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THE  
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RELATING CHIEFLY TO THE YEAR

**1919**

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## EXPLANATORY.

This Volume is printed in the Divisions enumerated on p. iv.

The pagination of each Division is separate, and is given at the left-hand top corner of the pages. The number and name of the Division is given as a heading on each left-hand page. The Registration Numbers when of importance are given at the right-hand top corner of the right-hand pages. The date 1919 corresponding to the bulk of the literature indexed is given at the right-hand top corner of the left-hand page.

In the Subject Index of each Division authors are quoted by name only. The full references will be found in the Title Section of the Division.

The Literature indexed is mainly that of 1919 but includes entries for earlier years that have been received too late for inclusion in previous volumes.

On account of the international situation, the Royal Society of London found itself unable to undertake at present any financial responsibility for any volumes of the International Catalogue subsequent to those of the Fourteenth Annual Issue.

Under these circumstances the Zoological Society of London arranged to undertake the issue of the present volume, which is the fifty-sixth of the Zoological Record, and would have been N. Zoology of the Nineteenth Annual Issue of the International Catalogue. Its preparation has been conducted as closely as possible on the model of the previous volumes prepared jointly by the International Catalogue and the Zoological Society.

It can now be purchased from the Zoological Society of London at the price of £2, either in the binding of the Zoological Record or in series with the International Catalogue.

Volume 57, dealing with the Literature of 1920, is in preparation.

An explanatory circular regarding issues subsequent to 1920 will shortly be issued to subscribers.

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# I. COMPREHENSIVE ZOOLOGY

BY

D. SHARP

This section includes works that deal with more than one branch of Zoology, or that are of general interest to Zoologists. It is, therefore, not complete in itself as regards any one subject included in it. The special records complete each subject. A few memoirs included in the special records are repeated in this division.

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ARRANGED BY

II. M. WOODCOCK, D.Sc.

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## 2. SARCODINA (= GYMNOXYXA).

Rhizopoda and Heliozoa, British fresh-water, described; CASH & WAILES London (Ray Soc.) vol. 4 130 pp. pls. lviii-lxiii.

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Amoeba of *limax*-type ingesting red blood cells; YORKE & MACFIE Ann. trop. Med. Parasitol. 13 pp. 133-135 1 text-fig.

*Amoeba bigemma* sp. n., described; SCHAEFFER Trans. Amer. Microsc. Soc. 37 80 pl. vii.—*A. proteus*, comparison of morphology and bionomics of different forms question of specific and varietal distinctions; CARTER Proc. R. Phys.

Soc. 20 pp. 193-210 pl. xix.—*A. sphaeronucleolus* commensal with a Lichen, morphology; MORFAU Ann. Inst. Pasteur 30 pp. 677-680 21 text-figs.

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*Iodamoeba* gen. n. proposed for the Amoeba producing I-cysts; DOBELL London (Bale, Sons & Daniellson) 1919 p. 110

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#### (b) Foraminifera.

Foraminifera, Recent, off New Zealand, with new forms, notes; CUSHMAN Proc. U.S. Nat. Mus. 56 pp. 593-640 pls. lxxiv-lxxv.

†Foraminifera, Eocene, Aquitaine and Pyrénées, with new forms, notes; DOUVILLÉ Mem. Carte géol. det. France 1919 pp. 1-84 pls. i-vii.

†Foraminifera, Blue Marl, Biarritz, with new species, diagnosed; HALKYARD Mem. Lit. Phil. Soc. Manchester 62 No. 2 145 pp. 8 pls.

*Ammodiscus mestayeri* sp. n. New Zealand; CUSHMAN Proc. U.S. Nat. Mus. 56 p. 597 pl. lxxiv figs. 1 & 2.

†*Bolivina intermedia* sp. n. p. 52, pl. iii fig. 10; HALKYARD Mem. Lit. Phil. Soc. Manchester 62 No. 2.

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†*Cristellaria robusta* sp. n.; HALKYARD T.c. p. 90 pl. vi fig. 1.

†*Cyclosteginae* of D'Orbigny (*Orbitolites* and *Orbitoides*), comparison of morphology of these forms, relationships; DOUVILLÉ C. R. Acad. Sci. 169 pp. 1130-1135 17 text-figs.

†*Discorbina compressa* sp. n. p. 114, pl. vii fig. 3. *opercularis* (d'Orb.) var. n. *elegans* p. 113 fig. 2; HALKYARD Mem. Lit. Phil. Soc. Manchester 62 No. 2.

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†*Eulepidina roberti* sp. n., note; DOUVILLÉ C. R. Soc. géol. 1917 p. 145.

†*Fronicularia arborescens* sp. n.; HALKYARD Manchester Mem. Lit. Phil. Soc. 62 No. 2 p. 88 pl. v figs. 8, 9.

†*Fusulina tschengkianensis*, p. 20 pl. ix figs. 16, 17, *dussaulti* p. 20 pl. viii figs. 6-8, *globosa* p. 22 pl. vi figs. 5-10, pl. vii fig. 1, *margheritii* p. 25 pl. viii figs. 9, 10, pl. ix fig. 1, *mansuyi* p. 32 pl. viii figs. 11, 12, *lantenoisi* p. 33 pl. ix figs. 2-4, **spp. n.**, Permo-Carboniferous, China, etc.; DEPRAT Mem. Serv. géol. Indochine 1 fasc. 3.—*P. propinqua* p. 10 pl. i figs. 12, 13, *kozui* p. 11 pl. iii figs. 4-8, *lepida* p. 15 pl. ii fig. 5, **spp. n.**; *japonica* Gumb. varr. n. *akasakiensis* p. 9 pl. iii figs. 10, 11, *constricta* p. 10, fig. 9; DEPRAT *op. cit.* 3 fasc. 1.

†*Fusulinidae*, Permo-Carboniferous, districts in China and Indochina, with new forms; DEPRAT Mém. Serv. géol. Indochine 1 fasc. iii pp. 1-77 pl. i-ix.

†*Gaudryina rugosa* d'Orb., var. n. *difformis*; HALKYARD Manchester Mem. Lit. Phil. Soc. 62 No. 2 p. 42 pl. ii figs. 7-9.

*Girvanella* not regarded as a Foraminiferan; CHAPMAN Nature 103 p. 4.

†*Halkyardia* gen. n. Heron-Allen and Earland, for *Linderina ovata* Halky. and other forms; (in) HALKYARD Mem. Lit. Phil. Soc. Manchester 62 No. 2 p. 108.

†*Haplophragmium tumidum* sp. n.; HALKYARD T.C. p. 24 pl. i fig. 9.

*Hyperammina nestayeri* sp. n. New Zealand; CUSHMAN Proc. U.S. Nat. Mus. 56 pl. 596 pl., lxxiv fig. 3.

*Iridia convexa* sp. n., commensal on shell of *Cyclammina*, note; CUSHMAN Proc. U.S. Nat. Mus. 56 pp. 101 & 102 pl. xxv.

†*Lagena flexicollis* sp. n. p. 59, pl. iii fig. 11, *striato-punctata* (P. and J.) var. n. *caudata*, p. 59, fig. 12; HALKYARD Manchester Mem. Lit. Phil. Soc. 62 No. 2.

†*Lepidocyclina* spp., from Tertiary Limestone, Cebu, notes; YABE Sci. Rep. Imp. Univ. Japan 5 pp. 37-51 pls. vi & vii.—*L. (Eulepidina) monstrosa* sp. n., Tertiary Limestone, Cebu; YABE T.C. p. 42 pl. vi fig. 5A, pl. vii figs. 11, 12A, 13.

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†*Lingulinopsis acutimargo* sp. n.; HALKYARD T.C. p. 81 pl. v fig. 1.

†*Marginulina pyramidale* (Karr.) var. n. *globosa* p. 85 pl. v fig. 2; HALKYARD T.C.

†*Neoschwagerina multicircumvoluta* p. 50 pl. ii figs. 7-9, pl. iii fig. 1, *N. (Sumatrina) multiseptata* p. 53 pl. iii figs. 2-8, **spp. n.** *N. (S.) annae* var. n. *stricta* p. 57 pl. v fig. 2, *N. craticulifera* varr. n. *grandis*, pl. ii figs. 5; 6, *tenuis* fig. 3, p. 49, Permo-Carboniferous, Indo-China; DEPRAT Mem. Serv. Géol. Indochine 1 fasc. 3.—*N. craticulifera* var. n. *minoensis* p. 27 pl. vii figs. 9, 10; *N. (Sumatrina) longissima* sp. n. p. 36 pl. v fig. 1-6; Permo-Carboniferous Indo-China; DEPRAT Mem. Serv. Géol. Indochine 3 fasc. 1.

*Nodosaria (Dentalina) lorifera* sp. n. (really *Ellipsoidina l.*, H. E. and E.), p. 70, pl. iv. figs. 2, 3, *N. (D.) pauperata* varr. n. *bulbosa*, figs. 10, 11, *crassisepta* figs. 12, 13, p. 72; HALKYARD Manchester Mem. Lit. Phil. Soc. 62 No. 2.

†*Nummulites exilis* sp. n., Eocene; DOUVILLÉ C. R. Acad. Sci. 168 p. 654.—*N. perforatus*, note on; DOUVILLÉ C. R. Soc. Géol. 1917 p. 174.—*N. subatlanticus* p. 41 pl. iii figs. 7 & 8, *pustulosus* p. 44 pl. ii figs. 1-4, *granifer* p. 45 pl. i figs. 39-41, pl. ii figs. 5-8, *exilis* p. 62 pl. i fig. 42, *subzeilisi* p. 65, pl. i figs. 43-45, **spp. n.**, Eocene, Aquitaine and Pyrenees, diagnosed; DOUVILLÉ Mem. Carte Géol. det. France 1919.

*Nummulitidae*, evolution and classification; DOUVILLÉ C. R. Acad. Sci. 168 pp. 651-656.

†*Orbitolina*-type occurring in Upper Jurassic; BLANCHET Trav. Lab. Géol. Grenoble 11 p. 73.

†*Patellina conica* sp. n.; HALKYARD Manchester Mem. Lit. Phil. Soc. 62 No. 2 p. 107 pl. vi fig. 7, pl. viii figs. 6, 7.

†*Pellatospira* Boussac from limestones, Japan, compared with *Assilina*; YABE J. Geol. Soc. Tokyo 26 No. 308 pp. 1-5.

†*Pentellina laevis*, pl. i fig. 1, *attenuata* pl. viii figs. 1 & 2, p. 15 **spp. n.**; HALKYARD Manchester Mem. Lit. Phil. Soc. 62 No. 2.

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†*Spirillina restis* sp. n. (syn. *sel-seyensis* H.A. and E.); HALKYARD T.c. p. 105 pl. vi fig. 6, pl. vii fig. 8.

*Spiroloculina elegans* sp. n., Murray Island, diagnosed; CUSHMAN Pap. Dept. Mar. Biol. Carnegie Inst. 9 p. 290 pl. xvi figs. 1, 2.

*Technitella mestayeri* sp. n. occurrence and diagnosis; CUSHMAN Proc. U.S. Nat. Mus. 56 p. 595 pl. lxxiv fig. 4.

†*Textularia biarrizensis* sp. n.; HALKYARD Manchester Mem. Lit. Phil. Soc. 62 No. 2 p. 34 pl. ii fig. 6.

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†*Valvulina oblonga* sp. n. Devonian, N.S. Wales; CHAPMAN Proc. Linn. Soc. N.S.W. 43 p. 389 fig. 8.

†*Verneuilina recurvata* sp. n., p. 43 pl. iii fig. 7; HALKYARD Manchester Mem. Lit. Phil. Soc. 62 No. 2.

†*Virgulina lineata* sp. n. p. 49, pl. viii fig. 5; HALKYARD T.c.

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## 3. SPOROZOA.

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*Monocystis agilis* Hesse, notes on life-cycle (isogamous conjugation); BASTIN Bull. Biol. France et Belg. 53 pp. 325-373 pls. v & vi.

*Pleurocystis cuénoti* Hesse, note on syzygies, comparison with *Nematocystis*; LEIGH-SHARPE Ann. Mag. Nat. Hist. Ser. 9 3 pp. 256-262 3 text-figs.

*Porospora nephropsis* sp. n.; LÉGER & DUBOSCQ Ann. Univ. Grenoble 28 pp. 477-481.

### (b) Coccidiidea.

Coccidia parasitic in Man, comparative account; DOBELL Parasitol. 11 pp. 147-197 pl. viii.

*Adelea ovata*, cytology of gamete-formation and fertilization; GREINER Biol. Centralbl. 38 pp. 522-529 8 text-figs.

*Coccidium arloingi* Marotel, of goat, notes on; VELU Bull. Soc. Path. exot. 12 pp. 298-301.—*C. crotali* sp. n., occurrence and note on; PHISALIX Bull. Soc. Path. exot. 12 pp. 11-14 & 20, and Bull. Mus. 1919 pp. 74-76.—*C. oxyspora* sp. n., from Man, cysts; DOBELL Parasitol. 11 p. 188 pl. viii fig. 3.

*Goussia truttiae* sp. n., from intestine of *Salmo fario*, notes on gametocytes and sporogony; LÉGER & HESSE C. R. Acad. Sci. 168 pp. 904-906.

*Merocystis kathae* Dakin, an Aggregata-like type, life-cycle described; FOULON La Cellule 30 pp. 119-150 3 pls.

*Minchinia* regarded as synonymous with *Haplosporidium* (q.v.); DEBAISIEUX C. R. Soc. biol. 82 p. 1401.

*Pseudoklossia chitonis* p. 1401, *patella* p. 1402 spp. n., note on; DEBAISIEUX C. R. Soc. biol. 82.

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*Leucocytozoon* sp. (probably new) from *Carduelis spinus*, note on cell-habitat (regarded as being usually parasitic in erythroblasts); BENTHAM Proc. Univ. Durham Phil. Soc. 5 pp. 139-146 1 pl.

Malarial parasites, question of the unity of the benign and malignant tertian forms; ARMAND-DELILLE C. R. Acad. Sci. 168 pp. 419-421.—Malarial parasites, question of specificity or unity of the three types; SEYFARTH Centralbl. Bakt. Abth. 1 82 Orig. pp. 564-570.

*Microbatesia divergens* in Niederländisch-Indien (Holländisch); SOHNS Ned. Ind. Blad. Diergen. 30 pp. 385-455 3 pls.

*Piroplasma canis*, transmission by *Dermacentor reticulatus*, morphology of different phases; BRUMPT Bull. Soc. Path. exot. 12 pp. 651-664 4 text-figs.

*Plasmodium bubalis* sp. n., from Indian buffalo, described; SHEATHER Bull. Agric. Res. Inst. Pusa No. 90 4 pp. 2 pls.—*P.* (cf. *carinii*) from *Tupinambis*, note on; LÉGER Bull. Soc. Path. exot. 12 p. 219.—*P. mesnili* Bouet from *Naja nigricollis*, note on, cytoplasmic fusion of two individuals in one corpuscle; MACFIE Ann. trop. Med. Parasitol. 13 pp. 25-29 pl. i figs. 5-24.—*P. semnopitheci* sp. n., phases in life-cycle described; KNOWLES Ind. J. Med. Res. 7 pp. 197-199 pls. xvi-xix.

*Protozoa* of birds, harmless to the Culicine transmitting host; SERGENT Bull. Soc. Path. exot. 12 pp. 601-603.—*P.*, non-relationship between gametes in the blood, and zygotes developed in the mosquito; SERGENT T.c. pp. 603-605.

### (d) Myxosporidia (including Microsporidia).

*Ceratomyxa acadensis* MAVOR, full account of life-cycle; MAVOR Proc. Amer. Acad. 51 pp. 551-578 3 pls. and 3 text-figs.

*Glugea danilewskyi* and *mülleri*, L. Pfr., account of life-history; DEBAISIEUX La Cellule 30 pp. 151-184 2 pls.

*Henneya brachyura* p. 57 text-fig. C., from *Notropis anogenus*, *H. salminicola* p. 59, figs. D-F, from *Oncorhynchus kisutch*, spp. n. diagnosed; WARD J. Parasitol. 6

*Myxobolus aureatus* sp. n., from *Notropis anogenus*, description of cysts and spores; WARD T.c. pp. 49-57 pl. v and text-figs. A & B.—*M. swellengrebeli* sp. n., from *Rhodeus amarus*, Holland, diagnosed; SCHUURMANS-STEKHOVEN Amsterdam (J. Clausen) 1918 p. 27.

*Nosema culicis* sp. n., note on; BRESSLAU & BUSCHKIOL Biol. Centralbl. 39 p. 327 text-fig. 1.



*Pleistophora simulii* L. and Spl., notes on life-cycle; DEBAISIEUX & GASTALDI La Cellule 30 p. 196 pl. iii.

*Thelohania corethrae* sp. n., from *Corethra*-larvae, notes on life-cycle; SCHUBERG & RODRIGUEZ Arb. kais. Gesundheitsa. 50 pp. 122-132 pls. iii & iv.—*T. multispora, fibrata* and *bracteata* Strickl., life-history compared; DEBAISIEUX & GASTALDI La Cellule 30 pp. 189-196 pls. i & ii.—*T. varians* (Lég.), life-history described; DEBAISIEUX T.c. pp. 46-79 pls. i-iii.

e) Actinomyxidia.

[Vacant.]

(f) Sarcosporidia.

*Sarcosporidium* sp. indet., occurring in an Indian, note; DARLING J. Parasitol. 6 pp. 98-101 2 text-figs.

(g) Haplosporidia.

*Haplosporidium nemertis* sp. n., occurrence and note on life-cycle; DEBAISIEUX C. R. Soc. biol. 82 pp. 1399 & 1400.—*H. chilonis* (syn. *Minchinia c*), note on; DEBAISIEUX T.c. p. 1401.

SPOROZOA INCERTAE SEDIS.

(Various and doubtful.)

*Amoebidium fasciculatum* sp. n. from rectum of larvae of *Anax*, notes on; LIGHTENSTEIN Arch. Zool. exp. 56 N. et R. pp. 50-62 7 text-figs.

*Anaplasma* regarded as a true parasite, distinct from *Piroplasma*, comparison with latter, *A. argentinum* Lign., from Argentine cattle; LIGNIERES Bull. Soc. Path. exot. 12 pp. 553-566.

*Dermomycoides* gen. n., *beccarii* sp. n., forming small cysts on *Molge vulgaris*, a parasite of uncertain nature, compared with *Blastocystis* and *Dermocystidium*, described; GRANATA Monit. Zool. ital. 30 pp. 153-160 pls. iv-v.

4.—MASTIGOPHORA.

(a) Flagellata.

Flagellata: *Pantostomatinae, Protomastiginac, Distomatinae*; PASCHER & LEMMERMANN. (Die Süßwasser-Flora Deutschlands, Oesterreichs und der Schweiz . . . hrsg. v. A. Pascher. H. 1.) Jena (G. Fischer) 1914 pp. 138.

Insectan Flagellates, various, notes on, inoculation to mice; LAVERAN & FRANCHINI Bull. Soc. Path. exot. 12 pp. 665-671 2 text-figs.

A Haemoflagellate, type indet. from Man, causing a new type of fatal disease, note on morphology; LÉGER Bull. Soc. Path. exot. 12 pp. 80-84.

*Anthophysa vegetans*, reproduction in colonial form; ENRIQUES Rend. Acc. Lincei 28 i pp. 287-290.

*Aphthomonas* gen. n. *infestans* sp. n., a Flagellate with relationships to *Leishmania* and *Leptomonas*, regarded as the cause of foot-and-mouth disease, development described; STAUFFACHER Zs. wiss. Zool. 115 pp. 1-57 pls. i & ii.

*Carteria rugulosa* sp. n. p. 514 pl. lv figs. 1, 2, with var. n. *angulata* fig. 3, *inaequalis* fig. 4, p. 515, *granulosa* sp. n. p. 516, figs. 7, 8, *bullulina* nom. nov. for *C. multifilis* p. 516; PLAYFAIR Proc. Linn. Soc. N.S.W. 43.

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[Vacant].

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[Vacant.]

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# III. PORIFERA OR SPONGIDA

ARRANGED BY

H. M. WOODCOCK, D.Sc. (LOND.).

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## (iv) LITHISTIDA.

[Vacant.]

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[Vacant.]



# IV. COELENTERATA

ARRANGED BY

A. KNYVETT TOTTON.

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†*Archaeosolafoëa* gen. n. p. 390 *longicornis* sp. n. p. 390 figs., Monegetta, Victoria, CHAPMAN Proc. R. Soc. Vict. 31.

*Archisoma natans*, Philippines, BIGELOW Bull. U.S. Nat. Mus. 100 p. 344.

†*Aulacera (Beatricea) undulata*, SCHUCHERT Amer. J. Sci. 47 p. 293 fig.

*Balea mirabilis*, Japan, JÄDERHOLM Arkiv. Zool. 12 9 p. 4.

*Balella* gen. n. for *Balea* Nutting, STECHOW Zool. Jahrb. 42 Syst. p. 154.

*Beroë cucumis* var. *ovata* pl. 38 figs. 8-10, BIGELOW Bull. U.S. Nat. Mus. 100.

*Bibrachium* gen. n. (= *Amphibrachium* F. E. Schulze 1880), STECHOW Zool. Jahrb. 42 Syst. p. 6.

*Bimeria stuminalis*, Orissa open sea, GRAVELY Rec. Ind. Mus. 16 p. 396.—*B. fragilis* sp. n., Villefranche, p. 28; *nutans* p. 30, STECHOW Zool. Jahrb. 42 Syst.—*B. rigida* sp. n. Pondoland, WARREN Ann. Natal Govt. Mus. 4 1 p. 1 figs.

*Bonneviella* p. 329, BALE Proc. R. Soc. Vict. 31.

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*Chromatonema rubrum*, KRAMP Danish Ingolf Exp. 5 8 p. 7 figs.

*Chuniphyes multidentata* Philippines, BIGELOW Bull. U.S. Nat. Mus. 100 p. 344.

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†*Clathrodictyon yunnanense* sp. n. Devonian Indochina, MANSUY Mém. Serv. géol. Indochine 3 2 p. 4 figs.

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*Tamoya bursaria*, STIASNY Zool. Med. 5 1 p. 38 figs.

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*Sympodium coralloides*, Marseille, VAYSSIÈRE Ann. Mus. Hist. Nat. Marseille 17 p. 105.

†*Tetradium sringoporoides* p. 200 figs.; *columnare* p. 201 fig.; *cellulosum* p. 202 figs.; *simplex* sp. n. Beekmantown Limestone, Maryland, p. 199 figs., BASSLER Maryland Geol. Surv. 1919.

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†*Astraepora asperina*, Eocene Veglia Id., OPPENHEIM Ver. K. K. Geol. Reichs. Wien 1914 p. 189.

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# V. ECHINODERMA

ARRANGED BY

II. B. PRESTON.

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†*Sycocrinus*, WANNER 87.

†*Symbathocrinus* with *S. campanulatus* & varr. *inflata*, *elongata*, *S. constrictus*, *sinuosus* spp. & varr. n. Permian Timor, WANNER Pal. Timor 6 pp. 15-22 pl. xcvi.

†*Syntomocrinus* gen. n. *S. sundaicus* sp. n. Permian Timor, WANNER Pal. Timor 6 pp. 256-257 pl. cx.

†*Thalassocrinus* gen. n. *T. gracilis* sp. n. Permian Timor, WANNER Pal. Timor 6 pp. 311 pl. cxi.

†*Thetidocrinus* gen. n. *T. piriformis*. sp. n. Permian Timor, WANNER Pal. Timor 6 pp. 111-112 pl. cii.

†*Timorocrinus* with *T. alatus*, *a. var. major*, *T. spinosus*, *s. var. pentagonalis*, *s. var. amarassica*, *s. var. informis*, *s. var. incissa*, *decurtatus*, *proboscidentis* spp. & varr. n. Permian Timor, WANNER Pal. Timor 6 pp. 298-310 pls. cxii cxiii cxiv cix.

†*Trimerocrinus* gen. n. *T. pumilius*, *ventriosus* spp. n. Permian Timor, WANNER Pal. Timor 6 pp. 143-146 pl. civ.

*Tropiometra*, CLARK 16.—*T.*, HARTMEYER 42.

†*Ulocrinus*, BATHER 5.

†*Zeacrinus? sundaicus* sp. n. Permian Timor, WANNER Pal. Timor 6 p. 147 pl. ci.

*Zygometa*, HARTMEYER 42.

#### G. CYSTIDEA & EDRIOASTEROIDEA.

†*Allocystites*, BATHER 2.

†*Archeogocystes*, BATHER 2.

†*Aristocystes*, BATHER 2.

†*Brockocystis nodosarius* sp. n. Silurian Ohio, FOERSTE Bul. Sci. Lab. Denison Univ. 19 p. 5 pl. i figs 1-5.

†*Culix*, BATHER 2.

†*Cariocystites*, BATHER 2.

†*Codiacystis*, BATHER 2.

†*Hippocystis* gen. n., BATHER London Geol. Mag. 6 pp. 71 72.

†*Holocystites*, BATHER 2.

†*Lepadocystis*, FOERSTE 34.

†*Megacystis*, BATHER 2.

†*Ovocystis*, BATHER 6.—*O.*, REED 72.

†*Sinocystis*, BATHER 2 & 6.—*S.*, REED 72 & 73.

†*Stromatocystites* with *S. walcotti* sp. n. Lower Cambrian Newfoundland, SCHUCHERT Washington Smiths. Inst. Misc. Coll. 70 No. 1 pp. 1-8 pl. i figs 1-4.



# VI. VERMIDEA

ARRANGED BY

II. M. WOODCOCK.

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*Amage inhamata* sp. n. Bermuda, diagnosed; HOAGLAND Bull. Amer. Mus. Nat. Hist. 41 p. 577 pl. xxx figs. 7-9.

*Ambo* gen. n. (*Cirrhatulidae*) *perbranchiata* p. 177, *convergens* p. 178, spp. n., Monterey, diagnosed; CHAMBERLIN Proc. Biol. Soc. Washington 31.

*Ammotrypane kampeni* p. 22 text-fig. 1, *ehlersi* p. 23 fig. 2, *kukenthali* p. 23, *buitendijki* p. 24, fig. 3, spp. n., Malay Archipelago, diagnosed; HORST Zool. Mededeel. 5.—*A. remigera* sp. n.; EHLERS Abh. Senckenb. Ges. 35 p. 245 pl. xvii figs. 1-4.

*Ampharete homa* sp. n. p. 444 pl. lxxvii figs. 7, 8; CHAMBERLIN Mem. Mus. Harvard 48.

*Amphicleis obscurior* p. 447, pl. lxxvi figs. 1, 2, pl. lxxvii fig. 3, *uncopalea* p. 448, pl. lxxvi figs. 5, 6, pl. lxxvii fig. 4, *orphanus* p. 450, pl. lxxvi figs. 3, 4, pl. lxxvii figs. 1, 2, spp. n.; CHAMBERLIN T.c.

*Anatides compsa* sp. n. p. 105 pl. xv figs. 8 & 9, pl. xvi figs. 1-6; CHAMBERLIN T.c.

*Ancistrosyllis rigida* sp. n., occurrence and diagnosis; FAUVEL Bull. Mus. 1919 p. 337 text-fig. 1.—*A. r.* Fauvel; FAUVEL Arch. Zool. 58 p. 373 text-fig. 4.

*Antiobactrum* gen. n. for *Ophelina brasiliensis*, p. 385; CHAMBERLIN Mem. Mus. Harvard 48.

*Aphelothrix* gen. n. (*Leodicidae*) for *Marphusa mossambica* Peters, p. 231; CHAMBERLIN T.c.

*Aphrodite defendens* sp. n. p. 80; CHAMBERLIN T.c.—*A. leioseta* sp. n., California; CHAMBERLIN Bull. Mus. Comp. Zool. Harvard 63 p. 254.

*Arabella munda* sp. n., p. 258; CHAMBERLIN T.c.

†*Arabellites serra* sp. n. Sweden Ordovician; HADDING Lund Univ. Årsskr. N.F. 9 Afd. 2 No. 15 p. 33 pl. i figs. 12-13.

*Aricia bioreti* sp. n., coasts of Africa; FAUVEL Bull. Mus. 1919 p. 34 text-fig. 2.—*A. bioreti* Fauvel p. 430 figs. 52-56, *A. foetida* Clap. var. n. *australis* p. 429, occurrence and diagnoses; FAUVEL Arch. Zool. exp. 58.

*Audouinia filigera* subsp. n. *nesophila* p. 380 pl. lxx figs. 5, 6; CHAMBERLIN Mem. Mus. Harvard 48.

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*Balanochaeta* gen. n. (*Flabelligeridae*), for *Trophonia eruca*, p. 397; CHAMBERLIN T.c.

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*Bylgides* nom. nov. for *Bylyia* Théel praecoc., p. 40; CHAMBERLIN T.c.

*Caulleriella* gen. n. for *Cirrhatus viridis* p. 372; CHAMBERLIN T.c.

*Cenogenus* gen. n. (*Lumbriconereidae*) *descendens* sp. n. p. 333; CHAMBERLIN T.c.

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*Ceratonereis erythraensis* p. 505 text-fig. 2, *pachychaeta* p. 506, fig. 3, spp. n., African coasts; FAUVEL Bull. Mus. 1918.—*C. pachychaeta* p. 403, figs. 22–25, *erythraensis* p. 407, figs. 26–30, 42–47, Madagascar and Red Sea; FAUVEL Arch. Zool. exp. 58.

*Chaetonereis fakaravae* sp. n., p. 213 pl. xxxv figs. 6–8; CHAMBERLIN Mem. Mus. Harvard 48.

*Chaunorhynchus* nom. n. for *Ceratocephale* praecoc., p. 194; CHAMBERLIN T.c.

*Chloecia eutypa* sp. n., p. 30, pl. xiii figs. 8 & 9, pl. xiv figs. 1 & 2; CHAMBERLIN T.c.

*Cirrhatulus exuberans* sp. n. p. 263; CHAMBERLIN Bull. Mus. Harvard 63.—*C. megalus* p. 375 pl. lxx figs. 1–4, *sinicolens* p. 377, figs. 7–10, spp. n.; CHAMBERLIN Mem. Mus. Harvard 48.

*Cirrhinereis nesiotles* sp. n. p. 373, pl. lxx figs. 5, 6; CHAMBERLIN T.c.

†*Cordylodus ramosus* sp. n. Sweden Ordovician; HADDING Lund Univ. Årsskr. N.F. 9 Afd. 2 No. 15 p. 31 pl. i fig. 6.

†*Cornulites youngi* sp. n., Silurian, diagnosed; CHAPMAN Proc. R. Soc. Victoria 31 p. 321 pls. xiii & xiv p.p.

*Corynocephalus paumotanus* sp. n. p. 141 pl. xxiii figs. 1–3; CHAMBERLIN Mem. Mus. Harvard 48.

*Crucigera hespera* sp. n., p. 270 pl. ii fig. 9; CHAMBERLIN Bull. Mus. Harvard 63.

*Dexiorbis* subgen. n. of *Dexiospira* C. and M. for *D. foraminosus*, p. 478; CHAMBERLIN Mem. Mus. Harvard 48.

*Dindymenides* nom. n. for *Dindymene* praecoc. p. 385; CHAMBERLIN T.c.

*Distylia monterea* sp. n. p. 267; CHAMBERLIN Bull. Mus. Harvard 63.

*Dorvillea crassa* sp. n. p. 339 pl. lxii figs. 6, 7, pl. lxiii fig. 1; CHAMBERLIN Mem. Mus. Harvard 48.

†*Drepanodus falcatus* p. 30 pl. i fig. 3, *verutus* p. 31 pl. i fig. 4, *robustus* p. 31 pl. i fig. 5, Sweden Ordovician; HADDING Lund Univ. Årsskr. N.F. 9 Afd. 2 No. 15.

*Ephesiella* gen. n. (*Sphaerodoridae*), genus only diagnosed; p. 182; CHAMBERLIN Mem. Mus. Harvard 48.

*Eulepethus* nom. nov. for *Eulepis* Grube, p. 90; CHAMBERLIN T.c.

*Eulepis grayi* sp. n., occurrence and diagnosis; FAUVEL Bull. Mus. 1918 p. 503 text-fig. 1, and Arch. Zool. exp. 58 p. 535 figs. 17–21 76–79.

*Eunoe eura* sp. n. p. 58 pl. iii figs. 2–6; CHAMBERLIN Mem. Mus. Harvard 48.

*Eupistella* nom. nov. for *Eupista*, p. 424; CHAMBERLIN T.c.

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*Euphrosyne panamica* sp. n. p. 33, pl. xii figs. 7 & 8, pl. xiii figs. 1–7; CHAMBERLIN Mem. Mus. Harvard 48.

*Euratella* gen. n. (*Sabellidae*) for *Laonome salmicidis* p. 469; CHAMBERLIN T.c.

*Euscione* nom. nov. for *Scione*, p. 423; CHAMBERLIN T.c.

*Euspio multioculata* sp. n., Cantabria, diagnosed; RIOJA Rev. Acad. Ci. 17 p. 60 text-fig. 2.

*Evarnella* nom. nov. for *Evarne* Malmgr. praecoc., p. 40; CHAMBERLIN Mem. Mus. Harvard 48.

*Filograna implexa*, distribution, general account of; M'INTOSH Ann. Mag. Nat. Hist. Ser. 9 3 pp. 125–162.

*Glycera profundi* p. 350 pl. lxiv figs. 2–6, *fundicola* p. 352, spp. n.; CHAMBERLIN Mem. Mus. Harvard 48.

*Gravierella* gen. n. (*Maldanidae*) *multiannulata* sp. n., intercalary growth described; FAUVEL Bull. Soc. Zool. 44 pp. 36–40 1 text-fig.—*G. m.* described; FAUVEL Arch. Zool. exp. 58 p. 438 figs. 58 & 59.—*G. m.* Fauvel [also described here as new]; FAUVEL Bull. Mus. 1919 p. 37 text-fig. 4. [The practice of this author in describing the same form as new in two or three periodicals is most reprehensible.]

*Grubea longisetis* sp. n., French Guinea; FAUVEL Bull. Mus. 1919 p. 474 text-fig. 2 a-d.

*Gwasitoo* gen. n. (*Scalibregmidae*) for *Oncoscolex heterochaetus* p. 390; CHAMBERLIN Mem. Mus. Harvard 48.

†*Hammatopsis* gen. n. *scanicus* sp. n. Sweden Ordovician; HADDING Lund Univ. Åsskr. N.F. 9 Afd. 2 No. 15 p. 27 pl. i fig. 1.

*Harmopsides* gen. n. (*Polynoidae*) p. 48, *natans* sp. n. p. 48 pl. vi figs. 1-5; CHAMBERLIN Mem. Mus. Harvard 48.

*Harmothoe mexicana* sp. n. p. 54 pl. i figs. 1-9, pl. ii fig. 1; CHAMBERLIN T.c.—*H. watsoni* M'I. and var. *marphysae* M'I., note on; M'INTOSH Ann. Mag. Nat. Hist. Ser. 9 3 p. 163.

*Hemipodus mexicanus* sp. n. p. 349, pl. lxiii figs. 2, 3; CHAMBERLIN Mem. Mus. Harvard 48.

*Hesione panamena* sp. n. p. 188 pl. xxii figs. 9, 10; CHAMBERLIN T.c.

*Hesperonee* gen. n. (*Polynoidae*) p. 252, *senilis* sp. n. p. 253 pl. i figs. 1-4, California, diagnosed; CHAMBERLIN Bull. Mus. Comp. Zool. Harvard 63.

*Hyulinocia tecton* p. 310 pl. xxxviii figs. 4-9, pl. xxxix figs. 1, 2, *leucaera* p. 317, pl. xxxvii figs. 9, 10, pl. xxxviii figs. 1-3, spp. n.; CHAMBERLIN Mem. Mus. Harvard 48.

*Hydroides exallatus* (Marenz.) var. n. *vesiculosus*; FAUVEL Bull. Mus. 1919 p. 342.—*H. norvegica* Gunn, note on anomaly and phylogenetic considerations; RIOJA Bol. Soc. espan. hist. nat. 19 pp. 445-449 2 text-figs.—*H. perezi* sp. n., Persian Gulf, diagnosed; FAUVEL Bull. Mus. 1918 p. 342 text-fig. 2, and Arch. Zool. exp. 58 p. 462 text-fig. 12.

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*Ilyphagus* gen. n. (*Flabelligeridae*) p. 402, *bythincola* p. 402 pl. lxi figs. 4-9, *pluto* and *ascendens*, p. 403, spp. n.; CHAMBERLIN Mem. Mus. Harvard 48.

*Kaionereis* gen. n. (*Nereidae*) p. 196, *alata* sp. n. p. 197 pl. xxviii figs. 6-8, pl. xxix figs. 1-8; CHAMBERLIN T.c.

*Kebuita* gen. n. (*Scalibregmidae*) for *Bumenia glabra*, p. 390; CHAMBERLIN T.c.

*Kesun* gen. n. (*Opheliidae*) p. 385, *fusus* sp. n. p. 386, pl. lxxvii fig. 5, pl. lxxviii figs. 1, 2; CHAMBERLIN T.c.

*Laetmatonice brevihastata* sp. n., Aru Islands; EHLERS Abh. Senckenb. Ges. 35 p. 231 pl. xv figs. 1-7.

*Laonomedes* gen. n. (*Subellidae*) for *Laonome antarctica*, p. 469; CHAMBERLIN Mem. Mus. Harvard 48.

*Leiocrates anomalus* sp. n. p. 190; CHAMBERLIN T.c.

*Leodice enteles* sp. n., Monterey, diagnosed; CHAMBERLIN Proc. Biol. Soc. Washington 31 p. 175.—*L. makemoana* p. 233, pl. liii figs. 1-11, *segregata* p. 237, pl. liv figs. 1-5, *lita* p. 240 pl. liv figs. 6-10, pl. lv figs. 1-7, *oliga* p. 244 pl. lv fig. 11, pl. lvi figs. 2-9 with subsp. n. *papeleensis* p. 248 pl. lv figs. 8-10, pl. lvi fig. 1, *pawroneurata* p. 249, pl. lvii figs. 8, 9, pl. lviii figs. 1-9, pl. lix figs. 1-3, *nesiotes* p. 253 pl. lvii figs. 6, 7, *panamena* p. 256, pl. lix figs. 4-8, pl. lx figs. 1-5, *contingens* p. 260, pl. lvii figs. 1-5, spp. n.; CHAMBERLIN Mem. Mus. Harvard 48.—*L. valens* sp. n., California; CHAMBERLIN Bull. Mus. Harvard 63 p. 257 pl. i figs. 6-8.

*Lepidasthenia curta* sp. n. p. 61 pl. v figs. 4-9; CHAMBERLIN Mem. Mus. Harvard 48.

*Lepidonotus nesophilus* sp. n. p. 75 pl. iv figs. 1-7, pl. v fig. 13; CHAMBERLIN T.c.—*L. notata* sp. n., Porto Rico; HOAGLAND Bull. Amer. Mus. Nat. Hist. 41 p. 572 pl. xxix figs. 5-10.—*L. onisciformis* sp. n.; EHLERS Abh. Senckenberg. Ges. 35 p. 233 pl. xv figs. 8-11, pl. xvi figs. 1-4.

*Leptoecia* gen. n. (*Onuphidae*) p. 319, *abyssorum* sp. n. p. 320, pl. xxxvi figs. 1-6, pl. xxxvii figs. 1-8; CHAMBERLIN Mem. Mus. Harvard 48.

*Lopadorrhynchus parvum* p. 114, pl. xvii figs. 6 & 7, *nans* p. 116, pl. xvii fig. 5, spp. n.; CHAMBERLIN T.c.

*Lumbriconereis papillifera* sp. n., Madagascar, diagnosed; FAUVEL Arch. Zool. 58 p. 395 figs. 9-16, and Bull. Mus. 1918 p. 508 text-fig. 4.—*L. papillosa* sp. n.; EHLERS Abh. Senckenb. Ges. 35 p. 241 pl. xvi figs. 8-16.

*Maldanella fibrillata* sp. n. p. 413, pl. lxxii figs. 1-6, pl. lxxiii figs. 1 & 2; CHAMBERLIN Mem. Mus. Harvard 48.

*Mastigethus* gen. n. (*Phyllodocidae*) p. 119, *errans* sp. n. p. 120 pl. xvii figs. 8 & 9, pl. xviii figs. 1-6; CHAMBERLIN T.c.

*Mauila* gen. n. (*Alciopidae*) p. 135, *nans* sp. n. p. 136 pl. xxiv figs. 10 & 11, pl. xxv figs. 1-6; CHAMBERLIN T.c.

*Moyamis* gen. n. (*Ampharetidae*) p. 451, *explorans* sp. n. p. 452, pl. lxxvii figs. 11 & 12; CHAMBERLIN T.c.

*Nainereis nannobranchia* sp. n., California; CHAMBERLIN Bull. Mus. Harvard 63 p. 260 pl. ii fig. 10, pl. iii fig. 1.—*N. retusiceps* sp. n. p. 355, pl. lxxv figs. 3-5; CHAMBERLIN Mem. Mus. Harvard 48.

*Namanereis* gen. n. (*Nereidae*) type *N. quadraticeps* (Gay), p. 194; CHAMBERLIN T.c.

*Nans* gen. n. (*Phyllodocidae simplex* sp. n. p. 125 pl. xviii figs. 7 & 8, pl. xix figs. 1-4; CHAMBERLIN T.c.

*Nephtys ectopa* sp. n. p. 94, pl. xv figs. 1-7; CHAMBERLIN T.c.—*N. spiribranchis* sp. n.; EHLERS Abh. Senckenberg. Ges. 35 p. 235 pl. xvi figs. 5-7.—*N. tulcarensis* sp. n.; FAUVEL Arch. Zool. exp. 58 p. 422 figs. 31-39, and Bull. Mus. 1919 p. 33 text-fig. 1.

*Nereis buitendijki* p. 59 text-fig. 1, *N. (Perinereis) rumphii* p. 60 fig. 2, *N. (Ceratoneis) ramosa* p. 62 fig. 3, spp. n., Dutch E. Indies; HORST Zool. Meded. 5.—*N. glandulata* sp. n. Porto Rico, diagnosed; HOAGLAND Bull. Amer. Mus. Nat. Hist. 41 p. 575 pl. xxx figs. 1-6.—*N. mendocinana* sp. n., California, diagnosed; CHAMBERLIN Bull. Mus. Harvard 63 p. 256 pl. i fig. 5.—*N. (Neanthes) monterea* sp. n., Monterey, diagnosed; CHAMBERLIN Proc. Biol. Soc. Washington 31 p. 174.—

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*Nerinides cantabra* sp. n.; RIOJA Rev. Acad. Ci. 17 p. 55 text-fig. 1.

*Nicolea taboguillae* p. 425 pl. lxxix figs. 12 & 13, *galapagensis* p. 427, pl. lxxx figs. 1-3, *profundi* p. 429 pl. lxxx fig. 9, *latens* p. 430 figs. 10 & 11, spp. n.; CHAMBERLIN Mem. Mus. Harvard 48.

*Notomastus pallidior* sp. n., Monterey, diagnosed; CHAMBERLIN Proc. Biol. Soc. Washington 31 p. 179.

*Oenone telura* sp. n. p. 335, pl. lxxii figs. 2-5; CHAMBERLIN Mem. Mus. Harvard 48.

*Odontosyllis atypica* sp. n. p. 180, pl. xxi figs. 3 & 4, pl. xxii figs. 1-3; CHAMBERLIN T.c.

*Onuphis proalopus* p. 265 pl. xli figs. 3-8, pl. xli figs. 1-10, *nannognathus* p. 270, pl. xliii figs. 8-11, pl. xliiv figs. 1-5, *litabranchia* p. 274, pl. i fig. 7, pl. li figs. 1-10, pl. liii fig. 1, *pachytmena* p. 279, pl. lxviii figs. 5-11, pl. lxix figs. 1-8, pl. l figs. 1-6, *socia* p. 284, pl. lxvii figs. 1-11, pl. lxviii figs. 1-4, *lepta* p. 290, pl. xlv figs. 1-7, pl. xlvi figs. 3-12, *crassisetosa* p. 295, pl. xlii figs. 1-6, pl. xliii figs. 1-7, *cobra* p. 300 pl. lii figs. 1-8, spp. n.; CHAMBERLIN T.c.

*Oriades* nom. nov. for *Oria* praecoc., p. 470; CHAMBERLIN T.c.

*Pabits* gen. n. (*Ampharetidae*) p. 456, *deroderus* sp. n. p. 457, pl. lxxvii figs. 5 & 6; CHAMBERLIN T.c.

*Paiwa* gen. n. (*Ampharetidae abyssii* sp. n. p. 459, pl. lxxvi figs. 7-9, pl. lxxvii figs. 9 & 10; CHAMBERLIN T.c.

*Panthalis panamensis* sp. n. p. 86 pl. xi figs. 4-8, pl. ii figs. 1-6; CHAMBERLIN T.c.

*Pantothrix* gen. n. (*Flabelligeridae*) for *Pherusa chilensis*, p. 397; CHAMBERLIN T.c.

*Parabasella fonticula* p. 579 pl. xxxi figs. 3-9, *midoculi* p. 579 pl. xxxi figs. 10-14, pl. xxxii figs. 1, 2; *flecata* p. 580 pl. xxxii figs. 3-8, occurrence and diagnoses; HOAGLAND Bull. Amer. Mus. Nat. Hist. 41.

*Paronuphis solenolecton* sp. n. p. 306, pl. xxxix figs. 3-8, pl. xl figs. 1, 2; CHAMBERLIN Mem. Mus. Harvard 48.

*Paumotella* gen. n. (*Serpulidae*) p. 481, *takemoana* sp. n. p. 482 pl. lxxviii figs. 1-5; CHAMBERLIN T.c.

*Perinereis nuntia* var. n. *djiboutiensis*; FAUVEL Arch. Zool. exp. 58 p. 420.

†*Periodon* gen. n., *aculeatus* sp. n. Sweden Ordovician; HADDING Lund Univ. Årsskr. N.F. 9 Afd. 2 No. 15 p. 33 pl. i fig. 14.

*Petaloproctus crenatus* sp. n. p. 410 pl. lxxiii figs. 3-7; CHAMBERLIN Mem. Mus. Harvard 48.

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*Pista brevibranchia* sp. n., p. 264 pl. ii figs. 1-4; CHAMBERLIN Bull. Mus. Harvard 63.

*Platynereis polyscalma* sp. n. p. 219 pl. xxx figs. 5-8, pl. xxxi figs. 1-10 and pl. xxxii figs. 1, 2; CHAMBERLIN Mem. Mus. Harvard 48.

*Plotobia* gen. n. (*Typhloscolecidae*) p. 154 *simplex* p. 155 pl. lxxv figs. 6-11, pl. lxxvi fig. 1, *coniceps* p. 156, pl. lxxvi figs. 2-4, spp. n.; CHAMBERLIN T.c.

*Plotohelms* gen. n. (*Alciopidae*) p. 143, *alata* sp. n. p. 144 pl. xxiii figs. 4-10, pl. xxiv figs. 1-3; CHAMBERLIN T.c.

*Plotolepsis* gen. n. (*Polynoidae*) p. 40, *nans* sp. n. p. 41 pl. vii figs. 3 & 4; CHAMBERLIN T.c.

*Podarke guanica* sp. n., Porto Rico, diagnosed; HOAGLAND Bull. Amer. Mus. Nat. Hist. 41 p. 571 pl. xxix figs. 1-4.

*Podarmus* gen. n. (*Polynoidae*) p. 45, *ploa* sp. n. p. 46, pl. vi fig. 6 and pl. vii figs. 1 & 2; CHAMBERLIN Mem. Mus. Harvard 48.

†*Polygnatus alternans* pl. i fig. 7, *spinatus* pl. i fig. 8, spp. n. Sweden Ordovician; HADDING Lund, Univ. Årsskr. N.F. 9 Afd. 2 No. 15 p. 32.

*Polynoe innatans* pl. 70, pl. viii figs. 1-7, *nesioles* p. 72 pl. viii fig. 8, pl. ix figs. 1-5, spp. n.; CHAMBERLIN Mem. Mus. Harvard 48.

*Pomatostegus stellatus*; JOHANSSON Stockholm Vet.-Ak. Handl. 58 No. 7 p. 10 fig. 2 8-12.

*Pontogenia curva* sp. n. p. 83, pl. x figs. 2-7, pl. xi fig. 12; CHAMBERLIN Mem. Mus. Harvard 48.

*Potamoceros paumotanus* sp. n. p. 479, pl. lxxviii figs. 6-9; CHAMBERLIN T.c.

†*Prioniodus alatus* pl. i figs. 9-10, *discedens* pl. i fig. 11, spp. n. Sweden Ordovician; HADDING Lund, Univ. Årsskr. N.F. 9 Afd. 2 No. 15 p. 32.

*Protis torquata* sp. n., Porto Rico; HOAGLAND Bull. Amer. Mus. Nat. Hist. 41 p. 580 pl. xxxii figs. 9-13.

*Protula procera* sp. n.; EHLERS Abh. Senckenberg Ges. 35 p. 248 pl. xvii figs. 5-9.

*Pseudonereis atopodon* sp. n. p. 228, pl. xxxv figs. 3-5; CHAMBERLIN Mem. Mus. Harvard 48.

*Pseudopotamilla panamica* sp. n. p. 268 pl. iii fig. 8; CHAMBERLIN Bull. Mus. Harvard 63.

*Pterothrix* gen. n. (*Lumbriconereidae*), type *Notocirrus scoticus* M'Int., p. 325; CHAMBERLIN Mem. Mus. Harvard 48.

*Rhynchonerella pycnocera* p. 147, pl. xxv figs. 7, 8, pl. xxvi, figs. 1-6, *parva* p. 150, pl. xxv figs. 9, 10, spp. n.; CHAMBERLIN T.c.

*Sabellaria nanella* sp. n., p. 261 pl. ii figs. 5-7; CHAMBERLIN Bull. Mus. Harvard 63.

*Sabellastarte indica*; JOHANSSON Stockholm Vet.-Ak. Handl. 58 No. 7 p. 3 figs. 1 A-B.

*Sabellides delius* sp. n. p. 455, pl. lxxvii fig. 13; CHAMBERLIN Mem. Mus. Harvard 48.



*Saphobranchia* gen. n. (*Flabelligeridae*), for *Stylariodes longisetosa*, p. 397; CHAMBERLIN T.c.

*Scionides* gen. n. for *Terebella reticulata* p. 421; CHAMBERLIN T.c.—*S. dux* sp. n. p. 266, pl. iii fig. 9; CHAMBERLIN Bull. Mus. Harvard 63.

*Scoloplos madagascariensis* sp. n., diagnosed; FAUVEL Bull. Mus. 1919 p. 36 text-fig. 3, and Arch. Zool. exp. 58 p. 433 figs. 81-86.

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# VII. BRACHIOPODA AND BRYOZOA

BY

F. W. EDWARDS.

## (a) BRACHIOPODA

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†*Martinia dongguenensis* sp. n. Indochina Permian, MANSUY Mém. Serv. géol. Indochine 5 4 1916 p. 33.

†*Maxillirhynchia jucunda*, *implicata* spp. n. England Jurassic, BUCKMAN Pal. Ind. 3 2 1917 p. 229.

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†*Orthis (Dinorthis) annamitica* sp. n. Indochina Ordovician, MANSUY *T.c.* 4 3 1915 p. 12.

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†*Pustula*, list of American species, GIRTY Missouri Bur. Geol. 13 1915 p. 348.

†*Quadratrhynchia sphaeroidalis* sp. n. England Jurassic, BUCKMAN Pal. Ind. 3 2 1917 p. 228.

†*Rafinesquina douvillei* sp. n. Tonkin ? Devonian, MANSUY Mém. Serv. géol. Indochine 5 4 1916 p. 49.—†*R. orientalis* sp. n. Tonkin Ordovician, MANSUY *T.c.* 4 3 1915 p. 11.

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ARRANGED BY

H. B. PRESTON.

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## Variation and Aetiology = 2223 :—

General Treatises	...	...	...	...	...	...	...	}
Teratology, Phylogeny and Relationship	...	...	...	...	...	...	...	
Evolution	...	...	...	...	...	...	...	}
Variation in Form...	...	...	...	...	...	...	...	

## Distribution = 2227 :—

General	...	...	...	...	...	...	...	24
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## (a) Recent :—

## (a) Marine :—

Arctic Ocean	...	...	...	...	...	...	}
North Atlantic Ocean, Caribbean Sea and Gulf of Mexico	...	...	...	...	...	...	
Mediterranean Sea, Black Sea	...	...	...	...	...	...	
South Atlantic Ocean...	...	...	...	...	...	...	
Indian Ocean, Red Sea	...	...	...	...	...	...	
Malaysia	...	...	...	...	...	...	
Pacific Ocean	...	...	...	...	...	...	
Southern Ocean	...	...	...	...	...	...	

## (β) Non-Marine :—

Europe as a whole	...	...	...	...	}	24
Norway = 2227 <i>da</i>	...	...	...	...		
British Islands = 2227 <i>de</i>	...	...	...	...		
France = 2227 <i>df</i>	...	...	...	...		
Italy = 2227 <i>dh</i>	...	...	...	...		
Switzerland = 2227 <i>di</i>	...	...	...	...		
Balkan Peninsula = 2227 <i>dl</i> ...	...	...	...	...		
Malta = 2227 <i>dm</i>	...	...	...	...		
Eastern Siberia = 2227 <i>ead</i>	...	...	...	...		
British India, etc. = 2227 <i>ef</i>	...	...	...	...		
Siam = 2227 <i>ee</i>	...	...	...	...		
Malaysia, Philippine Islands, etc. = 2227 <i>eg</i>	...	...	...	...		
Persia = 2227 <i>eh</i>	...	...	...	...		
China and Corea = 2227 <i>eb</i>	...	...	...	...		
Japan = 2227 <i>ec</i>	...	...	...	...		
Asiatic Turkey = 2227 <i>ei</i>	...	...	...	...		
Africa as a whole	...	...	...	...		
N. Africa = 2227 <i>fa</i>	...	...	...	...		
Belgian Congo = 2227 <i>fc</i>	...	...	...	...		
E. and C. Africa, etc. = 2227 <i>ff</i>	...	...	...	...		
S. Africa = 2227 <i>fg</i>	...	...	...	...		
Madagascar, etc. = 2227 <i>fh</i> ...	...	...	...	...		
North America as a whole	...	...	...	...		
Alaska = 2227 <i>ga</i>	...	...	...	...		
Canada = 2227 <i>gb</i>	...	...	...	...		
N.E. United States = 2227 <i>gg</i>	...	...	...	...		
S.E. United States = 2227 <i>gh</i>	...	...	...	...		
W. United States = 2227 <i>gi</i> ...	...	...	...	...		
Mississippi River System = 2227 <i>gk</i>	...	...	...	...		
Mexico = 2227 <i>gl</i>	...	...	...	...		
Central America = 2227 <i>hb</i> ...	...	...	...	...		
West Indies = 2227 <i>hc</i>	...	...	...	...		
Venezuela = 2227 <i>hd</i>	...	...	...	...		
Ecuador = 2227 <i>he</i>	...	...	...	...		
Peru = 2227 <i>hf</i>	...	...	...	...		
Argentina and Uruguay = 2227 <i>hi</i> ...	...	...	...	...		
Queensland = 2227 <i>id</i>	...	...	...	...		
S. Australia = 2227 <i>ig</i>	...	...	...	...		
W. Australia = 2227 <i>ih</i>	...	...	...	...		
N. Atlantic Ocean = 2227 <i>la</i>	...	...	...	...		
Pacific = 2227 <i>n</i>	...	...	...	...		

## (b) Fossil :—

General	...	...	...	...	...	25	
Quaternary	...	...	...	...	...	}	26
Cainozoic	...	...	...	...	...		
Pleistocene	...	...	...	...	...		
Tertiary	...	...	...	...	...		



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†*Surcula riomaonis* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 213.—*S. castlecliffensis* sp. n. Tertiary N. Zealand, MARSHALL & MURDOCH Trans. and Proc. N.Z. Inst. 51 p. 255.—*S. gravida*, *marginalis*, *equispiralis*, *tortocostata* spp. n. Tertiary New Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 pp. 231-232.

*Tabanis panope*, Ecuador; *zeuxippe*, Galapagos Isds. spp. n., DALL Proc. U.S. Nation. Mus. 56 p. 81.

*Terebra*, ODHNER 297.

†*Terebra benesulcata* sp. n. Tertiary N. Zealand, BARTRUM Trans. and Proc. N.Z. Inst. 51 p. 99.—*T. luxurians*, *T.* (*Strioterebrum*) *lycica* spp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 103.—*T. sulcata* sp. n. Tertiary N. Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 232.—*T. gausapata* var. *laevifasciola*, *cambiarsoi*, *petiti*, *berlineriae*, var. & spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 191 195 198.

*Turricula libya*, off Cape San Lucas; *T.* (*Knefastia*) *nigricans*, California; *T.* (*Surcula*) *laysanica*, N. Pacific;

*T. (S.) panthea*, Panama Bay; *T. (S.) lavinia*, W. Mexico spp. n., DALL Proc. U.S. Nation. Mus. 56 pp. 2-4.

†*Turris politus, margaritatus, reticulatus* spp. n. Tertiary New Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 pp. 230-231.—*T. (Drillia) modestus* sp. n. Tertiary U.S.A., MOODY Berkely Cal. Pub. Bul. 10 p. 54.

*Yeprecula cooperi* sp. n. New Zealand, MESTAYER Trans. and Proc. N.Z. Inst. 51 p. 134.

*Zetekia curta* sp. n. Panama, DALL Proc. U.S. Nation. Mus. 56 p. 305.

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†*Marginella christineladdae, maoensis, hispaniolana, M. (Persicula) cercadensis* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 234-237.—*M. aveniformis* sp. n. Tertiary N. Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 230.—*M. (Stazzania) sacyi, behni* spp. n. Oligocene France, COSSMANN J. Conchyliol. 64 pp. 157-158.

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†*Olivancillaria (Utriculina) luschani* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 99.

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†*Astyris communis carolinensis* subsp. n. Miocene U.S.A., GARDNER & ALDRICH Proc. Acad. Nat. Sci. Philad. 71 p. 34.—*A. debooyi* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 264.

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*Beringius crebricostatus* var. *undatus*—Alaska; *Kennicottii* var. *incisus*, *marshalli*, *indentatus*, Behring Sea var. & spp. n., DALL Proc. U.S. Nation. Mus. 56 pp. 311–312.

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*transliratum* Arctic Ocean spp. & varr. n., DALL Proc. U.S. Nation. Mus. 56 pp. 324–328.—*B. undatum*, FOULON 155.—*B.*, CHRISTENSEN 71.

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†*Latirus dubius* sp. n. Tertiary N.  
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†*Melongenina (?) guillemaini* sp. n.  
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†*Pseudoliva liburnica* sp. n. Eocene Croatia, DAINELLI Atti Soc. tosc. sc. nat. 32 p. 54.—*P. soldadoensis* sp. n. Eocene Trinidad, VAN WINKLE Bul. Amer. Pal. 8 p. 22.

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- †*Cerithiella tricineta* sp. n. Tertiary New Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 226.
- Cerithiopsis crocea* var. n. *marmorata* N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 47.—? *C. sasseti* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 345.
- Cerithium* with *C. (V.) attenuatum* var. n. *brevicaudatum* N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 47.
- †*Cerithium* with *C. serratum* var. n. *sylvanectensis*, *C. tuberculatum* var. n. *cossmanni* Eocene, CHARPIAT Bul. Mus. Paris 1919 pp. 415-422 527-532 [var. n. at pp. 417 422].—*C. russelli, gurabense* sp. n. Tertiary S. Domingo,

MAURY Bul. Amer. Pal. 5 pp. 286-288.  
—*C. lycovolcanum*, *C. (Tiaracerithium) lycolaurinum*, *C. assarensis* spp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 pp. 88-91.—*C. (Bilutium* [?]) *wanneri* sp. n. Eocene Togo, OPPENHEIM B. geol. Deutsch. Schutzg. 12 p. 46.—*C.*, DAINELLI 109.

*Clava californica* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 346.

†*Cryptaulax*, COUFFON 100.

†*Diaetoma hypermeceus* sp. n. Oligocene France, COSSMANN J. Conchyliol. 64 p. 177.—*D.*, DAINELLI 109.

? *Eglisia nebulosa* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 348.

†*Exelissa*, COUFFON 100.

†*Fastigella australis* sp. n. Tertiary New Zealand, SUTER Trans. and Proc. N.Z. Inst. 51 pp. 68-69.

†*Hemicerithium subimbricatum* sp. n. Oligocene France, CROSSMAN J. Conchyliol. 64 p. 169.

*Hirtocerithium, syrticum, manuscriptum grossularium, exulceratum, clavium* spp. n. Mediterranean, MONTE-ROSATO Boll. Soc. Zool. Ital. 3 pp. 16-17.

*Meioceras*, MORSE 285.

†*Mesalia koerti* sp. n. Eocene Togo, OPPENHEIM B. geol. Deutsch. Schutzg. 12 p. 44.

†*Paracerithium*, COUFFON 100.

*Petalococonchus montereyensis* sp. n. California, DALL Washington Proc. Biol. Soc. 32 p. 250.

†*Petalococonchus ladfrankliniae* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 293.

*Pirenella cyclus* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 345.

*Planaxis*, ODHNER 297.

*Potamides*, ODHNER 297.

†*Potamides ormei*, sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 290.—*P.*, DAINELLI 109.

†*Potamis* (?) *breberensis* sp. n. Eocene Croatia, DAINELLI Atti Soc. tosc. sc. nat. 32 p. 36.

†*Procerithium*, COUFFON 100.

†*Pyrasus*, DAINELLI 109.

†*Rhyocerithium*, COUFFON 100.

*Siliquaria*, ODHNER 297.

†*Siliquaria gurabensis* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 293.

*Styloidium paganicum* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 345.

*Telescopium*, ODHNER 297.

†*Telescopium*, DAINELLI 109.

†*Tiaracerithium*, CHARPIAT 69.

†*Tiarella*, CHARPIAT 69.

†*Tiarellacerithium* gen. n. [*Cerithiidae*], CHARPIAT Bul. Mus. Paris 1919 p. 534.

*Trachyrhynchus erosus*, ? *T. pratomus, stearnsii* spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 346-347.

†*Triforis* [vide etiam *Triphora*] *calypsonis* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 286.

*Triphora* [vide etiam *Triforis*] *bicincta* sp. n. N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 47.

*Tarritella*, DAINELLI 109.—*T.*, ODHNER 297.

†*Turritella adabionensis, tokpliensis* spp. n. Eocene Togo, OPPENHEIM B. geol. Deutsch. Schutzg. 12 p. 41.—*T. submortoni*, sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 294.—*T. freya, margaritana* spp. n. Tertiary U.S.A., NOMLAND Berkeley Cal. Pub. Bul. 10 p. 312.—*T. carica, araneosa* sp. n. Neogen, OPPENHEIM, Berlin Zs. D. geol. Ges. 70 pp. 56 81.—*T. duplinensis* sp. n. Miocene U.S.A., GARDNER & ALDRICH Proc. Acad. Nat. Sci. Philad. 71 p. 41.—*T. rudis* sp. n. Tertiary N. Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 227.—*T. (Haustator) myurelloides* sp. n. Oligocene France, COSSMANN J. Conchyliol. 64 p. 184.—*T. terebratis* var. *applanata*. *T. (Haustator* ?) *vermicularis* var. *bijugata, atlantica* varr. & sp. n. Tertiary S.W. Africa, BÖHM Beitr. geol. Deutsch. Schutzg. 5 pp. 61-71.—*T.*, COUFFON 100.

*Turritellopsis (acicula var.) stimpsoni* nom. n., DALL Proc. U.S. Nation. Mus. 56 p. 347.

†*Tympanotonus*, DAINELLI 109.

*Vermetus*, ODHNER 297.

TIARIDAE (*Melaniidae olim*), PSEUDOMELANIIDAE, PLEUROCERIDAE, LITTORINIDAE & FOSSARIDAE.

†*Bourguetia*, COUFFON 100.

*Cremonoconchus*, ANNANDALE 7.

†*Faunus*, DAINELLI 109.

*Fossarulus*, GODWIN-AUSTEN 177.

†*Fossarulus*, GODWIN-AUSTEN 177.

*Fossarus angiolus, lucanus* spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 350.

†*Fossarus*, COSSMANN & PEYROT 99.

*Haloconcha minor* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 350.

*Lacuna marmorata* sp. n. *L. var. n. puteoloides* N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 348-349.—*L.*, CHRISTENSEN 70.

†*Lacuna* with *L. bearnensis, L. (Pseudocirsope) degrangei, subscalata, burdigalica, L. (Cirsope) benoisti* spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 442-448.

*Littorina*, ANNANDALE & PRASHAD 11.—*L.*, CHRISTENSEN 70.—*L.*, DACIE 108.

†*Littorina* with *L. (Melaraphe) sacyi, L. (Touzinia) prevostina var. perconfusa* sp. & var. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 424-435.—*L.* with *L. headleyi* sp. n. Tertiary England, BELL Naturalist London 1919 p. 58.—*L.*, SHIMER 350.

†*Littorinolacuna quincuncialis* gen. & sp. n. Oligocene France, COSSMANN J. Conchyl. 64 p. 187.

†*Loxonema*, REPOS 330.

†*Melanella bartschi, magnoliiana* spp. n. Miocene U.S.A., GARDNER & ALDRICH Proc. Acad. Nat. Sci. Philad. 71 p. 37.

*Melania (Stenomelania) lorentzi, M. (Melanoides) alkaaarensis, similis, striatissima* spp. n. New Guinea, SCHEPMAN Nova Guinea 13 pp. 174-

175.—*M.*, ANNANDALE 5 & 7.—*M.*, ANNANDALE & PRASHAD 11.—*M.*, GERMAIN 170.

†*Melania (Eumelania) beziere* sp. n. Oligocene France, COSSMANN J. Conchyl. 64 p. 179.—*M. diadeana, carica* spp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 pp. 21-23.—*M.*, COSSMANN & PEYROT 99.—*M.*, DIANELLI 109.

*Melanoides* with *M. pyramis* varr. n. *leopardina, puteicola* Brit. India, ANNANDALE & PRASHAD Rec. Ind. Mus. Calcutta 16 p. 33.

*Melanopsis* with *M. deserticola* sp. n. Persia, ANNANDALE & PRASHAD Rec. Ind. Mus. Calcutta 16 p. 37.

†*Melanopsis*, COSSMANN & PEYROT 99.

†*Pseudomelania*, COUFFON 100.

†*Purpurina*, COUFFON 100.

†*Risella*, COSSMAN & PEYROT 99.

SOLARIIDAE, JEFFREYSIIDAE, LITIOPIDAE, RISSOIDAE, HYDROBIIDAE, VIVIPARIDAE, VALVATIDAE, AMPULLARIIDAE & ASSIMINEIDAE.

?*Alabina calena* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 345.

†*Alaba* with *A. costellata* varr. n. *ventripotens* and *ecostata* Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 366-370.

†*Alvania* with *A. raulini, A. (Alvinia) peyreirensis* spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 377-387.

*Amnicola cisternina, panzosensis, conchensensis, hinkleyi* spp. n. Guatemala WALKER Ann. Arbor Mich. Occ. Pprs. Mus. Zool. 73 pp. 1-4.—*A.* with subgen. n. *Alocinna, A. (A.) sistanica* sp. n. Brit. India, ANNANDALE & PRASHAD Rec. Ind. Mus. Calcutta 16 pp. 23 24.

*Apicularia scurra* sp. n. Mediterranean, MONTEROSATO Boll. Soc. Zool. Ital. 3 p. 10.

*Ampullaria (Felipponea) neritini-formis* sp. n. Uruguay, DALL Nautilus 33 p. 10.—*A. mermodi* sp. n. C. America, SOWERBY Proc. Malac. Soc. 13 p. 152.—*A.*, ANNANDALE 7.—*A.*, GERMAIN 170.

*Assiminea*, ANNANDALE & PRASHAD 11.

*Bithinella* [vide etiam *Bythinella*], ANNANDALE & PRASHAD 11.

*Bithynia*, ANNANDALE 5.—B., CAZIOT 62.

†*Bithynia* ? *giralanensis*, *pisidica* spp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 pp. 134-203.

†*Bythinella* [vide etiam *Bithinella*] with *B. bearnensis* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes Soc. linn. 70 pp. 412-415.

*Blanfordia nesophora*, CORT 96.

†*Ceratia* with *C. suturalis* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 395-396.

†*Cingula* with *C. vera* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 391-392.

*Cleopatra pirothi* var. n. *rufolira*'a Upper Zambesi, GERMAIN Bul. Mus. Paris 1919 p. 119.

*Discohelix*, MESTAYER 274.

*Fenouilia*, ANNANDALE & PRASHAD 12.

†*Fluminicola* (*Gillia*) *lycica* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 117.

*Homalogyra atomus*, MORSE 286.—H., CHRISTENSEN 71.

*Hydrobia*, CHRISTENSEN 70.

†*Hydrobia* with *H. ventrosa* var. *polysarca*, *H. (Tournoueria) girondica* var. *umbilicaris*, *H. (Peringia) cestasensis* and mut *sacyi*, *H. (Amnicola) leognanensis* varr. mut. & spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 399-411.

*Hydrobiidae*, ANNANDALE 8.

*Lanistes*, GERMAIN 170.

*Larina*, ODHNER 297.

*Lartetia serbica* sp. n. Serbia, PAVLOVIC Glas. Srpska Akad. Belgrade 91 pp. 71-75.

*Leachia*, CAZIOT 62.

†*Lithoglyphus* (?) *phrygicus* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 135.

†*Manzonina*, COSSMANN & PEYROT 99.

*Mysorella* nom. n. for *Mysoria*, GODWIN-AUSTEN Rec. Ind. Mus. 16 p. 431.

*Mysoria* gen. n. type *Bithynia costigera* K. var. *curta* Nev., GODWIN-AUSTEN Rec. Ind. Mus. Calcutta 16 p. 211.

*Nodulus palmeri* sp. n. Behring Sea, DALL Washington Proc. Biol. Soc. 32 p. 251.

†*Nystia* with *N. falunica* Benoist Mss., *N. degrangei* spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 421-422.

†*Oncomelania fragilis, conoidales* spp. n. Quaternary Burma, ANNANDALE Rec. Geol. Surv. Ind. 5 p. 226.

*Paludestrina ventrosa* var. n. *peculiaris* Mediterranean, MONTEROSATO Boll. Soc. zool. Ital. 3 p. 13.—*P. jenkinsi*, BOYCOTT 52.

†*Paludestrina*, SHIMER 350.

*Paludina viripara*, ARTOM 22.—P., ODHNER 297.—P., WALKER 396.

*Paludomus*, ANNANDALE 7.

*Paraprososthenia*, ANNANDALE & PRASHAD 12.

†*Paraprososthenia* gen. n. (*Hydrobiidae*) *P. minuta* sp. n. Quaternary Burma, ANNANDALE Rec. Geol. Surv. Ind. 5 pp. 228-230.

*Parapyrgula* subgen. n. (*Paraprososthenia*) with *P. (P.) coggini* sp. n. Yunnan, ANNANDALE & PRASHAD Rec. Ind. Mus. Calcutta 16 pp. 420-421.

†*Prososthenia phrygica, sublaevis, P. (?) erythracensis* spp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 pp. 148-150 200.

†*Pseudamnicola*, COSSMANN & PEYROT 99.

*Rissoa*, CHRISTENSEN 70.

†*Rissoa* with *R. orthezensis* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 p. 374.

*Rissoina*, ODHNER 297.

†*Rissonia* with *R. elongata* var. *scalarata* & mut. *mancielensis, R. bearnensis, emiliae, bistrata* var. *stephantensis, R. (Rissolina) aturensis, R.*

(*Zebinella degrangei* mut. var. & spp. n.; *R. (Z.) recticostulata* mut. n.; *R. (Z. ?) syratica*, *R. (Zebina) aquitanica* spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 332-356.

†*Scaliola* with *S. degrangei* descr. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 p. 397.

†*Setia*, COSSMANN & PEYROT 99.

*Skenea*, CHRISTENSEN 71.

†*Solarium stonemanae* [? sp. n.] Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 296.—*S. ianthinae* sp. n. Eocene U.S.A., VAN WINKLE Bul. Amer. Pal. 8 p. 8.—*S.* with *S. stephanense*, *micromphalus*, *flicki*, *S. (Nipteraxis) peyreirensense*, *merignacense*, *S. (Pseudotorinia) angustiforatum*, *burdigalense*, spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. Linn. 70 pp. 452-475.

†*Stalioa*, COSSMANN & PEYROT 99.

*Stenothyra echinata*, *soluta*, spp. n. Brit. India, ANNANDALE & PRASHAD Rec. Ind. Mus. Calcutta 16 p. 247.

†*Stenothyra* with *S. aquitanica* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 415-416.

†*Stossicia* with *S. planaroides* mut. n. *helvetica* Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 359-362.

†*Taia* with subgen. n. *Crassitaia*, *Rivularioides*; *T. (C.) infracrassata*; *T. (R.) spinifera*, spp. n. Quaternary Burma, ANNANDALE Rec. Geol. Surv. Ind. 5 pp. 234-236.

†*Turbella* with *T. (Pusillina) degrangei* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 p. 376.

*Valcata pisidica* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 206.—*V.*, ANNANDALE 5.—*V.*, CAZIOT 62.

*Vivipara* [vide etiam *Viviparus*] *bukowskii* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 207.—*V.*, ANNANDALE & PRASHAD 14.—*V.*, ANNANDALE 5.—*V.*, GERMAIN 170.

*Viviparidae*, ANNANDALE 8,

*Viviparus* [vide etiam *Vivipara*] with *V. burroughianus trinominis* nom. n. for *Paladina carinata*, Val., WALKER Nautilus 32 p. 120.

*Zippora augustior* sp. n. Mediterranean, MONTEROSATO Boll. Soc. Zool. Ital. 3 p. 9.

CYCLOPHORIDAE, CYCLOSTOMATIDAE & TRUNCATELLIDAE.

*Acicula*, CAZIOT 62.

*Adelomorpha lorentzi*, Aru Isds., *A. campanulata*, N. Guinea, spp. n., SCHEPMAN Nova Guinea 13 pp. 178-179.

†*Coxiella*, CHAPMAN 66.

*Cyathopoma africanum* sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 328.

*Cyclostoma*, CAZIOT 62.

*Hartmannia septemspiralis*, HUGGINS 210.

*Hedleya umbilicata* sp. n. S. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 75.

*Lagochilus guder* sp. n. N. Guinea, SCHEPMAN Nova Guinea 13 p. 178.

*Leptopoma maubaneise makabengana* subsp. n. Philippines, BARTSCH Washington Nation. Mus. Proc. 55 p. 306.—*L. melanostoma* var. n. *rufolabiata* N. Guinea, SCHEPMAN Nova Guinea 13 p. 177.—*L. goniostoma colabatenis*, *nitidum weeksi* subsp. n. Philippines, BARTSCH Washington Proc. Biol. Soc. 32 pp. 18-19.—*L.*, ODHNER 297.

†*Omphalotropis minuta* sp. n. N. Australia Quaternary, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 99.

*Opisthosiphon berryi* sp. n. Cuba, CLAPP Nautilus 32 p. 86.

*Pupina*, ODHNER 297.

*Pupinella*, ODHNER 297.

*Tropidophora standeni* sp. n. Madagascar, SPENCE J. Conch. Leeds 16 p. 43.

*Truncatella truncatula* var. n. *improvisa* Mediterranean, MONTEROSATO Boll. Soc. Zool. Ital. 3 p. 13.—*T. truncatula*, MORSE 286.

†*Truncatella*, COSSMANN & PEYROT 99.

CAPULIDAE, XENOPHORIDAE, NARICIDAE, ADEORBIDAE, LAMELLARIIDAE & NATICIDAE

†*Adeorbis novi-castri*, *A. ? virginiensis*, spp. n. Eocene U.S.A., VAN WINKLE Bul. Amer. Pal. 8 p. 9.—*A. tenuiliratus* sp. n. Montien Belgium; *A. simplex*, *montensis* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pp. 60-62 pl. iv. figs. 17-25.

†*Amauropsis guppyi* var. n. *gurbensis* Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 302.—*A.*, COUFFON 100.

†*Ampullina lavellei* fig. *A. montensis* sp. n. Montien Belgium, COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pp. 66-67 pl. iv. figs. 43-50.—*A.* with *A. sancti-stephani*, *peyreirensis* spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 241-248.—*A.*, COUFFON 100.

†*Calyptrea montensis* sp. n. Montien Belgium, COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pp. 70-71 pl. iv. figs. 60-68.—*C.* with *C. sallomacensis* mut. n. *C. cestasensis* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 269-281.

†*Capulus (vel Hipponyx) involutus* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. iv. figs. 54-59.—*C.* with *C. hungaricus* mut. *syrticus*, *C. benoisti*, *C. (Capulacmaea) merignacensis* mut. & spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 299-309.

*Crepidula orbiculata* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 351.—*C.*, GOULD 179.—*C.*, CONKLIN 90.—*C.*, ODHNER 297.

†*Crepidula*, COSSMANN & PEYROT 99.—*C.*, SHIMER 350.

†*Crommium* with *C. aturense* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 250-251.

†*Crucibulum* with *C. (Dispotaea) biali* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 291-297.

*Cryptonatica salimba*, *aleutica* spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 351-352.

†*Deshayesia miloni* sp. n. Oligocene France, COSSMANN J. Conchylol. 64 p. 191.

†*Diaphorostoma hillsboroensis* sp. n. Silurian Ohio, FOERSTE Ohio Nat. 19 p. 385.

*Elachisna grippi* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 354.

*Euspira acosmita monterona*, *politiana*, *canonica* spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 252-253.

*Hipponyx*, ODHNER 297.

†*Hipponyx*, COSSMANN & PEYROT 99.

*Lamellaria*, CHRISTENSEN 71.

†*Mitrolaria* with *M. falloti* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 322-323.

*Natica*, ODHNER 297.

†*Natica (Sigaretopsis) corneti*, *N. (Naticina) briarti*, *N. vateleti* fig., *N. (Cepatia) miliola* spp. n. Montien Belgium, COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pp. 63-65 pl. iv. figs. 30-42.—*N.* with *N. pachyope*, *N. saucatsensis* mut. *avitensis*, *N. plicatelloides*, *sacyi*, *angyglossa*, *degrangei*, *N. (Tectonatica) tectula* mut. *bearnensis*, *N. (T.) parvuloides*, *N. (Lunatia) benoisti*, *varians* var. *meridionalis*, spp. mutt. & var. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 182-240.—*N. youngi* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 299.—*N. (Labellinacea) tournoueri* sp. n. Oligocene France, COSSMANN J. Conchylol. 64 p. 192.—*N.*, COUFFON 100.—*N.*, DAINELLI 109.

†*Neverita nereidis* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 301.

†*Platyceras*, COBBOLD 84.—*P.*, FOERSTE 147.

†*Polinices stanislas-meunieri* [? sp. n.] Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 300.—*P.*, SHIMER 350.

*Ruma subfusca* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 353.

*Sigaretus*, ODHNER 297.

*Sinum pazianum*, *keratium* spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 354.

†*Sinum nolani* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 303.

*Torellia ammonia, vallonina* spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 355.

†*Tornus* with *T. orthezensis, gymnospira* and var. *gymnobasis, subcirculus* spp. & var. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 25-36.

*Velutina granulata* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 355.—*V. rubra* sp. n. Alaska, WILLETZ Nautilus 33 p. 25.

†*Xenophora*, DAINELLI 109.—X., COSSMANN & PEYROT 99.

#### EPITONIIDAE (*Stalidae olim*).

†*Aclis* (*Graphis*) *formosa* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. iv figs. 15-16.—*A. acuminatoides* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 305.

†*Cirsotrema* (*Coroniscala*) *tournoueri* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. iv fig. 29.

*Crossea cuvieriana* sp. n. New Zealand, MESTAYER Trans. and Proc. N.Z. Inst. 51 p. 132.

*Epitonium* (*Asperoscala*) *tinctorium, kerratum, canna, E. (Nitidoscala) barbarinum, phanium, callipeplum*, spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 240-241.

†*Epitonium muldrowi* sp. n. Miocene U.S.A., GARDNER & ALDRICH Proc. Acad. Nat. Sci. Philad. 71 p. 36.—*E. riparum, cercadicum, textivestitum*, spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 303-304.—*E. tenuispiralis* sp. n. Tertiary N. Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 227.

*Scalaria evicta, regionmontana* spp. n. Pacific Coast of N. America, BOURY DE J., Conchyliol. 64 pp. 36-39.—S., BOURY DE 47.

†*Scalaria pseudolineata, sublineata, shattucki* spp. n. Tertiary, BOURY DE J. Conchyliol. 64 p. 38.

#### STROMBIFORMIDAE (*Eulimidae olim*) & PYRAMIDELLIDAE.

†*Actaeopyramis* with *A. hypermeceus, merignacensis* spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 135-140.

*Æsopus sanctus* sp. n. California, DALL Washington Proc. Biol. Soc. 32 p. 250.

†*Anisocycla* with *A. perspicua* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 179-180.

*Auristomia ignorata* sp. n. Mediterranean, MONTEROSATO Boll. Soc. Zool. Ital. 3 p. 15.

†*Chemnitzia*, SCHÄFER 339.

†*Chrysallida*, COSSMANN & PEYROT 99.

*Eulima*, ODHNER 297.

†*Eulima* with *E. similis* var. *ventripotens, E. vignalis, E. (Polygyreulima) fontinensis, E. (Subularia) benoisti* var. & spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 61-77.—*E. (Margineulima) levis, E. (Rostreulima) lata, E. (Subularia) vicina* fig.; *E. (S.) planispira* sp. n. Montien Belgium, COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pp. 55-58 pl. iv figs. 3-14.

†*Eulimella* with *E. burdigalica, contabulata* and c. mut. *gamachotensis, E. (Liostomia) hydroliopsis* spp. & mut. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 173-178.

*Graphis shepardiana* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 242.

†*Hordeulima*, COSSMANN & PEYROT 99.

†*Macrodoctomia* with *M. saucatsensis*, sp. n. *M. merignacensis* mut. n., *M. asthenoptyxis* and var. *lagusensis* sp. & var. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 110-114.

†*Melanella* (*Eulima*) *cercadica, maica, jacululum, tethyos.*, spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 306-307.



*Mucronalia*, ODHNER 297.

†*Niso* with *N. degrangei* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 81–84.

†*Odontostomia deshayesi* fig.; *O. corneli* sp. n. Montien Belgium; *O. conjungens*, *briarti* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pp. 50–51 pl. iii figs. 69–74 77–82.—*O.* with *O. polysarcula*, *subintermedia*, *sallespissensis*, *O. (Cyclodostomia) aturensis*, *O. (Auristomia) degrangei*, *aquitana* and var. *bulimina*, spp. & var. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 114–128.

†*Odostomia sancti-dominici*, *yaquica* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 315.—*O.*, SHIMER 350.

†*Promathildia*, MARIANI 259.

*Pyramidella*, ODHNER 297.

†*Pyramidella semicanaliculata*, *diademata olssoni*, *P. (Callolongchaeus) cercadensis*, *P. (Orinella) arionis* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 308–310.—*P.* with *P. grateloupi* d'Orb. var. *stenogyra*, *P. g. var eurygyra*, *P. g. mut. eurybasis* var & mut. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 87–98.

†*Pyramidelloides*, COSSMANN & PEYROT 99.

†*Pyrgostylus* with *P. amoenus*, *aturensis*, *diastomoides*, *sallomacensis* spp. n. *P. s. mut. n. oligocolpus* Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 165–172.

†*Pyrgulina* with *Pyrguleta* sec. n. & *Pyrgulina sacyi*, *sectona*, *P. (P.) degrangei* spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 129–133.

†*Strombiformis dalli* sp. n. Miocene U.S.A., GARDNER & ALDRICH Proc. Acad. Nat. Sci. Philad. 71 p. 39.

*Stylifer*, CHRISTENSEN 71.

†*Stylifer* with *S. inopinatus* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 p. 78.

†*Syrnola* with *S. subumbilicata* [Grat] mut. *bearnensis*, *S. colpodes*, *sallomacensis*, *S. (Pachysyrnola) cuneolus* mut. & spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 90–100.—*S. (Cossmannica) zonifera* sp. n. Montien Belgium; *S. (C.) extensa*, *S. briarti*, *conica* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pp. 46–47 pl. iii figs. 63–68 75–76 83–84.

†*Turbonilla* with *T. falloti*, *avitensis*, *spiculoides*, *saccoi*, *T. (Strioturbonilla) raphidiopsis*, *flecicostata*, *benoisti*, *T. (Pyrgolidium) continuicosta*, *sallomacensis*, spp. n. *T. (P.) degrangei* nom. mu' for *T. parva* D.T.; *T. (Pyrgostelis) saucatsensis* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 141–164.—*T. polaris* sp. n. Quaternary, HEDLEY Brit. Ant. Exp. 1916 p. 84.—*T. antiqwa* sp. n. Tertiary N. Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 228.—*T. (Chemnitzia) ogilviei*, *yaquensis*, *cercadensis*, *T. (Pyrgiscus) Karlschmidti*, *olssoni*, *riomaoënsis*, *T. (Morinula) naniebella* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 311–315.—*T.*, SHIMER 350.

#### PROSERPINIDAE & HELICINIDAE.

*Aphanoconia leucostomoides*, *rufounistrigata* spp. n. N. Guinea, SCHEPMAN Nova Guinea 13 p. 180.

†*Aphanoconia extincta* sp. n. N. Australia Quaternary, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 98.

*Helicina (Idesa) ochsneri* sp. n. Galapagos Isds., DALL Proc. Cal. Acad. Sci. 2 p. 332.

*Schasicheila hinkleyi* sp. n. Guatemala, PILSBRY Proc. Acad. Nat. Sci. Philad. 1919 p. 221.

*Xenodiscula venezuelensis* sp. n. Venezuela, PILSBRY Proc. Acad. Nat. Sci. Philadelphia 71 p. 206.

NERITIDAE, NERITOPSIDAE, TURBINIDAE, TROCHIDAE, & ORBITELLIDAE (*Cyclostrematidae olim*).

*Astraea (Pachypoma) inaequalis* var. *pacifica*, *barbarensis*, *spirata* spp. & var. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 356–357.

†*Astralium sublongispinum*, *karlschmidti* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 318-319.

†*Ataphrus*, COUFFON 100.

†*Calliomphalus firketi* fig.; *C. oche-tophorus* COSSM. sp. n. Montien Belgium, COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pp. 22-23 pl. ii figs. 35-42.—*C.*, COUFFON 100.

*Calliostoma costatum* varr. n. *caeruleum* & *pictum*, *canaliculatum* varr. n. *nebulosum* & *transliratum* N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 359-360.

†*Calliostoma grabani* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 319.

*Chlorostoma gallina* var. *umbilicatum*, *brunneum* var. *fluctuosum* varr. n. N. Pacific. DALL Proc. U.S. Nation. Mus. 56 p. 359.

? *Cithna orvieta* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 251.

? *Circulus rossellinus* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 368.

†*Circulus inornatus* sp. n. Tertiary New Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 226.—*C. cingulatus* sp. n. Tertiary N. Zealand, BARTRUM Trans. and Proc. N.Z. Inst. 51 p. 97.

†*Collonia tenuizonata* sp. n. Oligocene France, COSSMANN J. Conchyliol. 64 p. 197.—*C. crenulata*, *inornata*, *C. (Parvirota) radiata* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. iii figs. 21-34.

†*Cyclostrema megalomphalus* CROSSE sp. n. Montien Belgium, COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 p. 21 pl. ii figs. 5-8.—*C.*, COSSMANN & PEYROT 99.

*Delphinula distorta* var. n. *zonata* N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 45.

†*Delphinula nodosospinosa* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. ii figs. 12-14.

†*Discopsis derbyi* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 320.

*Dostia* with *D. platyconcha* sp. n. Brit. India, ANNANDALE & PRASHAD Rec. Ind. Mus. Calcutta 16 p. 244.

†*Elenchus (Thalotia) falyanus*, *quadrangulatus*, *hannonicus* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. iii figs. 1-6 49-50.

*Euchelus*, ODHNER 297.

†*Eucyclus*, COUFFON 100.

*Ganessa (Granigyra) piona*, *filosa* spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 368.

†*Gibbula (Phorcus) briarti* fig., COSSMANN Mem. Mus. R. Hist. Belgique Nat. 6 pl. iii figs. 7-11.

*Isselica obtusa* var. n. *laxa* N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 251.

*Jujubinus matoni*, PAYR. var. n. *grisea* Mediterranean, MONTEROSATO Boll. Soc. Zool. Ital. 3 p. 8.

*Leptothyra juanensis* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 358.

†*Leucorhynchia nitida* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. iii figs. 39-41.

*Liotia suteri* sp. n. Bounty Isds., MESTAYER Trans. and Proc. N.Z. Inst. 51 p. 130.—*L. scitula* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 353.

†*Liotia (Arene) major* sp. n. Miocene U.S.A., GARDNER & ALDRICH Proc. Acad. Nat. Sci. Philad. 71 p. 42.

*Margarites pauperculus*, *M. (Pupillaria) kamchaticus*, *healyi*, *helicinus* varr. *elevatus* & *excavatus*, *M. pribiloffensis frigidus*, *marginatus*, *hypolisopus* spp. & varr. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 363-367.

*Mölleria drusiana* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 358.

*Monodonta*, ODHNER 297.

†*Monodonta incerta* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 61-62.—*M.*, COUFFON 100.

*Nerita*, ODHNER 297.

†*Nerita* with *N. funata* var. *barrerei*, *N. (Odontostoma) sancti-Stephani* var. & sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 40-48.

*Neritilia*, PILSBRY 317.

*Neritina (Neritaea Auriculatae) transversecostata*, *N. (Neritodryas) simplex*, New Guinea; *N. (Clithron) wallacei* var. *spinosa* Aru. Ids., spp. & var. n., SCHEPMAN Nova Guinea 13 pp. 181-183.

†*Neritina percarinata*, *bukowskii*, *denisliensis*, spp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 pp. 128 150-151.—*N.* with *N. (Smaragdia) merignacensis* sp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 49-59.—*N. fabula*, *montensis* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. iii figs. 54-55 59-62.—*N. (Puperita) figulopicta*, *N. (Smaragdia) viridemarisi*, spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 316.—*N.* with *N. beziere* sp. n. Eocene France, DALIMIER Paris Bul. soc. géol. 17 pp. 36-39.

†*Neritopsis multicostata* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. iii. figs. 51-53.—*N.*, COSSMANN & PEYROT 99.—*N.*, COUFFON 100.

*Omphalius marianus* nom. n. for *O. coronatus*, Pils., DALL Proc. U.S. Nation. Mus. 56 p. 359.

*Orbitostella hiniemoa* sp. n. Snares Ids., MESTAYER Trans. and Proc. N.Z. Inst. 51 p. 131.

†*Pareuchelus lefevrei* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. iii figs. 42-44.

†*Phasianella altyensis* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 80.

†*Rotellorbis* with *R. benoisti*, *vignali* spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes soc. linn. 70 pp. 19-24.

*Sequenzia certoma*, *giovia*, *cervola*, *caliana*, spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 243-244.

*Solariella tavernia*, *S. (Solaricida) hondoensis*, *S. diomedea*, *myssona*, *delicata*, *koreanica* spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 pp. 360-362.

†*Solariella ladrierei*, *multilineata* fig.; *S. vincenti* sp. n. Montien Belgium; *S. rutoli* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pp. 29-31 pl. ii figs. 61-63 pl. iii figs. 12-20.—*S. godineanensis* sp. n. Eocene Trinidad, VAN WINKLE Bul. Amer. Pal. 8 p. 26.

†*Submargarita ? tricineta* sp. n. Tertiary N. Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 227.

†*Tegula thea*, *varistriata* spp. n. Tertiary U.S.A., NOMLAND Berkely Cal. Pub. Bul. 10 pp. 310-311.

*Teinostoma (Pseudorotella) sapiella*, *bibbiana*, *salvania*, *cecinnella* spp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 369.

†*Teinostoma sandomingense* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 320.

†*Tinostoma* with *T. epichrismatum*, *T. (Megatyloma) neritinoides*, *T. (Solariorbis) degrangei*, *biali*, *planibasis* spp. n. Neogene France, COSSMANN & PEYROT Bordeaux Actes Soc. linn. 70 pp. 7-18. *Tinostoma bilabratum*, *T. (Megatyloma) briarti* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pls. i figs. 59-60 ii figs. 1-4.

*Tricoliella hobarti* var. n. *carissima*, *T. candidula* sp. n. Mediterranean, MONTEROSATO Boll. Soc. Zool. Ital. 3 p. 9.

†*Trochonema*, FOERSTE 147.

*Trochus*, DEBAISIEUX 125.—*T.*, ODHNER 297.

†*Trochus (Zizyphinus) lycicus* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 77.—*T. (Tectus) carinidentatus*, *dentulifer*, *lefevrei*, *simplicilineatus*, *houzeaui* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. ii figs. 15-34.—*T.*, CHRISTENSEN 70.

*Turbo*, ODHNER 297.

†*Turbo postulatus* sp. n. Tertiary N. Zealand, BARTRUM Trans. and Proc. N.Z. Inst. 51 p. 100.—*T. crenulatooides*, *dominicensis* var. *latoi* sp. & var. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 317.

*Turcica*, ODHNER 297.

*Vanikoro*, ODHNER 297.

STOMATIDAE, COCCULINIDAE, HALIOTIDAE, PLEUROTOMARIIDAE, BELLEROPHONTIDAE & FISSURELLIDAE.

*Cocculina casanica* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 356.

*Emarginula*, ODHNER 297.

†*Emarginula corneti, montensis, becardi* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 39-42 46-49.—E., COUFFON 100.

†*Fissurella concentrica, corneti, dolloi* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 27-32 36-38.

†*Fissuridea henekeni* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 321.

*Gena strigosa* var. n. *minor* N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 43.

*Glyphis*, ODHNER 297.

*Haliotis cracherodii* form. n. *imperfurata* N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 370.

†*Leptomaria*, COUFFON 100.

†*Lophospira pulchra* sp. n. Silurian Canada, WILLIAMS Canada Dept. Mines Geol. Surv. Mem. 111 p. 123.

†*Pleurotomaria*, COUFFON 100.—P., WILLIAMS 405.

†*Rimula praeintorta* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 43-45.

*Schismope caliana* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 370.—S., MESTAYER 274.

*Scissurella chiricova* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 370.—S., MESTAYER 274.

†*Scissurella corneti* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 53-55.

†*Scutum (Proscutum) montense* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 50-52.

*Scutus*, ODHNER 297.

†*Tugalia kawaensis* sp. n. Tertiary N. Zealand, BARTRUM Trans. and Proc. N.Z. Inst. 51 p. 100.

†*Worthenia*, MARIANI 259.

ACMAEIDAE & PATELLIDAE.

*Acmaea*, ODHNER 297.

*Cellana radians*, THOMSON 376.

*Helcion pellucidum*, MORSE 286.

†*Helcion simplex* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 23-26.

*Patella*, DEBAISTEUX 125.

†*Patella vincenti, regularis, montensis* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 12-17 20-22.

†*Scenella antiqua, depressa* spp. n. Cambrian Norway, KJER Skrift. Vid. Christiania 1916 pp. 17-18.

INCERTAE SEDIS.

†*Angarina spinosa* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. ii figs. 9-11.

†*Helcionella*, COBBOLD 84.

*Polyenaulus* nom. n. for *Coelocentrus*, Zittel 1882, ETHERIDGE Queensland Geol. Surv. Pub. 260 p. 16.

†*Stenotheca*, COBBOLD 84.

"*Stylobates aeneus*," DALL 116.

Opisthobranchia (INCLUDING PTEROPODA & HETEROPODA).

*Actaeon tornatilis* var. n. *ancilla* Mediterranean, MONTEROSATO Boll. Soc. Zool. Ital. 3 p. 25.

†*Actaeon riomaensis* sp. n. Tertiary San Domingo, MAURY Bull. Amer. Palaeont. 5 p. 175.

*Acteocina smirna, magdalenensis* spp. n. California, DALL Proc. U.S. Nation. Mus. 56 p. 296.

†*Acteocina (Cylichnella) triticum-tritonis* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 178.

*Aplysia limacina* & *A. depilans*, JORDAN 224.

*Atys*, ODHNER 297.

†*Atys doliolum* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 182.

*Bulla tenuisculpta*, sp. n. S.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 12.

*Bullaria guoyana* sp. n. California, DALL Proc. U.S. Nation. Mus. 56 p. 300.

†*Bullaria sarahbertineræ* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 183.

*Carinaria latidens* sp. n. N. Pacific, DALL Proc. U.S. Nation. Mus. 56 p. 242.

*Ceratosoma corallinum* sp. n. N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 60.

*Chromodoris zebra*, CROZIER 105.—C., AREY & CROZIER 21.

†*Cateoloides*, COBBOLD 84.

*Cylichnella (Bullinella) diegensis* sp. n. California. DALL Proc. U.S. Nation. Mus. 56 p. 300.

*Diaphana brunnea*, Alaska; *D. californica*, California spp. n., DALL Proc. U.S. Nation. Mus. 56 p. 299.

*Doridopsis guttata* sp. n. N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 62.

†*Fordilla*, COBBOLD 84.

*Haminaca olgae* sp. n. California, DALL Proc. U.S. Nation. Mus. 56 p. 300.

†*Hyolithus* with *H. corrugatus* sp. n. Cambrian Norway, KLER Skrift. Vid. Christiania 1916 pp. 25-26.—*H.* with *H. (H.) biconvexus, willsi, aequalateralis* spp. n. Cambrian England, COBBOLD London Geol. Mag. 6 pp. 149-134.

*Madrella*, ODHNER 297.

*Philine bakeri*, S. Coronado Isd.; *P. hemphilli*, California spp. n., DALL Proc. U.S. Nation. Mus. 56 pp. 300-301.

*Pleurobranchaea*, HIRSCH 207.

*Retusa xystrum, paziana*, California; *R. galapagana*, Galapagos spp. n., DALL Proc. U.S. Nation. Mus. 56 p. 297.

†*Retusa frigida* sp. n. Quaternary, HEDLEY Brit. Ant. Exp. 1916 p. 88.—*R. yaquensis* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 181.

*Ringicula caeca* sp. n. Brit. India, ANNANDALE & PRASHAD Rec. Ind. Mus. Calcutta 16 p. 254.

†*Ringicula dominicana* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 185.

†*Roxania tournoueri* sp. n. Oligocene France, COSSMANN J. Conchyliol. 64 p. 199.

*Runcina calarilana* sp. n. Mediterranean, COLOSI Torino Mem. Acc. sc. 66 No. 6 pp. 1-35.

†*Salterella*, COBBOLD 84.

*Scaphander willetti* sp. n. Alaska, DALL Proc. U.S. Nation. Mus. 56 p. 299.

*Stiliger tentaculatus* sp. n. Siam, ELIOT Calcutta J. As. Soc. Beng. 6 pp. 170-182.

†*Styliolina*, KINDLE 235.

†*Sulcoactazon*, COUFFON 100.

†*Tentaculites mackenziensis* sp. n. Devon. Canada, KINDLE Mus. Bul. Dept. Mines Canada geol. Ser. No. 76 29 p. 6.

†*Torellella laevigata* var. n. *holmi* Cambrian Norway, KLER Skrift. Vid. Christiania 1916 p. 20.

†*Tornatellaea*, COUFFON 100.

†*Tornatina angelinae* sp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 8 p. 17.—T., SHIMER 350.

*Treoclyana marginata* sp. n. N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 62.

*Volvulella cooperi, californica*, California; *V. panamica, catharia*, Panama; *V. callicera* Galapagos spp. n., DALL Proc. U.S. Nation. Mus. 56 pp. 297-299.

## Pulmonata.

### TESTACELLIDAE & SELENITIDAE.

*Cochlicopa lubrica*, BOYCOTT 51.—C., PEARCE 312.—C., CAZIOT 62.

*Edentulina langiana* sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 171.

*Gonaxis cavallii ituriensis*; *G. (Eustreptaxis) micans*, mut. *apertus* subsp. & mut. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 177-178.

*Gulella* secc. n. *Primigulella*, *Plicigulella*, *Pupigulella*, *Silvigulella*, *Costigulella*, *Tortigulella*, *Conogulella*, *Avakubia*; *G.* (*Plicigulella*) *bistriplacina*, *medi africana*; *G.* *socialis*, *disseminata*, *cymatonotus*, *rutshuruensis*, *lessensis*; *G.* (*Paucidentina*) *polloneriana*, *maspisiensis*, *m. palatidens*, *chapini*; *G.* (*Pupigulella*) *pupa ituriensis*, *G.* (*Silvigulella*) *osborni*; *G.* (*Costigulella*) *angi*, *torticostata*; *G.* (*Tortigulella*) *heteromphala*, *cara*; *G.* (*Conogulella*) *conospira polynematica*; *G.* (*Avakubia*) *avakubiensis* spp. & subsp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 215-234.

*Marconia lata ruwenzoriensis*, *gibbosa humilior* subsp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 174-175.

*Orthogibbus* gen. n., GERMAIN [*Streptaxidae*] Bul. Mus. Paris 1919 p. 264.

*Ptychotrema* secc. n. *Ptychoön*, *Haplonepion*; *P.* *sororcula*, *walikalense*, *edgarianum*, *sublimbatum*, *myrmecoön*, *P.* (*Ennea*) *bequaerti thyrrillense*, *fraterculus*, *silvaticum*, *monotes*; *P.* (*Parennea*) *mukulense*, *cylindrus*, *aequatoriale* spp. & subsp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 201-213.—*P.* *Katanggense*, *P.* & *B. nom. n.* for *Ennea joubini* Dtz. & Germain 1914 non. *E. j.* Germain 1912, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 214.

*Salasiella* with *S. hinkleyi* sp. n. Mexico; *S. guatemalensis*, sp. n. Guatemala, PILSBRY Proc. Acad. Nat. Sci. Philad. 1919 pp. 212-213.

†*Streptaxis* (*Artemon*) *bicaensis* sp. n. Tertiary Portugal, ROMAN Com. Com. Surv. Geol. Portugal 12 p. 89.

*Streptostele* subgenn. n. *Stereostele*, *Graplostele*; *S.* *zambiensis*, *leopoldvillensis*, *langi*, *bequaerti*, *centralis*, *c. coloba*, *dautzenbergi*, *bacillum*, *S.* (*Tomostele*) *congoris*, *S.* (*Graplostele*) *teres* spp. & subsp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 183-192.

*Testacella*, CAZIOT 62.—*T.*, COLOSI 89.—*T.*, FORTIER 149.

*Varicostele* gen. n.; *V. bequaertiana*, *subvaricosa major*, *rutshuruensis*, *lessensis* spp. & subsp. n. Belgian Congo PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 193 195-197.

ARIONIDAE, LIMACIDAE,  
PHYLOMYCIDAE & ZONITIDAE.

*Amalia*, ODHNER 297.

*Aneitea*, ODHNER 297.

†*Archaeozonites choffati* sp. n. Tertiary Portugal, ROMAN Com. Com. Surv. Geol. Portugal 12 p. 75.

*Arion* with *A. ater* var. n. *salmo-lateralis* England, ROEBUCK J. Conch. Leeds 16 p. 9.—*A.*, CAZIOT 62.

*Atopos*, ODHNER 297.

*Atoxon flavum rutshurensis*, *faradjense* subsp. & sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 289-290.

*Bukobia cockerelli* sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 294.

*Dendrolimax osborni* sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 291.

*Eucomulus*, BERRY 38.

*Guppya elegantula*, *jalisco* spp. n. Mexico, PILSBRY Proc. Acad. Nat. Sci. Philad. 1919 pp. 215-216

*Gymnarion* gen. n. *G. medjensis* sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 275-277.

*Helicarion* with *H. bullaceus* sp. n. N. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 77.

*Helicarion* subgenn. n. *Entagaricus*, *Augustivestis*; *H.* (*Granularion*) *subsucculentus*; *H.* (*E.*) *entagaricus*; *H.* (*A.*) *niger*, *bequaerti*, *ruwenzoriensis* spp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 266-273.

*Hemig'ypta webbi* sp. n. Philippines, BARTSCH Washington Proc. Biol. Soc. 32 p. 15.

*Hemiplecta crenocarinata*, *dense-granosa* spp. n. New Guinea, SCHIEFMAN Nova Guinea 13 pp. 157-158.

*Hyalina* (*Euryhyalina*) *subglabra* var. n. *speicola* Britany, PIAGET Neuchatel Bull. Soc. Sci. Nat. 41 p. 52.

*Koratia* gen. n. Type *Helix distincta*, Pfr., GODWIN-AUSTEN Rec. Ind. Mus. Calcutta 16 p. 202.

*Ledoulxia lessensis* sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 248.

*Limax*, CAZIOT 62.—L., COLOSI 88.—L., ODHNER 297.

*Macrochlamys novoguineensis* sp. n. New Guinea, SCHEPMAN Nova Guinea 13 p. 159.—*M. suturalis* sp. n. N. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 77.

*Mesafricarion* gen. n. *Belonarion* subgen. n.; *M. maculifer*; *M. (B.) pulzeysi* spp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 259-263.

*Microcystis* with *M. fulva* sp. n. N. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 pp. 77 & 78.

†*Microcystis antiqua* sp. n. N. Australia Quaternary, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 97.

*Parmacochlea*, ODHNER 297.

*Pleuroprocta silvatica*, s. *walikalensis* spp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 319-320.

*Polita cumberlandiana* sp. n. Tennessee, CLAPP Nautilus 33 p. 8.—*P.*, BERRY 38.

*Pseudohyalina maya* Guatemala; *P. opal*, Nicaragua, spp. n., PILSBRY Proc. Acad. Nat. Sci. Philad. 1919 p. 216.

*Rhytida*, ODHNER 297.

*Sitala gradata*, *lorentzi*, *fragilis*, spp. n. New Guinea, SCHEPMAN Nova Guinea 13 p. 160.—*S.*, ODHNER 297.

*Striatura*, BERRY 38.

*Thapsia zambiensis*, *stanleyvillensis*, *rutshuruensis*, *pompholyx cinnamomozonata*, c. *semikiensis*, *eucosmia*, *mukuleusis*, *rufescens*, spp. & var. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 237-242.

*Thysanophora rhoadsi* sp. n. Guatemala, PILSBRY Proc. Acad. Nat. Sci. Philad. 1919 p. 217.

*Trochomorpha repanda pagbilaoensis* subsp. n. Philippines, BARTSCH Washington Proc. Biol. Soc. 32 p. 16.—*T. lancasteri* sp. n. China, GUDE Proc. Malac. Soc. 13 p. 118.

*Trichotoxon pollonerae*, *maculatum perforatum*, *T. (Polytoxon) ruwenzoriense*, *pardus*, spp. & subsp. n., Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 205-209.

*Trochozonites* subgen. n. *Zonitrochus*, *Telezonites*; *T. plumaticostata*, *triflaris ituriensis*; *T. (Z.) aillyi*, *medjensis* spp. & subsp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 251-255.

*Thysanophora*, BERRY 38.

*Vitrea (Paravitrea) pilsbryana* sp. n. Tennessee, CLAPP Nautilus 33 p. 9.

*Vitrina* subgen. n. *Calidivitrina*, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 281.—*V.*, BERRY 38.

*Xesta citrina* var. n. *fragilis* Lorentz River New Guinea, SCHEPMAN Nova Guinea 13 p. 156.

*Zonitoides nitidus* var. *viridescens*, ALKINS 2.—*Z.*, BERRY 38.

#### EUDODONTIDAE.

*Endodonta (Charopa) tumida* W. Australia; *intermedia* N. Australia spp. n., ODHNER K. Svensk. Vet. Ak. Handl. 52 pp. 72-85.

*Flammulina cumulus* sp. n. N. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 84.

*Thalassia*, ODHNER 297.

#### HELICIDAE.

*Acanthinula*, STEENBERG 366.

*Archelix gebiletana* & var. *minor* sp. & var. n. Morocco, PALLARY J. Conchyliol. Paris 64 p. 55.

*Averellia (Trichodiscina) hinkleyi* sp. n. Guatemala, PILSBRY Proc. Acad. Nat. Sci. Philad. 1919 p. 217.

*Camaena gudei* sp. n. New Guinea, SCHEPMAN Nova Guinea 13 p. 161.—*C. forbesi* sp. n. Philippines, CLAPP Nautilus 33 p. 28.

*Cantareus*, CAZIOT 62.

*Chlorea*, BARTSCH 29.

*Chloritis* with *C. bilabiata* sp. n. N. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 85.—*C. (Sulcobasis) beatrix* var. n. *depressa* New Guinea, SCHEPMAN Nova Guinea 13 p. 165.

*Ciliella*, WATSON 401.

*Cochlicella acuta* var. n. *obesa* Morocco, PALLARY J. Conchyliol. 64 p. 56.—*C.* CAZIOT 62.

*Cochlostyla fulgetrum tayasana*, *nimbosa antiqua* subsp. n. Philippines, BARTSCH Washington Proc. Biol. Soc. 32 pp. 16–17.—*C.* with *C. cinerosa* subsp. n. *balabacensis*, *higginsii*, *ulugana*, *tagbayugana*, *tidepolensis*; *C. palavanensis* subsp. n. *mantangulensis culionensis*, *C. weberi* sp. n. Philippines, BARTSCH Proc. Biol. Soc. Washington 32 pp. 177–181.—*C. lignaria aguinoldoi*, *macrostoma vizcayana*, *carinata lunai*, *luzonica makabengana*, *domingoi*, *schaalenbergii ilongata* subsp. n. Philippines, BARTSCH Washington Nation. Mus. Proc. 55 pp. 301–304.

*Epiphragmophora tudiculata colusensis* subsp. n. California, BARTSCH Nautilus 32 p. 126.—*E. tudiculata awania*, *californiensis miwoka* subsp. n. California, BARTSCH Washington Proc. Biol. Soc. 32 pp. 247–248.

*Ereminella* sec. n. *Xerophila*, PALLARY J. Conchyliol. 64 p. 66.

*Gaetula olceseii* var. n. *fichtalana* Morocco, PALLARY J. Conchyliol. 64 p. 56.

*Hadra*, ODHNER 297.

*Halotimnohelix intonsa*, *rutshuruisensis*, *hirsuta*, *mukulensis*, *sericata*, *langi*, *zonata*, *mollitesta*, *bullata* spp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 37–46.

*Haplohelix* gen. n. type *H. anadenia* sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 49.

*Helicella (Heliomanes) virgata*, KEILIN 227.—*H.*, CAZIOT 62.

*Helicinae*, HESSE 201.

*Helicodonta obvoluta*, BEESTON 35.—*H. obvoluta*, KENNARD & WOODWARD 230.—*H.*, CAZIOT 62.—*H.*, HESSE 203.

*Helicogena*, CAZIOT 62.

*Helix aspersa*, MUSY 289.—*H.*, WURTEMBERG 409.—? *H. basaltica*, ? Cretaceous Portugal; *H. (Campylaea) iberica*, *H. (Gonostoma) mazerani* Tertiary Portugal spp. n., ROMAN Com. Surv. Geol. Portugal 12 pp. 72–80–91.—*H. jasonis*, *genezarethana*, HESSE 201.—*H. mazzulli*, Galati-Mosella 126.—*H. montivaga*, West. = *H. salmurina*, SERV, KENNARD & WOODWARD 228.—*H. nemoralis* & *hortensis*, TRUEMAN 379.—*H. nemoralis*, HAVILAND & PITT 193.—*H. patula*, HUGGINS 210.—*H. pisana*, LETACQ 256.—*H. pomatia*, CASTELLI 58.—*H. ponentina* MOREL (= *occidentalis*, Récluz) = *H. lisbonensis*, Pfr., KENNARD & WOODWARD 228.—*H. revelata* Mich., KENNARD & WOODWARD 228.—*H. revelata*, Fér., KENNARD & WOODWARD 228.—*H. revelata*, Britt. Auctt., KENNARD & WOODWARD 228.—*H. subvirescens*, Bellamy = *H. pilota*, Bourgt., KENNARD & WOODWARD 228.—*H. terveri*, Mich., CAZIOT 62.—*H. variabilis*, LETACQ 256.—*H. (Macularia) vermiculata*, TAYLOR 374.—*H.*, CAZIOT 62.

† *Helix (Xerophila) phrygo-striata*, *H. (Galactochilus?) phrygo-mysica* spp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 pp. 132–180.

*Hygromia*, CAZIOT 62.—*H. revelata*, GARDINER 166.—*H. limbata*, WATSON 401.

*Levantina*, HESSE 202.

*Mastigophallus* gen. n. *Helicodontinae*, HESSE NachrBl. D. mal. Ges. 1918 pp. 103–109.

*Micrarionta rixfordi* sp. n. California, PILSBRY Nautilus 33 p. 53.

† *Microphyura*, ODHNER 297.

*Monacha*, WATSON 401.

*Murellinae*, HESSE 201.

*Oestophora*, HESSE 203.

*Oreohelix cooperi apiarium* subsp. n. Montana, BERRY Proc. Acad. Nat. Sci. Philad. 71 p. 198.

*Panda*, ODHNER 297.

*Papuina lorentzi* & var. *roscolabiata*, *P. hellwigensis* spp. & var. n. New Guinea, SCHEPMAN Nova Guinea 13 pp. 167–168.—*P.*, ODHNER 297.

*Pedinogyra*, ODHNER 297.



*Planispira (Cristigibba) plagiocheila* var. *albolabiata*, *rhodomphala* varr. *fasciata*, *simplex*, *nigrolabiata*, *albolabiata* varr. n. New Guinea, SCHEFFMAN Nova Guinea 13 pp. 162-164.

†*Planispira praehadra* sp. n. N. Australia Quaternary, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 97.

*Polygyra plana* var. n. *bahamensis* Bahamas, VANATTA Nautilus 33 pp. 72.

*Praticotella campi* sp. n. Texas, CLAPP & FERRISS Nautilus 32 p. 78.

*Punctum*, BERRY 38.

*Pyramidella*, CAZIOT 62.

*Pyramidula rupestris*, HESSE 204.—P., BERRY 38.

*Rhagada*, ODHNER 297.

†*Sagda? tagica* sp. n. Tertiary Portugal, ROMAN Com. Com. Surv. Geol. Portugal 12 p. 79.

*Sonorella montana*, "Montana Peak, near the Montana mine, not far from Oro Blanco, and Bear canyon, further southeast, Pajarito range"; *hinkleyi*, "Cayetano Mountains"; *cayetanusis*, "Highest peaks of the Cayetano Mountains"; *tumacacori*, "Stations 209, 210, in a large gulch draining the north-eastern side of Tamacacori Peak"; *patagonica*, "Mt. Washington, Patagonia Mts."; *mustang*, "Mustang range"; *montezuma*, "Montezuma, Canyon, Huachuca Mts."; *elizabethae*, "Canillo Hills"; *cotis*, "Whetstone Range"; *insignis*, "Whetstone Range," spp. n., PILSBRY & FERRISS Nautilus 33 pp. 19-21. [The above localities are as given by the authors.]

*Soosia* gen. n. *Helicodontinae*, HESSE NachrBl. D. mal. ges. 1918 p. 104.

*Theba cantiana*, DEAN 124.—T., CAZIOT 62.

*Thersites* with *T. castanea* sp. n. N. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 87.

*Tingitana* sec. n. (*Helicidae*) *T. tingitana* varr. n. *minor*, *slessica*, *lacunata*, *angulosa*, *pullata*, *punctulata*, *laticolor*, *interrupta* Morocco, PALLARY J. Conchyl. 64 pp. 51-53.

*Trichia*, WATSON 401.

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*Trichocathaica* subgen. n. (*Cathaica*), *C. (T.) lyonsæ* sp. n. China, GUDÉ Proc. Malac. Soc. 13 p. 119.

*Vallonia*, CAZIOT 62.—V., STEENBERG 366.

*Vicarihelix* gen. n. type *V. orthotricha* sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 47.

*Xanthomelon*, ODHNER 297.

*Xerophila bogudiana* & var. *cingula*, *znassenensis*, *verignoni* & var. *elevata*, *edriassiana* & varr. *minor*, *conica* & *meradana*, *X. mograbina* varr. *minor*, *major*, *depressa*, *oblecta*, *privatiana*, *X. brulardi* varr. *claveli*, *bergeroni*, *X. leccointrei*, *dzirana*, *guercifiana*, *psammophila*, *brunoti*, *X. (Trochula) fryatti* & var. *branesiana* spp. & varr. n. Morocco, PALLARY J. Conchyl. 64 pp. 57-69.

#### BULIMIDAE, ORTHALICIDAE & BULIMULIDAE.

*Amphidromus versicolor* subsp. n. *secamensis*, *canabunganensis*; *A. maculiferus* subsp. n. *webbi* Philippines, BARTSCH Proc. Biol. Soc. Washington 32 pp. 182-183.

*Bothriembryon*, ODHNER 297.

*Bulimulus (Næsiotus) elwodes*, *hemarodes*, *perrus*, *acullimus*, *albamarlensis*, *akamatus*, *adelphus*, *lycodus*, *alethorhytidus*, *cymatias*, *ochneri*, *jer-visensis*, *rabidensis* spp. n. Galapagos Isds., DALL Proc. Cal. Acad. Sci. 2 pp. 376-381.—*B. nigromontanus* subsp. n. [sic] "Pina Blanca in the Pajarito Mountains." [Locality as given by the authors.] PILSBRY & FERRISS Nautilus 33 p. 20.—*B. brunoi*, LOBO 258.

*Drymaeus*, PILSBRY 317.

#### ENIDAE (*Buliminidae olim*), UROCOPTIDAE & PUPIDAE.

*Brachypodella oropouchensis* sp. n. Trinidad, SPENCE J. Conch. Leeds 16 pp. 42-43.—B., PILSBRY 317.

*Bulimulus*, CAZIOT 62.

*Cerastus bequaerti*, *b. mokotoensis*, *b. mukulensis*, *lucasi* spp. & subsp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 312-313.

*Chondrina*, PILSBRY 324.

*Clausilia (Euphaedasa) steetzneri* sp. n. China, PILSBRY Nautilus 33 p. 53.—*C. bidentata*, BOYCOTT 50.—*C. laminata*, PETERSEN 314a.—*C.*, CAZIOT 62.

*Enneopupa*, PILSBRY 324.

*Glandicula*, PILSBRY 324.

†*Hypselostoma australis* sp. n. N. Australia Quaternary, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 98.

*Jamina*, CAZIOT 62.

*Nenia cooki* sp. n. Peru, PILSBRY Nautilus 32 p. 80.

*Pachnodus rutshuruensis, spiraxis, herbigradus* spp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 307-308.

*Pseudhelix*, PILSBRY 324.

*Pupa (Vertigo) genestii, alpestris*, SOHLESCH 342.

†*Pupa (?) phrygica* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 182.

*Rachis böhmi delicatus* subsp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 306.

*Staurodon*, PILSBRY 324.

*Vertigo* with *V. alabamensis conehensis*, Alabama; *ovata diaboli*, Texas; *o. mariposa, V. berryi*, California; *gouldii paradoxa*, Maine; *g. cristata*, Canada; *andrusiana sanbernardinensis, V. sterkii*, California; *hannai*, Kansas; *coloradensis inserta*, Arizona; *modesta ultima*, Norton Sound; *m. insculpta* Arizona; *californica cupressicola*, California; spp. & subsp. n.; *Vertillaria* subgen. n. (Type *V. oscariana*), PILSBRY Man, Conch. 24 pp. 69-144; *V. bermudensis*, Bermuda; *eogea, hachijoensis*, Japan; *japonica coreana* Korea; *j. tosana*, Japan spp. & subsp. n., PILSBRY Man, Conch. 24 pp. 145-221.—*Vertigo modesta microphusma, allyniana, a. xenos* sp. & subsp. n. California, BERRY Nautilus 33 pp. 48-52.—*Vertigo pygmaea*, WOODRUFFE-PEACOCK 408.—*V. alpestris*, OLDHAM 299.—*V.*, BERRY 38.

STENOGYRIDAE & ACHATINELLIDAE.

*Achatina pfeifferi eugrapti, sylvatica* mut. *unicolor, weynsi* mut. *rosaris, schweinfurthi rhodacme, s. r. mut. rhodostemma, s. r. mut. levior, osborni*, sp. subsp. & mutt. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 67-77.—*A.*, PILSBRY 320.

*Achatium*, PILSBRY 320.

*Achatinus*, PILSBRY 320.

*Ampulla*, PILSBRY 320.

*Archachatina*, PILSBRY 320.

*Azeca tridens*, BOYCOTT 51.

*Bocageia* subgen. n. *Liobocageia*; B. (L.) *interioris, germani, liocephala* spp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 135 137 138.

*Chersina*, PILSBRY 320.

*Cochlitoma*, PILSBRY 320.

*Crenea*, CAZIOT 62.

*Curvella bathytoma, dautzenbergi, langi, chapini, thysvillensis* spp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 164-166.—*C. farguhari* sp. n. Cape Province, CONOLLY [CONNOLLY] Rec. Albany Mus. 3 p. 219.

*Elasmias*, ODHNER 297.

*Ferrussacia*, CAZIOT 62.

*Geodes*, PILSBRY 320.

*Homorus robinkempi* nom. n. for *H. foveolatus* Preston 1912 non Preston 1909, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 122.—*H.* subgen. n. *Oreohomorus, H. (Subulona) langi, kwidischwiensis nigricans, alberti, amputatus, clarus, lionepion, ischnus; H. (O.) bequaerti, osborni* spp. & subsp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 115-126.

*Limicolaria walkeri, w. mut. nudata, loeta medjensis, saturata masisiensis, s. capitellum, festiva* mut. *clara* spp. subsp. & mut. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 94-102.—*L.*, GERMAIN 173.

*Limicolariopsis ruwensoriensis* sp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 p. 89.

*Nothapalus paucispira xanthophaea*,  
*ptychoraphe*, *sororcula*, *coelatus*, *c. debilis*  
spp. & subspp. n. Belgian Congo,  
PILSBRY Bul. Amer. Mus. Nat. Hist.  
40 pp. 131-133.

*Obeliscus obeliscus*, SPENCE 363.

*Oncaea*, PILSBRY 320.

*Opeas strigile* with *O. fanei*, Natal;  
*O. burnupi*, Cape Province; *O.*  
*annipacis*, Natal, spp. n., CONNOLLY  
Proc. Malac. Soc. 13 pp. 142-144.—  
*O. albanense* sp. n. Cape Province,  
CONOLLY [CONNOLLY] Rec. Albany  
Mus. 3 p. 217.—*O. pumilum*, VANATTA  
382.

*Orbitina*, CAZIOT 62.

*Parachatina*, PILSBRY 320.

*Pegea*, CAZIOT 62.

*Perideriopsis fallsensis* mut. *pronuba*,  
*f. mut. sponsa* mutt. n. Belgian Congo,  
PILSBRY Bul. Amer. Mus. Nat. Hist.  
40 p. 109.

*Pintoa*, PILSBRY 320.

*Pseudoglessula* subgen. n. *Dictyoglessula*, *Ischnoglessula*; *P. walikalensis*, *intermedia masisiensis*; *P. (Kempicooncha) leopoldvillensis*, *umbilicata*; *P. (I.) subfuscidula*, *famelica*, *cruda*, *gracillima* spp. & subspp. n. Belgian Congo, PILSBRY Bul. Amer. Mus. Nat. Hist. 40 pp. 149-157.

*Pseudopeas victoriae* sp. n. Rhodesia,  
CONOLLY [CONNOLLY] Rec. Albany Mus.  
3 p. 218.—*P. thysvillensis*, *curvelliforme*  
spp. n. Belgian Congo, PILSBRY Bul.  
Amer. Mus. Nat. Hist. 40 pp. 160-162.  
—*P.*, ODHNER 297.

*Pseudosubulina martensiana* sp. n.  
Guatemala, PILSBRY Proc. Acad. Nat.  
Sci. Philad. 1919 p. 214.

*Rumina*, CAZIOT 62.

*Serpaea*, PILSBRY 320.

*Spiraxis livingstonensis*, *longior*  
spp. n. Guatemala, PILSBRY Proc. Acad.  
Nat. Sci. Philad. 1919 p. 213.

*Subulina glyptocephala*, *gratacapi*,  
*thysvillensis*, *pengensis*, *lowei*, *avaku-*  
*biensis*, *bequaerti* spp. n. Belgian  
Congo, PILSBRY Bul. Amer. Mus. Nat.  
Hist. 40 pp. 139-143.—*S. gracillima*  
sp. n. Rhodesia, CONOLLY [CONNOLLY]  
Rec. Albany Mus. 3 p. 216.

*Subuliniscus* gen. n. *S. lucasi* sp. n.  
Belgian Congo, PILSBRY Bul. Amer.  
Mus. Nat. Hist. 40 pp. 145-147.

*Urceus*, PILSBRY 320.

*Vediantius*, CAZIOT 62.

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*Lithotis japonica*, ANNANDALE &  
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*Oncia* gen. n. type *Lithotis japonica*,  
Preston, ANNANDALE J. and Proc. As.  
Soc. Beng. 14 p. 460.

*Onchidiidae*, BRETNALL 54.

*Oncis cinerea* sp. n. W. Australia,  
ODHNER K. Svensk. Vet. Ak. Handl.  
52 p. 73.

*Oris*, CAZIOT 62.

*Succinea congoensis*, *lessensis*, *be-*  
*quaerti* spp. n. Belgian Congo, PILSBRY  
Bul. Amer. Mus. Nat. Hist. 40 p. 301-  
302.—*S. panamensis* sp. n. Panama,  
PILSBRY Proc. Acad. Nat. Sci. Philad.  
1919 p. 218.—*S.*, CAZIOT 62.—*S.*,  
ODHNER 297.

*Vaginula*, ODHNER 297.

*Vaginulus*, PILSBRY 317.

ELLOIDIIDAE (*Auriculidae olim*),  
LIMNAEIDAE, PHYSIDAE, CHILI-  
NIDAE AND SIPHONARIIDAE.

*Alexia kobelti*, [sp. n.] Malta G.,  
Valletta Arch. Melit. 1 p. 104.

*Amphibola crenata*, FARNIE 140.

*Ancylus*, CAWSTON 59.—*A.*, CAZIOT  
62.—*A.*, ODHNER 297.

*Auricula translucens* sp. n. Brit.  
India, ANNANDALE & PRASHAD Rec.  
Ind. Mus. Calcutta 16 p. 256.

*Bullinidae* Fam. n., GERMAIN Bul.  
Mus. Paris 1919 p. 121.

†*Bullinus*, CHAPMAN 66.

*Camptoceras hirasei* sp. n. Japan,  
WALKER Ann. Arbor Mich. Occ. Pprs.  
Mus. Zool. 64 p. 1.—*C.*, ANNANDALE &  
PRASHAD 10.

*Choanomphalus*, ANNANDALE 5.

*Gyraulus*, ANNANDALE & PRASHAD 14.

*Isidora*, CAWSTON 59.

*Işodora* with *I. gibbosa* var. n. *brevispira* N. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 pp. 74 76.

*Leuconia bidentata*, KENNARD & WOODWARD 229.

*Limnaea* [vide etiam *Limnea* et *Lymnea*] with *L. iranica*, Persia; *L. gedrosiana* & var. *rectilabrum* Brit. India spp. & var. n., ANNANDALE & PRASHAD Rec. Ind. Mus. Calcutta 16 pp. 43 48 49.—*L.* with *L. acuminata* var. n. *nana* Brit. India, ANNANDALE Rec. Ind. Mus. Calcutta 16 p. 141.—*L.* with *L. cor* sp. n. Mesopotamia, ANNANDALE & PRASHAD Rec. Ind. Mus. 18 p. 111; —*Limnaea*, ANNANDALE 5.—*L. glabra*, ALKINS 1.—*L. gedrosiana*, KEMP in ANNANDALE & PRASHAD 14.—*L.*, BRUMFIEL 55.—*L.*, CAWSTON 59.—*Limnaea niatrix*, DOELLO-JURADO 130.—*L. stagnalis*, GATENBY 168.—*L.*, GERMAIN 170 & 172.—*L. pereger*, HARGREAVES 189.—*L. p.*, HUTTON 212.—*L.*, STELFOX 367.

†*Limnaea phrygopalustris*, *phrygo-ovata*, *aegaea*, *pergamonica* spp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 pp. 129 177 191.

*Limnea* [vide etiam *Limnaea* et *Lymnea*] *truncatula*, MUSHAM 288.—*L. stagnalis*, ŠECEROV 345.—*L. s.*, ŠECEROVA 347.

*Lymnaeidae*, BAKER 23.

*Lymnea* [vide etiam *Limnaea* et *Limnea*], CAZIOT 62.

*Physa solidissima* sp. n. Mexico, PILSBRY Proc. Acad. Nat. Sci. Philad. 1919 p. 219.—*P. oneida* sp. n. New York State, BAKER Nautilus 33 p. 11.—*P.*, BRUMFIEL 55.—*P. fontinalis*, MUSHAM 288.—*P.*, VAN HYNING 386.

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†*Planorbis parvus* var. *urbanensis*, *P. altissimus* sp. & var. n. Quaternary U.S.A., BAKER Nautilus 32 pp. 94 95.—*P. subverticillus* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 176.

*Planorbula*, PILSBRY 317.

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†*Siphonaria dubia* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 27–29.

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†*Cadulus denticulus-tigris* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 324.

†*Dentalium glaucoterrarum* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 323.—*D. (Entaliopsis) magnum*, *D. (Fustiaria) montense*, *D. (Laevidentalium) hannonicum* fig., COSSMANN Mem. Mus. R. Hist. Nat. Belgique 6 pl. i figs. 1–3 10–11 18–19.—*D. (Entalis) davasense* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 55.

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†*Anomia*, MARIANI 259.

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†*Exogyra sacyi* sp. n. Oligocene France, COSSMANN J. Conchyliol. 64 p. 137.—*E. popilanica* sp. n. Jura, KRENKEL Palaeont. Stuttgart 61 p. 303.

†*Gryphaea dilatata* var. n. *popilanica* Jura, KRENKEL Palaeont. Stuttgart 61 p. 301.

*Ostrea*, HEDLEY 194.—*O.*, ODHNER 297.

†*Ostrea titan corrugata* var. n. Tertiary U.S.A., NOMLAND Berkely Cal. Pub. Bul. 10 p. 306.—*O. latestimuosa* sp. n. Jura, SCHNEID Jena Geol. Pal. Abh. 13 p. 107.—*O. gilbertharrisi* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 246.—*O. gingensis* var. n. *africana* Tertiary S. W. Africa, BÖHM Beitr. Geol. Deutsch. Schutzg. 5 p. 61.—*O. vicksburgensis* var. n. *ludoviciana* Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 p. 16.—*O.*, SHIMER 350.—*O.*, DAINELLI 109.—*O.*, MARIANI 259.—*O. (Exogyra)*, DOLLFUS 131.

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*Chlamis varia* var. n. *livida* Mediterranean, MONTEROSATO Boll. Soc. Zool. Ital 3 p. 2.

†*Chlamys beziere*, *C. (Equipecten) gregoriensis* spp. n. Oligocene France, COSSMANN J. Conchyliol. 64 pp. 139-140.

†*Hinnites*, DAINELLI 109.

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†*Lima huttoni*, H. Wds. becomes *L. (Limatula) woodsi*, Sut. Wellington N. Zeal. J. Sci. Tech. 2 p. 58.—*L. waipipiensis* sp. n. Tertiary N. Zealand, MARSHALL & MURDOCH Trans. and Proc. N.Z. Inst. 51 p. 256.—*L.*, MARIANI 259.

*Pecten* with *P. difformis* sp. n. N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 15.—*Pecten tenuicostatus*, HALKETT 187.—*P.*, MESTAYER 274.—*P.*, MORSE 284.

†*Pecten crassicardo biformis* var. n. Tertiary U.S.A., NOMLAND Berkely Cal. Pub. Bul. 10 p. 307.—*P. thompsoni*, *cercadica*, *caimitica*, *haloviejonis* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 252-253.—*P. sylvestrei-sacyi* sp. n. Oligocene France, COSSMANN J. Conchyliol. 64 p. 138.—*P.* with *P. curdo-sarmatica* var. n. Miocene, DAUS Stuttgart N. Jahrb. Min. Geol. Pal. 38 p. 488.—*P. (wantubbeanus* var. ?) *willcoxi* var. n.; *cainei*, *P. (clarkeanus* ? var.) *burlesonensis* var. n.; *P. caucavensis* sp. n.; *scintillatus* var. n. *corneoides* Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 pp. 23-28.—*P. trentensis* sp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 8 p. 15.—*P.* with *P. (Amussium) praecobliteratus* sp. n. Oligocene France, DOLLFUS Paris Bul. soc. géol. 17 p. 97.—

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*P. (Propeamusium) levis* sp. n. Tertiary U.S.A., MOODY Berkely Cal. Pub. Bul. 10 p. 56.—*P.*, SCHÄFER 339.—*P.*, SHIMER 350.

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†*Botula hispaniolae* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 257.

†*Brachydontes athabaskaensis* sp. n. Cretaceous Canada, MCLEARN Mus. Bul. Dept. Mines Canada, 29 p. 12.

†*Cassianella* with *C. azzarolae*, *barnensis* spp. n. Rhaetio Lombardy, MARIANI Mem. Soc. ital. sc. nat. 58 pp. 120-121.

†*Congerina* (?) *kairanderensis* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 126.

*Crenella*, LAMY 248.

†*Dreissensia* (?) *phrygia*, *lycophila*, *hierapolitana* spp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 pp. 124-125 127.

†*Gervilleia*, SCHÄFER 339.

†*Inoceramus dowlingsi* sp. n. Cretaceous Canada, MCLEARN Mus. Bul. Dept. Mines Canada 29 p. 11.—*I. monsensis* sp. n. Cretaceous France, REPELIN in GUÉBHARD, LAMBERT & REPELIN Notes Provençales 6 p. 3.

*Lithodomus*, ODHNER 297.

†*Lithodomus*, COUFFON 100.

*Lithophaga* with *L. robusta*, *lima*, *pulchra* spp. n. Red Sea, LAMY Bul. Mus. Paris 1919 pp. 252-257 344-350.—*L.*, CALMAN 57.

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*Modiola*, LAMY 248.—*M.*, MORSE 284.—*M.*, ODHNER 297.

†*Modiola visgnolae* sp. n. Rhaetio Lombardy, MARIANI Mem. Soc. ital. sc. nat. 58 p. 123.

*Modiolaria*, LAMY 248.—*M.*, MORSE 284.—*M.*, ODHNER 297.

†*Modiolus cercadicus, maonis* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 256.—*M. cawcawensis* sp. n. *Mauricia* subgen. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 pp. 31-32.—*M.*, SHIMER 350.

*Mytilus edulis*, MELLEN 268.—*M.*, LAMY 248.—*M.*, MORSE 284.—*M.*, ODHNER 297.

†*Mytilus*, SCHÄFER 339.—*M.*, SHIMER 350.—*M.*, MARIANI 259.

*Perna*, ODHNER 297.

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†*Pinna curvmarginata* sp. n. Cretaceous Canada, McLEARN Mus. Bul. Dept. Mines Canada 29 p. 10.—*P. gravida, cawcawensis* spp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 pp. 30-31.—*P. quadrata* sp. n. Jura, SCHNEID Jena Geol. Pal. Abh. 13 p. 106.—*P. bicuneata* sp. n. Tertiary U.S.A., NOMLAND Berkely Cal. Pub. Bul. 10 p. 308.

*Pteria*, ODHNER 297.

†*Pterinea*, ETHERIDGE 138.—*P.*, WILLIAMS 405.

*Septifer*, LAMY 248.—*S.*, ODHNER 297.

†*Septifer margaritana* sp. n. Tertiary U.S.A., NOMLAND Berkely Cal. Pub. Bul. 10 p. 308.

*Stempelleria magellanica* nom. n. for *Avicula m.*, CLASING Mitt. Zool. Inst. Westfälisch. Wil.-Univ. Münster i/W. 1 p. 22.

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*Arca*, LAMY 243.—*A.*, MORSE 284.—*A.*, ODHNER 297.

†*Arca lomasdesamba, yaquensis* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 328.—*A. philippsoni* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 32.—*A. (cuculoides?)* var. n. *ludoviciana* Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 p. 54.—*A. (Noëtia) reuningi, koerti* spp. n. Tertiary S.W Africa, BÖHM Beitr. Geol. Deutsch. Schutzg. 5 pp. 63 65.—*A.*, COUFFON 100.

†*Barbatia (Calloarca) submarylandica* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 320.

†*Buchiola* with *B. dilata* sp. n. Devonian Canada, KINDLE Mus. Bul. Dept. Mines Canada Geol. Ser. No. 36 29 pp. 5-6.

*Cucullea*, LAMY 243.

†*Dicranodonta dowlingi* sp. n. Cretaceous Canada, McLEARN Mus. Bul. Dept. Mines Canada 29 p. 9.

*Glycimeris*, MORSE 284.

†*Glycymeris lisbonensis, sabinensis* spp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 pp. 48-51.

*Leda lomaensis* sp. n. California, DALL Washington Proc. Biol. Soc. 32 p. 249.—*L.*, MORSE 284.

†*Leda cœlatoides, trumani, magnopsis, pistorupes, kittensis, crassiparva, ozarkola, wantubbeana* spp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 pp. 58-69.—*L. coelatelata* sp. n. Eocene U.S.A., VAN WINKLE Bul. Amer. Pal. 8 1919 p. 6.—*L.*, COUFFON 100.—*L.*, SCHÄFER 339.

†*Limopsis hamptdenensis* sp. n. Tertiary N. Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 233.

†*Macrodon*, MARIANI 259.

†*Nemodon mcconnelli* sp. n. Cretaceous Canada, McLEARN Mus. Bul. Dept. Mines Canada 29 p. 10.

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†*Nucula dowlingi* sp. n. Cretaceous Canada, McLEARN Mus. Bul. Dept. Mines Canada 29 p. 9.—*N. ripae* sp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 p. 74.—*N.*, COUFFON 100.—*N.*, MARIANI 259.

†*Nuculites (Cleidophorus)*, WILLIAMS 405.

*Pectunculus* with *P. setiger* sp. n. N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 22.

†*Pectunculus togoënsis* sp. n. Eocene Togo, OPPENHEIM B. geol. Deutsch. Schutzg. 12 p. 21.

†*Sarepta solenelloides, tenuis* spp. n. Tertiary N. Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 233.

†*Scapharca henekeni, golfoyaquensis, cercadica, margareta, guayubonica, riogurabonica, losquemadica, caimitica, cibaoica, cor-cupidonis, hispaniolana, rio-canensis, arthurpennelli, S. (Cunearca)*

*willardausteni* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 331-334 336-337 339-340 341-343.

*Sheldonella* sec. n. (*Noetia*); *N. (S.) maoica* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 p. 330.

*Trigonia* with *T. uniophora* var. *crebrisculpta* var. n. N.W. Australia, ODHNER K. Svensk. Vet. Ak. Handl. 52 p. 23.

†*Trigonia albertaensis* sp. n. Cretaceous Canada, McLEARN Mus. Bul. Dept. Mines Canada 29 p. 11.—*T. areolata*, *densicostata* spp. n. Tertiary N. Zealand, MARSHALL Trans. and Proc. N.Z. Inst. 51 p. 234.—*T. zonata* var. n. *grewingki* Jura, KRENKEL Palaeont. Stuttgart 61 p. 316.—*T.*, COUFFON 100.

†*Trinacria pulchra* var. *sabinica*, *T. ovalis* var. & sp. n. *T. (Pachecoa) cainei* subgen. & sp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 pp. 41-46.

*Yoldia*, MORSE 284.

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*Alasmidonta (Decurambis) marginata susquehannæ*, ORTMANN Descr. Pennsylvania, ORTMANN Mem. Carnegie Mus. 8 p. 187.

*Anodonta*, ANNANDALE 5.

†*Anodonta*, SCHÄFER 339.

*Anodontinæ*, ORTMANN 304.

*Anodontites*, HAAS 185.

†*Anoplophora pralingeri* sp. n. Rhaetic Lombardy, MARIANI Mem. Soc. ital. sc. nat. 58 p. 128.

*Astarte*, MORSE 284.

†*Astarte mauriana*, *trinidadensis* spp. n. Eocene Trinidad, VAN WINKLE Bul. Amer. Pal. 8 pp. 19-20.—*A.* with *A. apiculata* sp. n. Tertiary England, BELL Naturalist London 1919 p. 58.—*A. triangulatoides*, *newseana* spp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 pp. 91 92.—*A.*, COUFFON 100.

*Astartidæ*, LAMY 252.

*Balvantia* gen. n. (*Unionidæ*), PRASHAD Rec. Ind. Mus. 16 p. 290.

†*Cardinia antero-truncata* sp. n. Rhaetic Lombardy, MARIANI Mem. Soc. ital. sc. nat. 58 p. 128.—*C.*, ETHERIDGE 138.

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*Cardita*, MORSE 284.—*C.*, ODHNER 297.

†*Cardita saaretenensis* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 74.—*C. koerti*, *logoenensis*, *tabligboënsis* spp. n. Eocene Togo, OPPENHEIM B. geol. Deutsch. Schutzg. 12 pp. 24-29.

*Castalina*, HAAS 185.

*Crassatella jousseau mei* sp. n. Red Sea, LAMY Bul. Mus. Paris 24 p. 514.

†*Crassatella*, DAINELLI 109.

†*Crassatellites entawcolens* sp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 8 p. 14.—*C. negreetensis* sp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 p. 97.—*C. subobesus* sp. n. Tertiary N. Zealand, MARSHALL & MURDOCH Trans. and Proc. N.Z. Inst. 51 p. 257.

*Cristaria*, ANANNDALE 5.

†*Cuna astartoides* sp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 p. 94.

*Diplodon* with *D. hidalgoi* sp. n. Uruguay, HAAS Madrid Trab. Mus. Nac. Ci. Nat. Ser. Zool. 25 1916 pp. 11-23 47-53.—*D.*, ODHNER 297.

*Eolymnium* subgen. n. Type *Unio terminalis*, Brgt., PRASHAD Rec. Ind. Mus. 16 p. 410.

*Hyria*, HAAS 185.

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*Lamellidens* with *L. marginalis rhadinceus* subsp. n. Brit. India, ANNANDALE & PRASHAD Rec. Ind. Mus. Calcutta 16 p. 59.—*L.*, ANNANDALE 7.—*L.*, PRASHAD 326.

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†*Modiolopsis kelsoensis* sp. n. Silurian Canada, WILLIAMS Canada Dept. Mines Geol. Surv. 111 p. 123.

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*Monococondylaea*, HAAS 185.

*Monodontina*, PRASHAD 327.

*Mycetopoda* with *M. bolivari* sp. n. Ecuador, HAAS Madrid Trab. Mus. Nac. Ci. Nat. Ser. Zool. 25 1916 pp. 36 57-58.

†*Myoconcha*, COUFFON 100.—*M.* REPOSSI 330.

†*Myophoria* with *M. valmadrerae* sp. n. Rhaetic Lombardy, MARIANI Mem. Soc. ital. sc. nat. 58 p. 123.—*M.*, REPOSSI 330.—*M.*, SCHÄFER 339.

*Nodularia (Caelatura) cariei* sp. n. Reunion, GERMAIN Bul. Mus. Paris 1919 p. 122.—*N.*, ANNANDALE 5.

†*Pachytypus*, COUFFON 100.

*Parreyssia* with *P. cylindrica* sp. n. Brit. India, ANNANDALE Rec. Ind. Mus. Calcutta 16 p. 150.—*P.*, PRASHAD 326.

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*Pletholophus*, ANNANDALE 5.

†*Pleurophopsis* gen. n. [? *Unionidae*], *P. unioides* & var. *fernandensis* sp. & var. n. Eocene Trinidad, VAN WINKLE Bul. Amer. Pal. 8 pp. 23-25.

*Pleurobema clava*, WINSLOW 407.

†*Pleuromeris aldrichi* sp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 p. 95.

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†*Unio dowlingi* sp. n. Cretaceous Canada, McLEARN Mus. Bul. Dept. Mines Canada 29 p. 11.

*Unionidae*, WALKER 400.—*U.*, ORTMANN 304.

*Venericardia nodulosa* sp. n. California, DALL Washington Proc. Biol. Soc. 32 p. 249.

†*Venericardia rotunda* var. *flabellum*, *V. natchitoches*, *V. (Pleuromeris) tortidens* var. & spp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 pp. 80 84 87.—*Venericardia islahispaniolae* [? sp. n.], *cerrogordensis* sp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 362-363.

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†*Bornia isosceles, perditia* spp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 p. 109.

†*Erycina*, CHAPMAN 66.

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†*Montacuta cercadica, maioica, hispaniola* spp. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 372-373.

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*Cardium corbis*, EDMONDSON 136.—*C.*, MORSE 284.—*C.*, ODHNER 297.

†*Cardium* with *C. pesuræ* sp. n. Rhaetic Lombardy, MARIANI Mem. Soc. ital. sc. nat. 58 pp. 131-132.—*C. luschni* sp. n. Neogen, OPPENHEIM Berlin Zs. D. geol. Ges. 70 p. 75.—*C. onachitense* sp. n. Eocene U.S.A., HARRIS Bul. Amer. Pal. 6 p. 132.—*C. zecki* sp. n. Eocene Togo, OPPENHEIM B. geol. Deutsch. Schutzg. 12 p. 22.—*C. (Trachycardium) linguatigris, tintinnabularum, cinderellae C. (Trigoniocardia) haitense* var. *cercadicum C. (T.) sambaicum* spp. & var. n. Tertiary S. Domingo, MAURY Bul. Amer. Pal. 5 pp. 373-376.—*C.*, SCHÄFER 339.

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# IX. ARTHROPODA

(GENERAL)

BY

D. S H A R P.

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# X. CRUSTACEA

ARRANGED BY

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*Harpinia brevirostris* sp. n. N. Atlantic p. 578, CHEVREUX t.c.

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†*Bythocypris symmetrica* p. 142 fig., HEDE Stockholm Geol. Fören. Förh. 41.

†*Candonocypris assimilis* p. 28 figs., CHAPMAN Proc. R. Soc. Victoria 32.

*Crossophorus grimaldii* sp. n. Atlantic p. 1 figs., GRANATA Bull. Inst. Ocean. Monaco 356.

†*Ctenobolbina sexcapillosa* p. 53 *rara* p. 54 spp. n. Sweden Silurian, figs., TROEDSSON Lund Univ. Årsskr. N.F. Avd. 2 15 No. 3.

†*Cypridina ocevjana*, *balbersteinensis*, spp. n. Trias, Europe, p. 176 figs., KITTL in TRAUTN. Wien Ann. Nat. Hofmus. 32.

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†*Cytheropteron antarcticum* sp. n. raised beach, Drygalski glacier p. 38 figs., CHAPMAN t.c.

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*Xestoleberis variegata*, *setigera*, p. 73, figs., CHAPMAN Brit. Antarct. Exped. Geol. 2.

†*Xestoleberis davidiana* p. 51, figs., CHAPMAN t.c.

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†*Lepidocoleus* sp. p. 23 fig., HEDE Sveriges Geol. Unders. Årsbok 11 No. 2.

*Megalasma (Megalasma) minus* p. 362, (*Glyptelasma*) *gigas* p. 364, *pilsbryi* sp. n. Java-Australia p. 365 figs., *orientale* sp. n. Java-Australia p. 367, figs., *hamatum* sp. n. Atlantic and Indo-Pacific p. 370 figs., CALMAN Ann. Mag. Nat. Hist. 4.

# XI. ARACHNIDA

TO WHICH ARE ADDED

GIGANTOSTRACA (XIPHOSURA, TRILOBITA, EURYPTERIDA),  
PANTOPODA, TARDIGRADA, PENTASTOMIDA, MYRIOPODA  
and PROTOTRACHEATA

ARRANGED BY

W. T. CALMAN, D.Sc., F.R.S.

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- Richter, R. and E. Proetiden aus neueren Aufsammlungen im vogtländischen und sudetischen Oberdevon. Frankfurt Senckenbergiana 1 1919 (97-130) text-figs. 17
- Richter, R. and E. Über *Phacops laevis* Münst. und andere Phacopiden des vogtländischen Oberdevons. Frankfurt Senckenbergiana 1 1919 (131-140) text-figs. 18
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*Agraulos tonkinensis* sp. n. Cambrian, Tonkin p. 19 figs., MANSUY *Mém. Serv. Géol. Indochine* 4 fasc. 2.

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*Anomocare* cf. *subquadratum* p. 26 fig., MANSUY *Mém. Serv. Géol. Indochine* 4 fasc. 2.

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Sweden, *Orphnaeus* (*Chilop.*); v. Porat, 22.

Scotland, Forth area, *Myriopoda*; Evans, 17.

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Ireland, *Chilopoda*, *Diplopoda*; Brade-Birks, 4; Ulster, *Chilopoda*, *Diplopoda*, *Symphyla*; Foster, 18.

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Switzerland, *Diplopoda*; Bigler, 2.

Austria, *Diplopoda*; Verhoeff, 23.

India, *Chilopoda*; Silvestri, 23.

Baluchistan, *Chilopoda*; Silvestri, 23.

Sumatra, *Chilopoda*; Silvestri, 23.

Japan, *Chilopoda*; Silvestri, 23.

Algiers, *Diplopoda*; Brolemann, 6.

French Guinea, *Diplopoda*; Brolemann, 7.

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16.

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figs., SILVESTRI t.c.

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*cumminsi* sp. n. Tennessee p. 25,  
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281, BROLEMANN Bull. Soc. Ent.  
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†*Palaeosoma* gen. n. type *Acantherpestes giganteus* Baldwin p. 410, *robustum* p. 411, figs., JACKSON and BRADBIRKS Geol. Mag. 6.

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## PROTOTRACHEATA

(Vacant.)

# XII. INSECTA

BY

D. SHARP

(Assisted by H. CAMPION and W. H. T. TAMS).

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S. Devon 25 years, Mayor, 1125.

Studland *D. nerii*, Riviere p. 207 Ent. Rec. 31.

Isle of Wight, *Spilosoma urticae*, Godfrey p. 138 Ent. 52; *Rhopalocera*, Cornell p. 279 Ent. 52.

New Forest *A. corydon* Lucas p. 237 Entom. 52 and Mellows p. 262 T.c.

Portsmouth *Sciapteron tabaniforme* Burras p. 276 Ent. 52.

Sussex *S. pinastri* E. P. Sharp p. 168 Ent. Rec. 31; *P. machaon* Crisp p. 236 Entom. 52; Eastbourne *D. nerii* Chartres p. 188 Ent. Rec. 31; Brighton *L. sibylla* Bramwell p. 257 Entom. 52; Folkestone *Isoria lathonia* Mathew p. 259 Ent. 52.

Alton Stowell p. 258 Ent. 52.

Winchester *P. c-album* Pierce p. 237 Ent. 52.

Longmoor Hants, Hunt, p. 43 Entomol. 52.

Godalming Prout pp. 20 & 21 Tr. London Nat. hist. Soc. 1918.

Kent Rowland-Brown p. 277 Ent. 52.

Burnham beeches *L. sibylla*, Campion p. 236 Ent. 52; and High Wycombe Pierce p. 237 T.c.

Ditton Park *Attacus* Blackie p. 234 Ent. 52.

Pewsey *Pol. c-album* Gardner p. 22 Entom. 52.

Gloucester *Pselnophorus brachydactylus* Clutterbuck p. 274 Ent. 52.

Highworth *P. c-album*, Arkell p. 261 Ent. 52.

Glamorgan, Hallett, 726.

Bath Sich p. 14 Ent. Rec. 81.

Wales and Hereford, Richards p. 190 Ent. 52.

Essex *Rhopalocera* Mathew p. 227 Entom. 52; Whittle p. 68 Ent. 52, Thurnall p. 90 T.c.; Dovecourt *C. nerii* Mathew p. 237 Ent. 52; Ongar, Russell pp. 49-51 Ent. Rec. 31.

Metropol. List. *C. fraxini* McLeod p. 189 Ent. 52.

Warwick *E. antiopa* King p. 260 Ent. 52.

Monk's Wood and Wansford Lister pp. 77-79 Ent. 52.

Suffolk *H. pinastri* Crisp p. 257, Sillan p. 258, Ent. 52.

Repton *Sesia asiliformis* Hayward p. 190 Ent. 52 and *Hesperia malvae* Hayward p. 168 Ent. 52.

Sherwood Daws p. 33 Ent. Rec. 31.

N.E. Derbyshire, *Rhop.*, Drabble & Drabble Naturalist 1919 pp. 10-12, Brown p. 79 t.c.

Yorkshire, Butterfield p. 278 Naturalist 1919; Huddersfield *C. nerii* Porritt p. 232 Ent. Mag. 55; Wharfedale, *Micro.*, Mansbridge Naturalist 1919 pp. 135 & 136; Hull, Stainforth Strather coll., 1620.

North England Harrison p. 38-40, 51-53 Entomol. 52.

Cheshire *Hesperia malvae* Thompson p. 189 Ent. 52.

Durham *P. moneta* Gardner p. 138 Ent. 52.

Cumberland *Aspilates ochrearia* Ford p. 167 Ent. 52; Windermere *A. praecox* Garnett p. 257 Ent. 52.

Witherslack and Rannoch, Lister, 1051.

Scotland, Rowland-Brown, 1471; Lammermuirs *Pol. artaxerxes*, Evans p. 96 Scott. Natural. 1919; Forth *Boarmia gemmaria* Evans p. 199 Scott. Nat. 1919; Edinburgh *Colias Hill* p. 199 Scott. Natural. 1919; Forfarshire *Colias* Carter p. 199 Scott. Nat. 1919; Rannoch Whittle pp. 54-56 Entom. 52; Decside *Endromis* Gowan p. 200 Scott. Nat. 1919; West Highlands *Z. achilleae* Reid p. 188 and Esson p. 189 Ent.

52; Isld. Coll., *Rhopalocera* Cowan p. 64 Scott. Natural. 1919; Inverness *R. lapponaria* Redmayne p. 141 Ent. 52; Shotland Saxby p. 21 Entomol. 52.

Ireland, Halbert, 722; *Argynnis aglaia*, Bonaparte-Wyse p. 12 Irish Nat. 28; N.E. Ireland Williams pp. 53-57 Ent. Rec. 31; Mayo *Argynnis aglaia*, Rutledge p. 72 Irish Nat. 28; Wicklow, *Leucophasia*, Tebb p. 92 Irish Nat. 28; Wexford, *Leucophasia*, Moffat p. 106 Irish Nat. 28; East Tyrone Greer pp. 72-74 Ent. Rec. 31; Greer p. 118 & 119 Irish Nat. 28; Waterford, Fleming p. 55 Irish Nat. 28; Cork, *C. edusa*, Westropp p. 120 Irish Nat. 28; *Leucophasia*, Bonaparte-Wyse p. 92 Irish Nat. 28.

#### *Trichoptera*.

Yorkshire *P. obsoleta*, Porritt p. 69 Ent. Mag. 55.

#### *Neuroptera*.

Berkshire *Chrysopa dorsalis* Collins p. 69 Ent. Mag. 55; Colchester *Chrysopa dorsalis* Harwood p. 18 Ent. Mo. Mag. 55.

#### *Diptera*.

Devon, Yerbury, 1880.

Glamorgan, Yerbury, 1881.

Wollington Coll. *Pocota* Arkell p. 261 Ent. 52.

Yorkshire, Cheetham p. 380 & p. 388 Naturalist 1919, additional list, Id. pp. 394 & 395 t.c. pp. 305 & 310 244 182 96 T.c.

Grango *Machimus atricapillus* Cheetham p. 19 Ent. Mag. 55.

Forfarshire, Carter p. 62 Scott. Natural. 1919; Perthshire Carter p. 233 Ent. Mag. 55.

#### *Hemiptera*.

Jersey Butler pp. 137 & 138 Ent. Mag. 55.

Cornwall *Notonecta halophila* Hutchinsonson p. 261 Ent. Mag. 55.

New Forest Lyle, 1073.

Chiltern hills, *Grypotes* Butler p. 17 Ent. Mo. Mag. 55.

Norfolk *Gerris asper* Hutchinsonson p. 33 Ent. Mag. 55.

Bradford *Elasmostethus*, Butler p. 17 Ent. Mo. Mag. 55.

Cumberland *Delphax* Day p. 17 Ent. Mo. Mag. 55.

Isle-of-man Newstead, 1212.

Caithness etc. Jackson, 860.

Ireland *Ploiaria culiciformis*, Johnson p. 91 Irish Nat. 28.

#### *Paraneuroptera*.

Bristol Hewer p. 191 Ent. 52.

North Wales Newton pp. 155-157 Ent. 52.

Yorkshire, Carter p. 399 Naturalist 1919.

Lancashire and Cheshire, Lucas, 1058.

#### *Orthoptera*.

Dorset Haines p. 238 Ent. 52; Bloxworth *T. verrucivora*, Lucas p. 280 Ent. 52.

#### *Aptera*.

Yorkshire and Derbyshire, Brown, 255.

### (e) Central and Eastern Europe.

#### *Insecta*.

Denmark, Wesenberg-Lund, 1834; Austria, Werner Zeitschr. wiss. Insbiol. 14 pp. 293-297; Poland, Pongrácz, 1347.

#### *Coleoptera*.

Csiki, 401; Eggers, Russia, 511; Jeannel, Roumania, 874; Künemann, 988; Langhoffer, 1011; Reitter, Roumania, 1389; Reitter, 1396; Reitter, Ural, 1399; Reitter, Carpathians, 1400; Scheidt, 1499; Stiller, 1633; Varendorff, Poland, 1751; Varendorff, Wilna, Ent. Bl. 13 pp. 83 and 84.

Wradatsch, flood of the Save; Ent. Bl. 11 pp. 181-187, 1915.

Denmark, Høeg, 800.

Holland, Everts, 546, 547, 548, 549.

Belgium; Ball, Alost, Dytiscidae, Gyrinidae, Bull. Soc. ent. Belgique 1 pp. 60-63; Frennet, Bull. Soc. ent. Belgique 1 pp. 50-52; Frennet & Guilleaume, 605; Guilleaume p. 113 and p. 125, Ann. Soc. ent. Belgique 59; Guilleaume p. 103, Bull. Soc. ent. Belgique 1; d'Orchymont, 1254;

d'Orchymont, *Laccobius ytenensis*, Ann. Soc. ent. Belgique 59 p. 23; Van Dorselaere, 1741, 1742.

Germany; Benick, 180; Bickhardt, Wiesbaden mole's nest. Ent. Bl. 14 p. 181-183; Frubstorfer, Tassin, Z itschr. wiss. Insbiol. 14 pp. 232 and 233; Füge, Memmert isld., 627; Hartmann, Schwarzwald, *Ennearthrön wagaë*, Ent. Bl. 13 1917; Meyer, 1148, 1149; Neresheimer & Wagner, 1210; Stock, 1634; Wanka, 1802.

#### *Hymenoptera.*

Strand, 1639.

Denmark; Jørgensen, 880, 881.

Holland, Lindemans, 1049; Oudemans, 1263, 1269; Smits Van Burgst, 1602, 1603.

Belgium; Bondroit, *Formicidae*, p. 69 Ann. Soc. ent. Belgique 59; Dubois, *Fossoria*, Bull. Soc. ent. Belgique 1 pp. 95-97.

Germany; †Cockerell, 341; Kieffer & Enslin, 941; †Kinsey, Baltic, 946; Trautmann & Trautmann, 1707; Wolff, 1875.

#### *Lepidoptera.*

Denmark; Høegh-Guldberg, 801; Jensen, Sealand, 876; Mikkelsen, 1154; Winther, 1874.

Germany; Bois-Reymond, 201; Hoffmann, 803; Kiefer, 927.

Russia, Sheljuzhko, 1587.

#### *Neuroptera.*

Holland, Willemse, 1862.

#### *Diptera.*

Hendel, 784; Schmitz, 1509, 1511, 1513; Villeneuve, 1775.

Denmark; Lundbeck, 1066; Nielsen, 1216, 1217; Rostrup, 1460.

Holland, Meijere, 1127.

Rousseau, *Notiphila stagnicola*, Bull. Soc. ent. Belgique 1 p. 101; Tonnoir, 1701, 1702, 1703.

Germany, Rübsamen, 1475, 1476.

Hungary, Riedel, 1420, 1421.

Archangelsk, Frey, 606.

#### *Hemiptera.*

Müller, 1191; Schumacher, 1553.

Denmark; Jacobson, Cat. *Psyllidae*, 862; Jensen-Haarup, 877.

Holland, Mac Gillavry, 1087.

Belgium, Schouteden, 1526, and *Phylloxerina salicis*, Ann. Soc. ent. Belgique 59 p. 24.

Germany, Schumacher, 1538, 1540.

Hungary; Horvath, 824, 831; Schumacher, 1550.

#### *Paraneuroptera.*

Schuster, Heilbronner, Ent. Zeitschr. Frankf. 29 p. 73.

#### *Orthoptera.*

Willemse, Netherlands, 1861.

Zacher, 1884.

#### *Aptera.*

Switzerland, Handschin, 731.

(f) France.

#### *Insecta.*

Navás, *Insecta* 9 p. 195.

#### *Coleoptera.*

Chobaut, 324; Clermont, 337; Deville, 441, 442, 443, 444; Friederichs, 608; Hubenthal, 845; Jeannel, 875; Lebon, Royan, *Scarabaeidae*, Miscell. ent. 24 p. 61; Peschet, 1305; Peyrimhoff, 1312; Pionneau, France mér., Miscell. ent. 24 pp. 41-43; Rapp, Südfrankreich, Ent. Bl. 14 pp. 45-54 1918.

#### *Hymenoptera.*

Gautier & Riel, 656; Honoré, 813; Lichtenstein, 1044, 1045; Lichtenstein & Picard, 1047; Pic, 1323; Picard, 1325, 1327.

#### *Lepidoptera.*

Demaison, 427; Etendard, Sarthe, *Araschnia levana*, Miscell. ent. 24 p. 70; Graham, 688a; Guignon, Fontainebleau *Lithocolletis platani*, Bull. Soc. ent. France 1919 p. 368; Mann & Eveleigh, Upper Lys valley, *Rhopalocera*, pp. 2 and 4, Entomol. 52; Miller, Pas-de-Calais and Somme pp. 164 and 165 Ent. 52; Morris, 1176; Oberthür, 1244 and *Syrichthus*, Bull. Soc. ent. France 1919 p. 218.

*Diptera*.

Becker, in Keilin, 906; Brolemann, 251, 252; Langeron, 1009; Péju, 1297; Pierre, 1340; Recroix, 1380; Villeneuve, 1774 and *Culex salinus*, Bull. Soc. ent. France 1919 p. 198.

*Hemiptera*.

Gelin, 660.

*Psocoptera*.

Lacroix, 1001.

## (g) South Europe and Mediterranean Basin.

*Insecta*, collectively.

Houard, 839; Jaap, 857; Lucas, 1059; Navás Neuropteroidea, 1201; Steck, 1625.

*Coleoptera*.

Apfelbeck, 36; Bedel, 114; Bolivar y Pieltain, 203, 204, 205, 206, 207; Clermont, 336; Csiki, 400, 402; Escalera, 542, 543; Fleischer, 584; Fuente, 628, 629; Jeannel, 873, 874; Kreklich-Strassoldo, Cairo, 978; Laboisière, 994; Moroder, 1175; Normand, 1221; Obenberger, 1228, 1231, 1238; Peyerimhoff, 1308, 1309, 1311; Portevin, 1355; Rasetti, 1378; Reitter, 1389, 1394, 1401, 1402; Schuster, 1556; Théry, 1679; Vidal, 1768, 1769; Zariquiey, 1889.

*Strepsiptera*.

Peyerimhoff, 1310.

*Hymenoptera*.

Alfken, 21; Duchaussoy, 470; Krausse, 977; Mercet, 1137, 1138, 1139, 1140, 1141; Morley, 1174; Santschi, 1486, 1491, 1492; Tavares, 1673; Timberlake, Sicily, 1696.

*Lepidoptera*.

Buresch, 271; Delbanty, Macedonia, pp. 139-141 Ent. 52; Graves, 695; Hampson, 730; Mace, 1086; Mendes, 1135; Rocci, 1431; Roch, 1433; Turati, 1711; Verity, 1761; Walsingham, 1800; Wilson, Macedonia, p. 166 Ent. 52.

*Trichoptera*.

Navás, 1203.

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*Neuroptera*.

Balkans, Mace pp. 239 & 240 Ent. 52; Navás, 1202, 1207, 1208.

*Diptera*.

Arias, 38; Becker, 107; Bezzi, 160, 168; Delanoë, 424, 425; Kieffer, 935; Niclot, 1213; Parrot, 1291; Pierre, Macedonia, 1338; Pittaluga & de Buen, 1342; Tavares, 1673; Verity, 1762; Villeneuve, 1777.

*Hemiptera*.

Bergevin, 135, 136, 137, 138, 140, 141; Divac, Servia and Macedonia, S.B. Ges. naturf. Fr. Berlin 1917 pp. 562 & 563; Horváth, Egypt, 820, 821, 826, 834, 836; Krumbach, 983; Schumacher, 1545, 1546, 1547.

*Paraneuroptera*.

Campion, Macedonia, 296.

*Orthoptera*.

Chopard, 325.

## (h) Caucasus, West &amp; Central Asia.

*Coleoptera*.

Champion, Arabia, 313, 314; Desbordes, 436; Doderò, 460; Eggers, 513; Fleischer, 585; Heyden, 793; Kreklich-Strassoldo, 978; Maulik, Arabia, 1123; Reitter, 1387, 1388, 1397.

*Hymenoptera*.

Cockerell, 343; Turner, 1724.

*Diptera*.

Brunetti, 265.

*Hemiptera*.

Horváth, Arabia, 825 & 838; Matsamura, 1121.

*Paraneuroptera*.

Morton, Mesopotamia, 1182.

Uvarov, 1733, 1734, 1735, 1736.

## Africa.

*Coleoptera*.

Achard, 1; Alluaud, 24, 25, 26; Arrow, 43, 45; Barker, 96; Bénard, 125; Benderitter, 127; Berlioz, 147; Bernhauer, 152, 156, 158; Bickhardt,

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175, 176, 178; Bourgoïn, 221; Caillol, 287; Cameron, 293; Champion, 310, 313, 314; Csiki, 403; Desbordes, 435, 437; Eggers, 514; Fleutiaux, 588; Grouvelle, 710, 712, 713, 715; Heller, 777, 778, 779; Hustache, 850; Kerremans, 917, 918; Kleine, 957; Kolbe, 974; Kreckich-Strassoldo, 978; Kriesche, 981; Kuntzen, 991; Laboissière, 995, 997, 998, 999, 1000; Lesne, 1034; Marshall, 1115, 1116; Maulik, 1123; Obenberger, 1232, 1233, 1234, 1239, 1240; Pic, 1316, 1320; Portevin, 1356; Spaeth, 1609, 1611; Wasmann, 1807, 1808, 1810, 1816, 1817; Wichmann, 1850, 1851; Zimmermann, 1892.

• *Hymenoptera*.

Bequaert, 131; Bridwell, 242, 243; Carpenter, 299; Cockerell, 360, 361; Elliott, 516; Enderlein, 528, 529, 530; Forsius, 597; Heymons, 796; Kieffer, 928; Kinsey, 947; Mocsáry, 1161; Morley, 1174; Santschi, 1488, 1489, 1490; Schouteden, 1517, 1521; Szépligeti, 1665, 1666; Timberlake, 1696; Turner, 1718, 1723; Wasmann, 1809; Waterston, 1820.

*Lepidoptera*.

Barker, 95; Clark, 330, 331; Devos, 445; Hall, 724; Hampson, 729, 730; Hardenberg, 734; Janse, 864, 865, 866; Jones, 890; Kaye, 903; Le Cerf, 1019, 1020; Meyrick, 1151; O'Neil, 1248, 1249; Prout, 1370, 1371; Rebel, 1379; Schouteden, 1520.

*Trichoptera*.

Lestage, 1042, 1043.

*Diptera*.

Alexander, 19; Becker, 109; Bezzi, 162, 163; Bouet, 219, 220; Brues, 261; Engel, 536; Gedoelst, 658; Ingram, 854; Johnson, 887; Kahl, 894; Kertész, 921, 925; Kieffer, 935; Ricardo, 1414; Rodhain & Bequaert, 1435; Rübsaamen, 1474; Schmitz, 1506; Stein, 1627; Villeneuve, 1771.

*Heteroptera*.

Bergroth, 143; Distant, 451; Horváth, 818, 820, 835, 838; Jeannel, 872; Schouteden, 1515, 1516, 1518, 1519, 1522, 1523, 1524, 1525; Schumacher, 1544.

*Homoptera*.

Brain, 229; Distant, 453, 454; Enderlein, 533; Funkhouser, 635; Melichar,

*Elliptoptera*.

Bedford, 117; Fahrenholz, 552.

*Thysanoptera*.

Bagnall, 68; Hood, 815.

*Ephemeroptera*.

Lestage, 1043.

*Paraneuroptera*.

Grünberg, 717; Ris, 1427.

*Orthoptera*.

Bolívar, 202; Karny, 897, 898; Sjöstedt, 1595.

*Aptera*.

Carpenter, 300.

Madagascar and Mascarene Islands.

*Insecta*.

Voeltzkow and others, Comores, 1781.

*Coleoptera*.

Alluaud, 24, 26; Arrow, Mauritius, 44; Bedel, 113; Bénard, Mauritius, 126; Bernhauer, 152, 158; Bourgoïn, 222, 223; Grouvelle, 715; Hustache, 849; Lesne, La Réunion, 1036; Obenberger, 1236; Pic, 1316, 1320; Portevin, 1356; Pouillaude, 1359, 1360; Spaeth, 1610.

*Hymenoptera*.

Santschi, 1488.

*Lepidoptera*.

Hampson, Seychelles, 730; Le Cerf, 1019, 1021, 1022; Meyrick, Seychelles, 1151; Prout, 1370.

*Diptera*.

Kertész, 925; Stein, Bourbon Mad. & Mauritius Réunion 1627.

*Hemiptera*.

Bergroth, 144, 145; Distant, 451; Horváth, 818, 819, 838; Jacobi, 861.

*Paraneuroptera*.

Grünberg, 717.

*Orthoptera*.

Chopard, 326; Karny, 896; Sjöstedt, 1595.

## Asia, Tropical and Eastern (including Japan).

*Insecta*.

† Cockerell, 358, 359; Fletcher, 586; Navás, 1206; Records of Ceylon spp.; Spol. Zeylan. 10 pp. 380–384.

*Coleoptera*.

Achard, Sikkin, 3, China, 4; Andrewes, 27, 28, 29, 31; Arrow, 44, 45; Bernhauer, 154; Bickhardt, 177; Blair, 186; Boucomont, 218; Bourgoin, 223 & Mekong, 222; Cameron, 292, 294; Champion, 307, 309, 311, 312, 313, 314; H. G. Champion, 315; Chapin, 316; Desbordes, 432, 434; Fleischer, Korea, 584; Fleutiaux, 589, 590; Gebien, 657; Gravely, 692; Grouvelle, 710, 715; Hubenthal, 846, 847; Kleine, 958; Kriesche, 982; Laboissière, 996; Lapouge, 1013; Lesne, 1035; Marshall, 1117; Maulik, 1122; Obenberger, 1227, 1232, 1233, 1238; Pic, 1316, 1319, 1320; Portevin, 1355, 1357; Prell, 1366; Reitter, Kashmir, 1388; Reitter, Chin. Turkestan, 1398; Reitter, Kashmir, 1403; d'Orchymont, 1254, 1256; Sampson, 1482; Schuster, Chinese Turkestan etc., 1557; Spaeth, 1611; Wasmann, 1812; Wichmann; Himalaya, 1851.

*Hymenoptera*.

Bridwell, Japan, *Hylaeus*, 242; Bridwell, Japan, *Atractodes*, 243; Cockerell, 342; Cockerell, Japan, 346; Cockerell, 347, 348, 349, 350; Dutt, 483; Elliott, 516, 517, 518, 519; Enderlein, 529; Friese, 609; Fullaway, 630; Gahan, 641; Kohl, Kashmir, Korea etc., 973; Mocsáry, 1161; Morley, 1174; Szépligeti, 1665, 1666; Timberlake, China, 1696; Turner, 1719, 1720, 1725; Viehmeyer, 1770.

*Lepidoptera*.

Allen, Kumaon *Rhop.* p. 870 J. Bombay Soc. 28; Durrant, 480; Godfrey, 680; Hampson, 729, 730;

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Le Cerf, 1025; Meyrick, 1151; Oberthür, 1243; Ormiston, Ceylon *Rhop.*, 1259; Prout, 1370, 1371; Rothschild, 1463; Strand, Formosa, 1638; Swinhoe, 1662, 1663; Turner, Japan *Rhop.*, 1714; Vincent, 1779; Wileman & South, Formosa, 1857; Zerny, Afghanistan, Chinese Turkestan, 1890; Zimmermann, 1893.

*Diptera*.

Alexander, Japan, 13; Becker, Formosa, 109; Becker, Tibet, 110; Cole, Japan, 374; Hendel, Formosa, 782, 783; Iyengar, 856; Kertész, 921; Kertész, Formosa, 920, 922, 923, 924, 925; Kieffer, 935; Kieffer, Formosa, 932; Malloch, 1092; Malloch, Formosa, 1093; Miyake, Japan, 1159; Ricardo, 1414; Riedel, 1422; Schmitz, 1506, 1507; Stein, 1627; Townsend, 1705; Villeneuve, Formosa, 1771, 1772.

*Heteroptera*.

Bergroth, 144; Distant, 451, 452, 455, 456; Horváth, 820, 824, 829, 832, 835, 838; Paiva, 1281, 1282; Poppius, 1350, 1351, 1352; Japan and Formosa, 1348; Schumacher, 1552; Japan, 1539.

*Homoptera*.

Baker, 77; Crawford, 395; Distant, 450; Enderlein, Ceylon, 538; Van der Goot, Ceylon *Aphid.*, 686; Green, 696; Matsumura, 1121; Melichar, 1131; Takahashi, Japan, *Aphidae*, 1668.

*Thysanoptera*.

Bagnall, 68; Hood, 816; Karny, 899.

*Isoptera*.

Oshima, 1261.

*Paraneuroptera*.

Fraser, 602, 603; Laidlaw, 1004.

*Orthoptera*.

Chopard, 327; Griffini, 701, 706.

## Asiatic Archipelago.

Java to New Guinea, incl. Philippines.

*Insecta*, collectively.

Banks, 89; Dodd, 459; Uichanco, 1728.

*Coleoptera*.

Andrewes, 29, 31; Arrow, 44; Bryant, 266; Champion, 313; Chapin, 316; Bickhardt, 170, 176, 178, 179; Blair, 186, 187; Banks, 91; Benick, 129; Fleutiaux, 587; Gebien, 657; Grouvelle, 710, 715; Györfi, New Guinea, 720; Heller, 774, 776, 780; Hubenthal, 846; Kerremans, 919; Kleine, 950, 956, 958, 962; Marshall, 1117; Obenberger, 1235, 1239, 1240; d'Orchymont, 1254; Pic, 1316, 1319, 1320; Roepke, 1438, 1440; Sampson, 1432; Schultze, 1528; Senna & Calabresi, 1575; Sharp, 1583; Spaeth, 1611; Wasmann, 1812.

*Strepsiptera*.

Hofeneder, 802.

*Hymenoptera*.

Bridwell, 240, 242; Cockerell, 342, 346, 348, 350, 364, 365, 366, 367, 368, 369, 370; Dodd, 458; Elliott, 516, 518; Enderlein, 528, 529, 530, 532; Friese, 609; Fullaway, 630, 631; Girault, 677; Kieffer, 930; Mocsáry, 1161; Timberlake, 1698; Viehmeyer, 1770; Wheeler, 1840; Williams, 1868; Roepke, 1439, 1443; Rohwer, 1451, 1455; Szépligeti, 1665, 1666.

*Lepidoptera*.

Banks, 87; Clark, 330; Eecke, 505; Hampson, 729, 730; Jordan, 891; Kaye, 903; Meyrick, 1151; Prout, 1370; Röber, 1436; Rothschild, 1463; Swinhoe, 1661, 1662, 1663; Wileman & South, 1856.

*Neuroptera*.

Banks, 85.

*Diptera*.

Banks, 88; Becker, 109; Bezzi, 161; Edwards, 497; Felt, 560; Kahl, 894; Kertész, 921, 924, 925; Kieffer, 933; Mangkoewinoto, 1108; de Meijere, 1128, 1129; Parker, 1287; Ricardo, 1414; Stein, 1627, 1628; Swellengrebel, 1656; Taylor, 1674; Townsend, 1705.

*Aphaniptera*.

Rothschild, 1464.

*Heteroptera*.

Bergroth, 144; Distant, 449, 451; Horváth, 820, 822, 823, 824, 835, 838; Leefmans, 1027; Poppius, 1348, 1350, 1351, 1352; Roepke, 1445.

*Homoptera*

Baker, 77, 78, 79; Cockerell, 345, 353, 371; Crawford, 395; Froggatt, 618; Funkhouser, 634; Melichar, 1131; Moulton, 1189; Muir, 1192.

*Thysanoptera*.

Hood, 815.

*Isoptera*.

Uichanco, 1729.

*Embioptera*.

Roepke, 1437.

*Paraneuroptera*.

Ris, 1425, 1427.

*Orthoptera*.

Hanitsch, 732; Karny, 896; Roepke, 1446.

## Australia and Tasmania.

*Insecta*, collectively.

Searle, 1567.

*Coleoptera*.

Arrow, 45; Bickhardt, 176; Blair, 186; Bridwell, *Bruchus*, Proc. Hawai. ent. Soc. 4 p. 41; Carter, 301; Elston, 521; Girault, 679; Goudie, 687; Grouvelle, 710, 711, 715; Kerremans, 919; Lea, 1014, 1015, 1016; Obenberger, 1239; Portevin, 1355; Prell, 1366; Senna, 1574.

*Hymenoptera*.

Brues, 258; Cockerell, 346; Elliott, 518; Girault, 678; Mocsáry, 1161; Morice, 1173; Szépligeti, 1665; Turner, 1717, 1721, 1722, 1726; Wheeler, 1843.

*Lepidoptera*.

Durrant, 480; Hampson, 729, 730; Meyrick, 1151; Swinhoe, 1661, 1662, 1663; Turner, 1712.

*Neuroptera*.

Banks, 85; Tillyard, 1686, 1688, 1693, † 1690, † 1691.

*Diptera*.

Bezzi, 164; Hendel, 784; Hill, 797; Kertész, 924, 925; Kieffer, 933; Rübsaamen, 1474; Taylor, 1674, 1675; Townsend, 1705.



*Hemiptera—Heteroptera.*

Bergroth, 144, 145; Horváth, 820, 835; Poppius, 1350, 1352.

*Thysanoptera.*

Bagnall, 68; Hood, 814.

*Lipoptera.*

Mjöberg, 1160.

*Orthoptera.*

†Tillyard, 1692.

## North America.

*Insecta*, collectively.

Banks, Canada, 86; †Cockerell, 341; Gibson, Canada, 664; Nicolay, 1214.

*Coleoptera.*

Bernhauer, 157; Blaisdell, 189, 190; Blatchley, 192, 193; Chittenden, 322; Davis, Florida, *Dorcasta obtusa*, J. New York ent. Soc. 27 p. 108; Dawson, 420, 421; Dury, 481; Fall, 554, 555, 556; Fisher, 579, 580, 581, 582; Kerremans, 919; Leng, 1031; Mickel, 1153; Morris, Keene, pp. 49–53 Canad. Ent. 51; Notman, 1222, 1223, 1224; Obenberger, 1234; Schaeffer, 1496; Sherman, 1589; Swaine, 1652; Timberlake, 1697; Van Dyke, Western N. Amer. distribution, 1746a; Van Dyke, 1747; †Wickham, 1852, 1853; †Wickham, 1854, Alaska, 1855.

*Hymenoptera.*

Banks, 92, 93; Bequaert, 132; Bradley, 228; Bridwell, 240, 242; Brues, 256, 260; Burrill & Smith, 276; Cockerell, 352, 355, 356, 363; †Cockerell, 351, 357; Cushman, 409, 410, 411; Felt, 562; Gahan, 639, 640, 642, 643, 644; Hall, 725; Kieffer, 928, 930; †Kinsey, 946; MacGillivray, 1088; Martin, California, *Schisax senex*, Ent. News 30 p. 231; Meusebeck, 1147; Mocsáry, 1161; Phillips & Emery, 1314; Rohwer, 1450, 1452, 1453; Sladen, 1599; Stevens, 1629; Timberlake, 1696; Weld, 1832; Wheeler, 1842, 1844.

*Lepidoptera.*

Barnes & Lindsey, 99; Barnes & McDunnough, 100; Bowman, 225;

Braun, 232, 233; Busck, 278, 280; Clark, 330, 331; Comstock & Comstock, 381; Dyar, 487, 495; Gunthrop, Kansas, *Eresia texana*, p. 257 Canad. Ent. 51; Hampson, 730; Heinrich, 772, 773; Meyrick, 1151; Meyrick, Alberta, *Orneodes huebneri*, p. 108 Ent. mo. Mag. 55; Ottolengui, 1262; Seitz, 1571; Skinner, 1597; Snyder & Shannon, 1608; Watson, New York *Rhopalocera*, J. New York ent. Soc. 27 p. 342 & 343; Woodruff, 1877.

*Neuroptera.*

Banks, 85.

*Diptera.*

Aldrich, 8, 9, 10; Alexander, 11, 14, 15, 17, 18, 20; Bequaert, 133; Brues, 264; †Cockerell, 340; Cole, 372; Cole & Lovett, 376; Cresson, 396; Dyar, 484, 486, 490; Felt, 558, 563, 564; Greene, Yukon riv., 698; Johnson, 884, 886; Kieffer, 934; McAtee, 1081; McAtee & Walton, 1082; Malloch, 1094, 1095, 1096, 1097, 1098, 1100, 1101, 1102, 1103, 1104, 1105, Labrador 1106; Mosier & Snyder, 1186, 1187; Parker, 1288, 1289, 1290; Reinhard, 1385; Smith, Indiana, *Syrphidae* p. 273 Canad. Ent. 51; Sturtevant, 1649; Townsend, 1705; Van Duzee, 1743, 1745, 1746.

*Heteroptera.*

Drake, 468, 469; Ferris, *Hesperocenes*, 574; Gibson, 669, 670; Hart & Malloch, 740; Knight, 964, 965, 966, 967, 968, 969, 970; McAtee, 1075, 1078; Olsen, 1247; Parshley, New England, Canad. Ent. 51 p. 70–72; Poppius, 1348, 1349; Van Duzee, 1744.

*Homoptera.*

Baker, 72, 73; Davis, 416, 417, 418, 419; Ferris, 567, 572, 573; Funkhouser, 636; Gibson, 667; Herbert, 790; McAtee, Nova Scotia, 1079; Davidson, 414; Wilson, 1870, 1871, 1872; Woodruff, 1878.

*Thysanoptera.*

Bagnall, Canada, 68; Ross, Ontario, *Taeniothrips inconsequens*, p. 85 Canad. Ent. 51; Treherne, 1710.

*Lipoptera.*

Baker, 76.

*Elliptoptera*.

Ferris &amp; Nuttall, 575.

*Paraneuroptera*.

Calvert, 288; Howe, 842, 843, 844; Kennedy, 915.

*Orthoptera*.

Hebard, 754, 755; Morse, 1180, 1181; Rehn, 1382, 1383; Rehn &amp; Hebard, 1384; Walker, 1797.

*Aptera*.Folsom, *Collembola*, 593.

## Central America.

*Coleoptera*.

Arrow, 45; Barber, 94; Benick, 129; Bernhauer, 153; Grouvelle, 715; Kerremans, 919; Notman, Lower California, 1223; Obenberger, 1233, 1234, 1239; Pic, 1316; Spaeth, 1612, 1613.

*Hymenoptera*.

Cockerell, 342, 343, 346, 352; Grandi, 691; Enderlein, 528, 529; Mocsáry, 1161; Szépligeti, 1666; Timberlake, 1696.

*Lepidoptera*.

Clark, 329, 330, 331; Dognin, 461; Dyar, 487, 488, 494; Hampson, 730; Kaye, 903; Seitz, 1571; Skinner, 1596.

*Neuroptera*.

Banks, 85.

*Diptera*.

Alexander, 16; Becker, 109; Cresson, 396; Dyar, 490; Dyar &amp; Knab, 496; Kieffer, 934; Ludlow, 1064; Stein, 1627; Townsend, 1705; Van Duzee, 1743, 1745, 1746.

*Hemiptera—Heteroptera*.

Gibson, 665, 670; Horváth, 838.

*Hemiptera—Homoptera*.

Davis, Lower California, 417; Gibson, 668.

*Paraneuroptera*.

Calvert, 289, 290; Ris, 1427.

*Orthoptera*.

Chopard, 326; Hebard, 752, 753, 754; Karny, 896; Rehn, 1382.

Antilles. Incl. Bermudas, excl. Trinidad and Tobago.

*Insecta*, collectively.

Stoner, Barbados &amp; Antigua, 1635.

*Coleoptera*.

Benick, 129; Bickhardt, Guadeloupe, 178; Grouvelle, 175; Holland &amp; Schwarz, 806; Obenberger, 1232; Pic, 1316.

*Hymenoptera*.

Cockerell, 342; Brues, Hayti, 263; Kieffer, 928, 930.

*Lepidoptera*.

Clark, 329, 331; Dyar, 487; Hampson, 730.

*Neuroptera*.

Lacroix, 1002.

*Diptera*.

Alexander, 16; Cola, 372; Dyar, 490; Dyar &amp; Knab, 496; Johnson, 883.

*Hemiptera*.

Gibson, 666; Heidemann &amp; Osborn, 763; Poppius, 1349.

*Paraneuroptera*.

Calvert, 288.

## South America, including Trinidad.

*Coleoptera*.

Achard, 2; Aurivillius, 52; Benick, 129; Bernhauer, 153, 155; Bickhardt, 170, 176; Blair, 186; Bodkin, 194; Bruch, 255c, 255d, 255e, 255g, 255h, 255k; Desbordes, 433; Grouvelle, 708a, 715; Kerremans, 919; Kleine, 954; Melzer, 1134; Obenberger, 1233; d'Orchymont, 1254; Peschet, 1304; Pic, 1316, 1317, 1318, 1320, 1322; Portevin, Chile, 1355; Spaeth, 1611, 1613, 1614; Wasmann, 1814, 1815; Wichmann, 1850, 1851.

*Hymenoptera*.

Bruch, 255a, 255b, 255f, 255i; Cockerell, 343, 344, 346, 352, 362;

Enderlein, 528, 529, 530; Gahan, Trinidad, 644; Gallardo, 646, 647, 648, 649; Holmberg, 812; Mocsáry, 1161; Rohwer, Trinidad, 1454; Santschi, 1487; Szépligeti, 1665, 1666; Timberlake, 1696; Wheeler, Tobago isld., 1845.

*Lepidoptera*.

Clark, 329, 330, 331; Dognin, 461, 462; Dyar, 487, 488; Giacomelli, 663; Hall, 724; Hampson, 730; Jörgensen, 882; Kaye, 902, 903, 904; Le Cerf, 1024; Lindsey, 1050; Mengel, 1136; Meyrick, 1151; Prout, 1370, 1371; Riley, 1423; Rothschild, 1461; Schaus, 1498; Seitz, 1571; Talbot, 1669.

*Trichoptera*.

Banks, 85.

*Neuroptera*.

Banks, 85; Navas, 1205.

*Diptera*.

Alexander, 16; Becker, 109; Bezzi, 167; Bonne-Wepster & Bonne, 209, 211, 212; Cole, 375; Dyar, 485, 489, 490, 492; Dyar & Knab, 496; Frey, 607; Johnson, 883; Kahl, 894; Kertész, 921, 923, 925; Kieffer, 934; Rübsaamen, 1474; Schmitz, 1506; Stein, 1627; Tavares, 1671, 1672; Townsend, 1705.

*Hemiptera—Heteroptera*.

Bergroth, 145; Breddin, 235; Gibson, 669, 670; Horváth, 828, 835, 838; Poppius, 1352.

*Hemiptera—Homoptera*.

Enderlein, 533; Funkhouser, 637; Hempel, 781; Morrison, 1178, 1179; Muir, 1194.

*Thysanoptera*.

Bagnall, 68; Brèthes, 236a.

*Embioptera*.

Navás, 1204.

*Paraneuroptera*.

Ris, 1426, 1427.

*Orthoptera*.

Chopard, 326; Hebard, 756; Karny, 896.

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*Colon elongatum* sp. n. Ontario p. 98, NOTMAN J. New York ent. Soc. 27.

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p. 124, *armaticrus* p. 125, *flavipluma*, Hungary, *caikiana* Kazan, p. 126, spp. n., KIEFFER Ann. Mus. Hungar. 17.

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- Eulalia laufferi*, BECKER p. 304 Ann. Mus. Hungar. 13 1915.
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*angustus* sp. n. New Guinea p. 633,  
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*superbus* var. n. *kolenatii* p. 465 and  
*erythropus* p. 466, HORVÁTH Ann.  
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*longicornis* Celebes p. 655, *confusus*  
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*limbicollis* Dammer, p. 658, *atrorufus*  
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*gibbicollis* Sumatra p. 632, spp. n.,  
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*Cymophyes*, *macreta* sp. n. N.S. Wales  
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*Microcaenocoris*, *nimbus* sp. n. New  
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*Thunbergia* subg. n. of *Caenocoris*  
type *marginatus* Thunb., HORVÁTH  
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*merus nigro-aeueus* Er., BERGROTH  
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*aethiopicus*, *rhodesianus*, Africa, spp. n.  
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sp. n. India, DISTANT p. 221 T.c.

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Mats.), HORVÁTH p. 660 Ann. Mus.  
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*schouledeni* is var. of *confusus*, p. 219,  
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*collaris* sp. n. Tonkin, DISTANT p. 1  
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*spinus* Ashm., McATEE J. New York  
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*Auchenoplus* gen. n. for *Metacanthus*  
*bilineatus* Dist., BERGROTH p. 179  
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Washington 32.

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*Monanthia ? necopina* sp. n. U.S. p. 420, DRAKE T.c.

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*Burgeonia* gen. n., *burgeoni* sp. n. Congo p. 134 with var. *maynei* p. 135, SCHOUTEDEN Rev. zool. afric. 6.

*Calisius lativentris* var. n. *nypelsi* p. 128, SCHOUTEDEN T.c.—*C. stappersi* sp. n. Congo p. 65, SCHOUTEDEN Rev. zool. afric. 7.

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*Carcinomma simile* sp. n. E. Africa p. 112, HORVÁTH T.c.

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*Cleptriola bayeri*, *togoensis*, spp. n. Africa p. 216, SCHOUTEDEN T.c.—*C. nigrolutea* var. n. *discolor*, HORVÁTH p. 116 Ann. Mus. Hungar. 12 1914.

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*quercalbac* p. 624, *semivittatus* p. 626, *omnivagus* p. 627, *johnsoni* p. 629, *clavigenitalis* p. 632, *canadensis* p. 634 with var. *binotatus*, *ostryae*, p. 635, *laurae* p. 636, spp. n., Amer. bor.; and the following varr. n., *pratensis* var. *rubidus* p. 565, *convexicollis* var. *coloratus* p. 569, *elisu* *viridiscutatus* and *e. hesperus* p. 575, *distinguendus* *tahoensis* p. 587, *rubicundus* *winnipegensis* p. 591, *olivaceus* *viridiusculus* p. 600; KNIGHT Bull. 391 Cornell Exp. Stat. 1917 figs.—*L. (Neolygus) nyssae* sp. n. Alabama p. 43 fig., *tiliae* var. n. *heterophyllus* p. 44, KNIGHT Bull. Brooklyn ent. Soc. 13 1918.—*L. (Neolygus) parrotti* sp. n. New York, *univittatus* ♂, KNIGHT p. 21 Bull. Brooklyn ent. Soc. 14.

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Utah pl. xx f. 6, DAVIS p. 221 T.c.

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gascar p. 528, figs. spp. n., JACOBI  
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sp. n. Cauca, MUIR p. 35 figs. 6 & 7  
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f. 12, spp. n. Demerara p. 38, MUIR  
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*guttula* Formosa p. 286 f. 10, *guttu-  
linervis* Japan p. 287, spp. n., MATSU-  
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spp. n., MUIR Philippine J. Sci. 15.

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# XIII. PROCHORDATA

INCLUDING

## ENTEROPNEUSTA AND PTEROBRANCHIA

BY

C. TATE REGAN, F.R.S.

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# XIV. VERTEBRATA

(GENERAL)

*i.e.*, complementary to Mammalia, Aves, Reptilia, and Pisces.

BY

D. SHARP.

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# XV. PISCES

BY

C. TATE REGAN, F.R.S.

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†*Rogenio vanclvei* sp. n. Miocene California, JORDAN and GILBERT Stanford Univ. Publ. 1919 p. 24 pl. xxxi fig. 3.

†*Eritima evides* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 40 pl. xxiii fig. 1.

†*Oxymandias* gen. n, *gilberti*, sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 43 pl. xxii.

†*Sebastavus* gen. n. *vertebralis* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 50 pl. xxxi fig. 1.

†*Hayia* gen. n. *daulica* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 55 pl. xxii fig. 2.

†*Diatomoeca* gen. n. *zatima* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 58 pl. xxiii fig. 3.

†*Emmachaere* gen. n. *rhachites* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 59 pl. xxviii fig. 2

†*Ectasis* gen. n. *proriger* sp. n. Pliocene, California, JORDAN and GILBERT t.c. p. 62 pl. xxii.

The following are based on remains of fishes, chiefly scales, from the Cretaceous of N. America, by COCKERELL 25:—

†*Petalolepis fibrillatus* sp. n.

†*Cycloides incertus* sp. n.

†*Holcolepis pulchellus*, *deilcatus*, *transversus*, *obliquus*, spp. n.

†*Helmintholepis* gen. n. *vermiculatus* sp. n.

†*Chicolepis* gen. n. *punctatus* sp. n.

†*Hypsodon radiatulus*, *granulosus*, sp. n.

*Pomolobus chicoensis* sp. n.

†*Leucichthyops* gen. n. *vagans* sp. n.

†*Cyclolepis stendinus* sp. n.

†*Erythrinolepis* gen. n. *mowriensis*, *chicoensis*, spp. n.

†*Halecodon* gen. n. *denticulatus* sp. n.

†*Echidnocephalus americanus*, *pacificus* spp. n.

†*Hemilampronites hesperius* sp. n.

†*Centrarchites* gen. n. *coloradensis* sp. n.

## PROTOSPONDYLI.

## †EUGNATHIDAE

†*Ainia* gen. n. = *Callopterus praeocc*, JORDAN Proc. Ac. Philad. 70 p. 344.

## AMIIDAE.

†*Urocles* gen. n. = *Megalurus praeocc*, JORDAN Proc. Ac. Philad. 70 p. 343.

## †ASPIDORHYNCHIDAE.

†*Vinctifer* gen. n. type *Belonostomus comptoni*, JORDAN Proc. Acad. Philadelphia 71 pl. 210.

## GINGLYMODI.

*Atractosteus lapidosus* sp. n. Pleistocene of Florida, HAY Proc. U.S. Nat. Mus. 56 p. 110 pls. xxvi fig. 4 xxviii fig. 8.

*Lepidosteus chondrocranium*, ALLIS 4.

## ISOSPONDYLI.

†*Rhomurus* gen. n. *fulcratus* sp. n. Soledad, California, JORDAN Stanford Univ. Publ. 1919 p. 9 pls. iv figs. 3 4 v fig. 1.

## †PHOLIDOPHORIDAE.

†*Ganolytes* gen. n. *cameo* sp. n. Soledad, California, JORDAN Stanford Univ. Publ. 1919 p. 6 pls. ii fig. 3 iv figs. 1 & 2.—*G. clepsydra* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 23 pl. xi fig. 1.

†*Pleurophotis formosa* sp. n. Purbeck Beds, WOODWARD Monogr. Palaeont. Soc. 1919 p. 115 figs.

## †LEPTOLEPIDAE.

†*Pachythrissops* gen. n. *laevis* sp. n. Purbeck Beds, WOODWARD Monogr. Palaeont. Soc. 1919 p. 128 figs.

†*Thrissops curtus* p. 137 pl. xxvi fig. 1, *mollossus* p. 138 pl. xxvi fig. 2 spp. n. Purbeck Beds, WOODWARD t.c.

## ELOPIDAE.

†*Ennelichthys* gen. n. *derbyi* sp. n. Cretaceous, Brazil, JORDAN Proc. Acad. Philadelphia 71 p. 208.

†*Branmerion* gen. n. type *Calamopleurus vestitus*, JORDAN t.c. p. 209.

## CLUPEIDAE.

*Clupea hadleyi* sp. n. Miocene of California, JORDAN and GILBERT Stanford Univ. Publ. 1919 p. 29 pl. xiii.—*Clupea harengus*, BJERKAN 14, 15; HUNTSMAN 56; JOHANSEN 60; LEA 79; MEEK 93; SAVAGE 122.

*Sardina neophilchardus*, McCULLOCH 91.

†*Iquius* gen. n. *nipponicus*, sp. n. Tertiary, Japan, JORDAN Proc. Calif. Acad. 9 p. 271 pl. xx.

†*Xyne* gen. n. *grex* sp. n. Miocene, California, JORDAN and GILBERT Stanford Univ. Publ. 1919 p. 25 pls. ix fig. 1 x fig. 2 xi figs. 2 3.

†*Alisea* gen. n. *grandis* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 28 pl. xvii fig. 3.

†*Azalois* gen. n. *angelensis* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 32 pl. xv. fig. 2.

†*Ellima elnodenae* p. 26 pl. xii fig. 1 *barbarae* p. 27 pl. ix fig. 3 spp. n. Miocene, California, JORDAN and GILBERT t.c.

†*Ellimichthys* gen. n. type *Ellima longicostatum*, JORDAN and GILBERT t.c. p. 27.

†*Smithites* gen. n. *elegans* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 30 pl. xxix fig. 3.

†*Lygisma* gen. n. *tenax* sp. n. Miocene, California, JORDAN and GILBERT t.c. p. 33 pls. viii fig. 2 xiv fig. 1.

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# XVI. REPTILIA AND BATRACHIA

ARRANGED BY

C. TATE REGAN, F.R.S.

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ARRANGED BY

W. L. SCLATER, M.A.

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The arrangement of Sharpe's "Hand-list of Birds" is here used; where generic names differ, the name in the Hand-list is prefixed in square brackets.

Full references are given only in the case of new genera and species. In other cases the numeral in Clarendon refers to the List of Titles, where the full reference will be found.

## ORDER ARCHÆOPTERYGES.

†*Archaeornis*\* gen. n. for the Berlin example *Archaeopteryx siemensis*, PETRONIEVICUS Proc. Zool. Soc. London 1917 p. 5 foot-note.

## ORDER RHEIFORMES.

*Rhea darwini* flexion of leg-joint, VIRCHOW 774.—*Pterocnemia tarapacensis garleppi* in Catamarca, Argentine, DABBENE 188 p. 259.

## ORDER STRUTHIONIFORMES.

*Struthio* genetics and variation of the germ-plasm, DUERDEN 208; tarsal callosities, DUERDEN 211.—*S. camelus* and *S. australis* experiments and results of hybridization, DUERDEN 209, 210.—*S. camelus syriacus* subsp. n. Syrian desert, note on the type-locality of the typical form and key of known forms, ROTHSCHILD Bull. B. O. C. 89 p. 83.

## ORDER CASUARIIFORMES.

*Dromaeus irroratus* not a distinct species, RENSHAW 610.

## ORDER DINORNITHIFORMES.

†*Dinornis robustus* in the Lower Wanganui [tertiary] beds of New Zealand, MARSHALL 468.

## ORDER ÆPYORNITHIFORMES.

†*Æpyornis maximus* note on the egg, BRADBURY 95

## ORDER TINAMIFORMES.

*Tinamus tao weddelli* taxonomic note, CHUBB 141 p. 6.

\* Accidentally omitted from Aves for 1917.

*Crypturus idoneus* sp. n. Colombia, TODD Proc. Biol. Soc. 32 p. 117.—*Crypturellus parvirostris* new to Argentina, DABBENE 188 pp. 260 552.—*C. garleppi affinis* subsp. n. Bolivia, CHUBB Ibis 1919 p. 8.

*Nothoprocta curvirostris* nestling plumage, CHUBB 141 p. 11.

*Calopezus elegans formosus* caeca figured, CHUBB 141 p. 14.

## ORDER GALLIFORMES.

Game birds of India, Burma and Ceylon pts. 26–28 with descriptions of the forms of *Lophophorus* and *Tragopan* and coloured plates of *Lophophorus refulgens* and *Tragopan b. blythi*, BAKER 39.

List of the Megapodidae with remarks on classification, taxonomy and distribution, SHUFELDT 689.

*Megapodius nicobariensis abbotti* subsp. n. Great and Little Nicobar Is., OBERHOLSER Proc. U.S. Nat. Mus. 55 p. 401.—*M. tumulus* economic relation to spread of Prickly Pear, BROOKES 98.

*Leipoa ocellata* mound-building, habits, ROSS 638.

*Penelope aequatorialis* history and nomenclature, CHUBB 141 p. 10.

*Chamaepetes goudotii* races discussed, *C. g. antioquiensis* subsp. n. Colombia, CHUBB Ibis 1919 p. 22: *C. fagani* figured with addt. description, *id. ibid* p. 24.

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# XVIII. MAMMALIA

ARRANGED BY

MARTIN A. C. HINTON.

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*Ziphius cavirostris* on coast of Queensland, LONGMAN Proc. Q. Soc. Queensland 31 p. 90; Note on two specimens on coast of Málaga, CABRERA Madrid Bol. Soc. Esp. Hist. Nat. 19 p. 468.

#### IX.—EDENTATA.

*Bradypus tridactylus* habits, LUEDERWALDT Rev. Mus. Sao Paulo 10 p. 793.

*Euphractus sexcinctus flavimanus* Desmarest antedates *E. s. gilvipes* Allen, OSGOOD J. Mamm. Baltimore 1 p. 33.

*Manis* taxonomic value of tail characters p. 17; species represented in pl. 74 Cuvier's Règne Animal p. 429, ANTHONY Bul. Muséum Paris 1919.

*Orycteropidae* account of U.S. Nat. Mus. collection from East Africa, HOLLISTER U.S. Nat. Mus. Bul. 99 pt. ii p. 169.

†*Thinobadistes segnis* gen. et sp. n., Pleistocene Florida, HAY Proc. U.S. Nat. Mus. 56 p. 104.

*Tolypeutes matacus* Desmarest replaces *conurus* Geoff., OSGOOD J. Mamm. Baltimore 1 p. 33.

*Zaedyus pichiy* Desmarest replaces *ciliatus* Fisher, OSGOOD J. Mamm. Baltimore 1 p. 33.

#### X.—MARSUPIALIA.

*Marsupialia* Review of genera, characters, habits, literature and distribution, CABRERA Genera Mammalium Madrid 1919 p. 23.

*Amperta* gen. n. for *Chaetocercus cristicauda* Kreff, CABRERA Gen. Mamm. p. 65 [= *Dasyercus*, Peters, 1875].

*Didelphidae* key to genera, CABRERA Gen. Mamm. p. 29.

*Holothylax* gen. n. for *Didelphis opossum* L., CABRERA Gen. Mamm. p. 47 [= *Metachirops*, Matschie, 1916].

*Minuania* gen. n. for *Didelphis dimidiata* Wagner, CABRERA Gen. Mamm. p. 43.

*Trichosurus vulpecula* development of urogenital system, FRASER J. Anat. London 53 p. 97.

#### XI.—MONOTREMATA.

*Monotremata* Review of Genera characters, habits, literature and distribution, CABRERA Genera Mammalium Madrid 1919 p. 9.



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