WESTERN, J. Quekett Club, v, pp. 308.
- Colurus pachypodus* and *tesselatus*, n. spp., Ireland, GLASCOTT, P. Dublin Soc. viii, p. 74. *C. cristatus*, n. sp., near New York, ROUSSELET, J. R. Micr. Soc. p. 446.
- Conochylus leptopus*, n. sp., Yellowstone Park, FORBES, Bull. U. S. Fish Comm. xi, p. 256. *C. volvox*, in Rhine Lakes, IMHOF (125).
- (*Cypridicola*), n. g., with *C. parasitica*, n. sp., and type of a new family below the order *Monogonota*, ectoparasitic on *Cypris incongruens*; DADAY, Termes. Fuzetek, xvi, pp. 1-28.
- (*Dictyoderma*), n. g., with (*D. hypopus*), n. sp., Rhine, LAUTERBORN, t. c. p. 268, = *Bipalpus vesiculosus* (*Gastroschiza flexilis*, Jäg.), WIERZEJSKI & ZACHARIAS, t. c., ? = *G. faveolata* (*B. lynceus*, W. & Z.), BERGENDAL, t. c.
- Diglena inflata*, *revolvens*, *elongata*, and *rugosa*, n. spp., pp. 60-62, and *hudsoni* and *dromius*, n. spp., pp. 83 & 84, Ireland, GLASCOTT, t. c. *D. ferox*, n. sp. for (*Pleurotrocha grandis*), West.; WESTERN, J. Quekett Club, v, p. 155.
- Dinocharis serica*, n. sp., China, THORPE, J. R. Micr. Soc. p. 152.
- Eosphora striata*, n. sp., Ireland, GLASCOTT, t. c. p. 57.
- (*Euchlanis bicarinata*), Perty, referred to genus *Salpina*, and needing a new specific name, there being already a *S. bicarinata*; DIXON-NUTTALL, J. R. Micr. Soc. pp. 639 & 640.
- Floscularia pelagica*, n. sp., Keston Common, ROUSSELET, J. R. Micr. Soc. p. 444. *F. spinata*, n. sp., Scotland, HOOD, J. Quekett Club, v, p. 281. *F. atrochoides*, n. sp., non-sessile, near Krakau, WIERZEJSKI, Zool. Anz. xvi, pp. 312-314. *F. regalis*, Huds., in Alpine Lakes, IMHOF (124). *F. mutabilis*, Bolt., in Rhine, LAUTERBORN, t. c.
- Furcularia semisetifera*, *megaloccephala*, and *rigida*, n. spp., Ireland, GLASCOTT, P. Dublin Soc. viii, pp. 55-57. *F. tubiformis*, n. sp., West Indies, KING, J. Quekett Club, v, pp. 137-145.
- (*Gasteropus stylifer*), Imh., in Rhine, ?, LAUTERBORN, t. c. p. 263, ? = *Gastroschiza stylifer*, JÄGERSKIÖLD, t. c., = *Notops pygmaeus*, Calman, WIERZEJSKI & ZACHARIAS, Zool. Anz. xvi, pp. 430-432, although not properly a *Notops*, and possibly also = *N. ruber*, Hood. (*G. hudsoni*), Imhof, ? = *Gastroschiza flexilis*, Jäg.; JÄGERSKIÖLD, t. c.; and (*G. ehrenbergi*), Imhof, ? = *Gastroschiza lynceus*, Ehrb., JÄGERSKIÖLD, t. c.

- Gastroschiza*: remarks on genus; JÄGERSKIÖLD, *t. c.*, BERGENDAL, *t. c.* JÄGERSKIÖLD recognises 5 species, and gives their synonyms [see *Bipalpus*].
- Gastrotricha*: relationship to Rotifers discussed; WAGNER, *Biol. Centralbl.* xiii, pp. 223–238. Three species in Holstein lakes; ZACHARIAS (268).
- (*Hudsonella*), n. g. with (*H. picta*), n. sp., ZACHARIAS, *t. c.*, = *Notops pygmaeus*, Calm.; ROUSSELET, *J. R. Micr. Soc.* pp. 444–449, WIERZEJSKI & ZACHARIAS, *Zeitschr. wiss. Zool.* lvi. The latter would, however, make the species the type of a separate genus, and suggests that the *Notops ruber* of Hood may be the same species.
- Lacinularia megalotrocha* and *racemovata*, n. spp., Singapore and China; THORPE, *J. R. Micr. Soc.* pp. 149 & 150.
- Mastigocera capucina*, n. sp., (♀ only), Holstein; ZACHARIAS, *Biol. Centralbl.* xiii, and WIERZEJSKI & ZACHARIAS, *Zeitschr. wiss. Zool.* lvi, p. 242. *M. (hudsoni)*, n. sp., Rhine; LAUTERBORN, *Zool. Jahrb. Syst.* vii, p. 266, and *Verh. Ver. Heidelb. v.*, = *M. capucina*, W. & Z.; WIERZEJSKI & ZACHARIAS, *t. c.* *M. cylindrica*, Imh.?, Rhine, p. 264, *M. setifera*, n. sp., or ? the same, Rhine, p. 271; LAUTERBORN, *Zool. Jahrb. Syst.* vii. *M. brachydactyla*, n. sp., Ireland; GLASCOTT, *P. Dublin Soc.* viii, p. 64.
- Megalocephala procer*a and *spinosa*, n. spp., China, THORPE, *t. c.* p. 150.
- Melicerta janus*, in Alpine Lakes; IMHOF, *Biol. Centralbl.* xiii, p. 607.
- Metopidea parvula*, n. sp., Epping Forest, BRYCE, *J. Quekett Club*, v, p. 284.
- Monostyla ovata*, n. sp., Yellowstone Lake, FORBES, *Bull. U. S. Fish Comm.* xi, p. 256. *M.* n. sp., in Rhone region, IMHOF, *Arch. Sci. Nat.* xxix, p. 649. *M. lamellata*, n. sp., between Danube and Theiss, DADAY, *Math. term. Ert. Magyar Ak.* xii, p. 40.
- Microdon* ? *robustus*, n. sp., Ireland, GLASCOTT, *t. c.* p. 40.
- Notholca hoodi*, n. sp., marine, Westport, Ireland, WESTERN, *J. Quekett Club*, v, p. 158. *M. scapha*, Gr. (for the first time in fresh water), and *N. labis*, Gr., in Alpine lakes; IMHOF, *Biol. Centralbl.* xiii.
- Notommata volitans*, *cylindriformis*, *larviformis*, and *rubra*, pp. 47–86, *N. lucens* and *N. gigantea*, pp. 79 & 80, n. spp., Ireland, GLASCOTT, *P. Dublin Soc.* viii.
- Notops lotos*, n. sp., China, THORPE, *t. c.* p. 152. *N. forcipata*, n. sp., p. 79, and *N. ? quadrangularis*, n. sp., p. 43, Ireland; GLASCOTT, *t. c.* *N. pygmaeus*, Calm., Dundee, description; ROUSSELET, *J. R. Micr. Soc.* p. 446 [see also *Hudsonella*].
- Octotrocha*, n. g., with *O. speciosa*, n. sp., China; THORPE, *t. c.* p. 146.
- Oecistes brevis*, n. sp., Scottish lakes, ROUSSELET, *t. c.* p. 448. *O. sp. ?*, TUGWELL, *Sci. Gossip*, p. 130.
- Pedalium fennicum*, Lev., remarks on species by Dr. Hudson; LEVANDER, (145): figured and remarked on by CALMAN, *Ann. Nat. Hist.* p. 332.
- Philodinide*: summary of knowledge of the family; JANSON (132).

- Philodina commensalis*, n. sp., on *Asellus vulgaris*, neighbourhood of London; WESTERN, J. Quekett Club, v, p. 156.
- (*Pleurotrocha grandis*) Western, = *Diglena ferox*, n. sp.; WESTERN, t. c. p. 155.
- Polyarthra aptera*, n. sp., Scottish lakes and pools; HOOD, t. c. p. 281.
- Rathulus bicornis*, n. sp., Roehampton, Scotland, and Ireland; WESTERN, t. c. p. 159, and p. 308.
- Rhinops orbiculodiscus*, Thorpe, in China, probably = type of new genus; THORPE, J. R. Micr. Soc. pp. 145-152.
- Rotifer phaleratus*, n. sp., or (?) only new var. of *R. vulgaris*, Ireland; GLASCOTT, t. c. p. 38.
- Sacculus hyalinus*, Kellie., in Rhine; LAUTERBORN, Zool. Jahrb. Syst. vii.
- Salpina*, n. sp., for *Euchlanis bicarinata*, Perty.; DIXON NUTTALL, J. R. Micr. Soc. p. 639.
- Stephanoceros eichhornii*, description of male; WESTERN, J. Quekett Club, v, p. 157.
- Synchaeta grandis*, n. sp., Greater Lake of Plön; ZACHARIAS, t. c.
- Triarthra longisetosus*, Ehrb., var. *limnetica*, n. var., Greater Lake of Plön; ZACHARIAS, t. c.
- Trochosphaera solstitialis*, n. sp., China, and reference of the genus to the family *Hydatinidae* instead of to the *Mellicertidae* as an aberrant form, on account of the shape of the ovary; THORPE, t. c. p. 147.

MESOZOA.

- MONTICELLI, Rend. Acc. Lincei (5) ii, pp. 39 & 40, describes under the name of *Treptoplax*, n. g., *reptans*, n. sp., an animal with no trace of organs, but having 3 layers of cells and exhibiting amœboid movements. It would seem to be most nearly allied to *Trichoplax adhaerens*, Schultze, but differs from it in having no somatic muscles, by the fact that of the two outer layers of cells, which are both epithelial, the ventral one only is ciliated; also the refringent bodies instead of being inside the animal are on the surface, and the pigment masses of *Trichoplax* are absent. It was found crawling on the glass of the tanks at the Naples Aquarium. It multiplies by simple division into two.
- THIELE, Abh. Ges. Isis, 1892, pp. 54-57, discusses the systematic position of *Salinella*, *Trichoplax*, &c., concluding that they are to be regarded as degenerate Metazoa, the *Ctenophora* being primitive.

XVI. CŒLEENTERATA.

BY

SYDNEY J. HICKSON, M.A.

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I.—TITLES.*

- ALCOCK, A. Newly-recorded Corals from the Indian Seas. *J. Asiat. Soc. Bengal*, lxii, pp. 138-149, 2 maps, 3 pls. Abstr. in *J. R. Micr. Soc.* 1893, vi, p. 745.
- . On some *Actiniaria* of the Indian Seas. *J. Asiat. Soc. Bengal*, lxii, pp. 151-153.
- . Natural History Notes from H.M. Indian Marine Survey Steamer "Investigator," Commander C. F. Oldham, R.N., commanding. Series II, No. 9. An Account of the Deep-Sea Collection made during the Season 1892-93. *J. Asiat. Soc. Bengal*, lxii, *Cœlenterata*, pp. 169-171, 1 pl. Abstr. in *J. R. Micr. Soc.* 1893, vi, p. 745.
- ANTIPA, G. Eine neue Stauromeduse. *MT. Stat. Neapel*, x, pp. 618-632, 1 pl. Abstr. in *J. R. Micr. Soc.* 1893, iv, pp. 490 & 491.
- . Eine neue Art von *Drymonema* [*D. cordelio*]. *Jena. Zeitschr.* xxvii, pp. 337-343, pl. ix. Abstr. in *J. R. Micr. Soc.* 1893, iii, p. 336.

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

6. APPELLÖFF, A. Zur Kenntniss der Edwardsien. [*Vide* Zool. Rec. 1892.] Abstr. in J. R. Micr. Soc. 1893, iv, p. 487.
7. BALE, W. W. Further Notes on Australian Hydroids, with descriptions of some new species. P. Soc. Victoria, vi, 4 pls., 24 pp. Abstr. in J. R. Micr. Soc. 1894, ii, p. 209.
8. BEAUMONT, W. I. Note on Lucernarians occurring in the neighbourhood of Port Erin, Isle of Man. P. Liverp. biol. Soc. vii, pp 253-263.
9. BEDOT, M. Résultats des Campagnes scientifiques accomplies sur son yacht par Albert I. Prince souverain de Monaco. Fasc v. *Bathyplysa grimaldii* (n.sp.). Siphonophore bathypélagique de l'Atlantique Nord, 1 pl. Monaco.
10. —. Révision de la famille des *Forskaliæ*. Rev. Suisse Zool. i. Abstr. in J. R. Micr. Soc. 1893, vi, p. 745.
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II.—MORPHOLOGY.

HYDROZOA.

The minute anatomy of the Hydroids has been submitted to careful examination by Zoja and Schneider. ZOJA (84) by means of the methyl-blue method investigated more particularly the ultimate ramifications of the nervous system of *Hydra*, and is able to give figures of minute fibrils and nodules terminating in the ectoderm cells.

SCHNEIDER'S paper (70) is very elaborate, and covers a wide field. The results of his investigations into the structure of the tissue elements are given in a series of figures. The minute anatomy of the ectoderm, endoderm, mesogloea, muscle and nerve fibres, nematocysts, &c., is considered in detail. The genera used in his investigations were *Carmarina* and *Pennaria*, as representatives of the *Hydromedusæ*; *Forskalea*, *Apolemia*, and *Vellella* as representatives of the *Siphonophora*; *Pelagia* of the *Scyphozoa*, and *Alcyonium* and *Adamsia* of the *Anthozoa*.

MURBACH (60) has arrived at different conclusions to Schneider on the subject of the development of nematocysts. He states that the division of the nuclei of the interstitial cells, which form the nematocysts, is amitotic. A portion of the nuclear mass forms a little rod at the periphery of the cell, which soon passes into the substance of the cell. The rod then separates itself from the cell-protoplasm, excepting at one point, where it remains in contact with it. The rod then increases in size, and the thread is formed in a spiral manner round it.

CHAPEAUX (25) says that physiological experiment teaches us that *Hydra* is a very sensitive animal, that the sensitivity is not localised in any particular region, but is distributed throughout the organism; that the peristomatic region is the coordinating centre of movement, that the extremities of the tentacles are extremely sensitive, and that the cnidocil is an "élément sensoriel."

The cnidocil, he finds, is in connection with the nervous system, and the peristomatic region is morphologically the centre of the nervous system.

SIGERFOOS (72) states that, notwithstanding Lang's investigations on the mode of gemmation of *Hydra* [*vide Zool. Rec.* 1892], the blastostyle buds of *Epenthesis* are formed by evagination of both ectoderm and endoderm.

SAMASSA (69), in a note on the origin of the sexual cells of the *Ctenophora*, says that although it has not yet been actually proved, it is highly probable that they arise in *Callianaria* from the ectoderm.

NUSSBAUM (64) observed that by changing some living Hydroids from one tank to another, he was able to change their sex. His conclusions are that light, temperature, &c., have no influence in producing the change, but that it is entirely due to the amount of food present, a

diminution in the amount of food producing a hermaphrodite and then a male condition.

GÜNTHER (34) gives a preliminary account of the anatomy of the freshwater Medusa (*Limnocyda*) from Lake Tanganyika, illustrated by two plates. Until the life-history is known more thoroughly, the zoological position of the genus must remain doubtful, but it shows affinities with both the *Lepto-* and *Anthomedusæ*.

HEIDER (39) gives an interesting account of the anatomy of the curious parasitic Ctenophore *Gastrodes*, previously discovered by Korotneff in 1888.

HICKSON (41) gives an account of the early stages in the development of *Distichopora*, together with a summary of the early stages in the development of other Cœlenterates, and discusses briefly the "delamination," "invagination," and other theories of Cœlenterate development.

NAGEL (6) gives an account of his investigations on the physiology of the senses of *Beroë*, and calls attention to the great sensitivity of the skin in this genus.

CHAPEAUX (23, 24) gives an account of his investigations on the digestion of the Cœlenterates. He finds that when one removes an *Adamsia* from the water, and attempts to remove it from the shell on which it is parasitic, it emits a fluid which contains a number of refracting vacuoles, which, when broken, are distinctly more alkaline than sea-water. This fluid does not, however, affect starch, but is capable of attacking albuminoids and changing them chemically. It is also capable of emulsifying fats much more rapidly than ordinary sea-water, but does not change them chemically. This liquid is undoubtedly secreted by the mesenterial filaments. Intra-cellular digestion also occurs. In the transparent nutritive zooids of *Apoletia wvaria* and *Diphyes acuminata*, diatoms, grains of carmine may be seen to undergo disintegration in the endoderm cells. Particles of fibrin are seized by these cells and digested, but the extra-cellular ferment has no effect upon hydrocarbons. When emulsified olive oil is injected into the *Apoletia*, some globules are taken up and changed chemically, but others are rejected.

SCYPHOZOA.

BIGELOW (13) states that in the Medusa *Polyclonia* there is a sexual dimorphism due to an especial adaptation in the female for the protection of the eggs. In the adult females the oral funnels have disappeared from the disc, while the oral vesicles have increased in number until they are closely crowded together and completely cover it. The vesicles on the oral disc serve to protect the eggs, those on the arms to capture food.

HORNELL (44) calls attention to the malformed colletocystophores in Lucernarians observed at Jersey, this organ bearing in many cases a tentacle-like outgrowth at its apex.

HORNELL (45) & HURST (48) arrive independently at the conclusion that the *Scyphomedusæ* are degenerate. HURST (48) summarises his conclusions as follows:—

1. That *Haliclystus* is a degenerate or arrested *Scyphistoma*.
2. That its marginal bodies are arrested rudiments (*i.e.*, vestiges) of tentaculocysts.
3. That *Lucernaria* is a still further modified ("degenerate") descendant of some free-swimming *Medusæ* of one or more species.

HURST (46, 47) comes to the conclusion that the so-called "auditory organs," *i.e.*, "tentaculocysts," "octocysts," &c., of the *Cœlenterata* and other invertebrates cannot be sensitive to vibrations of sound, but they are rather of the nature of "touch" organs.

GOETTE (31) finds that the larva of *Pelagia* possesses, before the beginning of the formation of ephyræ, nearly all the most essential parts of the organisation of a *Scyphistoma*, and lacks only the attached habit and the organs connected with it. The origin of the sexual cells is not purely endodermal, as some of the gastric pouches are formed from ectoderm.

ANTHOZOA.

CARLGREN (19) states that in the *Edwardsiæ* and *Edwardsioides* there are only 16 tentacles in two cycles of 8. In the *Edwardsiella* type there are 8 tentacles in the first cycle, but they stand inside instead of outside the tentacles of the second cycles. The tentacles of the second cycle are 12 in number. Besides this there are tentacles of a third cycle more or less incomplete. In the *Milne-Edwardsiæ* the tentacles are arranged in four cycles, 6-6-12-24, and on a hexactinian plan. There is a full description of *Milne-Edwardsia carnea*, = *Edwardsia carnea* (Gosse).

CARLGREN (20) finds two forms of brood chamber in the *Actiniæ*. In the one case they may be simply the intermesenterial chambers or cœlenteric cavity, in the other ectodermic invaginations of the body-wall. The former occurred in four examples of a Paractid and a Bunodid, probably a *Tealia*.

In the same species as the last occurred the chambers formed by ectodermic invagination. They have no communication with the cœlenteron, and must consequently be filled from outside.

According to CARLGREN (21), the siphonoglyphe of the *Cerianthæ* is dorsal, and not ventral as it is in *Alcyonaria*.

BOURNE (14), in his account of the post-embryonic development of *Fungia*, uses the following terms:—He calls the individual Caryophyllia-like form developed directly from the ovum a "trophozooid." From this there may arise one or more buds, or "anthoblasts." When two or more anthoblasts unite to form a colony they are called "anthocormus." "Anthocyathus" is the name given to the discoid *Fungia* form, whether free or attached, and "anthocaulus" to the pedicle which carries the anthocyathus.

Mr. Bourne's views as to the cause of the detachment of the anthocyathus from the anthocaulus are expressed as follows:—"It appears that the soft tissues undergo degeneration at the point where the anthocaulus passes into the anthocyathus. The decay and death of the tissues is followed by degenerative changes in the corallum, which is then more liable to the inroads of *Achyla penetrans*, the parasite hastening the process which has been begun by the decay of the tissues, and which may be completed in its absence by the solvent action of sea-water, a process which would be necessarily very slow."

BROOK (16), in discussing the affinities of the genus *Madrepora*, points out that in the bilateral arrangement of the septa the genera *Anacropora* and many *Montipora* show affinities with *Madrepora*, which are not shared by any other genus. *Madrepora*, however, stands alone in having axial corallites and radial bud corallites. The characteristic mode of colony formation in *Madrepora* is confined to the formation of independent branches; but in all colonies, so long as incrustation continues, the mode of budding is not characteristic.

VON KOCH (51) states that in *Madrepora echidnaea* and *M. surculosa* the skeleton of the buds arises from processes on the costæ of the mother-calyx. Connecting pieces are then formed, which become the rudiments of the calyx. The young calyx then becomes like a martin's nest attached to the present calyx. The septa and calyx of the bud are formed entirely from these processes of the costæ of the parent.

III.—FAUNISTIC.

DUERDEN (29) gives a list of the *Hydroidea* of the S. W. coast of Ireland. Eighteen species are recorded for the first time from this locality.

PICTET (66) gives a list of the *Hydroidea* collected in the Bay of Amboyna, and calls attention to the fact that in the tropics the number and size of the Hydroids are smaller than in temperate seas.

WOOD (83) gives a list of the Hydroids collected in the Isle of Man.

NORDGAARD (62) & NORMAN (63) give lists of *Cœlenterata* caught in the Trondhjem Fjord in Norway.

LANKESTER (53) calls attention to the fact that for three years *Limnocoedium* did not appear in the Regent's Park tank, but in the beginning of June, 1893, it made its reappearance in the *Victoria regia* tank at Sheffield. This tank was probably infected by the transference of water plants from Kew in 1892-3. The author gives a list of the dates of appearance of *Limnocoedium*.

GUERNE (33) calls attention to the freshwater *Medusa*, 20-25 mm. in diameter, stated to occur at Bamakou by Dr. Tautaiu.

MAAS (59) states that of the 116 *Medusa* caught by the Plankton Expedition only 9 were coast forms. No genera of *Craspedota* which occur north

of the Florida and Gulf Streams occur south of them, and *vice versa*; a long description of the distribution and occurrence of the species is given in this paper by the author.

CHUN (26) states that the *Monophyidae* are only known in the Mediterranean and in the temperate and tropical zones of the Atlantic and Pacific Oceans. They appear to be entirely absent from colder waters. An interesting point is that the Pacific and the Atlantic species are very closely allied.

DE LACAZE-DUTHIERS (52) calls attention to the immense number of *Scyphistomas* which appeared in one of the tanks of the laboratory at Arago. Not a single *Ephyra*, however, was seen.

VANHOFFEN (77) adds a note to a previous communication on the geographical distribution of *Nausithoe punctata* and some undetermined species of *Pelagia*.

BEAUMONT (8) gives a list of Lucernarians of the Isle of Man, and mentions one species of *Halicyclstus* as being probably new.

HERDMAN (40) gives a list of the *Alcyonaria* and *Zoantharia* collected by him in Norway.

SAVILLE KENT (50) gives an account of the fauna of the Great Barrier Reef of Australia.

IV.—NEW GENERA AND SPECIES.

HYDROZOA.

GYMNOBLASTEA.

Syncoryne crassa, 0-2 metres, Amboyna; PICTET (66), p. 8.

✓ *Sphaerocoryne*, n. g. Hydrorhiza rampant, filiform, and ramified. Hydranths in the form of an almost spherical mass. Tentacles capitate, disposed in whorls arranged round the median zone of the hydranth. Medusa buds sessile between the tentacles, Medusa free? *S. bedoti*; PICTET (66), Amboyna.

Tubularia viridis; PICTET (66), p. 17, Amboyna.

New family MYRIONEMIDÆ. The hydranths have a hypostome which is trumpet-shaped and surrounded by numerous filiform tentacles disposed in many whorls. ✓ *Myrionema amboinensis*, n. g. & sp.; PICTET (66), 1 metre, Amboyna.

Halcium simplex, p. 22, Laminarian Zone. *H. humile*, p. 23, Amboyna; PICTET (66).

Olytea trigona, p. 33, 1 metre. *O. arborescens*, p. 34, Amboyna; PICTET (66).

Lafœa triaxialis, R., = *L. dimosa*, ? Kattegat; LEVINSEN, (57) p. 381.

Umbrellaria, n. g. Hydrocaulus rudimentary covered by a rudimentary perisarc. Hydranths with a single whorl of filiform tentacles. Hypostome conical. Hydrorhiza filiform, ramified, creeping. Nematocysts of 2 forms. Gonosome unknown. *U. aloysii*; ZOJA, (85) p. 520, Naples Aquarium.

CALYPTOBLASTEÆ.

Halocordyle australis, BALE, (7) p. 94, Port Phillip Bay.

↳ *Leptoscyphus*, n. g. *L. junceus* = *Campanularia juncea*, Allman, PICTET, (66) Amboyna.

Campanularia tridentata, BALE, (7) Port Phillip Bay, p. 98.

Sertularella angulosa, BALE, (7) p. 102, hab. ?.

Plumularia tubulosa, p. 114, Port Phillip Bay, and *P. flexuosa*, p. 115, Snowy River mouth; BALE (7). *P. strictocarpa*, p. 55, and *P. plagio-campa*, p. 56; PICTET, (66) Amboyna.

Aglaophenia carinata, BALE, (7) p. 105, W. Australia. *A. disjuncta*, PICTET, (66) p. 59, Amboyna.

Hebella lata, PICTET, (66) p. 40, Amboyna.

Thujaria carica, LEVINSEN, (58) Kara-havet.

TRACHOMEDUSÆ.

MAAS (59) adds the following new species :—

Trachynema longiventris, p. 12, Atlantic.

Marmanema velatoides, p. 13, Tropical Atlantic.

Rhopalonema striatum, p. 15, Temperate N. Atlantic.

↳ *Homæonoma*, n. g. The tentacles are equal but numerous (32–64 and more). *H. platygonon*, p. 15. *H. militare*, p. 16, North Atlantic.

↳ *Pantachogon*, n. g. The gonads are not situated on definite places on the radial canals, but are in the form of irregular swellings on their whole course. The tentacles are numerous and similar to one another. *P. hæckelii*, p. 11, N. Atlantic.

Liriope distanogona, p. 36, Tropical Atlantic. *L. compacta*, p. 37, Tropical Atlantic. *L. minima*, p. 37, South Equatorial Current.

L. hyperbolica, p. 38, Tropical Atlantic.

NARCOMEDUSÆ.

Solmaris multilobata, p. 45, Hebrides.

Pegantha dactylethra, p. 47, North Equatorial Current.

Cunina duplicata, p. 52, Canary and Guinea Currents.

Solmundella henseni, p. 55, Florida Current, MAAS (59).

LEPTOMEDUSÆ.

Halopsis megalotis, p. 57, N. W. Scotland.

Ptychogena longigona, p. 64, N. Atlantic.

Tiara prismatica, p. 68, Gulf Stream, MAAS (59).

MEDUSA : INCERTÆ SEDIS. ANTHO- OR NARCOMEDUSÆ.

GÜNTHER (34) adds the following new genus :—

↳ *Limnocnida*, n. g. Umbrella flat, almost disk-like, about four times as broad as high, with a lens-shaped thickening in the middle. Tentacles very numerous, hollow, with bases partly embedded in and aduate to the umbrella margin. Marginal sense organs situate along line of attachment of velum, composed of a multicellular mass of refringent cells, enclosed in a roundish capsule. Mouth round, two-thirds the diameter of the animal. Manubrium very short. Stomach shallow, of same diameter as mouth. Sexual organs situated on the manubrium.

L. tanganyica, p. 274. Lake Tanganyika.

HYDROCORALLINÆ.

HALE (36) adds the following new species of fossil Stylasterids :—

↳ *Deontopora*, n. g. Dactylopores arranged in an arc of about three-quarters of a circle round a gastropore at the centre. There are no styles visible on a superficial examination in the dactylopores, and the presence of the matrix in the gastropores prevented the search for them there.

D. mooraboolensis, p. 117, Gray Clays, Geelong.

↳ *Leptobothrus*, n. g. The pores are grouped in cyclo systems ; dactylopores not in radial grooves.

L. spenceri, p. 120, Eocene, near Geelong.

RHABDOPHORA.

HOLM (43) describes *Dictyonema cervicorne*, p. 9, *D. abnorme*, p. 13, and *Retiolites nassa*, p. 25, from Gotland.

SIPHONOPHORA.

CHUN (26) adds—

Monophyes brevitruncata, Orotava, p. 103, which occurs in another form, *Diplophysa codonella*, p. 105.

↳ *Doromasia*, n. g. Bell pentagonal, the distal extremity of the sub-umbrella cavity being drawn out in a tubular manner. When the axial portion of the colony becomes free it develops into an *Ersaea*.

D. picta and *Ersaea picta*, p. 115, Canary Islands.

D. bojani and *Ersaea bojani*, p. 132, Pacific Ocean.

Halopyramis adamantina and *Cuboides adamantina*, p. 135, Canary Is.

BEDOT (9) adds *Bathyphysa grimaldii*, 1294–2000 metres, North Atlantic, and gives the following synonym (10) : *Forskalia leuckarti*, Bed., = *F. contorta*, Leuckart.

SCYPHOZOA.

ANTIPA (4) adds the following new family :—*Capriidæ*. Fixed Stauro-medusæ, with powerful adradial arms on the margin of the umbrella directed inwards for catching food. Without principal or succursal tentacles, but with a dentate border to each arm. Marginal muscle of the umbrella circular and undivided. Longitudinal muscles divided equally in a funnel-shaped manner over the sub-umbrella. A stalk for adhesion. ¹*Capria sturdzii*, n. g. & sp., off Capri, 80 metres.

ANTHOZOA.

ZOANTHARIA.

ACTINIARIA.

CERIANTHEÆ.

Cerianthus tenebrarum, ALCOCK, (3) p. 169, 410 faths., Bay of Bengal.
C. andamanensis, ALCOCK, (2) p. 153, Andaman Is. *C. nobilis*,
 HADDON & SHACKLETON, (35) p. 118, Torres Straits.

HEXACTINIÆ.

HADDON & SHACKLETON (35) add the following new species from Torres Straits :—

Corynactis hoplites, p. 118, 6 to 7 faths.

Discosoma kenti, p. 119. *D. malu*, p. 120. *D. macrodactylum*, p. 120.

SAVILLE KENT (50) also adds *D. haddoni*, p. 145, and *D. rubra-oris*, p. 151, from the Great Barrier Reef.

Rhodactis bryoides, p. 121. SAVILLE KENT (50) adds *R. howesii*, p. 150, Great Barrier Reef.

Phymanthus simplex, p. 121. *P. muscosus*, p. 122.

Actinaria dendrophora, p. 123.

Condylactis gelam, p. 123. *C. ramsayi*, p. 124. *C. aspera*, p. 124.

Anemonia citrina, p. 125. *A. kwoiam*, p. 125.

Actinioides dixoniana, p. 126. *A. sesere*, p. 126.

Viatrix cineta, p. 127.

Alicia rhadina, p. 127, 10 faths.

Phellia sipunculoides, p. 128. *P. devisi*, p. 129.

Paraphellia hunti, p. 129, 15 faths. *P. lineata*, p. 130, 6 to 7 faths.

Thoe milmani, p. 130, 10 faths.

Adamsia miriam, p. 130.

SAVILLE KENT (50) adds *Megalactis griffithsi*, p. 147, *Heterodactyla hypnoides*, p. 148, and *Physobrachia douglasi*, n. g. & sp., with bladder-like apices to the tentacles, p. 150, from the Great Barrier Reef.

BOVERI (15) adds the new tribe

HOLACTINIÆ.

Radially symmetrical actiniæ, with paired mesenteries. In each pair the longitudinal muscles are without exception turned towards one another, the transverse muscles turned away from one another. Mouth circular. Siphonoglyphes absent.

Gyraactis, n. g. *G. excavata*, p. 250; and *G. pallida*, p. 251, Galle coast, Ceylon.

ZOANTHIDÆ.

Acrozoanthus, n. g., SAVILLE KENT, (50) p. 154. Distinguished by its habit of building up an erect tubular support or "zoothecium." *A. australiæ*, p. 153.

Platyzoanthus, n. g., SAVILLE KENT (50). The tentacles are exceedingly short, in most instances minutely lobate, and developed over the greater portion of the area of the expanded disk. *P. mussoides*, p. 155.

MADREPORARIA.

TURBINOLIDÆ.

Rhizotrochus crateriformis, ALCOCK, (3) p. 170, 573 faths., Bay of Bengal. *Paracyathus fulvus*, ALCOCK, (1) p. 139, Persian Gulf. *P. porphyreus*, p. 140, Arrakan coast.

Heterocyathus wood-masoni, p. 141, Andaman Sea.

Discotrochus investigatoris, p. 142, Arrakan Sea.

Polycyathus andamanensis, p. 143, Andaman Sea.

EUPSAMMIDÆ.

Balanophyllia scabra, p. 144, Andaman Sea.

Eupsammia regalis, p. 144, Ceylon, 32 faths.

Heteropsammia aphrodes, p. 145, Ganjam coast, 20-25 faths.

EUPHYLLIDÆ.

Pectinia jardinei, p. 158.

Oculina fasciculata, p. 170, SAVILLE KENT (50), Great Barrier Reef.

FUNGIDÆ.

Cycloseris mycoides, p. 147, Andaman Sea, ALCOCK (1).

Diaseris fragilis, p. 148, Andaman Sea.

Bathyactis stephanus, p. 149, Kistna Delta.

PORITIDÆ.

Rhodaraea fruticosa, SAVILLE KENT, (50) p. 187.

FOSSIL CORALS: INCERTÆ SEDIS.

- TOMES (75) adds the new genus *Stelidoseris*. The genus comes next to *Clausastræa*, from which it differs in possessing a well-developed columella, and increasing both by fissiparity and gemmation. *S. gibbosa*, p. 576, Sutton stone of Glamorganshire.
- CANAVARI (18) adds *Ellipsactinia portisi*, p. 194, Valle della Stura di Cuneo. *E. tyrrhenica*, p. 195, various localities, *E. micropora*, p. 197, Capri. *E. caprense*, p. 198, Capri, &c. *E. africana*, p. 200, Montenegro. *E. polypora*, p. 201, Basilicata. *E. ramosa*, p. 201, Capri.
- Sparactinia pedemontana*, p. 203, Cuneo. *S. steinmanni*, p. 204, Capri. *S. dicotoma*, p. 205, Basilicata.
- THOMSON (76) adds *Callophyllum danai*, p. 687. *C. spinosum*, p. 688. *C. tuberculatum*, p. 689. *C. irregularum*, p. 689. *C. lehoniana*, p. 690. *C. cuspidum*, p. 691. *C. nodosum*, p. 692. *C. angulare*, p. 692. *C. denticulatum*, p. 693. *C. robustum*, p. 694. *C. approximatum*, p. 694. All from the Lower Carboniferous strata in Scotland.
- Campophyllum brockleyences*, p. 703. *C. simplicum*, p. 704. *C. recurvatum*, p. 706. *C. brevisseptum*, p. 708. *C. subfurcillatum*, p. 711. *C. juddi*, p. 711. *C. dissimilis*, p. 713. *C. heteroseptum*, p. 714. *C. furcatum*, p. 714. *C. rectangularum*, p. 715. *C. dendriformum*, p. 716. *C. amplexicum*, p. 717. *C. subclavaformis*, p. 718. *C. mammilatum*, p. 718. *C. supraphyllum*, p. 719. *C. turbinatum*, p. 720. *C. concaveum*, p. 721. *C. marginatum*, p. 722. *C. asheyburnensi*, p. 726. *C. submammillatum*, p. 729. *C. radiolarum*, p. 730. *C. dendriformum*, p. 731. *C. elegantum*, p. 732. *C. agassizi*, p. 733. *C. domiformum*, p. 734. *C. tuberculatum*, p. 735. *C. subpalmatum*, p. 736. *C. radiolarium*, p. 736. *C. taylori*, p. 737. *C. intercellulosum*, p. 738. *C. subclavatum*, p. 739. *C. crenulatum*, p. 740. *C. clavatum*, p. 741. *C. fasciculatum*, p. 742. Lower Carboniferous in Scotland. THOMSON, *t.c.*

ALCYONARIA.

STOLONIFERA.

- Cornularia pavo*, p. 199, *C. glauca*, *C. tubiporoides*, *C. auricula*, p. 199; SAVILLE KENT (50), Great Barrier Reef.

ALCYONACEA.

- Xenia pulsitans*, SAVILLE KENT, (50) p. 197, Great Barrier Reef.

GORGONACEA.

- Acanthogorgia inermis*, p. 6, Hong Kong, 30 faths. *Echinomuricea peterseni*, p. 11, Hong Kong, 30 faths. *E. philippinensis*, p. 14; HEDLUND (38).

PENNATULACEA.

- Graphularia belgica* (fossil), p. lviii, Eocene; VINCENT (78).

XVII. SPONGIÆ.

BY

R. HANITSCH, Ph.D.

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TITLES.*

THIS list includes all papers which have come under the Recorder's notice up to June 30th, 1894.

1. APSTEIN, C. Die während der Fahrt zur Untersuchung der Nordsee vom 6-10 August, 1889, zwischen Norderney und Helgoland gesammelten Thiere. Ber. Komm. deutsch. Meere, vi, hft. 3, pp. 191-199. *Grantia ciliata* and *Leucosolenia bothrylloides*.
2. BIDDER, G. Flask-shaped Ectoderm and Spongoblasts of one of the *Keratosa*. J. R. Micr. Soc. 1893, p. 55. Abstract of paper in P. R. Soc. London, li, pp. 475-484, 5 woodcuts. [See Zool. Rec. 1892.]
3. —. The collar-cells of Sponges. Zool. Anz. 1894, p. 167.

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

4. BOUVIER, E. L. La chlorophylle animale et les phénomènes de symbiose entre les algues vertes unicellulaires et les animaux. Bull. Soc. Philom. (8) v, pp. 72-149.
Spongilla fluviatilis, p. 82, &c.
5. BROOK, G., HADDON, A. C., HOYLE, W. E., THOMPSON, I. C., WALKER, A. O., & HERDMAN, W. A. The Marine Zoology of the Irish Sea. Rep. Brit. Ass., Sect. D, 1893, 10 pp., 1 pl., 2 woodcuts.
Spongia, p. 7.
6. CELESIA, P. Della *Suberites domuncula* e della sua simbiosi coi Paguri. Mus. zool. Genova, 1893, No. 14, 63 pp., 4 pls.
7. CHOPIN, A. Sponges. Tr. Manchester Micr. Soc. 1892, pp. 25-36.
8. —. Something about Sponges. Amer. Micr. J. xiv, No. 12, pp. 342-347.
9. DEAN, B. The physical and biological characteristics of the natural Oyster Grounds of South Carolina. Bull. U. S. Fish Comm. x (1890), pp. 335-361, pls. lxii-lxvii.
Sponges (*Cliona*) as enemies of the Oyster, p. 352.
10. DELAGE, Y. Embryology of Sponges. J. R. Micr. Soc. 1893, pp. 337 & 338. Abstract of paper in Arch. Zool. exp. (2) x, pp. 345-498, 8 pls. [See Zool. Rec. 1892.]
11. —. Note additionnelle sur l'embryogénie des éponges. Arch. Zool. exp. (3) i, No. 1, pp. iii-vi.
12. DENDY, A. Australian *Calcarea Heterocala*. J. R. Micr. Soc. 1893, p. 491. Abstract of paper in P. Soc. Victoria (n.s) v, pp. 69-116. [See Zool. Rec. 1892.]
13. —. Studies on the Comparative Anatomy of Sponges. v. Observations on the Structure and Classification of the *Calcarea Heterocala*. Q. J. Micr. Sci. (n.s.), No. 138, pp. 159-257, pls. x-xiv. Abstract in J. R. Micr. Soc. 1893, pp. 745 & 746.
14. —. Note on the History of the so-called Family *Teichonida*. Zool. Anz. xvi, No. 411, pp. 43 & 44, and Ann. Nat. Hist. (6) xi, pp. 50-52.
15. —. Studies on the Comparative Anatomy of Sponges. vi. On the Anatomy and Relationships of *Lelapia australis*, a living representative of the fossil *Pharetrones*. Q. J. Micr. Sci. (n.s.), No. 142, pp. 127-142, pl. xiii.
16. GOURRET, P. Notes zoologiques sur l'étang des Eaux-Blanches (Cette). Ann. Mus. Marseille, iv, 26 pp.
Suberites.
17. HANITSCH, R. Revision of the generic nomenclature and classification in Bowerbank's "British Spongiadæ." P. Liverp. biol. Soc. viii, pp. 173-206.

18. HORNELL, J. Notes on Animal Colouration. *J. Marine Zool. and Microscopy*, i, No. 1, pp. 3-8.
Colouration of Sponges, pp. 7 & 8.
19. —. Microscopical Studies in Marine Zoology. iv. Sponges: an Introductory Sketch. *T. c. No. 2*, pp. 35-42, pl. iii.
20. LENDENFELD, R. VON. *Hexaceratina*. *J. R. Micr. Soc.* 1893, p. 195. Abstract of paper in *Z. wiss. zool.* liv, hft. 3, pp. 275-315, 1 pl. [See *Zool. Rec.* 1892.]
21. —. Bemerkung über das Entoderm der Spongien. *Zool. Anz.* xvi, No. 409, pp. 12 & 13.
22. —. *Tetranthella*, eine neue Lithistide. *Zool. Anz.* xvii, No. 440, pp. 49-51.
1 new family, 1 new genus.
23. —. Die systematische Stellung von *Placospongia*. *Biol. Centralbl.* xiv, pp. 115 & 116. Abstracts in *Zool. Anz. (Litteratur)* xvii, p. 34, and *J. R. Micr. Soc.* 1894, p. 210.
24. —. Die Tetractinelliden der Adria. (Mit einem Anhang über die Lithistiden.) *Denk. Ak. Wien*, lxi (1894), pp. 91-204, pls. i-viii.
2 new species.
25. —. Bemerkungen über Tinctionsmittel für Spongien. *Zeitschr. wiss. Mikr.* xi (1894), pp. 22-24.
26. LEVINSEN, G. M. R. *Annulata, Hydroidea, Anthozoa, Porifera*. *Vid. Udb. Kanonbaaden 'Hauchs' Togter*, v, pp. 317-427, 1 pl.
Spongia, pp. 401-427, figg. 13-41. 2 new species.
27. —. Studier over Svampe-Spicula: Cheler og Ankere. *Vid. Medd.* 1893, pp. 1-20, pl. i. [With Latin resumé pp. 16 & 17.]
28. MAAS, O. Metamorphosis of *Esperia*. *J. R. Micr. Soc.* 1893, p. 338. Abstract of paper in *MT. Stat. Neapel*, x, pp. 408-440, 2 pls. [See *Zool. Rec.* 1892.]
29. —. Ueber die erste Differenzierung von Generations- und Soma-zellen bei den Spongien. *Verh. deutsch. Zool. Ges.* 1893, pp. 27-35, 6 woodcuts. Abstract in *Zool. Anz. (Litteratur)* xvii, p. 34.
30. —. Die Embryonal-Entwicklung und Metamorphose der *Cornacuspongien*. *Zool. Jahrb. Anat.* vii, pp. 331-448, pls. xix-xxiii. Abstract in *J. R. Micr. Soc.* 1894, p. 209.
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31. MINCHIN, E. A. The Embryology of the *Porifera*. *Science Progress*, i, No. 3, pp. 208-233.
32. MÖBIUS, K. Ueber die Thiere der schleswig-holsteinischen Austerbänke, ihre physikalischen und biologischen Lebensverhältnisse. *SB. Ak. Berlin*, 1893, viii, pp. 67-92.
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33. NORMAN, A. M. A month on the Trondhjem Fjord. *Ann. Nat. Hist.* (ser. 6) xii, pp. 341-367, pl. xvi.
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Popular narrative; *Spongiæ*, p. 115.
PHILLIPS, F. [See ROBERTS & PHILLIPS (41).]
35. RATHBUN, R. Report upon the Inquiry respecting Food-Fishes and the Fishing-grounds. *Rep. U. S. Fish Comm.* xvii (1889-1891), pp. 97-171.
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36. RAUFF, H. Ueber den Fossilisationsprocess derjenigen verkieselten Spongien, deren Hauptmasse jetzt aus Chalcedon gebildet wird, während das Skelet darin aus Kalkspath besteht, obschon das lebende Thier ein rein kieseliges Gerüst besass. *Verh. Ver. Rheinland*, xlix, pp. 51-57.
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39. —. Ueber angebliche Spongien aus dem Archaicum. *Op. cit.* ii, pp. 57-67, 3 woodcuts.
The structures from Laurentian Rocks, described by MATTHEW (see *Zool. Rec.* 1891) as Sponges, are most doubtful.
40. —. Palæospongiologie. i. Theil. *Palæontogr.* xl, lief. 1-4, pp. 1-232, 48 woodcuts.
41. ROBERTS, R. L., & PHILLIPS, F. The *Spongida* or *Porifera*. *J. Micr. & Nat. Sci.* (3) iii, pp. 337-358, pls. xiv-xvi.
42. SCHULZE, F. E. Revision des Systemes der Hyalonematiden. *SB. Ak. Berlin*, 1893, hft. 30, pp. 541-589. Abstract in *J. R. Micr. Soc.* 1894, p. 70.
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43. —. Ueber die Ableitung der Hexactinelliden - Nadeln vom regulären Hexactine. *MT. Ak. Berlin*, 1893, No. ix, pp. 607-613, 1 woodcut. Abstract in *J. R. Micr. Soc.* 1894, p. 352.
44. STEDMAN, J. M. Has the Fresh-water Sponge a Nervous System? *Amer. Micr. J.* xiv, No. 2, p. 48.
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47. —. Exposé des Principes actuels de la Classification des Spongiaires. *Op. cit.* iv, pp. 281-300, 411-414, & 457-462.
48. —. Sur une Ephydatie (*E. fluviatilis*, autt.) du Lac de Houleh (Syrie). *Op. cit.* v, No. 8, pp. 326 & 327.
49. —. Mission Scientifique de M. Ch. Alluaud aux Iles Sécholles (Mars-Mai 1892). Spongiaires. Bull. Soc. zool. France, xviii, pp. 172-175. Abstract in J. R. Micr. Soc. 1893, p. 747.
50. —. Note sur la faune des Spongillides de France. Bull. Soc. zool. France, xviii, p. 176.
51. —. Note sur quelques Éponges du Golfe de Tadjoura recueillies par M. le Dr. L. Faurot. Bull. Soc. zool. France, xviii, pp. 177-182, 4 figg. Abstract in J. R. Micr. Soc. 1893, p. 747.
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52. —. Contribution à l'histologie des Spongiaires. C.R. Ac. Sci. cxvii (1893), pp. 444-446. Abstract in J. R. Micr. Soc. 1893, pp. 746 & 747.
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58. —. Une réforme dans la classification des *Halichondrina*. *T. c.* pp. 5-27.
59. VOSMAER, G. C. J. Morphological Value of the Terms "Osculum" and "Pore" in Sponges. J. R. Micr. Soc. 1893, p. 195. Abstract of paper in Tijdschr. Nederland. Dierk. Ver. (2) iii, pp. 235-242. [See Zool. Rec. 1892.]

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61. —. Preliminary notes on some Tetractinellids of the Bay of Naples. Tijdschr. Nederland. Dierk. Ver. (2) iv (1894), pp. 269-286. 4 new species.
62. —. Note on *Suberites fruticosus* and *Suberites crambe* of Oscar Schmidt. *T. c.* 2 pp.
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67. —. Anleitung zum Sammeln von Süßwasserschwämmen nebst Bemerkungen über die in ihnen lebenden Insektenlarven. Ent. Nachr. xx, No. 10, pp. 145-151, 10 woodcuts.
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71. ZYKOFF, W. Development of *Ephydatia* from the Gemmules. J. R. Micr. Soc. 1893, p. 339. Abstract of paper in Biol. Centralbl. xii, pp. 713-716. [See Zool. Rec. 1892.]
72. —. Iztoriya razvitiya *Ephydatia mülleri*, Liebk. iz ghemmul. Rev. Sci. St. Petersburg. iii (1892), No. 9, pp. 315-319.

II.—MORPHOLOGY, EMBRYOLOGY, PHYSIOLOGY, AND GENERAL.

A. ANATOMY, HISTOLOGY, AND GENERAL.

BIDDER (3), in a short note, confirms Vosmaer and Pekelharing's observations as to the non-existence of Sollas's membrane, and promises a detailed account of the collar-cells in *Sycon compressum*.

CHOPIN (7) gives a brief account of the history, structure, development, classification, and distribution of Sponges.

DENDY (13) continues his "Studies on the Comparative Anatomy of Sponges," and gives an account of the structure and classification of the *Calcarea Heterocæla*. According to this author, the canal system varies greatly, even in genera apparently closely allied. The Leuconoid type has been independently developed from the Syconoid type no less than three times, but never directly from the Homocæle type. We find the Leuconoid type amongst the *Grantida* (*Lelapia*, *Leucyssa*, and most species of *Leucandra*), amongst the *Heteropida* (*Vosmaeropsis*, which genus is indeed not typically Leuconoid, but rather Sylleibid), and amongst the *Amphoriscida* (several species of *Leucilla*). Five stages can be distinguished in the evolution of the most complex Leuconoid from the most simple Syconoid form:—(1) *Sycetta* stage: the flagellated chambers are straight, unbranched, radially arranged, not touching each other, without dermal cortex. (2) *Sycon* stage: the walls of the adjacent chambers fuse, leaving between them the "intercanals." (3) *Grantia* stage: the distal ends of the chambers and intercanals are covered over by a dermal cortex, containing true inhalent pores. (4) *Sylleibid* stage: the chambers are no longer arranged radially around the central gastral cavity, but around the usually radial exhalant canals. (5) *Leucandra* stage: the chambers are small, spherical, irregularly scattered.

The starting-point for the development of the skeleton is the radially symmetrical skeleton of *Sycetta*, which is characteristic of the group, and obviously dependent upon the primitive radial symmetry of the canal system. The first great change in the skeleton is brought about by the development of a dermal cortex, with its special skeleton. The skeleton of the chamber layer of the sponge-wall now begins to vary. This variation may either depend upon the gradual change of the canal system from the Syconoid to the Leuconoid condition, whereby all radial symmetry is lost, or may be independent of the canal system, such a variation being of the utmost systematic importance. These modifications consist in the development of subdermal sagittal triradiates (*Heteropida*), or subdermal quadriradiates (*Amphoriscida*). These newly-developed spicules, with their inwardly directed apical rays, replace thus to a certain extent, by a kind of secondary centripetal radial symmetry, the primitive symmetry which had been lost in these families.

The gastral cortex is subjected to little modification, though a striking exception is found in *Utella*, with its oxeote spicules in the gastral cortex. *Sycyssa* and *Leucyssa* have very exceptional skeletons, with no radiate, but only oxeote spicules. *Leucascus* apparently never had a radially symmetrical skeleton.

The next two chapters treat of the histology and classification of the heterocœle *Calcarea*, with diagnoses of the families and genera. Finally, the origin and phylogeny of the group are discussed and summarised in a genealogical tree.

DENDY (15) has a paper on the anatomy and relationships of a remarkable calcareous Sponge, *Lelapia australis*. The most interesting feature of *Lelapia* is the reticulated fibrous character of its skeleton, which appears to have hitherto escaped observation. This character is unknown in any other living calcareous Sponge, while it forms the most prominent feature in Zittel's fossil group, *Pharetrones*. Dendy, however, shows that this fibrous skeleton may have been derived from the more primitive Syconoid type. Of the spicules, the "tuning-forks" are the most remarkable, although they are of no great significance, as they are paralleled in some of Hæckel's species. Its canal system belongs to the Leuconoid type, thus agreeing with Dendy's former supposition (18) p. 180. Altogether the author thinks it unadvisable, in the present state of our knowledge, to introduce the family *Pharetrones* into the system of recent *Calcarea*, and regards *Lelapia* simply as a very specialized type of the *Grantida*.

HANITSCH (17) gives a revision of the generic nomenclature and classification in Bowerbank's "British Spongiadæ." The paper consists of two parts, the first section giving, in two parallel columns, Bowerbank's and the revised nomenclature. The second part contains the classified list of all British Sponges described by Bowerbank, with their revised generic names. The classification is compiled from Ridley, Dendy, Topsent, Sollas, von Lendenfeld, and Vosmaer.

HORNELL (18), remarking on the colour of animals, offers an explanation why, in the case of the *Calcarea*, we find almost exclusively white, but in the *Silicea* a variety of colours.

HORNELL (19) gives a sketch of the structure of Sponges in general, and of a few species from Jersey in detail, with life-like illustrations.

MINCHIN (31) gives a critical account of the embryology of the *Porifera*, based upon Delage and Maas's recent works.

VON LENDENFELD (22) tells us that *Suberites fruticosus*, O. Schmidt, of which he examined the type specimen in the Graz Museum, does not belong to the *Suberitida*, but represents a new genus (*Tetranthella*) of the *Lithistida*. *Suberites crambe*, O. S., of which he also saw the type specimen, is identical with *S. fruticosus*. Accordingly he proposes the name *Tetranthella fruticosa*. Lendenfeld considers the few chelæ he observed in the Sponge as probably accidental. The same author (24), p. 189, gives a detailed description of this Sponge.

VON LENDENFELD (23) maintains that *Placospongia* is a monaxonid

Sponge, allied to the *Spirastrellida*. The sterrasters bear only a superficial resemblance to the *Geodida*, their structure and development are monaxonid.

VON LENDENFELD (27) has written a monograph on the *Tetractinellida* of the Adriatic. The first part contains a detailed description of the species, of which there are twenty-six, including one Lithistid. Two species are new. A table showing the geographical distribution, and an analytical key to the species are given. The synthetical part treats of the individuality and external form of tetractinellid Sponges, their canal system, cortex, and skeleton. A number of new names for spicules is suggested. The epithelium, according to Von Lendenfeld, may be of various forms,—pavement epithelium, with or without flagella, spherical, conical, and columnar epithelium. Mushroom-shaped epithelial cells, as described by Bidder and Minchin, seem to occur amongst the *Tetractinellida* in exceptional cases only. With regard to Sollas's membrane, the author cannot convince himself that it is present in the normal condition. Osmium-material of *Oscarella* showed distinct collar and flagella without Sollas's membrane, but material treated only with spirit showed no flagella, the collars were less well preserved but were fused to form a Sollas's membrane. [Compare VOSMAER & PEKELHARING (63) and BIDDER (3).] Hereafter follow description of cortex, chones, pulp, and a note on the development.

RAUFF (36) describes the process of fossilization of certain Sponges, in which reversion of the original conditions has taken place in such a manner, that the original silicious skeleton has been changed into calcareous spar, and the calcareous sediment into pure silica. Rauff explains it as follows:—After the death of the animal, and the decomposition of the soft parts, the silicious skeleton was slowly buried in the mud of the sea, the mud permeating and filling up the spaces between the framework of the skeleton. Gradually the sediment hardened into rock. Then the rock was permeated by solutions which dissolved the original silicious skeleton, but did not affect the calcareous sediment. Thus, in the place of a silicious skeleton, a continuous system of fine tubules was formed, which preserved the outlines of the skeleton in the sharpest detail. Afterwards the tubules were filled up with calcareous spar, and it was only after this took place, and when the rock was permeated by silicious solutions, that the ground mass became changed into clear chalcedon, which enclosed the water-clear calcareous skeleton, often of extreme beauty.

RAUFF (40) publishes the first part of a Monograph of Fossil Sponges. The present part is introductory, and begins with an account of the literature between the years 1672 and 1892. Subsequently the morphology of Sponges, their external form, histology, canal system, sexual and asexual reproduction, skeleton, and classification, and, lastly, the conditions of the fossilization are given. The author has fully utilised the labours of his predecessors, and his work will no doubt be a great assistance to those interested in this branch of zoology.

ROBERTS & PHILLIPS (41) give a popular account of the structure of Sponges.

SCHULZE (43) discusses the derivation of the eight-rayed spicules (Discoctaster) of certain *Hexactinellida* (some species of *Acanthascus* and *Rhabdocalyptus*) from the Hexaster. In these spicules the eight rays arise quite regularly, corresponding to the eight angles of a cube; the base of the rays, in transverse section, is three-lobed; between the bases of the rays, corresponding to the centres of the six sides of the cube, there are six prominences. On each of these six prominences are four ridges (standing at right angles to each other), which join on to the four neighbouring rays. Schulze propounds the theory that the six prominences correspond to the original chief rays of the Hexaster. Each of the original six rays became split into four (corresponding to the four ridges). These twenty-four split rays met in threes at points corresponding to the angles of a cube, then became fused, and thus eight rays were formed.

STEDMAN (44) describes certain structures in *Spongilla lacustris*, which he thinks may correspond to a nervous system. Sectionized spirit-material showed spindle- or star-shaped cells, ending in thread-like processes, with granular protoplasm, and large and prominent nuclei.

TOPSENT (52) gives an account of his examination of living Sponges. He found great differences in their relative consistency, which apparently depends on histological modifications. Some Sponges, such as *Desmacidon fruticosus*, *Dendoryx incrustans*, *D. reses*, *Reniera viscosa*, on being taken out of the water, give off an abundance of a thread-like liquid, which is a true mucus, secreted by spherical cells of glandular nature, as can be shown by staining with aniline. Others, chiefly *Reniera indistincta*, are viscous. They possess spherical cells, which often serve, at the same time, as glands and as nutritive reservoirs. Finally, many of the *Chalininae* and *Ectyoninae* are elastic. In them are found spherical cells which apparently have the function of connective tissue.

TOPSENT (55) approves of Lendenfeld's new generic name *Tetranthella* for *Suberites fruticosus* and *L. crambe* of O. Schmidt, as the generic name *Crambe*, proposed by Vosmaer, had been already applied by Linnæus to a cruciferous plant. Vosmaer is not right in his supposition that the few observed chelæ belong to the Sponge.

VOSMAER (61) gives a preliminary account of some *Tetractinellida* of the Bay of Naples, which had either been insufficiently described, or which vary to such an extent that a revision of their specific nomenclature was necessary. According to Vosmaer, many species vary enormously, and those which, by most authors, are regarded as distinct species, should at the most be called "varieties." Thus he acknowledges only one species of *Thenea* (*T. muricatu* (Bwk.) Gray), which includes the numerous species so carefully described by Sollas.

VOSMAER (62), referring to Lendenfeld's note (22), says that he examined the type specimens of *Suberites fruticosus* and *S. crambe*, O. S., so long as fourteen years ago, found them identical, and placed them

under the name *Crambe harpago* amongst the *Desmacidinæ*, as possessing chelæ which are not accidental, as Lendenfeld thinks. The specific name then given by himself should be dropped, and the Sponge called *Crambe fruticosa*, O. S.

VOSMAER & PEKELHARING (63) in their paper say "Sollas's membrane does not exist." The choanocytes stand quite free, and touch each other only at the very base. Then follow the opinions of other authors, namely Sollas, Dendy, Lendenfeld, Bidder, Delage, and Minchin, and a critical analysis of these various opinions. Finally the methods used in preparing the material are given. The species examined were: *Hali-chondria panicea*, *Spongilla lacustris*, and *Sycon ciliatum*. [Compare Bidder (3) and Lendenfeld (24), p. 163.]

WELTNER (65) has an extensive report on the work done in Spongology during the years 1888-1891. The report is arranged under the following headings: List of Papers, pp. 161-175; General, pp. 175-177; Methods, pp. 177-179; Sponge Culture, pp. 179 & 180; Anatomy and Histology, pp. 180-193; Nomenclature of Spicules, p. 193; Physiology, pp. 194-199; Ontogeny, pp. 199-207; Phylogeny, pp. 207-210; Systematic and Faunistic, pp. 210-255; Fossil Sponges, pp. 255 & 256.

B. EMBRYOLOGY.

DELAGE (11) claims the priority of having discovered the formation of the epidermis from the cells of the inner layer, and that the ciliated cells travel to the inside.

MAAS (29) gives a contribution to the doctrine of the continuity of the germ-plasm. There are two kinds of cells forming the "mesoderm" of the adult Sponge, (1) fine granular cells possessing oval nuclei with a delicate network of chromatin; (2) cells with coarse granular protoplasm and vesicular nuclei, the amœboid wandering cells, which give rise to the sexual elements. Both kinds of cells can be traced back through all the larval stages to the macromeres of the segmenting embryo. But whilst the former cells are differentiated descendants, the amœboid cells are the unaltered descendants of the macromeres. In other words: we can prove a direct derivation of the germinal cells from the ovum, since after the subtraction of all somatic specialized elements, there remains a number of undifferentiated elements, the primary sexual cells.

MAAS (30) has an important paper on the embryonic development and metamorphosis of the *Cornacuspongiæ*. He studies—1st, The metamorphosis (reversion of layers, &c.) in types of all the families of *Cornacuspongiæ*; 2nd, The formation of the larva from the ovum, in order to be able to homologize the same with larvæ of other groups of Sponges, and to support the view that the sponge-organism arises from two germinal layers only, although the adult shows three strata. Maas studied the development of *Chalinula* as type for the *Homorrhaphidæ*, *Gellius* for the *Heterorrhaphidæ*, *Myxilla* for the *Desmacidonidæ*, *Axinella* for the *Axinellidæ*. Certain stages in the development of *Hircinia*, *Euspongia*,

and *Spongilla* are also described. In all observed species the segmentation is more or less as follows:—As the result of the first two cleavages, four equal blastomeres are formed, standing meridionally, and at right angles to one another. The third furrow is horizontal, but divides the four blastomeres unequally, and, from that point, we have unequal segmentation, the difference between micromeres and macromeres being distinct. A segmentation cavity, which appears already at the eight-cell stage, exists only for a short time. The micromeres, at the anterior pole, go on dividing more rapidly than the macromeres at the posterior pole, and soon partly overgrow the latter. At that stage the micromeres contain very little yolk, and have a nucleus with a close framework of chromatin; the macromeres contain a good amount of yolk, and have a vesicular nucleus. The micromeres are transformed into flagellated columnar cells, and cover the anterior and lateral portions of the oval larva. The macromeres are differentiated in the way described by Maas in his last year's paper [see *Zool. Rec.* 1892, *Spongiæ*, p. 12]. Spicules are developed at a very early stage. Two types of larvæ can be distinguished amongst the true *Cornacuspongiæ*. In the one type, the flagellated cells simply stop at the posterior end, and, whilst they are coloured red, the internal mass of cells, protruding at the posterior end, shows no colour but that of ordinary protoplasm. *Esperia*, *Myxilla*, *Desmacidon*, *Clathria*, *Dictyonella*, *Axinella*, belong to this group. In the second type a circle of specially long flagella is found where the ordinary flagellated cells stop, and they are supported by larger cells. The posterior pole of the larva is pigmented—especially the large flagellated cells, which form a ring of violet, brown, or yellow pigment—whilst the rest of the body remains white. *Reniera*, *Chalinula*, *Gellius*, *Pachychalina*, *Toxochalina*, belong to this group. This shows that there is a close relationship between the *Homorrhaphidæ* and *Heterorrhaphidæ*, on the one hand, and between the *Desmacidonidæ* and *Axinellidæ* on the other. In the larvæ of the *Ceratosæ* (e.g., *Hircinia*) there is not a ring of flagella, but a circular area covering the posterior pole. These larvæ are to be regarded as belonging to the second type, in which the ring of flagella became extended over the whole posterior end. Similar are the larvæ of the *Spongillidæ*. The larva of *Aplysilla*, as described by Delage, seems to be allied to the first type. This would point towards a polyphyletic origin of the *Ceratosæ* from the *Cornacuspongiæ*, therefore not in the sense meant by Lendenfeld, who places *Aplysilla*, &c., in a special group (*Hexaceratina*), and regards it as closely allied to the *Hexactinellidæ*.

After pointing out the homology between the chief stages of the development of the silicious Sponges and those of *Sycandra*, and comparing their development with that of the *Celenterata* and other *Metazoa*, Maas comes to the conclusion that either the germinal layers of Sponges cannot be homologized with those of other animals, or else that the flagellated cells of sponge embryos correspond to the ectoderm, the large cells to the endoderm. The systematic position of the Sponges is

summed up as follows :—The Sponges are true *Metazoa*, as they form ova and spermatozoa, and as various tissues of specific functions are differentiated. And possibly they are true *Metazoa*, so far as they are derived from ancestors with two germinal layers, which layers can be compared to the ectoderm and endoderm ; but from that point, if not from the beginning, the Sponges took a different course in development, as their flagellated locomotory cells came to lie inside. They are in no case *Celenterata*, as their layers are not homologous to the ectoderm and endoderm of the *Celenterata*, and as their canal system is of a totally different origin. The development of the tissues and organs in Sponges is different in principle to that of all other animals.

WELTNER (66) continues his studies on the *Spongillidæ*, and describes the gemmules of Freshwater Sponges, chiefly from the neighbourhood of Berlin. The shell consists of several layers :—(1) An internal cuticle with one or more pores, closed during the winter. (2) An air-chamber layer, of cellular or vesicular structure, probably hydrostatic in function. Here are found the characteristic spicules ; whether the amphidiscs are really perforated by a central canal is doubtful. (3) A thin, yellowish external cuticle. This layer, and sometimes also the air-chamber layer, may be absent in certain forms. The germ of the gemmules consists of closely-packed cells, containing light-refracting bodies (Gœtte's yolk-granules). The cells are often bi- or even multi-nuclear ; but those with more than one nucleus divide when leaving the shell, so that each then contains only one nucleus. The gemmules of *Euspongilla lacustris*, and the Sponge itself, may contain *Zoochlorellæ*, each consisting of a small amount of protoplasm, and from one to three chlorophyll bodies. All the cells of the gemmules do not contain *Zoochlorellæ*, and in the Sponge itself they are found only in the superficial portions. *Spongilla fragilis* has a brown pigment, which is apparently affected by light, Sponges living in the shade being generally colourless. The pigment exists in amœboid cells, situated in the superficial portions of the Sponge in the form of irregular granules, not soluble in alcohol. Similar pigment is found in *Hydra fusca*, *Planaria*, &c. Its significance is doubtful, it perhaps being excretory matter. In any case it does not seem to form an essential part of the Sponge. In the last pages of the paper, the influence of temperature upon the germinating power of the gemmules is discussed, and remarks are added on the development of *Spongillidæ* from deformed larvæ.

C. PHYSIOLOGY AND BIOLOGY..

CELESIA (8) relates some interesting observations on the symbiosis of *Suberites domuncula* and *Pagurus*. After an introduction, giving the history of the subject, the author explains his method of orientation, and goes on to describe 34 specimens in detail, stating shape and colour of the Sponge, dimensions of the three chief axes of shell and Sponge, size and shape of the vestibule, and species of shell and inhabiting crab.

The next part treats in a comparative way of the colour of the Sponge, of the cavity occupied by the *Pagurus*, and of the vestibule. Next, in the genetic part, the origin of the symbiosis is discussed, and also the genesis of the vestibule, of colour and shape of the Sponge. The last part answers in the affirmative the question: Is there a fixed form of *Suberites domuncula*?—although only a single instance had come under the author's notice of *S. domuncula* attaching itself to other objects besides Univalves.

D. METHODS OF PRESERVATION AND PREPARATION.

VON LENDENFELD (25) gives directions for staining collar-cells.

MAAS (30), pp. 334–337, describes his methods for preserving and sectionizing larvæ.

VOSMAER and PEKELIARING (63) describe their methods for examining the collars of the flagellated cells.

WELTNER (67) gives directions for collecting and preserving Freshwater Sponges.

III.—DISTRIBUTION.

A. FAUNISTIC.

Mexico, Campeche : TOPSENT (57).

South Carolina : *Cliona* as enemy of the Oyster ; DEAN (9).

Norway, Trondhjem Fjord : NORMAN (33).

Kattegat and Skagerak : LEVINSSEN (26).

Germany, Heligoland : APSTEIN (1).—Holstein, Oyster-grounds : MOEBIUS (32).—Neighbourhood of Berlin : *Spongillidæ* ; WELTNER (66, 67).

Irish Sea : BROOK, &c. (5).

Jersey : HORNELL (19).

France, Eaux Blanches, Cette : GOURRET (16).—Roscoff : TOPSENT (54).—Mediterranean Coast : chiefly Banyuls : numerous *Hexaceratina* ; TOPSENT (53, 54).—*Spongillidæ* ; TOPSENT (50).

Bay of Naples : *Tetractinellida* : VOSMAER (61).

Adriatic : *Tetractinellida* ; LENDENFELD (24). 76 per cent. of all Adriatic *Tetractinellida* have been found at Lesina, 44 per cent. have been found in other parts of the Mediterranean, and 24 per cent. outside the Mediterranean.

TUNIS : Gulf of Gabes ; TOPSENT (56).

Syria, Lake of Houleh : *Spongillidæ* ; TOPSENT (48).

Gulf of Aden, Tadjoura : TOPSENT (51).

Sechelle Is. ; TOPSENT (49).

Australia : *Calcarea Heterocela* ; DENDY (13).

B. GEOLOGICAL.

Archaicum : *Spongia* (?) ; RAUFF (39).

Cretaceous, Minnesota : WOODWARD & THOMAS (70).

IV.—SYSTEMATIC.

A. PHYLOGENY.

- DENDY, (13) p. 250, illustrates the relationship of the *Calcarea Heterocæla* by a phylogenetic tree.
- SCHULZE, (42) p. 546, expresses the relationship of the genera of the *Hyalonematida* by a phylogenetic tree.
- VON LENDENFELD, (24) p. 90, illustrates the relationship of the *Tetractinellida* by a phylogenetic tree.

B. CLASSIFICATION.

- RAUFF (40) proposes a complete classification of Sponges.
- VON LENDENFELD, (24) p. 180, gives a revised classification of the *Tetractinellida*.
- TOPSENT (58) proposes a new classification of the *Monaxonida*, giving that of the *Halichondrina* more in detail.

C. DESCRIPTIVE.

1. CALCAREA.

- Lelapia australis*, redescribed; DENDY, Q. J. Micr. Sci. (n.s.), No. 142, pp. 127-142, pl. xiii.

2A. HEXACTINELLIDA.

- Hyalonema clavigerum*, F. E. Sch., p. 571, *globus*, F. E. Sch., p. 572, *cebuense*, Higgin, p. 573, *thomsoni*, W. Marshall, p. 574, *poculum*, F. E. Sch., p. 574, *conus*, F. E. Sch., p. 575, *lusitanicum*, Barb. du Bocage, p. 576, *divergens*, F. E. Sch., p. 576, *robustum*, F. E. Sch., p. 577, *tenerum*, F. E. Sch., p. 577, *gracile*, F. E. Sch., p. 578, *elegans*, F. E. Sch., p. 579, *kenti*, O. Schmidt, p. 579, *depressum*, F. E. Sch., p. 580, *apertum*, F. E. Sch., p. 581, *sieboldi*, Gray, p. 582, *toxeres*, Wyv.-Thomson, p. 583, *acuferum*, F. E. Sch., p. 583, redescribed; SCHULZE, SB. Ak. Berlin, 1893, hft. 30.
- H. cupressiferum*, Pacific, lat. 0° 33' S., long. 151° 34' W., depth 4438 metres, p. 568, *fruticosum*, Philippines, Luzou, depth 1922 metres, p. 570, SCHULZE, SB. Ak. Berlin, 1893, hft. 30, n. spp.
- Phoronema annæ*, Leidy, p. 561, *carpenteri*, Wyv.-Thomson, p. 562, *giganteum*, F. E. Sch., p. 563, *grayi*, Sav. Kent, p. 564, *hemisphericum*, Gray, p. 565, *globosum*, F. E. Sch., p. 565, redescribed; SCHULZE, SB. Ak. Berlin, 1893, hft. 30.
- Poliopogon amadou*, Wyv.-Thompson, *gigas*, F. E. Sch., redescribed; SCHULZE, SB. Ak. Berlin, 1893, hft. 30, p. 567.
- Semperella schultzei*, Semper, redescribed; SCHULZE, SB. Ak. Berlin, 1893, hft. 30, p. 584.

2B. HEXACERATINA.

- Darwinella intermedia*, Banyuls, France, TOPSENT, Arch. Zool. exp. (3) i (1893), p. xxxvii; *D. simplex*, TOPSENT, *op. cit.* (2) x, p. xxvii, Banyuls: n. spp.
- Dendrilla cirsioides*, Banyuls, France, TOPSENT, Arch. Zool. exp. (3) i (1893), p. xxxvii, n. sp.
- Halisarca sputum*, Banyuls, France, TOPSENT, Arch. Zool. exp. (3) i (1893), p. xxxviii, n. sp.

3A. TETRACTINELLIDA.

- Ancorina radix*, Mar., p. 116, pl. ii, fig. 24, pl. iii, fig. 38, pl. v, fig. 75, *cerebrum*, O. S., p. 117, pl. i, fig. 7, pl. ii, fig. 23, &c., *mucronata*, O. S., p. 123, pl. i, fig. 8, pl. ii, fig. 12, &c., Adriatic, redescribed; LENDENFELD, Denk. Ak. Wien, lxi; *A. cerebrum*, O. S., Naples, redescribed, VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, p. 282.
- Caminella loricata*, n. sp., Lesina, LENDENFELD, Denk. Ak. Wien, lxi, p. 62, pl. ii, fig. 27, pl. iii, fig. 52, pl. viii, figg. 143-146.
- Caminus vulcani*, O. Schmidt, Lesina, redescribed; LENDENFELD, Denk. Ak. Wien, lxi, p. 148, pl. i, fig. 6, pl. ii, fig. 29, &c. *C. vulcani*, O. S., Naples, redescribed; VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, p. 276.
- Characella saxicolla*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xvii, Banyuls, depth 25-30 metres.
- Corticella stelligera*, O. Schmidt, Sebenico, Adriatic, redescribed; LENDENFELD, Denk. Ak. Wien, lxi, p. 106, pl. ii, fig. 11, pl. iii, fig. 49.
- Corticium candelabrum*, O. Schmidt, Sebenico, Adriatic, redescribed; LENDENFELD, Denk. Ak. Wien, lxi, p. 103, pl. iii, fig. 50, pl. iv, figg. 60-65.
- Cydonium intutum*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xviii, Banyuls, depth 25-30 metres.
- C. gigas* (O. S.), Soll., Posillipo and Nisida, Italy, redescribed; VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, p. 270.
- Dercitus plicata*, O. Schmidt, Lesina, redescribed; LENDENFELD, Denk. Ak. Wien, lxi, p. 105, pl. ii, fig. 10, pl. iii, fig. 43.
- Ecionema helleri*, O. Schmidt, Lesina and Lissa, redescribed; LENDENFELD, Denk. Ak. Wien, lxi, p. 127, pl. i, fig. 5, pl. ii, fig. 26, pl. iii, fig. 30, pl. vi, figg. 92-95.
- Erylus stellifer*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xviii, Banyuls, depth 25-30 metres.
- E. discophorus*, O. Schmidt, Triest and Lesina, p. 129, pl. ii, fig. 25, pl. iii, fig. 42, pl. vi, figg. 96-106, *mammillaris*, O. S., Triest, p. 132, pl. ii, fig. 28, pl. iii, fig. 41, redescribed; LENDENFELD, Denk. Ak. Wien, lxi. *E. euastrum* (O. S.) Ridl., Naples, redescribed; VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, p. 277.

- Geodia conchilega*, O. S., p. 134, pl. ii, fig. 22, pl. iii, fig. 39, &c., *cydonium*, O. F. Müller, p. 138, pl. i, figg. 4 & 9, pl. ii, fig. 21, &c., *tuberosa*, O. S., p. 146, pl. i, fig. 3, pl. ii, fig. 20, &c., Adriatic, redescribed; LENDENFELD, Denk. Ak. Wien, lxi.
- Isops maculosus*, Naples, 175 metres, VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, p. 273, n. sp.
- Oscarella lobularis*, O. Schmidt, Triest and Lesina, redescribed; LENDENFELD, Denk. Ak. Wien, lxi, p. 99, pl. iv, figg. 55-59 & 66.
- Pachastrella lesinensis*, n. sp., Lesina, LENDENFELD, Denk. Ak. Wien, lxi, p. 106, pl. ii, fig. 18, pl. iii, fig. 44, pl. iv, figg. 67 & 68.
- Penares helleri* (O. S.) Gray, Naples, redescribed; VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, p. 279.
- Pilochrota mediterranea*, Banyuls, France, TOPSENT, Arch. Zool. exp. (3) i (1893), p. xliii, n. sp.
- Placina monolopha*, F. E. Schulze, Triest and Lesina, p. 96, pl. iii, fig. 46, *dilopha*, F. E. S., Triest, p. 97, pl. iii, fig. 48, *trilopha*, F. E. S., Lesina, p. 98, pl. iii, fig. 45, pl. iv, fig. 54, redescribed; LENDENFELD, Denk. Ak. Wien, lxi.
- Pæcillastra fragilis*, Naples, 150-200 metres, p. 285, *cumana*, Cuinæ, 150 metres, p. 286, VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, n. spp.
- Sanidastrella*, n. g., with *S. coronata*, n. sp.; TOPSENT, Arch. Zool. exp. (2) x, p. xviii, Banyuls, depth 15-20 metres.
- Stelletta stellata*, Banyuls, France, TOPSENT, Arch. Zool. exp. (3) i (1893), p. xliii, n. sp.
- S. grubei*, O. S., p. 108, pl. ii, fig. 15, pl. iii, fig. 36, *dorsigera*, O. S., p. 110, pl. i, fig. 2, pl. ii, fig. 17, pl. iii, fig. 34, *boglicii*, O. S., p. 112, pl. i, fig. 1, pl. ii, fig. 16, pl. iii, fig. 33, *pumex*, O. S., p. 113, pl. ii, fig. 13, pl. iii, fig. 32, *simplicissima*, O. S., p. 114, pl. ii, fig. 14, pl. iii, fig. 35, *hispidæ*, Buccich, p. 115, pl. ii, fig. 19, pl. iii, fig. 31, Adriatic, redescribed; LENDENFELD, Denk. Ak. Wien, lxi. *S. grubii*, O. S., Naples, redescribed; VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, p. 283.
- Stryphnus mucronatus* (O. S.), Soll., Naples, redescribed; VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, p. 280.
- Synops anceps*, Naples, 175 metres, VOSMAER, Tijdschr. Nederland. Dierk. Ver. (2) iv, 3, p. 275, n. sp.

3B. LITHISTIDA.

- Desmanthus*, n. g., for *Aciculites incrustans*, Topsent; TOPSENT, Arch. Zool. exp. (3) i (1893), p. xxxvi.
- Tetranthella*, n. g., for *Suberites fruticosus*, O. Schmidt; LENDENFELD, Zool. Anz. xvii, p. 49. *T. fruticosa*, O. S., redescribed; LENDENFELD, Denk. Ak. Wien, lxi (1894), p. 189.
- Tetranthellidæ*, n. fam. of the *Lithistida anoplia*, with *Tetranthella*, n. g.; LENDENFELD, Zool. Anz. xvii, p. 49.

4A. MONAXONIDA.

- Halichondrina*: TOPSENT remodels the classification, introducing the following nomenclature, viz. :—
- Hadromerina*, new name for the subord. *Spintharophora*, Sollas ; TOPSENT, Mem. Soc. zool. France, vii, p. 26.
- Haplosclerida*, n. fam., for *Chalinina*, *Renierina*, *Spongillina*, *Gelliodina*, *Phlæodictyina* ; TOPSENT, p. 7, t. c.
- Pæcilosclerida*, n. fam., for *Esperellina*, *Dendoricina*, *Ectyonina*, *Bubarina* ; TOPSENT, p. 10, t. c.
- Bubarina*, n. subfam., for *Plocamia*, Schmidt ; *Suberotelites*, Schmidt ; *Bubaris*, Gray ; *Rhabderemia*, Topsent ; *Hymerhabdia*, Topsent ; TOPSENT, p. 20, t. c.
- Acarnus tortilis*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xxiv, Banyuls.
- Acheliderma*, n. g., *A. lemniscata*, n. sp., Banyuls, TOPSENT, t. c., p. xxiv.
- Amphilectus osculosus*, n. sp., Banyuls, TOPSENT, t. c., p. xxiii.
- Axinella crista-galli*, Naples, MAAS, p. 333, pl. xx, figg. 16-18 & 20-24, Zool. Jahrb. Anat. vii, n. sp.
- Azoserites*, n. g., with *A. fauroti*, n. sp. ; TOPSENT, Bull. Soc. zool. France, xviii, p. 179, fig. 3, Gulf of Tadjoura (Aden).
- Batzella*, n. g., for *Halichondria inops*, Topsent ; TOPSENT, Arch. Zool. exp. (3) i (1893), p. xxxiv.
- Bubaris constellata*, I. of Batz, Roscoff, p. xxxiii, *gallica*, Oceanic and Mediterranean coast of France, TOPSENT, p. xxxv, t. c., n. spp.
- Chalina zostericola*, n. sp., TOPSENT, *op. cit.* (2) x, p. xviii, Ile de Porquerolles.
- Coppatias inconditus*, n. sp., Bandol and Banyuls, TOPSENT, t. c., p. xxvi.
- Damiria cavernosa prouhoi*, Banyuls, TOPSENT, t. c., p. xxii, n. spp.
- Dendoryx reses*, Banyuls, *iotrochotina*, Bandol, TOPSENT, t. c., p. xxi, n. spp.
- Desmacella vulgaris*, n. sp., Banyuls, TOPSENT, t. c., p. xx.
- Echinodictyum lacazei*, n. sp., Arch. Zool. exp. (2) x, p. xxv, Saint-Nazaire.
- Esperella mollis, albicans*, Banyuls, *hamata*, Bandol, TOPSENT, Arch. Zool. exp. (2) x, pp. xx & xxi, n. spp.
- Gellius lacazei*, Arch. Zool. exp. (3) i (1893), p. xl, *G. uncinatus*, *op. cit.* (2) x, p. xx, Banyuls, France ; TOPSENT, n. spp.
- Halichondria intricata*, n. sp., TOPSENT, t. c., p. xix, Banyuls.
- Holoxea*, n. g., with *H. furtiva*, n. sp. ; TOPSENT, t. c., p. xxvi, Banyuls.
- Hymedesmia unistellata, tristellata*, n. spp., TOPSENT, t. c. p. xxvii, Banyuls.
- H. acuto-stellata*, Liverpool Bay, HANITSCH, P. Liverp. biol. Soc. viii, p. 203, n. sp. (provisionally).
- Hymeniacion pallescens*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xxvi, Banyuls.
- Hymerhabdia*, n. g., with *H. typica*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, pp. xxv & xxvi, Banyuls.
- Iophon funis*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xxii, Banyuls.

- ^d*Leptosia*, n. g., with *L. exilis*, n. sp.; TOPSENT, Arch. Zool. exp. (2) x, p. xxii, Banyuls and Porquerolles.
- ^l*Lissomyxilla*, n. g., for *Tethea spinosa*, Bow.; HANITSCH, P. Liverp. biol. Soc. viii, p. 194.
- Myxilla banyulensis*, *arcitenens*, Banyuls, TOPSENT, Arch. Zool. exp. (2) x, pp. xxiii & xxiv; *M. versicolor*, Banyuls, France, TOPSENT, *op. cit.* (3) i (1893), p. xli; *M. fibrosa*, LEVINSEN, Vid. Udb. Kanonbaaden 'Hauchs' Togter, v, p. 421, pl. i, figg. 35 & 36, Kattegat, 10 faths. : n. spp.
- Placospongia*, referred by LENDENFELD (Biol. Centralbl. xiv, p. 115) to the *Monaxonida*. See also p. 8 of this Report.
- ^l*Pocillon*, n. g., for *Microciona spinulenta*, B., and *Isodictya implicita*, B.; TOPSENT, Arch. Zool. exp. (3) i (1893), p. xxxiv.
- Polysiphonia mucronalis*, n. sp., LEVINSEN, Vid. Udb. Kanonbaaden 'Hauchs' Togter, v, p. 417, pl. i, fig. 29, Kattegat and Oresund.
- ^d*Prosuberites*, n. g., with *P. longispina* and *P. rugosus*, n. spp., Banyuls, France; TOPSENT, Arch. Zool. exp. (3) i (1893), p. xlii.
- Reniera lenis*, *citrina*, *latens*, Banyuls, *plana*, Villefranche, Porquerolles, Banyuls, TOPSENT, Arch. Zool. exp. (2) x, p. xix; *R. parietalis*, *flavescens*, *fulva*, Banyuls, France, TOPSENT, Arch. Zool. exp. (3) i (1893), p. xxxix; *R. ramusculoides*, *depressa*, TOPSENT, Bull. Soc. zool. France, xviii, p. 181, Gulf of Tadjoura (Aden) : n. spp.
- Rhabderemia toxigera*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xxv, Banyuls.
- Rhaphidophlus jolicoeuri*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xxv, Banyuls.
- ^d*Rhaphisia*, n. g., with *R. laxa*, n. sp.; TOPSENT, Arch. Zool. exp. (2) x, p. xx, Banyuls.
- Stylinos brevicuspis*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xx, Banyuls and Bandol. *S. brevicuspis* said to be *Tetranthella fruticosa*, TOPSENT, Rev. biol. Nord France, vi, p. 313.
- Stylostichon fibulatus*, Banyuls, France, TOPSENT, Arch. Zool. exp. (3) i (1893), p. xlii, n. sp.
- Stylotella marsillii*, Banyuls, France, TOPSENT, Arch. Zool. exp. (3) i (1893), p. xli, n. sp.
- Suberites spissus*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xxvii, Banyuls.
- Yvesia rosea*, n. sp., TOPSENT, Arch. Zool. exp. (2) x, p. xxiii, Banyuls.

4B. MONOCERATINA.

- Hircinia condensa*, p. 41, pl. 1, figg. 1 & 2, *stipitata*, p. 41, pl. i, figg. 3 & 4, *digitata*, p. 42, pl. i, fig. 5, *chevreuxi*, p. 42, pl. i, figg. 6 & 7, *truncata*, p. 42, pl. i, figg. 8 & 9, Gulf of Gabès, Tunis, TOPSENT, Mem. Soc. zool. France, vii (1894), n. spp.

XVIII. PROTOZOA.

BY

R. HANITSCH, Ph.D.

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1 new genus, 1 new species.
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210. —. *Pericometes digitatus*. *T. c.* pp. 19-23, pls. vii & viii.
1 new genus, 1 new species.
211. —. Grégarines nouvelles ou peu connues. *T. c.* pp. 67-85, pls. x & x bis.
2 new genera, 2 new species.
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213. —. Sur le genre *Pileocephalus*. *T. c.* pp. 199-207, pls. xxxi & xxxii.
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II.—MORPHOLOGY AND PHYSIOLOGY.

I. ANATOMY.

BLOCHMANN (15) has discovered numerous fine protoplasmic threads projecting from the surface of *Pelomyxa*.

BLOCHMANN (17) proves the existence of axial threads in *Dimorpha mutans*, which, like the flagella, converge radially towards the nucleus. The nucleus, too, has a radial structure, flagella and axial threads springing from its centre. This author establishes a new genus, *Dimastigamæba*, which differs from *Dimorpha* by the *Rhizopoda*-like pseudopodia, and the arrangement of the flagella. The *Rhizomastigina* are *Flagellata*, contrary to Frenzel's views.

EGGER (54) has an important monograph on the *Foraminifera* collected during the voyage of the German corvette "Gazelle," in the Atlantic, Indian, and Pacific Oceans, during the years 1874-76. 490 species are described, of which 46 are new. The work is illustrated by 21 plates and 1 map.

FRANZÉ (62) has studied the stigmata or eye-spots of the *Euglenoidina Chlamydomadina*, and *Volvocinæ*. They consist of a disc of a plasmatic, fine-meshed ground substance, containing oily red granules. The centre of the disc is occupied by a crystalline body, surrounded by a number of lens-bodies. The stigmata serve for the perception of light and heat.

MOORE (155) has studied the structural differentiation of the *Protozoa* by microscopic sections. *Spirostomum* showed a splendid reticulum of the whole protoplasmic body, and, near the oral furrow, a structure which suggests a nervous apparatus. *Paramacium* showed much less differentiation.

RHUMBLER (185) has a paper on the origin and significance of certain small bodies which occur in the nucleus of many *Protozoa*, and in the germinal vesicle of *Metazoa*. They are probably not organized structures, but reserve material.

RHUMBLER (186), describing *Saccamina spherica*, states that the sand grains constituting the shell are connected by a cementing substance along the lines of contact only. When growing, certain parts of the shell are broken open, and are rebuilt by the pushing in of new sand grains. Sarcodæ and nucleus are also described.

SCHAUDINN (198) describes a new marine Rhizopod, *Myxotheca arenilega*, of very great size, which may be either the lowest living Foraminifer, or perhaps an incompletely developed one.

SCHAUDINN (200) describes the shell, protoplasm, nucleus, nutrition, and reproduction of *Calcituba polymorpha*.

THÉLOHAN (240) has observed, in the gall-bladder of Fishes, certain forms, with two spores, mostly belonging to the genus *Ceratomyxa*, and others, which form a transition between *Ceratomyxa* and *Sphaeromyxa*, and thus connect the disporic and polysporic species. The latter are degenerated through more pronounced stages of parasitism.

2. EMBRYOLOGY.

BLOCHMANN (15) describes karyokinesis in *Pelomyxa uvella*.

BLOCHMANN (16) describes mitosis in *Euglena* and *Trachelomonas*. Centrosomes and polar striæ are absent, nor could spindle fibres be demonstrated. The nuclear membrane remains.

LABBÉ (110) has observed a dimorphism in the development of certain *Hæmatosporidia* (*Drepanidium ranarum* and *D. danilevskii*). They may reproduce either by means of macrospores or of microspores. Cytocysts, with macrospores, are found in the leucocytes, in spring and autumn; cytocysts, with microspores, in liver and spleen, at the beginning of the summer.

LÉGER (122) has studied the development of Gregarines in the intestine of Marine Worms (*Nereis cultrifera* and *Polydora agassizi*).

MARSHALL (139) describes the life-history of *Gregarina* (*Clepsidrina*) *blattarum*, v. Sieb.

SCHAUDINN (201), on the reproduction in various types of *Foraminifera*, describes how it takes place by the division of the soft body, either within the maternal shell, or after it has left the same. In the former case, the new formation of the shell takes place within the mother; in the latter, after the parts, in the form of naked plasmodia, have left the shell of the mother. The nuclei, before dividing, go through a series of changes, first taking up fluid, then becoming vesicular, and with their chromatin and achromatin evenly distributed. Then they break up into numerous portions, afterwards freed by the dissolution of the nuclear membrane.

ZACHARIAS, (262) pp. 114–117, describes mitosis in *Ceratium hirundinella*.

3. PHYSIOLOGY AND BIOLOGY.

ATTFIELD (8) made experiments showing that the "self-purification" of impure water may be due to the destruction of *Bacteria* by *Infusoria*.

BALBIANI (10) gives an account of his continued experiments on the merotomy of the *Ciliata*, especially *Stentor polymorphus*, *S. igneus*, *Dileptus anser*, *Loxodes rostrum*, and *Paramœcium aurelia*.

BLOCHMANN (15) describes his observations on the daily movements of *Pelomyxa*, and the effect upon it of light and oxygen.

FRANZÉ (63), in a preliminary note on the organization of the *Choano-flagellata*, gives an account of the ingestion of food in *Codosiga botrytis*, and the structure of collar and digestive vacuole, which differs in various points from that given by Bütschli.

GREENWOOD (70) describes the constitution and formation of the food-vacuoles, and her observations on the processes of digestion in *Carchesium polypinum*.

GRUBER (71) in a popular lecture, "Microscopic Vivisection," gives an account of his experiments on the artificial division of *Stentor caruleus*, and its power of regeneration.

HASWELL (82) has noticed a parasitic Flagellate, resembling *Euglena deses*, in an undescribed rhabdocoel Turbellarian (from a pond in Victoria Park, Sydney), producing there a dull yellowish green colour. They were found in the interior of unicellular glands, or other large cells of the parenchyma. No similar occurrence of *Flagellata* seems to have been previously recorded.

MASSART (141) gives an account of his experiments on the irritability of *Noctiluca*, and its reaction to mechanical, physical, and chemical influences.

SCHIEWIAKOFF (205) records his studies on so-called excretory granules of *Paramacium*, and some other *Protozoa*.

STRENG (236) observed *Infusoria* in the sputum of pulmonary gangrene, and made cultures of the same.

VERWORN (249), in his paper on the movement of living substance, comes to the conclusion that the affinity of certain particles of the protoplasm to the oxygen of the surrounding medium is the cause of the formation of Pseudopodia, and of the protoplasmic streaming.

VERWORN (250) made a series of experiments on some marine *Radio-laria*, in order to ascertain how far the organism is affected by the removal of certain parts, especially of the central capsule and nucleus; how far regeneration can take place; and what conclusions can be drawn from these experiments as to the physiological significance of the nucleus.

WERNICKE (255) found enormous numbers of parasitic *Protozoa*, probably *Coccidia*, in the giant-cells of a tumour of the corium (*Mycosis fungoides*?).

ZACHARIAS, (262) p. 124, has found *Carchesium polypinum* and *Epistylis lacustris* floating free in the lake of Plön, in such numbers that they could not be supposed to have been torn away from their supports. They probably give up periodically their fixed habit in favour of a free-floating one, a kind of retrogressive adaptation.

ZACHARIAS (262) discusses the periodicity of the *Limnoplankton* in the lake of Plön (Holstein), and gives the results in a tabular form.

III.—DISTRIBUTION.

A. HOSTS AND SEATS OF PROTOZOA.

The literature on parasitic and pathogenic *Protozoa* is extensive and scattered. The following list, even though imperfect, may, it is hoped, be useful :—

PROTOZOA (generally).

General occurrence, BAUMGARTEN (13), DÖHLE (53), LINDNER (124).—Holothurians, MONTICELLI (153).—Cyclops, SCHEWIAKOFF (204).—Termites, GRASSI & SANDIAS (69).—Blood of caterpillars, HARTIG (81): Man, KARTULIS (100).—Mycosis fungoides, WERNICKE (255).—Cancer, DELÉPINE (49), NEPVEU (161), PLIMMER (174), RUFFER (192), RUFFER & PLIMMER (193), RUFFER & WALKER (194), RUSSELL (196), SOUDAKEWITSCH (226), TÖRÖK (245).—Cancer of man and Vertebrata, PFEIFFER (170).

AMEBA.

Urine, POSNER (177).—Abscess of jaw, FLEXNER (60).—Malaria, KOCHS (101).—*Amœba coli*: Man, COUNCILMAN (43, 44), EICHBERG (55), EPSTEIN (57), HAROLD (80), LUDWIG (128), RHEIN (184), SCHUBERG (219), STENGEL (229), TALAMON (237), WESENER (256).

SPOROZOA (generally).

General occurrence, KOROTNEFF (102).—Scolopendra and Phalangidium, SCHNEIDER (211).—Insects, LÉGER (123).—Periplaneta, KÜNSTLER (104).—Fishes, THÉLOHAN (241).—Salmon, HOFER (87).—Rat, REGNAULT (183).—Graafian follicle and ovum of Rabbit, PODWYSSOZKI (176).—Intestinal villi of Cattle, SMITH (223).—Texas fever of Cattle, SMITH (224).—Cancer, CLARKE (39), KOROTNEFF (103), KÜRSTEINER (105), SOUDAKEWITSCH (225).—Cancer of Man and Vertebrata, PFEIFFER (170).

GREGARINIDEA.

Holothuria, MINCHIN (147).—Acridium, LÉGER (120).—Blatta and Aphodius, MARSHALL (139).—Melolontha, LÉGER (121).—Marine worms, LÉGER (122).

COCCIDIIDEA.

Generally, WILLACH (257).—Solen vagina, SCHNEIDER (214).—Fish, LABBÉ (108), THÉLOHAN (243).—Birds, LABBÉ (111, 112), STILES (232), RAILLIET & LUCET (182).—Rabbit, DELÉPINE & COOPER (50), PFEIFFER (169), BARROIS (12).—Mouse, SCHUBERG (218).—Sheep, STILES (230).—Cattle, GUILLEBAUM (73).—Cancer, BURCHARDT (27), METSCHKOFF (146).

MYXOSPORIDEA.

Fishes, GURLEY (75), THÉLOHAN (239).—Crustacea Decapoda, HENNEGUY & THÉLOHAN (83, 84).

FLAGELLATA.

Turbellaria, HASWELL (82).—*Cercomonas intestinalis*: Man, MÜLLER (157).—*Cercomonas coli hominis*: Man, MAY (144).—*Cercomonas musca domesticae*: Pinemoth Caterpillar, HARTIG (81).—*Hamatozoa*: Cold-blooded Vertebrata, LABBÉ (109).—Malaria, Texas fever, &c., ARNAUD (5, 6), BACELLI (9), BARBACCI (11), BEIN (14), CORONADO (41), LAYERAN (113, &c.), MANNABERG (134, 135), MARCHIAFAVA & BIGAMI (136), MIRINESCU (149), POTAIN (178), SCHELLONG (202), SJÖBRING (222), SOULIÉ (227), STARCOVICI (228), TREILLE (247, 248), VINCENT (252).

CILIATA.

Invertebrata, CUÉNOT (45).—*Ichthyophthirius*, Fishes, ZACHARIAS (263).—*Balantidium coli*: Man, ORTMANN (165).—Pulmonary Gangrene, STRENG (236).

ACINETARIA.

Gammarus, SCHNEIDER (210).—Cyclops, SCHEWIAKOFF (204).

B. FAUNISTIC.

South America, Cape.—*Foraminifera*; EGGER (54).

Argentina.—*Iobosa*, *Heliozoa*; FRENZEL (66).

North America.—*Protozoa*; SCHEWIAKOFF (203).—Rocky Mountains: *Rhizopoda*; PENARD (167).—South Carolina, Oyster grounds: *Protozoa*; DEAN (48).—United States, Brackish water: *Infusoria*; STOKES (335).

Atlantic.—*Foraminifera*; EGGER (54), PICAGLIA (173).

France.—Neighbourhood of Paris: *Protozoa*; CERTES (36).—Gulf of Marseille: *Foraminifera*; SCHLUMBERGER (207).—Jan Mayen: *Protozoa*; POUCHET (179).

Germany.—Schleswig-Holstein, Oyster banks: *Protozoa*; MÆBIUS (150).—Holstein: *Protozoa*; APSTEIN (3).—Lakes of Plön, Holstein: *Protozoa*; ZACHARIAS (260–263).—Norderney and Heligoland: *Protozoa*; APSTEIN (3).

Norway.—Trondhjem Fjord: *Foraminifera*; NORMAN (162).

Hungary.—Mezöseger Lakes: *Protozoa*; DADAY (46).

Galizia.—Wells of Krakau and Lemberg: *Protozoa*; JAWOROWSKI (94).

Russia.—Odessa, Salt-lakes: *Peridinidæ*; ZABOLOTNY (259).

Mediterranean.—*Foraminifera*; PICAGLIA (172).

Red Sea.—*Foraminifera*; PICAGLIA (172).

Indian Ocean (especially coast of Mauritius).—*Foraminifera*; EGGER (54).

Malay Archipelago.—Freshwater *Protozoa*; SCHEWIAKOFF (203).

New Guinea.—*Foraminifera*; EGGER (54).

Australia.—Freshwater *Protozoa*; SCHEWIAKOFF (203).—East and West Coast: *Foraminifera*; EGGER (54).

New Zealand.—Freshwater *Protozoa* ; SCHEWIAKOFF (203).

Sandwich Islands.—Freshwater *Protozoa* ; SCHEWIAKOFF (203).

Fiji Islands.—*Foraminifera* ; EGGER (54).

Pacific.—*Foraminifera* ; EGGER (54), PICAGLIA (173).

SCHEWIAKOFF (203), who describes the *Protozoa* collected by him in North America, Sandwich Islands, New Zealand, Australia, and Malay Archipelago, finds that the European species are mostly cosmopolitan. 274 genera and 584 species have been recorded so far in Europe, and out of Europe 202 genera with 395 species, of which 181 genera with 326 species are European. 21 genera with 69 species have not been found so far in Europe.

c. GEOLOGICAL.

Silurian (?).—Barbadoes : *Radiolaria* ; CARTER (32).

Jurassic (Pholadomyenmergel).—Switzerland : *Lagenida* ; HÆUSLER (78).

Cretaceous.—Taplow (Chalk) : *Foraminifera* ; CHAPMAN (37).—Folkstone (Gault) : *Foraminifera* ; CHAPMAN (38).—Russia : *Foraminifera* ; JACOBIJ (93).—Minnesota : *Foraminifera* ; WOODWARD & THOMAS (258).—North-western Manitoba (Upper Cretaceous, Pierre Formation) : *Radiolaria* ; RÜST (191).—Chalk (or Oligocene ?), Liguria : *Bathysiphon filiformis*, Sars, identical with the living form ; ANDRÆ (1).

Tertiary.—Trinidad and West Indies : *Foraminifera* ; GUPPY (74).

Eocene.—Bellarine Peninsula, Australia : *Foraminifera* ; HALL & PRITCHARD (79).

Miocene.—Germany : *Foraminifera* ; HOSIUS (89).

Pliocene.—Italy : *Foraminifera* ; FORNASINI (61).—Andalusia : *Foraminifera* ; CALDERÓN (29).

IV.—SYSTEMATIC.

A.—GYMNOMYXA.

Class 3.—LOBOSA.

Amœba eteropoda, Lugano, Switzerland, p. 13, *jalina*, Brinzio, Lombardy, p. 14, MAGGI, Boll. scient. xv ; *A. tentaculifera*, p. 94, pl. vii, figg. 21–25, *salina*, p. 97, pl. vii, figg. 26–29, Argentina, FRENZEL, Bibl. Zool. xii : n. spp.

Diffugia polycroma, Cuvio (Valcuvia, territorio di Varese), p. 15, MAGGI, Boll. scient. xv ; *D. roseolata*, Western Australia, Dirk Hartog, 82 metres, p. 251, pl. xxi, fig. 3, EGGER, Abh. Bayer. Ak. xviii : n. spp.

Diplophrys elongata, pp. 8 & 46, pl. i, fig. 1, *D. graberi*, pp. 10 & 46, pl. i, fig. 2, in the wells of Krakau, JAWOROWSKI (Nowe Gatunki, &c.), n. spp.

- ¹*Filigerina*, n. g., with *F. delicatula*, n. sp., found in A. Schneider's aquarium, p. 1, pl. i, figg. 5-10; SCHNEIDER, Tabl. zool. ii.
- ²*Mycetomyxa*, n. g., with *M. zoppi*, n. sp., Plön, Holstein, p. 13, pl. i, fig. 5; ZACHARIAS, Forschungsberichte, Plön, i.
- ³*Myzotheca*, n. g., with *M. arenilega*, n. sp., Berlin in Seawater aquarium stocked from Rovigno, p. 18, pl. ii; SCHAUDINN, Zeitschr. wiss. Zool. lvii.
- Pelomyxa greeffi*, Freshwater, Rostock, p. 86, BLOCHMANN, Biol. Centralbl., n. sp.
- Quadrula compressa*, Sprawozd. Kom. Krajo. xxviii, p. 8, *Q. acolis* (Nowe Gatunki, &c.), pp. 4 & 45, pl. ii, figg. 20-25, in the wells of Krakau and Lemberg, JAWOROWSKI, n. spp.
- Saccamaba insectivora*, n. sp., p. 83, pl. viii, figg. 6-12, *S. alveolata*, n. sp. (?), p. 86, pl. vii, figg. 30-32, Argentina, FRENZEL, Bibl. Zool. xii.
- ⁴*Stylamaba*, n. g., with *S. sessilis*, n. sp., Argentina; FRENZEL, p. 102, pl. vii, fig. 9, Bibl. Zool. xii.
- ⁵*Vampyrina*, n. g., with *V. buetschlii*, n. sp., Argentina; FRENZEL, p. 103, pl. ix, fig. 2, Bibl. Zool. xii.

Class 5.—HELIOZOA.

- Acanthocystis lemani*, Penard, var. *plonensis*, Plön, Holstein; ZACHARIAS, p. 70, pl. i, fig. 2, Forschungsberichte, Plön, ii, n. var.
- ¹*Actinosphaeridium*, n. g., with *A. pedatum*, n. sp., Plön, Holstein, p. 15, pl. i, fig. 9; ZACHARIAS, Forschungsberichte, Plön, i.
- ²*Gymnosphaeria*, n. g., with *G. albida*, n. sp., Sea water Aquarium, Munich; SASSAKI, p. 46, pl. ii, Jena. Zeitschr. xxviii.
- Nuclearia mebiusi*, Argentina, FRENZEL, p. 106, pl. viii, figg. 1-3, Bibl. Zool. xii, n. sp.
- Nuclearina similis*, Argentina, FRENZEL, p. 108, pl. x, figg. 2 & 7, Bibl. Zool. xii, n. sp.
- ³*Olivina*, n. g., with *O. monostomum*, n. sp., Argentina; FRENZEL, p. 110, pl. vii, figg. 16 & 17, Bibl. Zool. xii.
- ⁴*Rosario*, n. g., with *R. argentinus*, n. sp., Argentina; FRENZEL, p. 111, pl. vii, figg. 11-15, Bibl. Zool. xii.

Class 6.—RETICULARIA.

- Amphistegina maculata*, Mauritius, 137 metres, p. 430, pl. xx, figg. 1 & 2, *foveolata*, West Africa, Mauritius, Dirk Hartog, p. 430, pl. xx, figg. 6-8, EGGER, Abh. Bayer. Ak. xviii, n. spp.
- Anomalina globigerinoides*, from 16 different stations, p. 378, pl. xiv, figg. 16-19, EGGER, Abh. Bayer. Ak. xviii, n. sp.
- Articulina extensa*, Mauritius, 411 metres, p. 242, pl. iii, fig. 3, EGGER, Abh. Bayer. Ak. xviii, n. sp.

- Biloculina discus*, West Coast of Africa, lat. 10° 12' 9" N., long. 17° 12' 5" W., depth 677 metres, p. 217, pl. i, figg. 50 & 51, *nodosa*, Mauritius, depth 411 metres, p. 221, pl. i, fig. 12, EGGER, Abh. Bayer. Ak. xviii, n. spp.
- Bolivina ovata*, Mauritius, 411 metres, p. 293, pl. viii, figg. 21-23, *acaulis*, Western Australia, 1187 metres and 359 metres, p. 295, pl. viii, figg. 28-30, *glutinata*, West Africa, 677 metres, Western Australia, 359 metres, p. 297, pl. viii, figg. 57-62, *substriata*, Mauritius, 411 metres, p. 298, pl. viii, figg. 4-6, *campanulata*, West Portugal, 5301 metres, Mauritius, 411 metres, Western Australia, 359 metres, p. 301, pl. viii, figg. 53 & 54, EGGER, Abh. Bayer. Ak., n. spp.
- † *Bolivina strigillata*, Phosphatic Chalk of Taplow, p. 515, pl. xv, fig. 10, CHAPMAN, Quart. J. Geol. Soc. xlvi, n. sp.
- Bulimina ornata*, Western Australia, 359 metres, p. 286, pl. viii, fig. 80, EGGER, Abh. Bayer. Ak., n. sp.
- † *Bulimina*, n. sp., HOSIUS, Verh. Ver. Rheinland, 1, 1 Hft., p. 118, pl. ii, fig. 11, Miocene, Germany. † *B. trigona*, Phosphatic Chalk of Taplow, p. 515, pl. xv, fig. 8, CHAPMAN, Quart. J. Geol. Soc. xlvi, n. sp.
- † *Flabelliporus*, n. g., with *F. orbicularis*, p. 59, figg. 13-17, 23, 35, & 36, *dilatatus*, Colli Torinesi (Termofurà, Italy), p. 60, figg. 1-12, 18, 20, 21, 24, 25, 27-33, DERVIEUX, Atti Acc. Torino, xxix, n. spp.
- Gaudryina colligera*, Western Australia, 915 metres, p. 279, pl. vii, figg. 4 & 5, EGGER, Abh. Bayer. Ak. xviii, n. sp.
- Globigerina radians*, Western Australia, 915 metres and 359 metres, Fiji Is., 1655 metres, p. 362, pl. xiii, fig. 22-24, *sphaeroides*, from 25 different stations, p. 367, pl. xiii, fig. 69 & 70, *hastata*, Western Australia, 359 metres, p. 368, pl. xiii, fig. 80, pl. xiv, figg. 41 & 42, *glutinata*, West Africa, Western Australia, New Guinea, p. 371, pl. xiii, figg. 19-21, EGGER, Abh. Bayer. Ak. xviii, n. spp.
- Layena tubulifera*, between Montevideo and Tristan d'Acunha, 3950 metres, p. 324, pl. x, figg. 6 & 7, *tortilis*, Western Australia, 359 metres, p. 329, pl. x, figg. 61-63, *compressa*, Neumsterdam, 1485 metres, p. 331, pl. x, figg. 1 & 2, *costulata*, Western Australia, 359 metres, Fiji Is., 1655 metres, p. 334, pl. x, figg. 40 & 41, *bicornuta*, between Montevideo and Tristan d'Acunha, 3950 metres, p. 335, pl. x, figg. 92 & 93, *ungula*, Western Australia, 359 metres, p. 335, pl. x, figg. 52 & 53, EGGER, Abh. Bayer. Ak. xviii, n. spp.
- ~ *Massilina*, n. g., p. 76, with *M. annectens*, Gulf of Marseille, p. 78, pl. iii, figg. 77-79, SCHLUMBERGER, Mem. Soc. zool. France, n. sp.
- Miliolina pellucida*, Western Africa, 677 metres, Neumsterdam, 1485 metres, Western Australia, 1188 and 359 metres, Eastern Australia, 2769 metres, Fiji Is., 1655 metres, p. 229, pl. ii, figg. 7-12, *cylindrica*, Western Australia, 359 metres, p. 233, pl. ii, fig. 69, pl. iv, figg. 25-27, *porrecta*, Mauritius, 411 metres, p. 233, pl. ii, figg. 50-52,

- tubulifera*, Western Australia, 359 metres, p. 234, pl. i, figg. 52-54, *maculata*, West Africa, 677 metres, p. 238, pl. ii, figg. 85 & 86, EGGER, Abh. Bayer. Ak. xviii, n. spp.
- †*Nodosaria perpusilla*, p. 591, pl. ix, fig. 6, *bambusa*, p. 591, pl. ix, fig. 7, *internotata*, p. 592, pl. ix, fig. 10, Gault of Folkestone, CHAPMAN, J. R. Micr. Soc. 1893, n. spp.
- †*Nonionina*, n. sp., HOSIUS, Verh. Ver. Rheinland, iv, 1 Hft., p. 134, Miocene, Germany.
- †*Nubecularia jonesiana*, Phosphatic Chalk of Taplow, p. 514, pl. xv, fig. 2, CHAPMAN, Quart. J. Geol. Soc. xviii, n. sp.
- Pelosina spiculotesta*, Western Australia, 1187 metres, p. 254, pl. iv, fig. 3, EGGER, Abh. Bayer. Ak. xviii, n. sp.
- Planispirina auriculata*, Mauritius, 411 metres, lat. 20° 35' S., long. 57° 17' E., 347 metres, Western Australia, 1187 and 359 metres, p. 245, pl. iii, figs. 13-15, EGGER, Abh. Bayer. Ak. xviii, n. sp.
- Polymorphina compressa*, Cape Verde, 69 metres, p. 309, pl. ix, figg. 11-13, *formosa*, Cape Verde and Western Australia, 359 metres, p. 440, pl. ix, figg. 17-19, EGGER, Abh. Bayer. Ak. xviii, n. spp.
- Quinqueloculina stelligera*, Gulf of Marseille, p. 68, pl. ii, figg. 58 & 59, SCHLUMBERGER, Mem. Soc. zool. France, n. sp.
- Rheophax hystrix*, Cape Verde Is., 69 metres, p. 256, pl. iv, fig. 14, EGGER, Abh. Bayer. Ak. xviii, n. sp.
- Sigmoilina costata*, Gulf of Marseille, p. 61, pl. i, figg. 51 & 52, SCHLUMBERGER, Mem. Soc. zool. France, vi, n. sp.
- Spiroloculina inaequilateralis*, Gulf of Marseille, p. 60, pl. iv, figg. 84-86, SCHLUMBERGER, Mem. Soc. zool. France; *S. involuta*, Mauritius, depth 411 metres, p. 222, pl. i, figg. 37 & 38, *lamella*, Western Australia, lat. 18° 52' S., long. 116° 18' E., depth 359 metres, p. 223, pl. i, figg. 24 & 25, *foveolata*, Mauritius, depth 137 metres, p. 224, pl. i, figg. 33 & 34, *complanata*, Mauritius, depth 411 metres, lat. 20° 35' S. long. 57° 17' E., depth 347 metres, Western Australia, depth 359 metres, p. 225, pl. iii, figg. 7 & 8, EGGER, Abh. Bayer. Ak. xviii: n. spp.
- Textularia horrida*, Mauritius, Coral Reefs, 137 metres, p. 270, pl. vi, figg. 11 & 12, EGGER, Abh. Bayer. Ak. xviii, n. sp.
- †*T. decurrens*, pl. xv, fig. 6, *serrata*, pl. xv, fig. 7, p. 515, Phosphatic Chalk of Taplow, CHAPMAN, Quart. J. Geol. Soc. xviii, n. spp.
- Triloculina marioni*, Gulf of Marseille, p. 62, pl. i, figg. 38-41, SCHLUMBERGER, Mem. Soc. zool. France, n. sp.
- Trochammina plana*, Western Australia, 359 metres, p. 264, pl. v, figg. 19-21 & 48-52, *elegans*, Cape Verde Is., 3427 metres, p. 265, pl. v, figg. 22-24, EGGER, Abh. Bayer. Ak. xviii, n. spp.
- Uvigerina crassa*, Mauritius, 411 metres, p. 311, pl. ix, figg. 38 & 39, *tuberosa*, New Guinea, 832 metres, p. 313, pl. ix, fig. 56, *globulosa*, Western Australia, 359 metres, p. 414, pl. ix, figg. 54 & 55, EGGER, Abh. Bayer. Ak. xviii, n. spp.
- Vaginulina sigmoidea*, Mauritius, 410 metres, p. 347, pl. xi, figg. 34 & 35, EGGER, Abh. Bayer. Ak. xviii, n. sp.

Class 7.—RADIOLARIA.

- † *Caryosphæra æquidistans*, Pierre Formation, Manitoba, Rüst, p. 104, pl. xiv, figg. 1a & 1b, Geol. Survey, Canada, 1892, n. sp.
- † *Cenellipsis hexagonalis*, Pierre Formation, Manitoba, Rüst, p. 104, pl. xiv, fig. 2, Geol. Survey, Canada, 1892, n. sp.
- † *Cyrtocalpis crassitestata*, Pierre Formation, Manitoba, Rüst, p. 105, pl. xiv, fig. 4, Geol. Survey, Canada, 1892, n. sp.
- † *Dictyocephalus microstoma*, p. 105, pl. xiv, fig. 5, *macrostoma*, p. 106 pl. xv, fig. 1, Pierre Formation, Manitoba, Rüst, Geol. Survey, Canada, 1892, n. spp.
- † *Dictyomitra canadensis*, Pierre Formation, Manitoba, Rüst, p. 108, pl. xvi, fig. 1, Geol. Survey, Canada, 1892, n. sp.
- † *Prunulum calococcus*, Pierre Formation, Manitoba, Rüst, p. 105, pl. xiv, fig. 3, Geol. Survey, Canada, 1892, n. sp.
- † *Stichocapsa tyrelli*, p. 110, pl. xvi, fig. 4, *dawsoni*, p. 110, pl. xvi, fig. 5, Pierre Formation, Manitoba, Rüst, Geol. Survey, Canada, 1892, n. spp.
- † *Theocampe sphaerocephala*, Pierre Formation, Manitoba, Rüst, p. 106, pl. xv, fig. 2, Geol. Survey, Canada, 1892, n. sp.
- † *Tricolocapsa thoracica*, p. 107, pl. xv, fig. 4, *dowlingi*, p. 108, pl. xv, fig. 5, *selwyni*, p. 108, pl. xv, fig. 6, Pierre Formation, Manitoba, Rüst, Geol. Survey, Canada, 1892, n. spp.

B.—CORTICATA.

Class 1.—SPOROZOA.

LÉGER (123) gives the following classification of the *Gregarinidea* :—

A. GYMNOSPOREA.

The spores are without protecting envelope.

Fam. *Gymnosporidæ*.

B. ANGIOSPOREA.

The spores are always covered by a resistant membrane, which may be either simple or double.

I. *Polycystidea* : the spores have equal poles.

a. With regular smooth spores.

Fam. *Clepsidrinidæ*, *Anthocephalidæ*, *Dactylophoridæ*, *Actinocephalidæ*.

b. With regular, spiny spores.

Fam. *Acanthosporidæ*.

c. With irregular spores.

Fam. *Stylorhynchidæ*, *Menosporidæ*.

II. *Monocystidea* : the spores have unequal poles.

Fam. *Gonosporidæ*, *Urosporidæ*.

GURLEY (75) proposes the following classification of the *Myxosporidia* :—

- I. *Cryptocystes*, n. ord. *Myxosporidia*, in which the pansporoblast produces many (at the fewest 8) spores; the last minute, without distinct symmetry, with a single capsule; type (and only) family: *Glugeidæ*, n. fam.
 - II. *Phenocystes*, n. ord. *Myxosporidia*, in which the pansporoblast produces few (at the most 2) spores; the last relatively large, with distinct symmetry and two or more capsules; type family, *Myxobolidæ*, n. fam. Other families: *Cystodiscidæ*, *Chloromyxidæ*, *Myxidiidæ*, n. fam.
- ^v*Acanthospora*, n. g., with *A. pileata*, n. sp., in alimentary canal of larval *Cistelides*; LÉGER, p. 145, pl. xv, figg. 1-5, Tabl. zool. iii.
Actinocephalus tipulæ, in alimentary canal of larval *Tipula*, p. 141, pl. xiv, figg. 12-14, *A. acutispora*, in alimentary canal of *Silpha levigata*, p. 142, pl. xiv, figg. 6-11, LÉGER, Tabl. zool. iii, n. spp.
[^]*Amphorella*, n. g., with *A. polydesmi*, n. sp., in alimentary canal of *Polydesmus complanatus*; LÉGER, p. 132, pl. x, figg. 9-14, Tabl. zool. iii.
[^]*Ancyrophora*, n. g., with *A. gracilis*, in alimentary canal of larval and adult *Carabus auratus* and *C. violaceus*, and in larval *Silpha thoracica*, p. 146, pl. xix, figg. 11-13, *A. uncinata*, in alimentary canal of larval *Sericostomes* and larval *Dytiscus* and *Colymbetes*, p. 147, pl. xix, figg. 6-10, LÉGER, Tabl. zool. iii, n. spp.
[^]*Anthrocephalus*, n. g., with *A. sophiæ*, in alimentary canal of *Phalangium opilio*, p. 69, pl. x, fig. 11, SCHNEIDER, Tabl. zool. ii, n. sp.
[^]*Asterophora*, n. g., with *A. mucronata*, in alimentary canal of larval *Ryacophila*, pp. 129-131, pl. xv, figg. 6-9, *A. elegans*, in alimentary canal of larvæ of *Phryganea grandis* and *Sericicostomes*, p. 131, pl. xii, figg. 8-14, LÉGER, Tabl. zool. iii, n. spp.
Balbiana rileyi, falcatulula, parasitic in birds, p. 79, STILES, U.S. Bureau Anim. Industry, 1893, n. spp.
[^]*Ceratospora*, n. g., with *C. mirabilis*, n. sp., in body cavity of *Glycera*, LÉGER, p. 159, pl. xx, figg. 9-11, Tabl. zool. iii.
Chloromyxidæ, n. fam.; GURLEY, p. 418, Bull. U. S. Fish Comm. xi.
Chloromyxum mucronatum in urinary bladder of *Lota lota*, *incisum* in gall-bladder of *Raja batis*, GURLEY, p. 419, Bull. U. S. Fish Comm. xi, n. spp.
Clepsidrina acridiorum, parasitic in *Acridium*, p. 811, LÉGER, C.R. Ac. Sci. cxvii, n. sp.
C. longa in alimentary canal of larval *Tipula*, p. 117, pl. viii, *lagenoides* in alimentary canal of *Lepisma saccharina*, p. 118, pl. vi, fig. 7, *poduræ* in alimentary canal of *Podura villosa*, p. 119, pl. x, figg. 1-8, *acuta* in alimentary canal of *Trox perlatus*, p. 121, pl. vi, figg. 9 & 10, *longirostris* in alimentary canal of *Thanasimus formicarius*, p. 122, pl. xi, figg. 2-12, LÉGER, Tabl. zool. iii, n. spp.
Oocidium cristalloides in intestine of *Motella tricirrata*, *C. variabile* in intestine of *Cottus bubalis*, *Crenilabrus melops*, and *Lepadogaster gouanii*, THÉLOHAN, C.R. Ac. Sci. cxvii, p. 249, n. spp.

- U. lucidum* parasitic in *Motella* (? = *Coccidium variabile*, Thélohan) ; LABBÉ, Soc. zool. France, xviii, n. sp. ?
- ¹*Corycella*, n. g., with *C. armata*, n. sp., in alimentary canal of larval *Gyrinus natator* ; LÉGER, p. 144, pl. xvi, figg. 7-11, Tabl. zool. iii.
- Cryptocystes*, n. order of *Sporozoa* ; GURLEY, Bull. U. S. Fish Comm. xi, p. 409.
- Cystodiscidæ*, n. fam. ; GURLEY, p. 413, Bull. U. S. Fish Comm. xi.
- Cystodiscus* ? *diploxys*, in *Tortrix viridana*, GURLEY, p. 413, Bull. U. S. Fish Comm. xi, n. sp.
- ⁴*Dactylophora*, n. g., with *D. robusta*, n. sp., in alimentary canal of *Cryptops hortensis* ; LÉGER, p. 124, pl. ix, Tabl. zool. iii.
- Didymophyes leuckarti*, in alimentary canal of *Aphodius prodromus* and *A. nitidulus*, p. 41, pl. ii, figg. 24-29, MARSHALL, Arch. Naturg. lix, n. sp.
- ⁴*Diplocystis*, n. g., with *D. schneideri*, in body cavity of *Periplaneta americana*, p. 43, pl. ix, KÜNSTLER, Tabl. zool. ii, n. sp.
- ⁴*Discocephalus*, n. g., with *D. truncatus*, n. sp., in alimentary canal of larval *Sericicostomes* (?) ; LÉGER, p. 134, pl. xv, figg. 10-12, Tabl. zool. iii.
- ⁴*Eirmocystis*, n. g., with *E. ventricosa*, in alimentary canal of larval *Tipula oleracea* and *T. pratensis*, p. 111, pl. vi, figg. 1-4, *E. polymorpha* in alimentary canal of larval *Limnobia*, p. 113, pl. iii, LÉGER. Tabl. zool. iii, n. spp.
- Glugeidæ*, n. fam. of *Sporozoa* ; GURLEY, p. 409, Bull. U. S. Fish Comm. xi.
- Gonospora varia* in body cavity of *Audouinia*, p. 157, pl. xx, fig. 2, *G. sparsa* in body cavity of *Phyllodoce* and *Glyceria*, p. 157, LÉGER, Tabl. zool. iii, n. spp.
- ⁴*Menospora*, n. g., with *M. polyacantha*, n. sp., in alimentary canal of larval *Agrion puella* ; LÉGER, p. 151, pl. xix, figg. 1-5, Tabl. zool. iii.
- Myxidiidæ*, n. fam. ; GURLEY, p. 420, Bull. U. S. Fish Comm. xi.
- Myxobolidæ*, n. fam. ; GURLEY, p. 413, Bull. U. S. Fish Comm. xi.
- Myxobolus unicapsulatus* on *Labeo niloticus*, *inequalis* on *Pimelodus clarias*, *oblongus* on *Erimyzon sucetta*, *bicostatus* on branchiæ of *Tinca tinca*, *lintoni* on *Cyprinodon variegatus*, p. 414, *obesus* on *Alburnus alburnus*, *cycloides* on *Leuciscus rutilus*, *spherialis* in the branchial mucosa of *Coregonus fera*, *globosus* on *Erimyzon sucetta*, *transovalis* on *Phoxinus funduloides*, *perlatus* on *Gymnocephalus cernua*, p. 415, ? ? *zschokkei* on *Coregonus fera*, *monurus* on *Aphredoderus sayanus*, *macrurus* on *Hybognathus nuchalis*, p. 416, *strongylurus* on *Synodontis schal*, *kolesnikovi* on *Coregonus fera*, *linearis* on *Rhambdia sebæ* and *Pseudoplatystoma fasciatum*, *schizurus* on *Esox lucius*, p. 417, *creplini* on *Gymnocephalus cornua*, *diphurus* in kidney of *Lota lota*, p. 418, GURLEY, Bull. U. S. Fish Comm. xi, n. spp.

- ¹ *Nematopsis*, n. g., parasitic in the mantle of *Solen vagina*, p. 209, pl. xxxiii; SCHNEIDER, *Tabl. zool.* ii. [No specific name.]
Phenocystes, new order of *Sporozoa*; GURLEY, p. 410, *Bull. U. S. Fish Comm.* xi.
- ² *Phialis*, n. g., with *P. ornata*, n. sp., in alimentary canal of larval *Hydrophilus piceus*; LÉGER, p. 135, pl. xiii, figg. 4-12, *Tabl. zool.* iii.
- ³ *Pleistophora*, n. g., with *P. typicalis*, n. sp., in muscles of *Cottus scorpio*; GURLEY, p. 410, *Bull. U. S. Fish Comm.* xi.
- ⁴ *Pogonites*, n. g., with *P. crinitus*, in alimentary canal of larval *Hydrobius*, pp. 148-150, pl. xviii, *P. capitatus*, in alimentary canal of larval *Hydrous*, p. 150, pl. xvi, figg. 1-6, n. spp.; LÉGER, *Tabl. zool.* iii.
- ⁵ *Perocephalus*, n. g., with *P. nobilis*, n. sp., parasitic in *Scolopendra morsitans*, p. 67, pl. x, figg. 1-10; SCHNEIDER, *Tabl. zool.* ii.
Pyrosoma bigeminum, in blood of diseased cattle (Texas fever), SMITH, p. 511, *Centrbl. Bakter.* xiii (1893), n. sp.
- ⁶ *Rhopaloccephalus*, n. g., with *R. carcinomatosus*, n. sp., cancer parasite, p. 373, figg. 1-15; KOROTNEFF, *Centrbl. Bakter.* xiii.
Sarcocystis farcatula, parasitic in Birds, p. 79, STILES, U. S. Bureau Anim. Industry, 1893, n. sp.
- ⁷ *Schneideria*, n. g., with *S. mucronata*, in alimentary canal of larval *Bibio marci*, p. 153, pl. ii, figg. 7-13, *S. coronata*, in alimentary canal of larval *Sciara*, p. 155, pl. ii, figg. 1-6, n. spp.; LÉGER, *Tabl. zool.* iii.
- ⁸ *Sphaerocystis*, n. g., with *S. simplex*, n. sp., in larvæ of *Cyphon pallidus*; LÉGER, p. 115, pl. vi, fig. 11, *Tabl. zool.* iii.
- ⁹ *Stephanophora*, n. g., with *S. radiosa*, n. sp., in alimentary canal of *Dorcus parallelipedus*; LÉGER, p. 127, pl. xii, figg. 1-7, *Tabl. zool.* iii.
- ¹⁰ *Stictospora*, n. g., with *S. provincialis*, n. sp., in the alimentary canal of larval *Melolontha* and *Rhizotrogus*; LÉGER, p. 129, *C.R. Ac. Sci.* cxvii.
Thelohania macrocystis, in muscles of *Palaemonetes varians*, GURLEY, p. 410, *Bull. U. S. Fish Comm.* xi, n. sp.
- ¹¹ *Xiphorhynchus*, n. g., with *X. firmus*, in alimentary canal of *Dermestes lardarius*, pp. 137-139, pl. xvii, figg. 1-8, 12, & 13, *X. tenuis*, in alimentary canal of *Dermestes tenuis*, p. 139, pl. xvii, figg. 9-11, LÉGER, *Tabl. zool.* iii, n. spp.

Class 2.—FLAGELLATA.

- Asterosiga radiata*, Plön, Holstein, ZACHARIAS, p. 76, pl. i, fig. 8, *Forschungsberichte*, Plön, ii, n. sp.
- Bicosæca oculata*, Plön, Holstein, ZACHARIAS, p. 71, pl. i, figg. 5 & 5A, *Forschungsberichte*, Plön, ii, n. sp.
- B. lacustris*, J. Clark, var. *longipes*, Plön, Holstein; ZACHARIAS, p. 72, pl. i, figg. 7 & 7A, *Forschungsberichte*, Plön, ii, n. var.

- ¹*Dimastigamœba*, n. g., for certain forms included by Klebs under the genus *Dimorpha*, but differing from it by rhizopoda-like pseudopodia and the arrangement of the flagella; BLOCHMANN, Biol. Centralbl. xiv, p. 198.
- Diplostiga frequentissima*, Plön, Holstein, ZACHARIAS, p. 75, pl. i, figg. 4A & B, Forschungsberichte, Plön, ii, n. sp.
- Mallomonas acaroides*, Plön, Holstein, ZACHARIAS, p. 16, pl. i, fig. 13, Forschungsberichte, Plön, i, n. sp.
- M. acaroides*, var. *producta*, Plön, Holstein; ZACHARIAS, p. 73, pl. i, figg. 6A-E, Forschungsberichte, Plön, ii, n. var.
- Monas nephrodes*, Cadempino, Italy, p. 16, MAGGI, Boll. scient. xv, n. sp.

Class 5.—CILIATA.

- ¹*Cœnomorphina*, n. g., with *C. henrici*, n. sp., Freshwater, Rostock; BLOCHMANN, Biol. Centralbl. xiv, p. 90, fig. 3.
- Chenia similis*, Plön, Holstein, ZACHARIAS, p. 77, Forschungsberichte, Plön, ii, n. sp. (?).
- Cothurnia fecunda*, Brackish water, Morris and Essex Canal, near Greenville, N. J., p. 298, pl. v, fig. 1, *inflata*, Brackish water, Longport, Long Island, N. Y., p. 299, pl. v, fig. 2, STOKES, J. R. Micr. Soc. 1893; *C. ligia*, on the gills of *Ligia oceanica*, p. 86, fig. 3, CUÉNOT, Rev. biol. Nord France, iv; *C. puteana*, pp. 12 & 47, pl. i, figg. 3-12, *C. cyathus*, pp. 15 & 48, pl. i, figg. 16-18, in the wells of Krakau, JAWOROWSKI (Nowe Gatunki, &c.) : n. spp.
- ¹*Cothurniopsis*, n. g., with *C. valvata*, n. sp., Brackish water, Coney I., N. Y., p. 299, pl. v, figg. 3 & 4; STOKES, J. R. Micr. Soc. 1893.
- Dileptus trachelioides*, Plön, Holstein, ZACHARIAS, p. 78, pl. ii, figg. 1 & 2, Forschungsberichte, Plön, ii, n. sp.
- Epistylis pyriformis*, in the wells of Krakau, pp. 16 & 48, pl. ii, fig. 19, JAWOROWSKI (Nowe Gatunki, &c.), n. sp.
- Lagynus ornatus*, Brackish water, Northport, Long I., N. Y., STOKES, p. 300, pl. v, fig. 7, J. R. Micr. Soc. 1893, n. sp.
- ¹*Litosolenus*, n. g., with *L. armatus*, n. sp., Brackish water, Northport, Long I., N. Y., p. 301, pl. v, fig. 8, *verrucosus*, n. sp., Brackish water, Coney I., N. Y., p. 302, pl. v, fig. 9; STOKES, J. R. Micr. Soc. 1893.
- Metacystis striata*, Northport, Long I., N. Y., STOKES, p. 300, pl. v, fig. 6, J. R. Micr. Soc. 1893, n. sp.
- Scyphidia patella*, in the gills of *Patella vulgata*, p. 83, fig. 2, CUÉNOT, Rev. biol. Nord France, iv, n. sp.
- ¹*Staurophrya*, n. g., with *S. elegans*, n. sp., Plön, Holstein; ZACHARIAS, p. 18, pl. i, fig. 10, Forschungsberichte, Plön, i.
- Tintinnus tubus*, Brackish water, Coney Is., N. Y., p. 300, pl. v, fig. 5, STOKES, J. R. Micr. Soc. 1893, n. sp.

- Trichodina patellæ*, in the gills of *Patella vulgata*, p. 82, fig. 1, CUÉNOT,
Rev. biol. Nord France, iv, n. sp.
Vorticella vaga, Jena, RÖMER, p. 465, Biol. Centralbl. xiii, n. sp.

Class 6.—ACINETARIA.

- Acineta simplex*, Plön, Holstein, ZACHARIAS, p. 17, Forschungsberichte,
Plön, i, n. sp.
Pericometes, n. g., with *P. digitatus*, n. sp., in branchiæ of *Gammarus*,
p. 19, pls. vii & viii ; SCHNEIDER, Tabl. zool. ii.
Trichophrya cordiformis, n. sp., SCHEWIAKOFF, Bull. Mosc. 1893, No. 1,
p. 8, pl. i, figg. 13-16. Parasitic on *Cyclops phaleratus*, Koch.

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