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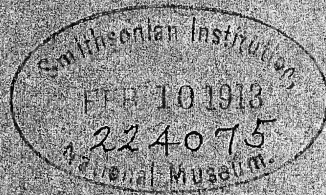
OF

SCIENTIFIC LITERATURE

ELEVENTH ANNUAL ISSUE

N

ZOOLOGY



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OF

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ELEVENTH ANNUAL ISSUE

N

ZOOLOGY

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BY THE

ROYAL SOCIETY OF LONDON

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HARRISON AND SONS, 45, ST. MARTIN'S LANE

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VOLUME THE FORTY-EIGHTH

BEING

RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

1911

COMPILED BY THE REGIONAL BUREAUS OF THE INTERNATIONAL CATALOGUE OF
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SUPPLEMENTED AND ARRANGED FOR THE ZOOLOGICAL SOCIETY
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BY D. SHARP, H. M. WOODCOCK, IGERNA B. J. SOLLAS, C. L. BOULENGER,
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Papers and Memoirs intended for this work should be addressed to "THE EDITOR of the Zoological Record, Zoological Society, Regent's Park, London, N.W." It is earnestly requested that in the case of separately-printed copies of papers so forwarded, the *original pagination* may be indicated.

EXPLANATORY.

This Volume is printed in twenty Divisions, as enumerated on p. xii.

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 are given at the right-hand top corner of the right-hand pages. The date 1911 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.

A List of Abbreviations of Titles of Journals is given at the end of the volume. This List includes not only journals actually indexed in this volume, but also journals that have been indexed in previous volumes. It should therefore be a fairly complete List of Journals that contain Zoological papers.

The Literature indexed is mainly that of 1911 but includes entries for 1901-1910 that have been received too late for inclusion in previous volumes of the International Catalogue.

The two title-pages show that Volume N (Zoology) of the Eleventh annual issue of the International Catalogue of Scientific Literature and Volume XLVIII of the Zoological Record are identical.

The proposal for an amalgamation of the Zoological Record with Volume N of the International Catalogue was approved by the International Convention which met in London in July, 1905. The agreement concluded with the Zoological Society of London provides that the amalgamation shall be for a period of five years, covering the literature of 1906-1910; at the end of this period each party to the agreement may resume the independent issue of its annual volumes, preserving the continuity of its series.

Subscribers to the Zoological Record will receive the volumes bound uniformly with previous volumes of the Record, while subscribers to the International Catalogue will receive their volumes in covers uniform with other volumes of the Catalogue.

The Schedules of Classification are bound up with the volumes intended for subscribers to the International Catalogue, but are absent from the volumes bound uniform with the Zoological Record.

The volume is arranged in accordance with these Schedules, but in one or two instances, notably in the case of Section XII Insecta, the Editor has adopted a modified arrangement.

CONTENTS.

- I. COMPREHENSIVE AND GENERAL ZOOLOGY.
 - II. PROTOZOA.
 - III. PORIFERA OR SPONGIAE.
 - IV. COELENTERATA.
 - V. ECHINODERMATA.
 - VI. VERMIDEA: including Gephyrea and Pterobranchiata.
 - VII. BRACHIOPODA AND BRYOZOA OR POLYZOA.
 - VIII. MOLLUSCA.
 - IX. ARTHROPODA (GENERAL).
 - X. CRUSTACEA.
 - XI. ARACHNIDA AND MYRIOPODA; including also GIGANTOSTRACA, EURYPTERIDA, PROTOTRACHEATA.
 - XII. INSECTA.
 - XIII. PROCHORDATA = TUNICATA, CEPHALOCHORDATA, ENTEROPNEUSTA.
 - XIV. VERTEBRATA (GENERAL).
 - XV. PISCES.
 - XVI. REPTILIA AND BATRACHIA.
 - XVII. AVES.
 - XVIII. MAMMALIA.
- ALPHABETICAL INDEX OF NEW NAMES OF GENERA AND SUBGENERA.
- LIST OF ABBREVIATIONS AND OF TITLES OF JOURNALS.

International Catalogue of Scientific Literature

SCHEDULE
OF
CLASSIFICATION.

(N) ZOOLOGY

(N) ZOOLOGY.

EXPLANATORY.

OWING to the great extent of Zoology, and the consequent specialisation that occurs amongst its workers, and because also of the desire that parts of the Zoological Catalogue shall be complete each one in itself, Zoology is divided into "Branches." These Branches, though primarily determined by the natural divisions of the animal kingdom, do not entirely correspond therewith, because of the great difference in the extent of the natural divisions. Some of these divisions (Phyla, or Classes) are consequently treated together, while others are divided into more than one Branch. When a division of this kind is adopted, there is also a Branch in which the divisions are still treated together as one whole, viz., Arthropoda, 2400-2431, and Vertebrata, 5200-5231. These two Branches will include only works of a wide scope. Thirty Branches are adopted, under the numbers 0100 to 6031, and there is also a comprehensive Branch numbered 0000-0231.

The subject matter of Zoology proper (as distinguished from the mode of arrangement of the animals alluded to above) is arranged under eight heads (or great Subjects). These eight Subjects all recur under each of the thirty Branches. Each Subject is indicated by a number, the terminal two digits of which are the same in every Branch. These great subjects will be found under 0207 to 0231.

Each great subject is divided into sub-divisions which are not numbered.

(N) ZOOLOGIE.

ERLÄUTERUNG.

BEI dem grossen Umfange der Zoologie und bei der hieraus sich ergebenden Specialisierung unter ihren Forschern, und ferner, weil der Wunsch besteht, dass einzelne Teile der zoologischen Bibliographie ein in sich geschlossenes Ganzes darstellen möchten, ist es als notwendig befunden, die Zoologie nach „Zweigen“ abzutheilen.

Diese Zweige sind zwar in erster Linie nach den natürlichen Gruppen des Tierreichs bestimmt, entsprechen ihnen aber doch nicht völlig, da der Umfang der einzelnen natürlichen Gruppen zu verschieden ist.

Demgemäss sind einzelne dieser Gruppen (Phyla oder Klassen) mit einander zusammengefasst, während andere in mehrere Zweige geteilt sind. In den Fällen, wo eine solche Teilung vorgenommen ist, giebt es auch einen Zweig, in dem die betreffende Gruppe ungeteilt als Ganzes behandelt wird, nämlich Arthropoden, 2400-2431 und Vertebraten, 5200-5231. Diese beiden Zweige sollen nur Werke allgemeinerer Art enthalten. Im ganzen sind unter Nummer 0400 bis 6031 dreissig Zweige angenommen und dazu kommt noch ein alles umfassender, unter Nummer 0000 bis 0231.

Der sonstige Stoff der Zoologie (im Unterschied von der Art der Anordnung der Tiere, von der bisher die Rede war) ist auf acht Kapitel (oder Hauptgegenstände) verteilt. Diese acht Gegenstände kehren bei jedem der dreissig Zweige wieder. Jeder Gegenstand ist durch eine Nummer bezeichnet, deren letzte beide Ziffern in allen Zweigen die gleichen sind.

Diese Hauptgegenstände findet man unter 0207 bis 0231.

Jeder Hauptgegenstand ist in Unterabteilungen geteilt, die nicht numeriert sind.

(N) ZOOLOGIE.

EXPLICATION.

ÉTANT donnée d'une part la grande extension de la Zoologie, qui force les adoptes de cette science à se spécialiser, et d'autre part la nécessité de rendre les diverses parties du Catalogue zoologique indépendantes les unes des autres, et aussi complètes que possible, on a jugé nécessaire de diviser la Zoologie en un certain nombre de "branches." Ces branches ont été établies autant que possible d'après les divisions naturelles du règne animal; toutefois elles ne correspondent pas toujours exactement à ces divisions, en raison des grandes différences qui existent dans l'étendue de celles-ci. Il en résulte que certaines divisions (phyla, ou embranchements) sont traitées ensemble, tandis que d'autres sont partagées en plusieurs branches. Dans ce dernier cas il y a ordinairement une branche qui traite l'ensemble d'un embranchement, par exemple, Arthropodes, 2400-2431, et Vertébrés, 5200-5231. Ces deux branches ne comprennent que des ouvrages traitant un sujet assez vaste. On a adopté trente branches, portant les indices 0400 à 6031. Il y a en outre une branche de généralités portant l'indice 0000-0231.

La Zoologie considérée en elle-même, indépendamment des subdivisions en groupes auxquelles il vient d'être fait allusion, est partagée en huit chapitres (ou grandes catégories de sujets). Ces huit catégories se répètent dans chacune des trente branches, et sont indiquées chacune par des nombres dont les deux derniers chiffres sont les mêmes dans toutes les branches. Elles se trouvent sous les indices 0207 à 0231. Chacune d'elles se partage en subdivisions qui ne portent pas d'indices spéciaux.

(N) ZOOLOGIA.

SPIEGAZIONI.

IN causa della grande estensione della zoologia, e della conseguente specializzazione che esiste tra i suoi cultori, e perchè è desiderabile che le parti del Catalogo zoologico siano complete ciascuna per sè stessa, si è trovato necessario dividere la zoologia in "rami." Questi rami, qualunque principalmente determinati dalle naturali divisioni del regno animale, non corrispondono interamente ad esse in causa della grande differenza nella estensione delle divisioni naturali. Alcune di queste divisioni (phyla, oppure classi) sono conseguentemente trattate insieme, mentre che altre sono divise in più di un ramo. Quando una divisione di questo genere è adottata, vi è anche un ramo nel quale le divisioni sono tuttavia trattate insieme come un complesso, p. es. Arthropoda, 2400-2431, e Vertebrata, 5200-5231. Questi due rami includeranno soltanto opere di largo soggetto. Trenta rami sono adottati, sotto i numeri 0400 a 6031, e inoltre è incluso un ramo comprensivo col numero 0000-0231.

La materia della zoologia comprensiva (distinta da quelli dei gruppi degli animali qui sopra accennati) è disposta sotto otto capitoli (o grandi soggetti). Questi otto soggetti tutti si ripetono in ognuno dei trenta rami. Ciascun soggetto è indicato da un numero, del quale le due ultime cifre sono le stesse in ciaschedun ramo. Questi grandi soggetti si trovano sotto i numeri da 0207 a 0231. Ciascun grande soggetto è diviso in sottodivisioni, che non sono numerate.

INSTRUCTIONS.

The registration numbers used in Zoology consist of four figures, of which the first two indicate the taxonomic position of the animal or animals dealt with and the last two the heading under which the paper is to be indexed.

Thus, in the registration number 2611 the figures 26 indicate *Crustacea*, while the figures 11 denote *Physiology*. All registration numbers beginning with 26 refer to *Crustacea*, and all registration numbers ending in 11 show that the paper indexed deals with a physiological subject.

The meaning to be assigned to the last two figures is always that given in the following list:—

- ..00 Title slip.
- ..03 Comprehensive and General Works.
(For sub-divisions see Hyperzoology p. 18.)
- ..07 Structure. (For sub-divisions see 0207.)
- ..11 Physiology. (For sub-divisions see 0211.)
- ..15 Development. (For sub-divisions see 0215.)
- ..19 Ethology. (For sub-divisions see 0219.)
- ..23 Variation and Actiology. (For sub-divisions see 0223.)
- ..27 Geography. (For sub-divisions see (J) Geography.)
- ..31 Taxonomy.
The meaning of the first two figures is as follows:—
- 02.. General papers, or papers dealing with several classes of animals.
- 04.. Protozoa.
- 06.. Porifera (or Spongida).
- 08.. Coelenterata (or Cnidaria).
- 10.. Echinodermata.
- 12.. Platyhelminthes. Mesozoa and Trichoplax.
- 14.. Nematelminthes.
- 16.. Chaetognatha. Rotifera. Gastrotricha. Kinorhyncha (or Echinodera).
- 18.. Archiannelida. Polychaeta. Myzostomaria. Oligochaeta. Gephyrea. Phoronis. Hirudinea.

INSTRUKTIONEN.

Die in der Zoologie gebrauchten Ordnungsnummern bestehen aus vier Ziffern, von denen die beiden ersten die taxonomische Stellung des oder der behandelten Tiere anzeigen, während die letzten die Art der Behandlung angeben. So bedeutet z. B. in der Ordnungsnummer 2611 die 26 *Crustacea*, die 11 aber *Physiologie*. Die mit 26 beginnenden Ordnungsnummern beziehen sich also auf *Crustacea*, und alle Ordnungsnummern auf 11 geben an, dass die katalogisierte Arbeit sich mit einem physiologischen Gegenstande befasst.

Die Bedeutung der letzten beiden Ziffern ergibt sich aus folgender Liste:—

- Titel-Zettel.
- Umfassende und allgemeine Arbeiten. (Unterabteilungen siehe Hyperzoologie p. 18.)
- Morphologie. (Unterabteilungen siehe 0207.)
- Physiologie. (Unterabteilungen siehe 0211.)
- Entwicklung. (Unterabteilungen siehe 0215.)
- Ethologie. (Unterabteilungen siehe 0219.)
- Variation und Ätiologie. (Unterabteilungen siehe 0223.)
- Geographische Verbreitung. (Unterabteilungen siehe (J) Geographie.)
- Taxonomie.
Die ersten beiden Ziffern bedeuten Folgendes:—
- Allgemeine, oder auf mehrere Tierklassen bezügliche Arbeiten.
- Protozoa.
- Porifera (oder Spongida).
- Coelenterata (oder Cnidaria).
- Echinodermata.
- Platyhelminthes. Mesozoa und Trichoplax.
- Nematelminthes.
- Chaetognatha. Rotifera. Gastrotricha. Kinorhyncha (oder Echinodera).
- Archiannelida. Polychaeta. Myzostomaria. Oligochaeta. Gephyrea. Phoronis. Hirudinea.

INSTRUCTIONS.

Les numéros enregistreurs employés en zoologie comprennent quatre chiffres, dont les deux premiers indiquent la position taxonomique de l'animal ou des animaux en question, tandis que les deux derniers indiquent la rubrique sous laquelle le mémoire doit être classé.

Ainsi, dans le numéro enregistreur 2611 les chiffres 26 indiquent Crustacés, pendant que les chiffres 11 signifient Physiologie. Tout numéro enregistreur qui commence par 26 se rapporte aux Crustacés, de même que tout numéro enregistreur en 11 indique que le mémoire dont il est question s'occupe de physiologie.

La signification des deux derniers chiffres est toujours celle qui est donnée dans la liste suivante :—

- ..00 Fiche de titre.
- ..03 Ouvrages généraux ou d'une grande étendue. (Pour les subdivisions voy. *Hyperzoologie p. 19.*)
- ..07 Morphologie. (Pour les subdivisions voy. 0207.)
- ..11 Physiologie. (Pour les subdivisions voy. 0211.)
- ..15 Développement. (Pour les subdivisions voy. 0215.)
- ..19 Ethologie. (Pour les subdivisions voy. 0219.)
- ..23 Variation et étiologie. (Pour les subdivisions voy. 0223.)
- ..27 Distribution géographique. (Pour les subdivisions voy. (J) Géographie.)
- ..31 Taxonomie.
La signification des deux premiers chiffres est comme suit :—
- 02.. Mémoires généraux ou ayant trait à plusieurs classes d'animaux.
- 04.. Protozoaires.
- 06.. Porifères (ou Spongiaires).
- 08.. Cœlentérés (ou Cnidaria).
- 10.. Echinodermes.
- 12.. Platyhelminthes. Mésozoaires et le Trichoplax.
- 14.. Nématelminthes.
- 16.. Chætognathes. Rotifères. Gastrotriches. Kinorhynques (ou Echinodères).
- 18.. Archiannelides. Polychètes. Myzostomes. Oligochètes. Géphyriens. Phoronis. Hirudinées.

(ISTRUZION).

I numeri di registrazione adoperati nella zoologia consistono di quattro cifre, delle quali le due prime indicano la posizione tassonomica dell'animale o degli animali di cui si tratta, mentre che le due ultime indicano la rubrica sotto la quale si ha da catalogare la memoria. Così, nel numero di registrazione 2611 le cifre 26 indicano *Crustacea*, mentre che le cifre 11 si riferiscono alla *Fisiologia*. Ogni numero di registrazione che comincia con 26 si riferisce ai *Crustacea*, e da ogni numero che termina in 11 si può inferire che la memoria catalogata si occupa di fisiologia.

Le due ultime cifre hanno invariabilmente la significazione che si vede nell'elenco seguente :—

- Scheda a titolo.
- Opere generali e comprensive. (Per le suddivisioni vedi *Iperzoologia p. 19.*)
- Struttura. (Per le suddivisioni vedi 0207.)
- Fisiologia. (Per le suddivisioni vedi 0211.)
- Sviluppo. (Per le suddivisioni vedi 0215.)
- Etologia. (Per le suddivisioni vedi 0219.)
- Variatione ed Etiologia. (Per le suddivisioni vedi 0223.)
- Geografia. (Per le suddivisioni vedi (J) Geografia.)
- Tassonomia.
Le due prime cifre hanno sempre la significazione seguente :—
- Lavori generali o riferentisi a più classi di animali.
- Protozoa.
- Porifera (vel Spongida).
- Cœlenterata (vel Cnidaria).
- Echinodermata.
- Platyhelminthes. Mesozoa e Trichoplax.
- Nematelminthes.
- Chætognatha. Rotifera. Gastrotricha. Kinorhyncha (vel Echinodera).
- Archiannelida. Polychæta. Myzostomaria. Oligochæta. Gephyræa. Phoronis. Hirudinea.

- | | | |
|------|--|--|
| 20.. | Brachiopoda. Bryozoa (or Polyzoa). | Brachiopoda. Bryozoa (oder Polyzoa). |
| 22.. | Mollusca. | Mollusca. |
| 24.. | Arthropoda. | Arthropoda. |
| 26.. | Crustacea. | Crustacea. |
| 28.. | Trilobita. Xiphosura. Eurypterida. Pantopoda. Tardigrada. Linguatulida. | Trilobita. Xiphosura. Eurypterida. Pantopoda. Tardigrada. Linguatulida. |
| 30.. | Arachnida. | Arachnida. |
| 32.. | Prototracheata (or Onychophora). | Prototracheata. |
| 34.. | Myriopoda. | Myriopoda. |
| 35.. | Insecta. | Insecta. |
| 36.. | Aptera (or Apterygogenea). Anoplura. Mallophaga. Thysanoptera (or Physopoda). Siphonaptera (or Aphaniptera). | Aptera (oder Apterygogenea). Anoplura. Mallophaga. Thysanoptera (oder Physopoda). Siphonaptera (oder Aphaniptera). |
| 38.. | Orthoptera, Neuroptera and Trichoptera. | Orthoptera, Neuroptera und Trichoptera. |
| 40.. | Hemiptera (or Rhynchota), excluding Anoplura, which are placed in 36.. | Hemiptera (oder Rhynchota), excl. Anoplura, die unter 36 .. eingeordnet sind. |
| 42.. | Diptera, excluding Siphonaptera, which are placed in 36.. | Diptera, excl. Siphonaptera, die unter 36.. eingeordnet sind. |
| 44.. | Lepidoptera. | Lepidoptera. |
| 40.. | Hymenoptera. | Hymenoptera. |
| 48.. | Colcoptera, including Strepsiptera. | Coleoptera, incl. Strepsiptera. |
| 50.. | Prochordata: Amphioxus (or Leptocardii), Enteropneusta, Tunicata. | Prochordata: Amphioxus (oder Leptocardii), Enteropneusta, Tunicata. |
| 52.. | Vertebrata. | Vertebrata. |
| 54.. | Pisces, excluding Leptocardii (or Amphioxus), which are placed in 50.. | Pisces, excl. Leptocardii (oder Amphioxus), die unter 50 .. eingeordnet sind). |
| 56.. | Amphibia and Reptilia. | Amphibia und Reptilia. |
| 58.. | Aves. | Aves. |
| 60.. | Mammalia. | Mammalia. |

Slips or Cards used in preparing the Volume.

Four kinds of slips are to be provided:—(1) Title slips, (2) Subject slips, (3) Systematic (Taxonomic) slips, (4) New Genera or Species slips. The several slips relating to the same paper should be tied together, and should have a common (arbitrary) number. This number must not be used for any other paper until two years have

Zettel zur Vorbereitung des Bandes.

Es wird beabsichtigt, ausser dem Gesamtbande noch drei separate, aus folgenden Abschnitten bestehende Teile herauszugeben: 12.. bis 18.. (Vermidea); 28.. bis 34..; und 35.. bis 48.. (Hexapoda). Jeder der übrigen Abschnitte wird dann auch separat herausgegeben.

Es müssen vier verschiedene Zettel hergestellt werden:—(1) Titel-Zettel, (2) Sach-Zettel, (3) System-(Taxonomie-) Zettel, (4) Zettel für neue Gattungen oder Arten. Die verschiedenen, auf dieselbe Arbeit bezüglichen Zettel sollen zusammengeheftet und mit einer gemeinsamen (willkürlichen) Nummer versehen werden. Vor Ablauf von zwei

20..	Brachiopodes. Bryozoaires (ou Polyzoaires).	Brachiopoda. Bryozoa (vel Polyzoa).
22..	Mollusques.	Mollusca.
24..	Arthropodes.	Arthropoda.
26..	Crustacés.	Crustacea.
28..	Trilobites. Xiphosures. Euryptérides. Pantopodes. Tardigrades. Linguatulides.	Trilobita. Xiphosura. Eurypterida. Pantopoda. Tardigrada. Linguatulida.
30..	Arachnides.	Arachnida.
32..	Prototrachéates (ou Onychophores).	Prototracheata (vel Onychophora).
34..	Myriapodes.	Myriopoda.
35..	Insectes.	Insecta.
36..	Aptères (ou Aptéryrogénies). Anoploures. Mallophages. Thisanoptères (ou Physopodes). Siphonoptères (ou Aphaniptères).	Aptera (vel Apterygogenea). Anoplura. Mallophaga. Thysanoptera (vel Physopoda). Siphonoptera (vel Aphaniptera).
38..	Orthoptères, Névroptères et Trichoptères.	Orthoptera, Neuroptera et Trichoptera.
40..	Hémiptères (ou Rhynchotes), à l'exclusion des Anoploures, qui sont placés sous le numéro 36..	Hemiptera (vel Rhynchota), esclusi Anoplura, che sono indicati col numero 36..
42..	Diptères, à l'exclusion des Siphonoptères, qui sont placés sous le numéro 36..	Diptera, esclusi Siphonoptera, che sono indicati col numero 36..
44..	Lépidoptères.	Lepidoptera.
46..	Hyménoptères.	Hymenoptera.
48..	Coléoptères, y compris les Strepsiptères.	Coleoptera, incl. Strepsiptera.
50..	Prochordés : Amphioxus (ou Leptocardiens) Entéropneustes, Tuniciers.	Prochordata : Amphioxus (vel Leptocardii), Enteropneusta, Tunicata.
52..	Vertébrés.	Vertebrata.
54..	Poissons, à l'exclusion des Leptocardiens (ou Amphioxus), qui sont placés sous le numéro 50..	Pisces, escl. Leptocardii (vel Amphioxus), i quali sono indicati col numero 50..
56..	Batraciens et Reptiles.	Batrachia et Reptilia.
58..	Oiseaux.	Aves.
60..	Mammifères.	Mammalia.

Oltre le volume complet, l'on se propose de publier en trois volumes à part les sections 12.. à 18.. (Vermidés); 28.. à 34..; et 35.. à 48.. (Hexapodes). Puis chacune des sections suivantes sera aussi publiée à part.

Oltre il tomo completo si ha l'intenzione di pubblicare in tre parti separate le sezioni 12.. a 18.. (Vermidea); 28.. a 34..; e 35.. a 48.. (Hexapoda). Ciascuna delle rimanenti sezioni verrà poi anche pubblicata separatamente.

Rédaction des Fiches.

Il doit y avoir quatre sortes de fiches, savoir :—(1) Fiches de titre, (2) Fiches de matière, (3) Fiches systématiques (taxonomiques), (4) Fiches pour les genres ou espèces nouvelles. Toutes les fiches qui se rapportent au même mémoire doivent être attachées ensemble et marquées d'un numéro en commun (arbitraire). Ce numéro ne

Redazione delle Schede.

Devono farsi quattro specie di schede :—(1) Schede a titolo, (2) Schede a materia, (3) Schede sistematiche (tassonomiche), (4) Schede per i generi o le specie nuove. Tutte le schede riferentisi al medesimo lavoro devono essere attaccate insieme e segnate con un numero commune (arbitrario). Questo numero non è da usa si

elapsed. The slips should be prepared as follows :—

(1) *Title slips*.—The first entry on a title slip is the letter N, followed by a four-figure registration number, in which the first two figures indicate the Branch of zoology as given in the above list, while the two last figures are .00. The remaining entries on the title slips are to be made as on the author slips for the other sciences.

At the foot of each title slip all the registration numbers corresponding to the subject and systematic slips prepared for the paper are to be given. If a paper is to be indexed under more than one Branch of zoology a separate title slip must be prepared for each Branch.

Example—

N 6000.

Mansion, Arthur. La taupe commune. Rev. sci., Paris, (sér. 4), 17, 1902, (13–18). [6019 6031].

In order to economise space and to simplify entries, the full reference to a paper will be made only on the title and systematic slips. Each title slip will be printed in the Catalogue with a definite number attached. This number, together with the author's name, will be the reference to the paper in all other cases.

(2) *Subject Slips*.—The entries on the subject slips shall not, as a rule, be reproductions of the title, but such modifications thereof as shall serve to convey the necessary information in the clearest and most direct manner possible.

To prepare such slips properly it is essential that the papers shall have been read and indexed by those who are able to determine what are the several matters of importance to be brought under notice.

In the case of slips bearing the numbers 0000–0050, 0070 and 0090,

Jahren darf keine andere Arbeit mit derselben Nummer bezeichnet werden.

(1) *Titel-Zettel*.—Die erste Eintragung auf einem Titel-Zettel ist der Buchstabe N, worauf eine vierziffrige Ordnungsnummer folgt wovon die zwei ersten Ziffern den Zweig der Zoologie bezeichnen, wie in obiger Liste angegeben, während die zwei letzten Ziffern .00 sind. Die übrigen Eintragungen auf dem Titel-Zettel sind in derselben Weise abzufassen wie bei den Autoren-Zetteln in den anderen Wissenschaften.

Am Fusse eines jeden Titel-Zettels müssen sämtliche, den für die betreffende Arbeit hergestellten Sach- und System-Zetteln entsprechende, Ordnungsnummern angegeben werden. Soll ein Aufsatz unter mehr als einem Zweige der Zoologie katalogisiert werden, so ist für jeden Zweig ein besonderer Titel-Zettel herzustellen.

Beispiel—

N 6000.

Mansion, Arthur. La taupe commune. Rev. sci., Paris, (sér. 4), 17, 1902, (13–18). [6019 6031].

Um Raum zu ersparen und die Eintragungen zu vereinfachen kommt das vollständige Citat nur auf die Titel- und System-Zettel. Jedem im Kataloge gedruckten Titel-Zettel wird eine bestimmte Nummer zugeteilt. Diese Nummer, mit dem Verfassernamen, bildet in allen anderen Fällen das Citat.

(2) *Sach-Zettel*.—Die Eintragungen auf den Sach-Zetteln sollen in der Regel keine Wiederholungen des Titels sein, sondern solche Modifikationen desselben, dass sie die erforderliche Auskunft so kurz und bündig wie möglich erteilen.

Für die richtige Fassung solcher Zettel ist es von Wichtigkeit, dass die Aufsätze von Personen gelesen und katalogisiert werden, welche im stande sind das Wichtige darin zu erkennen und hervorzuheben.

Bei Zetteln, welche die Nummern 0000–0050, 0070 und 0090 tragen,

doit être employé pour aucun autre mémoire qu'au bout de deux ans. Voici comment il faut rédiger les fiches :—

(1) *Fiches de titre.*—La fiche de titre doit commencer par la lettre N, suivie d'un numéro enregistreur de quatre chiffres, dont les deux premiers indiquent la branche de zoologie d'accord avec la liste ci-dessus, tandis que les deux dernières sont 00. Ensuite la fiche de titre sera établie de la même façon que les fiches d'auteur pour les autres sciences.

Chaque fiche de titre doit porter en bas tous les numéros enregistreurs qui correspondent aux fiches de matière et systématiques qui aient été rédigées pour le mémoire dont il s'agit. Si un mémoire doit être catalogué sous plus d'une branche de zoologie il faut une fiche séparée pour chaque branche.

Exemple—

N 6000.

Mansion, Arthur. La taupe commune. Rev. sci., Paris, (sér. 4), 17, 1902, (13-18). [6019 6031].

Pour gagner de la place et simplifier les articles, la référence ne sera donnée en entier que sur les fiches de titre et les fiches systématiques. Chaque fiche de titre sera imprimée dans le Catalogue et désignée par un numéro. Ce numéro, avec le nom d'auteur, servira de renvoi à l'article partout ailleurs.

(2) *Fiches de matière.*—Règle générale, la fiche de matière doit porter non pas une reproduction du titre mais de telles modifications du titre qui suffisent à donner les renseignements nécessaires de la manière la plus précise.

Afin que de telles fiches soient bien établies il est essentiel que les mémoires aient été lus et catalogués par des personnes à même de déterminer quelles sont les choses d'importance à faire ressortir. Là où il s'agit de fiches portant les numéros 0000-0050, 0070 et 0090, le

per nessun altro lavoro prima che siano scorsi due anni. Le schede devono essere redatte come segue :—

(1) *Schede a titolo.*—La scheda a titolo deve cominciare colla lettera N, seguita da un numero di registrazione di quattro cifre di cui le due prime indicano il ramo di zoologia d'accordo coll'elenco dissopra, mentre che le due ultime sono .00. Le altri annotazioni sulla scheda a titolo si fanno poi come sulle schede per autori nelle altre scienze.

La scheda a titolo deve portare in fondo tutti i numeri di registrazione corrispondenti colle schede sistematiche ed a materia che si siano preparate per il lavoro di cui si tratta. Se si vuol catalogare un lavoro sotto più d'un ramo di zoologia bisogna fare una scheda separata per ogni ramo.

Esempio—

N 6000.

Mansion, Arthur. La taupe commune. Rev. Sci., Paris, (sér. 4), 17, 1902, (13-18). [6019 6031].

Per risparmiare lo spazio e ridurre al più semplice le annotazioni, la riferenza non verrà scritta per esteso che sulle schede a titolo e le schede sistematiche. Ogni scheda a titolo si stamperà nel Catalogo con un numero definito. Questo numero, assieme al nome dell'autore, costituirà la riferenza al lavoro in ogni altro caso.

(2) *Schede a materia.*—Le annotazioni sulle schede a materia non saranno, di regola, ripetizioni del titolo, ma saranno tali modificazioni di questo che bastino a dare le informazioni necessarie nel modo più perspicuo che sia possibile.

Perchè tali schede siano ben redatte è essenziale che le memorie siano state lette e catalogate da persone che possano determinare quali sono le cose importanti da far risaltare.

Trattandosi di schede portanti i numeri 0000-0050, 0070 e 0090, il

the author's name should immediately follow the registration number.

Example—

N 0040.

Ross, R. Malaria and mosquitoes. London, Proc. R. Inst., 16, 1901, (295-313).

This should be attached to the title slip and abbreviated thus:—

N 0040.

Ross, R. Malaria and mosquitoes. (295-313).

In cases in which it is desirable, for other purposes which the Bureaus may have in contemplation, to enter the full reference on the slip, the shortened reference will be made at the Central Bureau by striking out unnecessary particulars.

On slips bearing a number ending in .27 (Geographical Distribution) the registration number should be immediately followed by the geographical symbol. After this should come (a) the author's name, (b) the title of the paper.

Example—

N 2227 *he.*

Pilsbry, H. A. A new Colombian Pleurodonte [*P. clappi*]. Nautilus, Philadelphia, Pa., 15, 1901, (34-35).

which, if the above directions are followed, will be reduced to—

N 2227 *he.*

Pilsbry, H. A. A new Colombian Pleurodonte. (34-35).

The remaining registration numbers, viz., 0060, and those ending in .03, .07, .11, .15, .19, and .23, are divided into numerous sub-headings. One of these sub-headings should follow the registration number.

A separate card must be provided for each entry that is to appear separately in the Catalogue.

In cases in which entries cannot be included under existing subdivisions, and for which a new sub-

muss der Verfassersname unmittelbar auf die Ordnungsnummer folgen.

Beispiel—

N 0040.

Ross, R. Malaria and mosquitoes. London, Proc. R. Inst., 16, 1901, (295-313).

Dieser Zettel müsste an den Titelzettel geheftet und wie folgt abgekürzt werden:—

N 0040.

Ross, R. Malaria and mosquitoes. (295-313.)

Falls es den Bureaus, zu irgend einem von ihnen beabsichtigten Zwecke, wünschenswert erscheint, das vollständige Citat beizubehalten, so wird das Centralbureau durch Streichen des Überflüssigen dasselbe abkürzen.

Bei Zetteln, welche eine Nummer auf .27 tragen (geographische Verbreitung) muss das geographische Symbol unmittelbar auf die Ordnungsnummer folgen. Dann kommt (a) der Verfassersname, (b) der Titel des Aufsatzes.

Beispiel—

N 2227 *he.*

Pilsbry, H. A. A new Colombian Pleurodonte [*P. clappi*]. Nautilus, Philadelphia, Pa., 15, 1901, (34-35).

was, obiger Vorschrift gemäss, abgekürzt so lautet:—

N 2227 *he.*

Pilsbry, H. A. A new Colombian Pleurodonte. (34-35).

Die übrigen Ordnungsnummern, namentlich 0060 und jene auf .03, .07, .11, .15, .19 und .23, sind in zahlreiche Unterabteilungen geteilt. Eine dieser Unterabteilungen muss auf die Ordnungsnummer folgen.

Jeder besonderen Eintragung im Kataloge muss ein besonderer Zettel entsprechen.

Falls die vorhandenen Unterabteilungen zur gehörigen Katalogisierung nicht hinreichen und

nom d'auteur doit suivre immédiatement le numéro enregistreur.

Exemple—

N 0040.

Ross, R. Malaria and mosquitoes. London, Proc. R. Inst., 16, 1901, (295-313).

Ceci doit être attaché à la fiche de titre et abrégé ainsi :—

N 0040.

Ross, R. Malaria and mosquitoes. (295-313).

Dans les cas où les bureaux régionaux, dans un but quelconque, désirent mettre la référence en entier sur la fiche, le Bureau Central en fera la référence abrégée en biffant les détails superflus.

Sur les fiches portant un numéro en .27 (Distribution Géographique) le numéro enregistreur doit être suivi immédiatement du symbole géographique. Ensuite viendrait (a) le nom d'auteur, (b) le titre du mémoire.

Exemple—

N 2227 *he.*

Pilsbry, H. A. A new Colombian Pleurodonte [*P. clappi*]. Nautilus, Philadelphia, Pa., 15, 1901, (34-35).

Ce qui, conformément aux instructions ci-dessus, sera réduit à :—

N 2227 *he.*

Pilsbry, H. A. A new Colombian Pleurodonte. (34-35).

Les autres numéros enregistreurs, c.à.d. 0060 et ceux en .03, .07, .11, .15, .19 et .23, sont divisés en de nombreux subdivisions. Une de ces subdivisions doit suivre le numéro enregistreur.

Il faut une fiche séparée pour chaque article qui doit paraître séparément dans le catalogue.

S'il se trouve que les subdivisions actuelles ne suffisent pas et qu'une nouvelle subdivision serait à désirer

nome dell'autore deve seguire immediatamente il numero di registrazione.

Esempio—

N 0040.

Ross, R. Malaria and mosquitoes. London, Proc. R. Inst., 16, 1901, (295-313).

Questo si deve attaccare alla scheda a titolo ed abbreviare così :—

N 0040.

Ross, R. Malaria and mosquitoes. (295-313).

Ove gli Uffici Regionali, a qualunque scopo, volessero annotare la riferenza sulla scheda per esteso, la riferenza abbreviata si farebbe dall'Ufficio Centrale col cancellare i dettagli soverchi.

Sulle schede portanti un numero in .27 (Distribuzione Geografica) il numero di registrazione dev'essere seguito immediatamente dal simbolo geografico. Poi verrebbe (a) il nome dell'autore, (b) il titolo della memoria.

Esempio—

N 2227 *he.*

Pilsbry, H. A. A new Colombian Pleurodonte [*P. clappi*]. Nautilus, Philadelphia, Pa., 15, 1901, (34-35).

Giusto le suddette istruzioni questo si ridurrebbe a :—

N 2227 *he.*

Pilsbry, H. A. A new Colombian Pleurodonte. (34-35).

I rimanenti numeri di registrazione, cioè 0060 e quelli in .03, .07, .11, .15 e .23 sono divisi in numerose subdivisions. Una di queste subdivisions deve seguire il numero di registrazione.

Ci vuol una scheda separata per ogni articolo che deve apparire separatamente nel Catalogo.

Nel caso di articoli che non si possono includere nelle subdivisions attuali e per i quali si stima desidera-

division is thought to be desirable, such suggested new sub-division shall be recorded upon the card, in order that the matter may be dealt with by the Central Bureau. In no case must two differently numbered subjects be placed on one slip.

If the book or paper deals with so many of these sub-headings as to render it unnecessary to mention all of them, the word "general" should be used for the sub-heading. The sub-heading should be followed by (a) the author's name, (b) the title or modified title of the paper.

Example—

N 6015 [Regeneration].
Lange, C. Experiments on
regeneration [of kidneys].
(Danish) Kjöbenhavn, Biol.
Forh., 1899-1900, 1901, (1-8).

If this card is sent to the Central Bureau tied to the corresponding title slip, it should be abbreviated, as explained above, to—

N 6015 [Regeneration].
Lange, C. Experiments on
regeneration [of kidneys].
(Danish) (1-8).

(3) *Systematic slips*.—In these slips the name of the animal or animals should immediately follow the registration number. Where more than one genus is mentioned a separate slip must be prepared for each genus.

Every new genus must have a separate slip; the name of the new genus must be followed by the indication "n. gen.," a brief statement as to what it is allied to and some indication of the species it includes, followed by the author's name and reference.

New sub-genera are to be treated in a similar manner to genera, except that "n. subgen." will be used, and the name of the genus of which it is a division will follow.

eine neue Unterabteilung deshalb wünschenswert erscheint, so ist die vorgeschlagene neue Unterabteilung auf dem Zettel anzugeben, damit das Central-Bureau entscheide, wie dabei zu verfahren sei. Auf keinen Fall dürfen zwei verschieden nummerierte Gegenstände auf einen Zettel gesetzt werden.

Bezieht sich das Buch, resp. der Aufsatz, auf so viele Unterabteilungen, dass es unzumutbar ist, sie alle anzuführen, so gebraucht man das Wort „Allgemeines“ für die Unterabteilung. Auf die Unterabteilung folgt (a) der Verfassersname, (b) der Titel, resp. der modifizierte Titel der Arbeit.

Beispiel—

N 6015 [Regeneration].
Lange, C. Experiments on
regeneration [of kidneys].
(Danish) Kjöbenhavn, Biol.
Forh., 1899-1900, 1901, (1-8).

Wird dieser Zettel mit dem entsprechenden Titel-Zettel zusammengeheftet an das Central-Bureau geschickt, so ist er, wie oben erklärt, folgendermassen abzukürzen:—

N 6015 [Regeneration].
Lange, C. Experiments on
regeneration [of kidneys].
(Danish) (1-8).

(3) *System-Zettel*.—Bei diesen Zetteln soll der Name des Tieres oder der Tiere unmittelbar auf die Ordnungsnummer folgen. Wird mehr als eine Gattung erwähnt, so ist für jede Gattung ein besonderer Zettel herzustellen. Jede neue Gattung muss einen besonderen Zettel erhalten; auf den Namen der neuen Gattung folgt die Bemerkung „n. gen.“ eine kurze Notiz, wem sie verwandt ist, und irgend eine Angabe über die Species, die sie umfasst; hierauf Verfassersname und Citat.

Neue Untergattungen sind ähnlich zu behandeln, wie Gattungen, nur dass die Bemerkung „n. subgen.“ gebraucht und der Name der Gattung, um deren Unterabteilung es handelt, hinzugefügt wird.

la nouvelle subdivision que l'on propose doit être indiquée sur la fiche afin que le Bureau Central décide comment il faut procéder. En aucun cas deux articles portant des numéros différents ne doivent être écrits sur la même fiche.

Dans le cas où le livre ou mémoire traite de tant de ces subdivisions qu'il est inutile de les citer toutes, il faut employer le mot "Généralités" pour la subdivision. La subdivision doit être suivie (a) du nom d'auteur, (b) du titre ou du titre modifié du mémoire.

Exemple—

N 6015 [Regeneration].

Lange, C. Experiments on regeneration [of kidneys]. (Danish) Kjöbenhavn, Biol. Forh., 1899-1900, 1901, (1-8).

Si cette fiche est envoyée au Bureau Central attachée à la fiche de titre correspondante elle doit être abrégée, comme il est expliqué ci-dessus, à :—

N 6015 [Regeneration].

Lange, C. Experiments on regeneration [of kidneys]. (Danish) (1-8).

(3) *Fiches systématiques.*—Sur ces fiches le nom de l'animal ou des animaux doit suivre immédiatement le numéro enregistreur. Si mention est faite de plus d'un genre il faut une fiche distincte pour chaque genre.

Chaque genre nouveau doit avoir une fiche distincte ; le nom du genre nouveau doit être suivi de l'indication "n. gen.," puis d'une courte indication du genre ou des genres auxquels il est allié et de quelques indications relatives aux espèces qu'il renferme ; le tout sera suivi du nom d'auteur et de la référence.

Les sous-genres nouveaux seront traités de la même façon que les genres, mais l'indication "n. gen." sera remplacée par "n. subgen.," et l'on mettra ensuite le nom du genre auquel le sous-genre se rattache.

bile qualche nuova suddivisione, si deve annotare sulla scheda la nuova suddivisione proposta affinché l'Ufficio Centrale decida come si debba comportare con essa. In nessun caso si devono porre sulla stessa scheda due soggetti portanti numeri diversi.

Se il libro o la memoria si riferisce a tante di queste suddivisioni che non fa d'uopo accennarle tutte, allora si pone per la suddivisione la parola "generale." La suddivisione dev' essere seguita (a) dal nome dell'autore, (b) dal titolo, ossia dal titolo modificato, del lavoro.

Esempio—

N 6015 [Regeneration].

Lange, C. Experiments on regeneration [of kidneys]. (Danish) Kjöbenhavn, Biol. Forh., 1899-1900, 1901, (1-8).

Se questa scheda si manda all'Ufficio Centrale attaccata alla scheda a titolo corrispondente si deve abbreviare, come si è spiegato qui sopra, a :—

N 6015 [Regeneration].

Lange, C. Experiments on regeneration [of kidneys]. (Danish) (1-8).

(3) *Schede sistematiche.*—Su queste schede il nome dell'animale o degli animali deve seguire immediatamente il numero di registrazione. Se si fa menzione di più di un genere bisogna far una scheda separata per ogni genere.

Ciascun nuovo genere deve avere una scheda separata ; il nome del nuovo genere dev' essere seguito dalla indicazione "n. gen.," poi viene una breve indicazione di quello cui esso si connette, e qualche indicazione delle specie che include, e segue infine il nome dell'autore e le riferenze.

I nuovi sottogeneri saranno trattati in modo simile ai nuovi generi, ma sarà adoperata la indicazione "n. subgen.," e seguirà il nome del genere del quale il sottogenere è divisione.

The author's name should follow the title or modified title on these slips.

Examples—

(I) N 2631.

Amblyops crozetii, bipolar occurrence. Ohlin, A. Ann. Mag. Nat. Hist., London, (Ser. 7), 7, 1901, (371-374). [Schizopoda.]

(II) N 4431.

Heterophrya neximargo sp. n. Peru. Warren, W. Nov. Zool., Tring, 8, 1901, (457). [Geometridae.]

When more than one new species is described from the same genus, all the new species should be mentioned on the slip and the respective page references given. Where only one new species is mentioned the slip should be arranged as in Example II. In any case the habitat should be given where possible.

At the end of each slip the name of the group of animals referred to should be given. When the work gives no indication of the group (i.e., Family, Sub-family or Tribe) and the slip-maker cannot from his own knowledge supply the deficiency the sign [?] may be written at the end of the slip.

When it is undesirable to index each genus separately a general entry should be given.

Example—

N 4431.

Hoyningen-Huene, F. von. Aberrationen einiger estländischer Eulen und Spanner. Berliner ent. Zs., 46, 1901, (309-319, mit 1 Taf.). [Noctuidae.]

On systematic slips Christian names should be represented by initials only.

Slips relating to fossil forms are to be marked †, and slips relating to fossil and recent forms †*. (The latter condition occurs only rarely in this division.)

Bei diesen Zetteln sollte der Verfassernamen auf den Titel oder modifizierten Titel folgen.

Beispiele—

(I) N 2631.

Amblyops crozetii, bipolar occurrence. Ohlin, A. Ann. Mag. Nat. Hist., London, (Ser. 7), 7, 1901, (371-374). [Schizopoda.]

(II) N 4431.

Heterophrya neximargo sp. n. Peru. Warren, W. Nov. Zool., Tring, 8, 1901, (457). [Geometridae.]

Wird mehr als eine neue Art derselben Gattung beschrieben, so sollen sämtliche neue Arten, mit Angabe der betreffenden Seitenzahlen, auf dem Zettel erwähnt werden. Wo es sich bloß um eine neue Art handelt, ist der Zettel wie in Beispiel II herzustellen. Das Habitat ist auf jeden Fall wenn möglich anzugeben.

Am Ende eines jeden Systemzettels ist der Name der betreffenden Tiergruppe anzuführen. Enthält die Arbeit keine Angabe der Gruppe (d.h. Familie, Unterfamilie oder Tribus) und ist der Zettelschreiber nicht im stande, aus eigener Kenntniss die Lücke auszufüllen, so kann das Zeichen [?] an das Ende des Zettels gesetzt werden. Ist die gesonderte Angabe einer jeden Gattung nicht wünschenswert, so ist eine allgemeine Bezeichnung zu geben.

Beispiel—

N 4431

Hoyningen-Huene, F. von. Aberrationen einiger estländischer Eulen und Spanner. Berliner ent. Zs., 46, 1901, (309-319, mit 1 Taf.). [Noctuidae.]

Auf den System-Zetteln sollen die Vornamen nur durch Anfangsbuchstaben wiedergegeben werden.

Zettel, die sich auf fossile Formen beziehen, sind durch ein † zu bezeichnen; solche, die sich sowohl auf fossile als auf recente Formen beziehen, durch ein †*. (Der letzte Fall kommt in diesem Abschnitt nur selten vor.)

Le nom d'auteur doit *suivre* le titre ou le titre modifié sur ces fiches.

Exemples—

(I) N 2631.

Amblyops crozetii, bipolar occurrence. Ohlin, A. Ann. Mag. Nat. Hist., London, (Ser. 7), 7, 1901, (371-374). [Schizopoda.]

(II) N 4431.

Heterophrya neximargo sp. n. Peru. Warren, W. Nov. Zool., Tring, 8, 1901, (457). [Geometridae.]

Quand il y a description de plus d'une espèce du même genre, toutes les espèces nouvelles doivent être portées sur la fiche avec le renvoi aux pages respectives. S'il ne s'agit que d'une seule espèce nouvelle la fiche doit être établie conformément à exemple II. L'habitat doit être indiqué en tout cas si possible. L'on devra placer à la fin de chaque fiche systématique le nom du groupe d'animaux auquel la fiche se rapporte. Quand l'ouvrage ne fournit aucune indication de groupe (famille, sous-famille ou tribu) et lorsque le rédacteur de la fiche ne peut, d'après ses propres connaissances, suppléer à ce défaut d'indications, l'on pourra mettre le signe [?] à la fin de la fiche.

S'il n'est pas à désirer que chaque genre soit catalogué séparément il faut établir un article général.

Exemple—

N 4431.

Hoyningen-Huene, F. von. Aberrationen einiger estländischer Eulen und Spanner. Berliner ent. Zs., 46, 1901, (309-319, mit 1 Taf.). [Noctuidae.]

Sur les fiches systématiques les noms de baptême doivent être représentés par des initiales seulement.

Les fiches relatives aux formes fossiles doivent être marquées †, et celles qui se rapportent aux formes fossiles récentes †*. (Cette dernière condition ne se présente que rarement dans cette division.)

Su queste schede il nome dell'autore deve venire *dopo* il titolo o titolo modificato.

Esempi—

(I) N 2631.

Amblyops crozetii, bipolar occurrence. Ohlin, A. Ann. Mag. Nat. Hist., London, (Ser. 7), 7, 1901, (371-374). [Schizopoda.]

(II) N 4431.

Heterophrya neximargo sp. n. Peru. Warren, W. Nov. Zool., Tring, 8, 1901, (457). [Geometridae.]

Quando si descrive più di una specie nuova del medesimo genere, tutte le specie nuove devono venire accennate sulla scheda colla riferenza alle pagine rispettive. Trattandosi di una sola specie nuova, la scheda dev' essere redatta come in esempio II. In ogni caso, per quanto sia possibile, si deve menzionare il habitat.

Al fine di ciascuna scheda sistematica si deve porre il nome del gruppo di animali cui la scheda si riferisce. Quando il lavoro non porta indicazione del gruppo (cioè famiglia, sottofamiglia, tribù) e il redattore della scheda non può di suo supplire alla deficienza, si può mettere al fine della scheda il segno [?].

Quando non si vuole catalogare separatamente ogni genere, si farà un' annotazione generale.

Esempio—

N 4431.

Hoyningen-Huene, F. von. Aberrationen einiger estländischer Eulen und Spanner. Berliner ent. Zs., 46, 1901, (309-319, mit 1 Taf.). [Noctuidae.]

I nomi di battesimo devono essere rappresentati sulle schede sistematiche colle sole iniziali.

Le schede relative a forme estinte saranno segnate †, e le schede relative a forme estinte e viventi †*. (L'ultima condizione occorre soltanto raramente in questa divisione.)

(4) *Lists of New Genera and Species.*—For the preparation of these lists, the Regional Bureaus should give the names of genera and sub-genera (a) which are new, (b) the significance of which has been changed, (c) which contain new species. These may be written at the foot of the systematic slips, but it would greatly facilitate an earlier production of the volume if the Regional Bureaus would write each new genus on a separate card and attach it to the systematic slip.

Date of Receiving Slips.

The period during which the material for any one year will be received at the Central Bureau will not extend beyond June of the following year. Regional Bureaus are therefore earnestly requested to complete the indexing of their zoological literature within the time named.

The period covered by the literature indexed in any one of the annual volumes shall be from January 1st to December 31st of the particular year, but any matter which had not been received in time for insertion in the previous volume shall also be included therein.

Distinctive Character of cards.

The editorial work will be greatly facilitated by ruling a red line near the left-hand edge of the title slips, a green line near the left-hand edge of the subject slips, and no line at all on the taxonomy and new species slips. Or the slips may be printed on thin card of three colours, viz., red for the title slips, green for the subject slips, and white for the systematic slips. The size of the slips must be 16 cm. by 8 cm.

(4) *Listen neuer Gattungen und Arten.*—Zur Herstellung dieser Listen sollten die Regionalbureaus die Namen der Gattungen und Untergattungen angeben, (a) die neu sind, (b) deren Bedeutung sich geändert hat, (c) die neue Arten enthalten. Diese können am Fusse der System-Zettel angeführt werden, es würde jedoch zur schnelleren Erscheinung des Bandes wesentlich beitragen, wenn die Regionalbureaus jede neue Gattung auf einem besonderen Zettel schrieben und diesen an den System-Zettel hefteten.

Termin des Empfangs der Zettel.

Das Material für irgend ein Jahr darf nicht später als Ende Juni des folgenden Jahres in den Besitz des Centralbureaus gelangen. Die Regionalbureaus werden daher dringend ersucht, mit dem Katalogisieren ihrer zoologischen Literatur bis zu dem genannten Termin fertig zu werden.

Die in irgend einem der jährlichen Bände veröffentlichte Litteratur soll die Periode vom 1. Januar bis zum 31. December des betreffenden Jahres decken, etwaige Artikel aber, die für den vorigen Band zu spät eintrafen, werden darin mit aufgenommen.

Markierung der Zettel.

Die Herausgabe wird bedeutend erleichtert werden, wenn auf den Titel-Zetteln nahe dem linken Rande eine rothe Linie, auf den Sach-Zetteln entsprechend eine grüne Linie gezogen wird, während die Taxonomie- und Arten-Zettel ohne Linie bleiben. Man kann auch die Zettel auf drei verschiedenfarbige Sorten Carton drucken, nämlich die Titel-Zettel auf roten, die Sach-Zettel auf grünen und die System-Zettel auf weissen.

Die Zettel müssen 16 × 8 cm. gross sein.

(4) *Listes des genres et espèces nouvelles.*—Pour la rédaction de ces listes les Bureaux Régionaux doivent donner les noms des genres et sous-genres (a) qui sont nouveaux, (b) dont la signification est changée, (c) qui contiennent des espèces nouvelles. Ils peuvent être écrits au pied des fiches systématiques, pourtant si les Bureaux Régionaux voulaient écrire chaque genre nouveau sur une fiche séparée et l'attacher à la fiche systématique, cela contribuerait beaucoup à accélérer la publication du volume.

(4) *Elenchi di Generi e Specie nuove.*—Per la redazione di questi elenchi gli Uffici Regionali devono dare i nomi dei generi e sottogeneri, (a) che sono nuovi, (b) il cui significato si è cambiato, (c) che contengono delle specie nuove. Questi possono essere scritti in fondo alle schede sistematiche, ma contribuirebbe molto ad accelerare la pubblicazione del tomo se gli Uffici Regionali scrivessero ogni genere nuovo sopra una scheda separata e attaccassero questa alla scheda sistematica.

Date de la réception des fiches.

La période pendant laquelle les matières pour une année quelconque seront admises par le Bureau Central ne s'étendra pas au-delà du mois de juin de l'année suivante. Aussi les Bureaux Régionaux sont-ils instamment priés de compléter l'index de leur littérature zoologique avant l'expiration de ce terme.

La littérature indexée dans un volume annuel quelconque comprendra la période du 1er janvier au 31 décembre de l'année en question, ainsi que les articles qui étaient arrivés trop tard pour être incorporés dans le volume précédent.

Caractère distinctif des fiches.

Le travail du Directeur sera grandement facilité si l'on trace une ligne rouge près du bord gauche des fiches de titre, une ligne verte près du bord gauche des fiches de matière, et si l'on ne trace aucune ligne sur les fiches systématiques et sur les fiches pour les espèces nouvelles. On peut aussi imprimer les fiches sur des cartons minces de trois couleurs, savoir, une carte rouge pour les fiches de titre, une carte verte pour les fiches de matière, et une carte blanche pour les fiches systématiques.

Les dimensions des fiches doivent être de 16 cm. sur 8 cm.

(N-9186)

Data di ricezione delle schede.

Il periodo durante il quale il materiale per un anno qualunque sarà ammesso dall' Ufficio Centrale non si stenderà in là di Giugno dell'anno seguente. Gli Uffici Regionali sono perciò pregati con istanza di completare il catalogo della loro letteratura zoologica dentro del detto termine.

La letteratura catalogata in un tomo annuale qualunque comprenderà il periodo dal 1° Gennaio al 31 Dicembre dell' anno di cui si tratta, coll' aggiunto di quegli articoli che fossero ricevuti troppo tardi per essere inclusi nel tomo precedente.

Carattere distintivo delle schede.

Il lavoro dell' Ufficio Centrale sarà grandemente facilitato dal segnare il margine sinistro delle schede a titolo con una linea rossa, quello delle schede a soggetto con una verde, e dal lasciare senza linea le schede tassonomiche e quelle per le specie nuove. Oppure le schede potranno essere scritte su carta di tre colori, rosso, verde, e bianco, il primo per le schede a titolo, il secondo per quelle a soggetto, il terzo per quelle sistematiche.

Il formato delle schede dev'essere di 16 per 8 centimetri di lato.

o

0000-0231. Comprehensive
Zoology.

N.B.—The subjects enumerated under numbers 0000 to 0231 may recur in any one of the subsequent Branches. In the Catalogue only works that deal with several Branches will be registered under numbers 0000 to 0231; hence the term "Comprehensive Zoology."

- HYPERZOOLOGY.**
- 0000 Philosophy.
0010 History. Biography.
0020 Periodicals. Reports of Institutions, Societies, Congresses, Explorations.
0030 General Treatises, Text-books, Dictionaries, Collected Works, Tables.
0032 Bibliographies.
0040 Addresses, Lectures, etc., of a general character.
0050 Pedagogy.
0060 Institutions, Museums, Collections, Aquaria, Gardens, Utility and Harmfulness, Zoology in relation to Medicine, etc. (*See also* the general sections of Special Zoology.)
0070 Nomenclature (principles of).
0090 Technique. Methods of research, instruments and apparatus.
0207 **STRUCTURE (OR MORPHOLOGY).** [In general or of more than one of the classes of animals.] (*See also* (I) General Biology (O) Anatomy and (Q) Physiology.)

General; Comparative Anatomy; Special Anatomy and Histology: Tegument and its Organs; Nervous System and Organs of Sense; Myology; Skeleton (including Osteology and Dentition); Skeletal Structures of Invertebrates; Alimentary System; Circulatory and Respiratory Organs; Water Vascular System, Blood, Lymph, Cœlomic Fluid, Chyle. Special Glands; Excretory Organs; Reproductive Organs; Special External Characters; Colour. Rudimentary or Vestigial Organs, and Organs of uncertain nature.

0000-0231. Allgemeine Zoologie.

N.B.—Die unter Nr. 0000 bis 0231 aufgeführten Gegenstände können in jedem der nachfolgenden Zweige wiederkehren. Unter Nr. 0000-0231 bringt der Katalog nur solche Arbeiten, die mehrere Zweige behandeln. Daher der Ausdruck „Allgemeine Zoologie.“

- HYPERZOOLOGIE.**
- Philosophie.
Geschichte. Biographien.
Periodica. Berichte von Instituten, Gesellschaften, Kongressen, Forschungsreisen etc.
Allgemeine Abhandlungen, Lehrbücher, Wörterbücher, Sammelwerke, Tabellen.
Bibliographien.
Festreden, Vorträge u.s.w., allgemeiner Art.
Pädagogik.
Institute, Museen, Sammlungen, Aquarien, Gärten, Nützlichkeit und Schädlichkeit, Zoologie in Beziehung zur Medizin etc. (*Siehe auch* die allgemeinen Abteilungen der speciellen Zoologie.)
Nomenklatur (Prinzipien).
Technik. Untersuchungsmethoden. Instrumente und Apparate.
STRUKTUR (ODER MORPHOLOGIE). [Im allgemeinen oder von mehreren Tierklassen.] (*Siehe auch* (I) Allgemeine Biologie, (O) Anatomie und (Q) Physiologie.)
Allgemeines; Vergleichende Anatomie; Spezielle Anatomie und Histologie: Tegument und seine Organe; Nervensystem und Sinnesorgane; Myologie; Skelett (einschl. Osteologie und Zahnbildung); Inneres Skelett bei Wirbellosen; Ernährungssystem; Circulations- und Respirationsorgane; Wassergefäßsystem, Blut, Lymphe, Cœlomflüssigkeit, Chylus. Spezielle Drüsen; Excretions-Organe; Reproduktive Organe; Spezielle äussere Charaktere; Farbe. Rudimentäre oder unentwickelte Organe und Organe ungewisser Natur.

0000-0231. Zoologie générale.

N.B.—Les sujets énumérés sous les indices 0000 à 0231 peuvent être représentés dans chacune des “branches” suivantes; mais c'est seulement les ouvrages ayant trait à plusieurs “branches” qui doivent être catalogués sous les numéros 0000 à 0231; de là le terme de “Zoologie générale.”

- HYPERZOOLOGIE.
- 0000 Philosophie.
- 0010 Histoire. Biographie.
- 0020 Périodiques. Rapports d'Institutions, de Sociétés, de Congrès, d'Explorations, etc.
- 0030 Traités généraux, Manuels, Dictionnaires, Recueils, Tables.
- 0032 Bibliographies.
- 0040 Discours, Cours, etc., d'un caractère général.
- 0050 Enseignement.
- 0060 Institutions, Musées, Collections, Aquaria, Jardins, Utilité et Nocuité. Zoologie en rapport avec la Médecine, etc. (*Voy aussi les sections générales de la Zoologie spéciale.*)
- 0070 Nomenclature (principes de).
- 0090 Technique. Méthodes de recherche, instruments et appareils.
- 0207 STRUCTURE (ou MORPHOLOGIE). [En général ou dans plusieurs classes d'animaux.] (*Voy. aussi* (L) Biologie Générale, (O) Anatomie et (Q) Physiologie.)

Généralités; Anatomie comparée; Anatomie spéciale et Histologie (*ex.* organes tégumentaires); Système nerveux et organes des sens; Myologie; Squelette (y compris Ostéologie et Dentition); Structure des Invertébrés; Système digestif; Appareils de la circulation et de la respiration; Système aquifère vasculaire, sang, lymph, liquide de la cavité générale, chyle. Glandes spéciales; Organes d'excrétion; Organes de reproduction; Organes externes spéciaux; Couleur. Organes rudimentaires ou vestiges d'organes anciens; Organes de nature incertaine.

0000-0231. Zoologia comprensiva.

I soggetti designati coi numeri 0000 a 0231 possono ricorrere in ognuno dei seguenti rami. Nel catalogo, tuttavia, soltanto i lavori che trattano di diversi rami saranno registrati sotto i numeri 0000 a 0231; di qui il termine “Zoologia comprensiva.”

- IPERZOOLOGIA.
- Filosofia.
- Storia. Biografia.
- Periodici. Resoconti di Istituti Società, Congressi, Esplorazioni.
- Trattati generali, Libri di testo, Dizionari, Raccolte, Tavole.
- Bibliografie.
- Discorsi, Letture, etc., aventi un carattere generale.
- Pedagogia.
- Istituti, Musei, Collezioni, Aquaria, Giardini, Utilità e Nocività. Zoologia in rapporto alla medicina. (*Vedi anche le sezioni generali della Zoologia speciale.*)
- Principi di Nomenclatura.
- Tecnica. Metodi di ricerca, strumenti ed apparati.
- STRUTTURA (o MORFOLOGIA). [In generale oppure di più di una classe di animali.] (*Vedi anche* (L) Biologia Generale, (O) Anatomia e (Q) Fisiologia.)

Generalità; Anatomia comparata; Anatomia speciale e Istologia; Tegumento e suoi organi; Sistema nervoso e organi di senso; Miologia; Scheletro (incl. Osteologia e Dentizione); Strutture interne scheletriche degli invertebrati; Apparecchio alimentare; Organi della circolazione e della respirazione; Sistema acquifero vascolare, Sangue, Linfa, Liquido celomatico, Chilo; Glandule speciali; Organi escretori; Organi riproduttivi. Caratteri speciali esterni; Colore. Organi rudimentali e in vestigio e organi di natura incerta.

0211 **PHYSIOLOGY** [of the Animal Kingdom, or of more than one of its Branches]. (*See also* (Q) **Physiology**.)

[Physiology will be treated as a separate science. In zoology it is therefore only necessary to collect those physiological memoirs that specially interest zoologists; hence a detailed division is superfluous, but the following may be cited as examples to come under this heading.]

General; Production of Sex; Production of Caste; Function of Sense Organs; Function of Special Organs and Structures, *e.g.*, of Glands; Assimilation; Respiration; Environmental Effects; Change of Function; Adaptation. Duration of Life; Senescence; Death.

0215 **DEVELOPMENT.** [General works on more than one of the Branches.] (*See also* L 2000-5900; O 1500-1940.)

General; Budding and Asexual Reproduction; Oogenesis and Ovum; Spermatogenesis and Spermatozoon; Phenomena of Fertilization; Parthenogenesis; Embryology, Organogeny and Histogeny; Metamorphosis and Larval Forms; Post-embryonic Ontogeny; Alternation of Generations; Pædogenesis; Dissogony; Cycles of Generations; Changes during Life; Regeneration; Hermaphroditism.

For cell-structure and processes *see* (L) **General Biology—Cytology**.

0219 **ETHOLOGY.** [Works dealing with one or more of the following subjects, and relating to more than one Branch of the Animal Kingdom.]

General; Habits; Phenology; Migration and Nonmigration; Hibernation; Parental Relations; Sexual Relations; Sexual Dimorphism; Ovipois-

PHYSIOLOGIE [des Tierreichs oder mehrerer seiner Zweige]. (*Siehe auch* (Q) **Physiologie**.)

[Physiologie wird als besondere Wissenschaft behandelt werden. In „Zoologie“ brauchen daher nur solche physiologische Abhandlungen aufgeführt zu werden, die speciell den Zoologen interessieren. Darum ist eine detaillierte Einteilung hier überflüssig, doch mag das Folgende als Beispiel dienen.]

Allgemeines; Hervorbringung des Geschlechtes, der Rasse; Funktion der Sinnesorgane; Funktion besonderer Bildungen, *z. B.* Drüsen; Assimilation; Atmung; Wirkung der Umgebung; Funktionswechsel; Anpassung. Lebensdauer; Altern; Tod.

ENTWICKELUNG. [Allgemeine Werke über mehr als einen der Zweige.] (*Siehe auch* L 2000-5900; O 1500-1940.)

Allgemeines; Knospenbildung und ungeschlechtliche Fortpflanzung; Oogenesis und Ovum; Spermatogenesis und Spermatozoon; Befruchtungs-Phänomene; Parthenogenesis; Embryologie, Organogenie und Histogenie; Metamorphose und Larvenformen; postembryonale Ontogenie; Generationswechsel; Pædogenesis; Dissogonie; Generations-Cyklen; Veränderungen während des Lebens; Regeneration; Hermaphroditismus.

Zell-Struktur und -Prozesse *siehe* (L) **Allgemeine Biologie—Cytologie**.

ETHOLOGIE. [Arbeiten, die einen oder mehrere der folgenden Gegenstände behandeln und sich auf mehr als einen Zweig des Tierreichs beziehen.]

Allgemeines; Lebensgewohnheiten; Phänologie; Wanderung und Nichtwanderung; Winterschlaf; Beziehungen zwischen Eltern und Nachkommenschaft;

- 0211 **PHYSIOLOGIE** [du règne animal ou de plusieurs branches du règne animal]. (*Voy. aussi* (Q) Physiologie.)
 [La Physiologie doit être traitée comme une science distincte; en conséquence, en Zoologie il ne sera nécessaire de relever que les mémoires de physiologie qui intéressent spécialement les zoologistes; une division détaillée est donc superflue, néanmoins on peut citer la suivante comme exemple.]
- Généralités; Production des sexes; Formation des genres; Fonctions des organes des sens; Fonctions des organes de structure spéciale (*ex.* des glandes); Assimilation; Respiration; Influence du milieu; Changement de fonction; Adaptation; Durée de la vie; Sénescence; Mort.
- 0215 **DÉVELOPPEMENT.** [Ouvrages généraux ayant trait à plusieurs "branches."] (*Voy. aussi* L 2000-5900; O 1500-1940.)
 Généralités; Bourgeonnement et reproduction asexuée; Oogenèse et œuf; Spermatogenèse et Spermatozoïdes; Phénomènes de fécondation; Parthénogenèse; Embryologie, organogénie et histogénie; Métamorphose et formes larvaires; Ontogénie postembryonnaire; Générations alternantes; Pædogénèse; Dissogonie; Cycles de générations; Changements pendant la vie; Régénération; Hermaphroditisme.
- Pour la structure et les processus cellulaires *voir* (L) Biologie générale—Cytologie.
- 0219 **ÉTHOLOGIE.** [Ouvrages traitant d'un ou de plusieurs des sujets suivants et se rapportant à un ou à plusieurs embranchements du règne animal].
 Généralités; Habitudes; Phénologie; Migration et non-migration; Hibernation; Relations de parenté; Relations sexuelles; Dimorphisme sexuel; Ponte;
- FISIOLOGIA** [del Regno animale o di più di uno dei suoi rami]. (*Vedi anche* (Q) Fisiologia).
 [La fisiologia sarà trattata come una scienza separata. Nella zoologia è perciò soltanto necessario raccogliere quelle memorie di fisiologia che più specialmente possono interessare lo zoologo; quindi una divisione particolareggiata è superflua, ma ciò che segue può rappresentare la divisione di questo capitolo.]
- Generalità; Produzione dei sessi; Produzione di caste; Funzione degli organi di senso; Funzione di speciali organi, *p. es.* le glandule; Assimilazione; Respirazione; Effetti dell' ambiente; Cambiamento di funzione; Adattamento. Durata della vita; Senescenza; Morte.
- SVILUPPO.** [Lavori generali su più di uno dei rami.] (*Vedi anche* L 2000-5900; O 1500-1940.)
 Generalità; Gemmazione e riproduzione asessuale; Oogenesi o Uovo; Spermatogenesi o Spermatozoide; Fenomeni di Fecondazione; Partenogenesi; Embriologia, organogenia ed istogenia; Metamorfofi e forme larvali; Ontogenia postembrionale; Alternanza delle generazioni; Pedogenesi; Dissogonia; Cicli delle generazioni; Cambiamenti durante la vita; Rigenerazione; Ermafroditismo.
- Per la struttura cellulare e i processi di sviluppo *vedi* (L) Biologia generale—Citologia.
- ETOLOGIA.** [Lavori aventi a che fare con uno o più dei soggetti seguenti e relativi ad uno o più rami del regno animale.]
 Generalità; Abitudini; Fenologia; migrazione e non migrazione; ibernazione; rapporti parentali; rapporti sessuali; dimorfismo sessuale;

tion; Voice; Sound Production; (*see also* Q 4145). Luminosity; (*see also* Q 0260). Habitat with sub-divisions, *e.g.*, Cavernicolous Animals, Pelagic and Deep-sea Animals (plankton), etc.; Instinct and Psychology; Social Relations; Gregariousness; Symbiosis; (*see also* L 5550; Q 0285; R 1640); Parasitism; Defensive Processes (including Protective Coloration, Mimicry and Protective Resemblance); Ornament and Colour; Breeding and Acclimatisation.

- 0223 VARIATION AND ÆTIOLGY. [Works dealing with one or more of the following subjects and relating to more than one Branch of the Animal Kingdom.] (*See also* (L) General Biology, and (Q) Physiology.)

General; Substantive variation; size, proportions, form, colour, etc. Meristic variations; numerical [meristic proper]; homoeotic; teratological. Bionomic variation; of fertility; of time of appearance; of maturity; of development; of habits. Phylogeny.

Or indexed alternatively or supplementally, with reference to treatment—descriptive, statistical, mathematical; geographical or stational.

Heredity. Grafts. Crosses and Hybrids. In-breeding. Telegony. Evolution. (*See also* K 0200; L 4300.)

- 0227 GEOGRAPHICAL ZOOLOGY. Geographical Distribution. [Works relating to the principles and modes of distribution.]

Topographical Zoology. [Works relating to the Fauna of one or more of the sub-divisions used in (J) Geography, and dealing

Sexuelle Beziehungen; Sexueller Dimorphismus; Eiablage; Stimme; Hervorbringung von Lauten (*siehe auch* Q 4145); Leuchtvermögen (*siehe auch* Q 0260); Habitat mit Unterabteilungen, z. B. Höhlentiere, pelagische und Tiefsee-Tiere (Plankton) u. s. w.; Instinkt und Psychologie; Soziale Beziehungen; Heerdenleben; Symbiose (*siehe auch* L 5550; Q 0285; R 1640); Parasitismus; Verteidigungs-Prozesse (einschl. Schutzfärbung, Mimicry und schützende Ähnlichkeiten); Schmuck und Farbe; Züchtung und Akklimatisation.

- VARIATION UND ÆTIOLOGIE. [Arbeiten, die einen oder mehrere der folgenden Gegenstände behandeln und sich auf mehr als einen Zweig des Tierreichs beziehen.] (*Siehe auch* (L) Allgemeine Biologie und (Q) Physiologie.)

Allgemeines; Substantielle Variation; Grösse, Proportionen, Form, Farbe etc. Meristische Variationen; numerische (meristische im eigentlichen Sinne); homoeotische; teratologische. Bionomische Variation; in Hinsicht auf Fruchtbarkeit, auf Erscheinungszeit; auf Zeit der Reife; auf Entwicklung; auf Lebensgewohnheiten. Phylogenie.

Hierneben oder als Ergänzung eine Einteilung mit Rücksicht auf die Art der Behandlung—ob descriptiv, statistisch, mathematisch; geographisch oder nach Standort.

Vererbung. Pfropfen. Kreuzungen und Bastardbildungen. Inzucht. Telegonie. Evolution. (*Siehe auch* K 0200; L 4300.)

- GEOGRAPHISCHE ZOOLOGIE. Geographische Verbreitung. [Arbeiten, die sich auf die Prinzipien und die Arten der Verbreitung beziehen.]

Topographische Zoologie. [Arbeiten, die sich auf die Fauna einer oder mehrerer der Unterabteilungen in (J) Geographie,

Voix; Productions des sons; (*Voy aussi* Q 4145.) Production de la lumière; (*Voy. aussi* Q 0260.) Habitat avec subdivisions, *ex.* Animaux cavernicoles; Animaux pélagiques et des zones abyssales (plankton), etc.; Instinct et Psychologie; Relations sociales; Instincts sociaux; Symbiose; (*Voy. aussi* L 5550; Q 0285; R 1640); Parasitisme; Procédés de défense; Ressemblance (y compris la coloration protectrice, le mimétisme et la ressemblance protectrice); Ornaments et couleur; Elevage et acclimatation.

0223 VARIATION ET ETIOLOGIE. [Ouvrages traitant d'un ou de plusieurs des sujets suivants, et ayant trait à plus d'une branche du règne animal.] (*Voy. aussi* (L) Biologie Générale et (Q) Physiologic.)

Généralités; Variations traitées en elles-mêmes; Taille, proportions, forme, couleur, etc. Variations méristiques; variations numériques (méristiques proprement dites); homéotiques; tératologiques. Variations bionomiques, variations de fécondité; variations dans l'époque d'apparition, la maturité, le développement, les habitudes. Phylogénie.

Variations traitées d'une façon supplémentaire dans les ouvrages descriptifs, statistiques, mathématiques, géographiques.

Hérédité. Greffes. Croisements et Hybrides. Unions consanguines. Télégonie. Évolution. (*Voy. aussi* K 0200; L 4300.)

0227 ZOOLOGIE GÉOGRAPHIQUE.

Distribution géographique des animaux. [Ouvrages ayant trait aux principes et aux modes de distribution géographique.]

Zoologie topographique. [Ouvrages ayant trait à la faune d'une ou de plusieurs des subdivisions employées en (J)

oviposizione; voce; produzione di suoni (*v. anche* Q 4145); luminosità (*v. anche* Q 0260); Habitat con suddivisioni, *p. es.* animali cavernicoli, animali pelagici e delle zone abissali (plankton), etc.; istinto e psicologia; rapporti sociali; istinti gregari; simbiosi (*v. anche* L 5550; Q 0285; R 1640); parasitismo; processi difensivi (compresi la colorazione protettiva, il mimetismo e la rassomiglianza protettiva); ornamenti e colore; Allevamento ed acclimatazione.

VARIAZIONE ED ETIOLOGIA. [Lavori aventi a che fare con uno o più dei soggetti seguenti e relativi ad uno o più rami del regno animale.] (*Vedi anche* (L) Biologia Generale e (Q) Fisiologia.)

Generalità; Variazione sostanzialmente considerata; dimensioni, proporzioni, forma, colore, etc. Variazioni meristiche; numeriche (meristiche vere o proprie); omeotiche; per teratologia. Variazioni bionomiche; di fecondità; di epoca di apparizione; di maturità; di sviluppo; di abitudini. Filogenia.

Oppure considerata alternativamente e supplementariamente sotto il punto di vista descrittivo, statistico, matematico, geografico o stazionale.

Eredità. Innesti. Incrociamenti e ibridismi. Consanguineità. Telegonia. Evoluzione. (*Vedi anche* K 0200; L 4300.)

ZOOLOGIA GEOGRAFICA.

Distribuzione geografica. [Lavori relativi ai principi e ai modi di distribuzione.]

Zoologia topografica. [Lavori relativi alla Fauna di una o più delle suddivisioni adottate in (J) Geografia, e riferentisi a

with more than one of the Branches of Zoology.]

beziehen und mehr als einen Zweig der Zoologie umfassen.]

0231 TAXONOMY or CLASSIFICATION in general.

[In this are to be placed works dealing with the principles of zoological classification; works discussing the classification of more than one of the Branches; works dealing with the relations of the great groups of existing animals; phylogenetic classification, *i.e.*, the relations in time of the great groups of animals. Works relating to the classification of only one of the Branches are to be dealt with in that Branch.]

TAXONOMIE ODER KLASSIFIKATION IM ALLGEMEINEN.

[Hierher sind Arbeiten zu stellen, welche die Prinzipien der zoologischen Klassifikation behandeln; ferner Arbeiten, welche die Klassifikation von mehr als einem der Zweige discutieren; Arbeiten, welche die Beziehungen der grossen Gruppen der lebenden Tierwelt behandeln; phylogenetische Klassifikation, d. h. die zeitlichen Beziehungen der grossen Tiergruppen. Dagegen sind Arbeiten, die sich auf die Klassifikation eines einzelnen Zweiges beziehen, bei diesem zu erledigen.]

0400-6031 Special Zoology.

0400-6031 Spezielle Zoologie.

0400-0431 Protozoa. (See also R 1200.)

Protozoa. (Siehe auch R 1200.)

The principal divisions are:—

Mycetozoa; Rhizopoda (Radiolaria, Heliozoa, Foraminifera, Amœbaea, Proteomyxa); Sporozoa (Gregarinida, Coccidiidea, Haemosporida, Myxosporidia, Sarcosporidia); Mastigophora (Flagellata, Dinoflagellata); Infusoria (Acinetaria, Ciliata).

Hauptabteilungen sind:—

Mycetozoa; Rhizopoda (Radiolaria, Heliozoa, Foraminifera, Amœbaea, Proteomyxa); Sporozoa (Gregarinida, Coccidiidea, Haemosporida, Myxosporidia, Sarcosporidia); Mastigophora (Flagellata, Dinoflagellata); Infusoria (Acinetaria, Ciliata).

0600-0631 Porifera (or Spongida).

The principal divisions are:—

Calcarea; Hexactinellida; Demospongiae (Carnosa, Tetractinellida, Monaxonida, Keratosa, Myxospongida).

Porifera (oder Spongida).

Hauptabteilungen sind:—

Calcarea; Hexactinellida; Demospongiae (Carnosa, Tetractinellida, Monaxonida, Keratosa, Myxospongida).

0800-0831 Coelenterata (or Cnidaria).

The principal divisions are:—

Graptolites; Hydromedusae; Scyphomedusae; Monticuliporidae; Stromatoporidae; Alcyonaria; Zoantharia; Ctenophora.

Cœlenterata (oder Cnidaria).

Hauptabteilungen sind:—

Graptolites; Hydromedusae; Scyphomedusae; Monticuliporidae; Stromatoporidae; Alcyonaria; Zoantharia; Ctenophora.

1000-1031 Echinodermata.

The principal divisions are:—

Cystoidea; Crinoidea; Blastoida; Asteroidea; Ophiuroidea; Echinoidea; Holothurioidea.

Echinodermata.

Hauptabteilungen sind:—

Cystoidea; Crinoidea; Blastoida; Asteroidea; Ophiuroidea; Echinoidea; Holothurioidea.

Géographie et ayant trait à plus d'une branche de la Zoologie.]

0231 TAXONOMIE ou CLASSIFICATION en général.

[Dans cette division doivent être placés les ouvrages traitant des principes de la classification zoologique; les ouvrages discutant la classification de plus d'une "branche"; les ouvrages traitant des relations des grands groupes d'animaux de la faune actuelle; la classification phylogénétique, c'est à dire les relations anciennes entre les grands groupes d'animaux. Les ouvrages ayant trait à la classification d'une branche isolée seront traités à propos de cette branche.]

0400-6031. Zoologie spéciale.

0400-0431 Protozoaires. (*Voy. aussi R 1200.*)

Voici les divisions principales :—
Mycétozoaires; Rhizopodes (Radiolaires, Hélozoaires, Foraminifères, Amœbiens, Protéomyces); Sporozoaires (Grégarinides, Coccidiides, Haemosporidies, Myxosporidies, Sarcosporidies); Mastigophores (Flagellés, Dinoflagellés); Infusoires (Acinétiens, Ciliés.)

0600-0631 Porifères (ou Spongiaires).

Voici les divisions principales :—
Calcaires; Hexactinellides; Démospongiaires (Carnosa, Tetractinellides, Monaxonides, Kératosa, Myxospongiaires).

0800-0831 Cœlentérés (ou Cnidaria).

Voici les divisions principales :—
Graptolites; Hydroméduses; Scyphoméduses; Monticuliporides; Stromatoporides; Aélyconaires; Zoanthaires; Ctnéophores.

1000-1031 Échinodermes.

Voici les divisions principales :—
Cystoïdes; Crinoïdes; Blastoides; Astéroïdes; Ophiuroïdes; Echinoïdes; Hélothurioïdes.

più di uno dei rami della zoologia.]

TASSONOMIA E CLASSIFICAZIONE IN GENERALE.

[Qui saranno posti i lavori che trattano dei principi della classificazione zoologica; i lavori discutenti la classificazione di più di un ramo; i lavori riguardanti le relazioni tassonomiche dei grandi gruppi degli animali esistenti; la classificazione filogenetica, ossia le relazioni nel tempo dei grandi gruppi di animali. I lavori relativi alla classificazione di uno solo dei rami sono trattati in quel ramo.]

0400-6031. Zoologia Speciale.

Protozoa. (*Vedi anche R 1200.*)

Le divisioni principali sono :—
Mycetozoa; Rhizopoda (Radiolaria, Heliozoa, Foraminifera, Amœbacea, Proteomyxa); Sporozoa (Gregarinida, Coccidiida, Haemosporidia, Myxosporidia, Sarcosporidia); Mastigophora (Flagellata, Dinoflagellata); Infusoria (Acinetaria, Ciliata).

Porifera (vel Spongida).

Le divisioni principali sono :—
Calcarea; Hexactinellida; Demospongiae (Carnosa, Tetractinellida, Monaxonida, Keratosa, Myxospongida).

Cœlenterata (vel Cnidaria).

Le divisioni principali sono :—
Graptolites; Hydromedusac; Scyphomedusac; Monticuliporidae; Stromatoporidiae; Aelyconaria; Zoantharia; Ctenophora.

Echinodermata.

Le divisioni principali sono :—
Cystoidea; Crinoidea; Blastoidca; Asteroidea; Ophiuroidea; Echinoidea; Holothurioidea.

- 1200-1231 **Platyhelminthes. Mesozoa and Trichoplax.**
 The principal divisions are :—
 Platyhelminthes (Turbellaria, Trematoda, Cestoda, Nemertinea); Mesozoa (Dicyemidae, Orthonectidae); *Trichoplax*.
- 1400-1431 **Nemathelminthes.**
 The principal divisions are :—
 Nematoda; Nematomorpha (or Gordiidae); Acanthocephala.
- 1600-1631 **Chaetognatha. Rotifera. Gastrotricha. Kinorhyncha (or Echinodera.)**
- 1800-1831 **Archiannelida. Polychaeta. Myzostomaria. Oligochaeta. Gephyrea. Phoronis. Hirudinea.**
- 2000-2031 **Brachiopoda. Bryozoa (or Polyzoa).**
 The principal divisions are :—
 Brachiopoda.
 Bryozoa: Entoprocta; Ectoprocta (Gymnolaema: Cyclostomata, Trepostomata, Cryptostomata, Cheilostomata, Ctenostomata; Phylactolaema).
- 2200-2231 **Mollusca.**
 The principal divisions are :—
 Lamellibranchiata (or Pelecypoda) (Order should be given); Scaphopoda; Amphineura.
 Gastropoda includes Prosobranchiata (Rhipidoglossa, Ptenoglossa, Taenioglossa, Rachiglossa, Toxoglossa); Heteropoda; Opisthobranchiata (Tectibranchiata, Nudibranchiata); Pteropoda; Pulmonata (Bassomatophora, Stylomatophora). Families of Prosobranchiata and Pulmonata should be mentioned. *See Cambridge Natural History.*
 Cephalopoda includes Nautiloidea, Ammonoidea, Dibranchiata.
- 2400-2431 **Arthropoda.**
 2431 will not include a systematic arrangement of genera and species.
- Platyhelminthes. Mesozoa und Trichoplax.**
 Hauptabteilungen sind :—
 Platyhelminthes (Turbellaria, Trematoda, Cestoda, Nemertinea); Mesozoa (Dicyemidae, Orthonectidae); *Trichoplax*.
- Nemathelminthes.**
 Hauptabteilungen sind :—
 Nematoda; Nematomorpha (oder Gordiidae); Acanthocephala.
- Chætognatha. Rotifera. Gastrotricha. Kinorhyncha (oder Echinodera).**
- Archiannelida. Polychæta. Myzostomaria. Oligochæta. Gephyrea. Phoronis. Hirudinea.**
- Brachiopoda. Bryozoa (oder Polyzoa).**
 Hauptabteilungen sind :—
 Brachiopoda.
 Bryozoa: Endoprocta; Ectoprocta (Gymnolaema: Cyclostomata, Trepostomata, Cryptostomata, Cheilostomata, Ctenostomata; Phylactolaema).
- Mollusca.**
 Hauptabteilungen sind :—
 Lamellibranchiata (oder Pelecypoda) (Ordnung angeben); Scaphopoda; Amphineura.
 Gastropoda umfasst Prosobranchiata (Rhipidoglossa, Ptenoglossa, Taenioglossa, Rachiglossa, Toxoglossa); Heteropoda; Opisthobranchiata (Tectibranchiata, Nudibranchiata); Pteropoda; Pulmonata (Bassomatophora, Stylomatophora). Familien der Prosobranchiata und Pulmonata angeben. *Siehe Cambridge Natural History.*
 Cephalopoda umfasst Nautiloidea, Ammonoidea, Dibranchiata.
- Arthropoda.**
 2431 wird eine systematische Anordnung der Gattungen und Arten nicht enthalten.

1200-1231 **Platyhelminthes. Mésozoaires et le Trichoplax.**

Voici les divisions principales :—
Platyhelminthes (Turbellariés, Trématodes, Cestodes, Némertiens); Mésozoaires (Dicyemidæ, Orthonectidæ); *Trichoplax*.

1400-1431 **Némathelminthes.**

Voici les divisions principales :—
Nématodes; Nématomorphes (ou Gordiens); Acanthocéphales.

1600-1631 **Chætognathes. Rotifères. Gastrotriches. Kinorhynques (ou Echinodères).**

1800-1831 **Archiannelides. Polychètes. Myzostomes. Oligochètes. Géphyriens. Phoronis. Hirudinées.**

2000-2031 **Brachiopodes. Bryozoaires (ou Polyzoaires).**

Voici les divisions principales :—
Brachiopodes.
Bryozoaires: Entoproctes; Ectoproctes (Gymnolèmes: Cyclostomes, Trepostomes, Cryptostomes, Cheilostomes, Ctenostomes; Phylactolèmes).

2200-2231 **Mollusques.**

Voici les divisions principales :—
Lamellibranches (ou Pélécy-podes) (indiquer l'ordre); Scaphopodes; Amphineures.

Les Gastropodes comprennent les Prosobranches (Rhipidoglosses, Ptéroglosses, Taenioglosses, Rachiglosses, Toxoglosses); Hétéropodes; Opisthobranches (Tectibranches, Nudibranches); Ptéropodes; Pulmonés (Basomatophores, Stylomatophores). Indiquer les familles des Prosobranches et des Pulmonés. *Voy.* la Cambridge Natural History.

Les Céphalopodes comprennent les Nautilés, Ammonites, Dibranches.

2400-2431 **Arthropodes.**

2431 ne comprendra pas un arrangement systématique des genres et des espèces.

Platyhelminthes. Mesozoa et Trichoplax.

Le divisioni principali sono :—
Platyhelminthes (Turbellaria, Trematoda, Cestoda, Nemertinea); Mesozoa (Dicyemida, Orthonectida); *Trichoplax*.

Nemathelminthes.

Le divisioni principali sono :—
Nematoda; Nematomorpha (vel Gordiida); Acanthocephala.

Chætognatha. Rotifera. Gastrotricha. Kinorhyncha (vel Echinodera).

Archiannelida. Polychæta. Myzostomaria. Oligochæta. Gephyrea. Phoronis. Hirudinea.

Brachiopoda. Bryozoa (vel Polyzoa).

Le divisioni principali sono :—
Brachiopoda.
Bryozoa: Entoprocta; Ectoprocta (Gymnolaema: Cyclostomata, Trepostomata, Cryptostomata, Cheilostomata, Ctenostomata; Phylactolaema).

Mollusca.

Le divisioni principali sono :—
Lamellibranchiata (vel Pelecy-poda) (indicare l'ordine); Scaphopoda; Amphineura.

Gastropoda includono Prosobranchiata (Rhipidoglossa, Ptenoglossa, Taenioglossa, Rachiglossa, Toxoglossa); Heteropoda; Opisthobranchiata (Tectibranchiata, Nudibranchiata); Pteropoda; Pulmonata (Bassomatophora, Stylomatophora). Indicare le famiglie dei Prosobranchiata e Pulmonata. *Vedi* Cambridge Natural History.

Cephalopoda includono Nautiloidea, Ammonoidea, Dibranchiata.

Arthropoda.

2431 non deve includere la disposizione sistematica dei generi e delle specie.

2600-2631 Crustacea.

Entomostraca (= Cirripedia, Ostracoda, Copepoda, Phyllopoda).

Leptostraca.

Arthrostraca (or Edriophthalma) (= Amphipoda, Isopoda, Anisopoda).

[Malacostraca (= Thoracostraca + Arthrostraca).]

Thoracostraca (or Podophthalma) includes Decapoda, Schizopoda, Stomatopoda, Cumacea.

Crustacea.

Entomostraca (= Cirripedia, Ostracoda, Copepoda, Phyllopoda).

Leptostraca.

Arthrostraca (oder Edriophthalma) (= Amphipoda, Isopoda, Anisopoda).

[Malacostraca (=Thoracostraca + Arthrostraca).]

Thoracostraca (oder Podophthalma) umfasst Decapoda, Schizopoda, Stomatopoda, Cumacea.

2800-2831 Trilobita. Xiphosura. Eurypterida. Pantopoda. Tardigrada. Linguatulida.

Trilobita. Xiphosura. Eurypterida. Pantopoda. Tardigrada. Linguatulida.

3000-3031 Arachnida.

Arachnida consists of Scorpionida, Pedipalpi, Palpigradi, Araneida, Solifugae, Chernetida (or Pseudoscorpiones), Phalangida (or Opiliones), Acarida (or Acari).

Arachnida.

Arachnida umfasst Scorpionida, Pedipalpi, Palpigradi, Araneida, Solifugae, Chernetida (oder Pseudoscorpiones), Phalangida (oder Opiliones), Acarida (oder Acari).

3200-3231 Prototracheata (or Onychophora).

Prototracheata includes only *Peripatus* and its divisions.

Prototracheata (oder Onychophora).

Prototracheata umfasst nur *Peripatus* und dessen Abteilungen.

3400-3431 Myriopoda.

Myriopoda consists of Chilopoda, Diplopoda (= Pselaphognatha and Chilognatha), Symphyla (or Scolopendrella), Pauropoda.

Myriopoda.

Myriopoda umfasst Chilopoda, Diplopoda (= Pselaphognatha and Chilognatha), Symphyla (oder Scolopendrella), Pauropoda.

3500-3531 Insecta.

3531 will not include a systematic arrangement of genera and species.

Insecta.

3531 wird eine systematische Anordnung der Gattungen und Arten nicht enthalten.

3600-3631 Aptera (or Apterygogenea). Anoplura. Mallophaga. Thysanoptera (or Physopoda). Siphonaptera (or Aphaniptera).

Aptera, proper, consists of Thysanura and Collembola.

Aptera (oder Apterygogenea). Anoplura. Mallophaga. Thysanoptera (oder Physopoda). Siphonaptera (oder Aphaniptera).

Aptera, im eigentlichen Sinne, umfasst Thysanura und Collembola.

3800-3831 Orthoptera. Neuroptera. Trichoptera.

The principal divisions are:—

Orthoptera (Forficulidæ or Dermaptera, Hemimeridae, Blattidae, Mantidae, Phasmidae, Gryllidae, Locustidae, Acridiidae).

Orthoptera. Neuroptera. Trichoptera.

Hauptabteilungen sind:—

Orthoptera (Forficulidæ oder Dermaptera, Hemimeridæ, Blattidæ, Mantidæ, Phasmidæ, Gryllidæ, Locustidæ, Acridiidæ).

2600-2631 Crustacés.

Entomostracés (= Cirripèdes, Ostracodes, Copépodes, Phyllopodes).
Leptostracés.

Arthrostracés (ou Edriophthalmes) (= Amphipodes, Isopodes, Anisopodes).

[Malacostracés (=Thoracostracés + Arthrostracés).]

Les Thoracostracés (ou Podophthalmes), comprennent les Décapodes, Schizopodes, Stomatopodes, Cumacés).

2800-2831 Trilobites. Xiphosures. Euryptérides. Pantopodes. Tardigrades. Linguatulides.

3000-3031 Arachnides.

Les Arachnides comprennent les Scorpionides, Pédipalpes, Palpigrades, Aranéides, Solifuges, Chernetes (ou Pseudoscorpions), Phalangides (ou Opilions), Acariens.

3200-3231 Prototrachéates (ou Onychophores).

Les Prototrachéates comprennent seulement le genre *Peripatus* et ses divisions.

3400-3431 Myriapodes.

Les Myriapodes comprennent les Chilopodes, Diplopodes (Psélapognathes et Chilognathes), Symphyliens (ou Scolopendrelles), Pauropodes.

3500-3531 Insectes.

3531 ne comprendra pas un arrangement systématique des genres et des espèces.

3600-3631 Aptères (ou Aptérygogéniens). Anoploures. Mallophages. Thysanoptères (ou Physopodes). Siphonaptères (ou Aphaniptères).

Les Aptères proprement dits comprennent les Thysanoures et les Collembolés.

3800-3831 Orthoptères. Névroptères. Trichoptères.

Voici les divisions principales :—
Orthoptères (Forficulides ou Dermaptères, Hémiimérides, Blattides, Mantides, Phasmidés, Gryllides, Locustides, Acridides).

Crustacea.

Entomostraca (= Cirripedia, Ostracorda, Copepoda, Phyllopoda).
Leptostraca.

Arthrostraca (vel Edriophthalma) (= Amphipoda, Isopoda, Anisopoda).

[Malacostraca (= Thoracostraca + Arthrostraca).]

Thoracostraca (vel Podophthalma) includono Decapoda, Schizopoda, Stomatopoda, Cumacea.

Trilobita. Xiphosura. Eurypterida. Pantopoda. Tardigrada. Linguatulida.

Arachnida.

Arachnida includono Scorpionida, Pedipalpi, Palpigradi, Aracida, Solifuge, Chernetida (vel Pseudoscorpiones), Phalangida (vel Opiliones), Acarida (vel Acari).

Prototracheata (vel Onychophora).

Nei Prototracheata è incluso il solo *Peripatus* e le sue divisioni.

Myriopoda.

Chilopoda, Diplopoda (= Psélapognatha e Chilognatha), Symphyla (vel Scolopendrella), Pauropoda.

Insecta.

3531 non deve includere la disposizione sistematica dei generi e delle specie.

Aptera (vel Apterygogenea). Anoplura. Mallophaga. Thysanoptera (vel Physopoda). Siphonaptera (vel Aphaniptera).

Gli Aptera propriamente detti consistono nei Thysanura e Collembola.

Orthoptera. Neuroptera. Trichoptera.

Le divisioni principali sono :—
Orthoptera (Forficulidæ vel Dermaptera, Hemimeridæ, Blattidæ, Mantidæ, Phasmidæ, Gryllidæ, Locustidæ, Acrididæ).

Neuroptera (Planipennia, Embiidae, Termitidae, Psocidae, Perlidae, Ephemeridae, Odonata).

Each slip relating to Neuroptera should also state to which of these divisions it refers.

Most of the Palaeozoic Insects are to be dealt with in this branch.

Neuroptera (Planipennia, Embiidae, Termitidae, Psocidae, Perlidae, Ephemeridae, Odonata).

Jeder Zettel für Neuroptera soll auch angeben, auf welche dieser Abteilungen er sich bezieht.

Die meisten der paläozoischen Insekten werden bei diesem Zweige zu behandeln sein.

4000-4031 Hemiptera (or Rhynchota) excl. Anoplura, which are placed in 3600.

The principal divisions are :—
Hemiptera Heteroptera and Hemiptera Homoptera. [Phytophthires (Aphidae, Psyllidae, Aleurodidae, Coccidae) are included in Hemiptera Homoptera.]

Families to be mentioned in all cases.

See Cambridge Natural History.

Hemiptera (oder Rhynchota), excl. Anoplura, welche unter 3600 eingeordnet sind.

Hauptabteilungen sind :—
Hemiptera Heteroptera und Hemiptera Homoptera. [Phytophthires (Aphidae, Psyllidae, Aleurodidae, Coccidae) sind in Hemiptera Homoptera enthalten.]

Familien immer angeben. *Siehe* Cambridge Natural History.

4200-4231 Diptera (excl. Siphonaptera, which are placed in 3600-3631).

The slips should be marked with the name of the family of Diptera. See Cambridge Natural History.

Diptera (excl. Siphonaptera, welche unter 3600-3631 eingeordnet sind).

Bei den Diptera sind auf den Zetteln die Namen der Familien zu vermerken. *Siehe* Cambridge Natural History.

4400-4431 Lepidoptera.

The principal divisions are :—
Rhopalocera ; Heterocera.

The family to be mentioned in all cases. See Cambridge Natural History.

Lepidoptera.

Hauptabteilungen sind :—
Rhopalocera ; Heterocera.

Familien immer angeben. *Siehe* Cambridge Natural History.

4600-4631 Hymenoptera.

The principal divisions are :—
Aculeata = Anthophila (Apidae Andrenidae), Vespidae (Diploptera), Sphegidae s.l. (Fossoria). Formicidae (Heterogyna). Tubulifera = Chrysididae. Parasitica = Trigonulidae, Proctotrupidae, Pelecinidae, Chalcididae, Ichneumonidae, Braconidae, Megalyridae, Evaniidae, Stephanidae, Cynipidae. Sessiliventre (or Chalastogastra) = Cephidae, Siricidae, Oryssidae, Tenthredinidae.

Hymenoptera.

Hauptabteilungen sind :—
Aculeata = Anthophila (Apidae Andrenidae), Vespidae (Diploptera), Sphegidae s.l. (Fossoria). Formicidae (Heterogyna). Tubulifera = Chrysididae. Parasitica = Trigonulidae, Proctotrupidae, Pelecinidae, Chalcididae, Ichneumonidae Braconidae, Megalyridae, Evaniidae, Stephanidae, Cynipidae. Sessiliventre (oder Chalastogastra) = Cephidae, Siricidae, Oryssidae, Tenthredinidae.

Névroptères (Planipennes, Em-
biides, Termitides, Psocides, Per-
lides, Ephémérides, Odonates).

Chaque fiche relative aux Névro-
ptères doit aussi indiquer à laquelle
de ces divisions elle se rapporte.

La plupart des Insectes paléo-
zoïques devront être traités dans
cette branche.

Neuroptera (Planipennia, Em-
biidae, Termitidae, Psocidae,
Perlidae, Ephemeridae, Odonata.)

Ciascuna scheda relativa ai
Neuroptera deve stabilire a quale
di queste divisioni del gruppo si
riferisce.

La maggior parte degli insetti
paleozoici riferiscansi a questo ramo.

4000-4031 Hémiptères (ou Rhynchotes) à
l'exclusion des Anoploures, qui
sont placés sous le numéro 3600.

Voici les divisions principales :—
Hémiptères Hétéroptères et
Hémiptères Homoptères. [Les
Phytophthires (Aphides, Psyllides,
Aleurodides, Coccides) sont com-
pris dans les Hémiptères Homo-
ptères.]

Indiquer les familles en tout cas.
Voy. Cambridge Natural History.

Hemiptera (vel Rhynchota), esclusi
Anoplura, che sono indicati col
numero 3600.

Le divisioni principali sono :—
Hemiptera Heteroptera e
Hemiptera Homoptera. [Phyto-
phthires (Aphidae, Psyllidae,
Aleurodidae, Coccidae) sono inclusi in
Hemiptera Homoptera.]

Indicare le famiglie in ogni caso.
Vedi Cambridge Natural History.

4200-4231 Diptères (sauf les Siphona-
ptères, qui sont placés sous les
numéros 3600-3631).

Les fiches doivent porter le nom
de la famille des Diptères. *Voy.*
Cambridge Natural History.

Diptera (esclusi Siphonaptera, che
sono indicati dai numeri 3600-
3631).

Le schede dovranno portare il
nome della famiglia dei Diptera cui
si riferiscono. *Vedi* Cambridge
Natural History.

4400-4431 Lépidoptères.

Voici les divisions principales :—
Rhopalocères ; Hétérocères.
Indiquer la famille en tout cas.
Voy. Cambridge Natural History.

Lepidoptera.

Le divisioni principali sono :—
Rhopalocera ; Heterocera.
Indicare la famiglia in ogni caso.
Vedi Cambridge Natural History.

4600-4631 Hyménoptères.

Voici les divisions principales :—
Aculeata (ou Porte-aiguillons) =
Antophiles (Apidés, Andrcnides),
Vespides (Diploptères) Sphégides
s.l. (Fouisseurs) Formicides (Hétéro-
gynes). Tubulifères = Chrysi-
dides. Parasites = Trigonalides,
Proctotrupides, Pélécinides, Chal-
cides, Ichneumonides, Braconides,
Mégalytrides, Evaniides, Stépha-
nides, Cynipides. Sossiliventres (ou
Chalastogastres) = Céphides, Siri-
cides, Oryssides, Tenthredinides.

Hymenoptera.

Le divisioni principali sono :—
Aculeata = Anthophila (Apidæ,
Andrenidae), Vespidae (Diploptera),
Sphegidae s.l. (Fossoria). Formi-
cidae (Heterogyna). Tubulifera =
Chrysididae. Parasitica = Trigo-
nalidae, Proctotrupidae, Pele-
cinidae, Chalcididae, Ichneu-
monidae, Braconidae, Megalyridae,
Evaniidae, Stephanidae, Cynipidae.
Sossiliventres (vel Chalastogastra) =
Cephidae, Siricidae, Oryssidae,
Tenthredinidae.

4800-4831 **Coleoptera** (incl. **Strepsiptera**).

The name of the family referred to should be given on each slip.

The families are numerous. They are included in the Munich Catalogue of the Coleoptera (Catalogus coleopterorum hucusque descriptorum synonymicus et systematicus) and (the subsequent additions) in "Cambridge Natural History," vol. vi.

5000-5031 **Prochordata**, viz., **Leptocardii**, **Enteropneusta**, **Tunicata**.

5200-5231 **Vertebrata**.

No systematic enumeration is to be placed under 5231.

5400-5431 **Pisces** [excl. **Leptocardii** (or **Amphioxus**), for which see 5000-5031].

The principal divisions are :—
Cyclostomi, Ostracodermi, Plagiostomi, Holocephali, Arthrodira, Dipnoi, Teleostomi (or Teleostei and Ganoidei, with the exception of Arthrodira and Ostracodermi).

The family should be mentioned. See Cambridge Natural History.

5600-5631 **Amphibia** and **Reptilia**.

The principal divisions are :—
Batrachia or Amphibia (Stegocephala or Labyrinthodontia, Apoda, Caudata or Urodela, Ecaudata or Anura).

Reptilia (Anomodontia, Rhynchocephalia, Plesiosauria, Ichthyosauria, Cotylosauria, Pareiasauria, Diaptosauria, Protosauria, Rhynchosauria, Procolophonia, Proganosauria, Choristodera, Chelonia, Crocodilia, Dinosauria, Ornithosauria or Pterosauria, Ophidia, Pythonomorpha, Rhiptoglossa, Lacertilia).

Coleoptera (incl. **Strepsiptera**).

Auf jedem Zettel ist der Name der betr. Familie anzugeben.

Die Zahl der Familien ist gross. Sie sind aufgeführt in dem Münchener Coleopteren-Katalog (Catalogus coleopterorum hucusque descriptorum synonymicus et systematicus) und (soweit es sich um spätere Zusätze handelt) in „Cambridge Natural History,“ vol. vi.

Prochordata, d.h., **Leptocardii**, **Enteropneusta**, **Tunicata**.

Vertebrata.

5231 wird keine systematische Aufzählung enthalten.

Pisces [mit Ausschluss der **Leptocardii** (oder **Amphioxus**), siehe 5003-5031].

Hauptabteilungen sind :—
Cyclostomi, Ostracodermi, Plagiostomi, Holocephali, Arthrodira, Dipnoi, Teleostomi (oder Teleostei und Ganoidei, mit Ausnahme von Arthrodira und Ostracodermi).

Familie angeben. *Siehe* Cambridge Natural History.

Amphibia und **Reptilia**.

Hauptabteilungen sind :—
Batrachia oder Amphibia (Stegocephala oder Labyrinthodontia, Apoda, Caudata oder Urodela, Ecaudata oder Anura).

Reptilia (Anomodontia, Rhynchocephalia, Plesiosauria, Ichthyosauria, Cotylosauria, Pareiasauria, Diaptosauria, Protosauria, Rhynchosauria, Procolophonia, Proganosauria, Choristodera, Chelonia, Crocodilia, Dinosauria, Ornithosauria oder Pterosauria, Ophidia, Pythonomorpha, Rhiptoglossa, Lacterilia).

4800-4831 Coléoptères (y compris les Strepsiptères).

Le nom de la famille dont il est question doit être donné sur chaque fiche.

Les familles sont nombreuses. Elles sont indiquées dans le Catalogue des Coléoptères de Munich (Catalogus coleopterorum hucusque descriptorum synonymicus et systematicus) et (pour les additions subséquentes) dans "Cambridge Natural History," vol. vi.

Coleoptera (incl. Strepsiptera).

Il nome della famiglia dev'essere indicato su ciascuna scheda.

Le famiglie sono numerose. Si trovano indicate nel Catalogo dei Coleoptera di Monaco (Catalogus coleopterorum hucusque descriptorum synonymicus et systematicus) e (le susseguenti aggiunte) in "Cambridge Natural History," vol. vi.

5000-5031 Prochordés, c'est à dire, Leptocardiens, Entéropneustes, Tuniciers.

Prochordata, cioè Leptocardii, Enteropneusta, Tunicata.

5200-5231 Vertébrés.

Aucune énumération systématique n'est placée sous le numéro 5231.

Vertebrata.

Non deve porsi alcuna enumerazione sistematica sotto 5231.

5400-5431 Poissons [à l'exception des Leptocardiens (ou Amphioxus), qui se trouvent sous les numéros 5000-5031].

Voici les divisions principales :—
Cyclostomes, Ostracodermes, Plagiostomes, Holocéphales, Arthrodires, Dipnoiques, Téléostomes (ou Téléostéens et Ganoïdes, à l'exception des Arthrodires et des Ostracodermes).

La famille doit être mentionnée. Voy. Cambridge Natural History.

Pisces [escl. Leptocardii (vel Amphioxus), per i quali vedi 5000-5031].

Le divisioni principali sono :—
Cyclostomi, Ostracodermi, Plagiostomi, Holocephali, Arthrodira, Dipnoi, Teleostomi (o Teleostei e Ganoidei, con esclusione di Arthrodira e Ostracodermi).

Indicare la famiglia. Vedi Cambridge Natural History.

5600-5631 Batraciens et Reptiles.

Voici les divisions principales :—
Batraciens ou Amphibies (Stégocéphales ou Labyrinthodontes, Apodes, Caudés ou Urodèles, Ecaudés ou Anoures).

Reptiles (Anomodontes, Rhynchocéphales, Plésiosauriens, Ichthyosauriens, Cotylosauriens, Paríasauriens, Diaptosauriens, Protosauriens, Rhynchosauriens, Procolophoniens, Proganosauriens, Choristodères, Chéloniens, Crocodiliens, Dinosauriens, Ornithosauriens ou Pterosauriens, Ophiidiens, Pythonomorphes, Rhiptoglosses, Lacertilien)

Batrachia et Reptilia.

Le divisioni principali sono :—
Batrachia vel Amphibia (Stegoccephala vel Labyrinthodontia, Apoda, Caudata vel Urodela, Ecaudata vel Anura).

Reptilia (Anomodontia, Rhynchocephalia, Plesiosauria, Ichthyosauria, Cotylosauria, Parciasauria, Diaptosauria, Protosauria, Rhynchosauria, Procolophonia, Proganosauria, Choristodera, Chelonia, Crocodilia, Dinosauria, Ornithosauria vel Pterosauria, Ophidia, Pythonomorpha, Rhiptoglossa, Lacertilia).

5800-5831 Aves.

The principal divisions are :—
 Accipitres, Aepyornithes, Alcae, Alectorides (including *Cariama*), Anisodactylæ (including Podargidae and *Steatornis*), Anseres (including Phœnicopteri and Palamediidae), Apteryges, Casuarii, Coccyges, Columbae, Coraciae, Crypturi, Cypseli, Dinornithes, Fulicariæ, Gallinae, Gaviae, Herodiones, Heterodactylæ, Impennes, Limicolæ, Odontolcae, Odontormæ, Opisthocomi, Passeres (mention families), Pici, Psittaci, Pterocletes, Pygopodes, Rheae, Saururæ, Steganopodes, Stereornithes, Striges, Struthiones, Tubinares, Zygodactylæ.

Aves.

Hauptabteilungen sind :—
 Accipitres, Aepyornithes, Alcæ, Alectorides (einschl. *Cariama*), Anisodactylæ (einschl. Podargidæ und *Steatornis*), Anseres (einschl. Phœnicopteri und Palamediidae), Apteryges, Casuarii, Coccyges, Columbæ, Coraciæ, Crypturi, Cypseli, Dinornithes, Fulicariæ, Gallinæ, Gaviæ, Herodiones, Heterodactylæ, Impennes, Limicolæ, Odontolcæ, Odontormæ, Opisthocomi, Passeres (Familien angeben), Pici, Psittaci, Pterocletes, Pygopodes, Rheæ, Saururæ, Steganopodes, Stereornithes, Striges, Struthiones, Tubinares, Zygodactylæ.

6000-6031 Mammalia.

The principal divisions are :—
 Carnivora, Cetacea, Chiroptera, Edentata, Insectivora, Marsupialia, Monotremata, Multituberculata, Primates, Rodentia, Sirenia, Tillo-dontia, Ungulata (Artiodactyla, Perissodactyla, Subungulata).

Mammalia.

Hauptabteilungen sind :—
 Carnivora, Cetacea, Chiroptera, Edentata, Insectivora, Marsupialia, Monotremata, Multituberculata, Primates, Rodentia, Sirenia, Tillo-dontia, Ungulata (Artiodactyla, Perissodactyla, Subungulata).

5803-5831 Oiseaux.

Voici les divisions principales :—
 Accipitres, *Æpyornithéens*,
 Alciens, Alectorides (y compris les
Cariama), Anisodactyles (y compris
 les Podargides et les *Steatornis*),
 Anséniens (y compris les Phœnico-
 ptères et les Palamédiidés), Aptery-
 giens, Casuariens, Coccoygiens,
 Colombins, Coraciens, Crypturiens,
 Cypséliens, Dinornithiens, Fuli-
 cariens, Gallinacés, Gaviens,
 Hérodiens, Hétérodactyles, Im-
 pennes, Limicoliens, Odontolciens,
 Odontormiens, Opisthocomes, Pas-
 sereaux (indiquer les familles),
 Pics, Perroquets, Ptérocliens,
 Pygopodes, Rhéens, Saururiens,
 Stéganopodes, Stéréonithiens, Stri-
 giens, Struthioniens, Tubinariens,
 Zygodactyles.

6000-6031 Mammifères.

Voici les divisions principales :—
 Carnivores, Cétacés, Chiroptères,
 Édentés, Insectivores, Marsupiaux,
 Monotrèmes; Multituberculés, Pri-
 mates, Rongeurs, Siréniens, Tillo-
 dontes, Ongulés [Ungulata] (Artio-
 dactyles, Périssodactyles, Subon-
 gulés).

Aves.

Le divisioni principali sono :—
 Accipitres, *Aepyornithes*, Alcæ,
 Alectorides (incl. *Cariama*), Aniso-
 dactylæ (incl. Podargidæ et
Steatornis), Anseres (incl. Phœni-
 copteri et Palamediidæ), Apteryges,
 Casuarii, Coccoyges, Columbæ,
 Coraciæ, Crypturi, Cypseli, Dinor-
 nithes, Fulicariæ, Gallinæ, Gaviæ,
 Herodiones, Heterodactylæ, Im-
 pennes, Limicolæ, Odontolcæ,
 Odontormæ, Opisthocomi, Passeres
 (indicare le famiglie), Pici, Psit-
 taci, Pterocletes, Pygopodes,
 Rheæ, Saururæ, Steganopodes,
 Stereornithes, Striges, Struthiones,
 Tubinares, Zygodactylæ.

Mammalia.

Le divisioni principali sono :—
 Carnivora, Cetacea, Chiroptera,
 Edentata, Insectivora, Marsupialia,
 Monotremata, Multituberculata, Pri-
 mates, Rodentia, Sirenia, Tillo-
 dontia, Ungulata (Artiodactyla,
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I. COMPREHENSIVE ZOOLOGY

ARRANGED 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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II. PROTOZOA

ARRANGED BY

II. M. WOODCOCK, D.Sc. (Lond.)

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Pleodorina californica, son cycle évolutif; Chatton, 97.

Primary and secondary cysts of intestinal Flagellates (*Trichomonas, Bodo*): their division and budding; Alexeieff, 13.

Sur la nature des formations dites "kystes de *Trichomonas intestinalis*." Les kystes sont en réalité un Ascomycète; Alexeieff, 5.—On the cysts of *Trichomonas*; Prowazek, 379.

Division stages and encystment in Flagellates (*Trichomonads*) of the fowl's caecum; Martin & Robertson, 303.

Liability of mistaking phases of Microsporidian parasites in Insects for resting or schizogonic phases of Flagellates (*Trypanosomes* and allied forms); Chatton, 98.

Cyst-formation in *Trypanosoma drosophilae*; Chatton & Léger, 101.

Schizogonic (auto-infective) processes in *Schizotrypanum cruzi*; Chagas, 88.—Phases in life-cycle of *Trypanosoma (Schizotrypanum) cruzi* in the bug *Conorhinus* and in the human organism; Chagas, 90.

Phases in life-history of *T. gambiense* and *T. rhodesiense*, as seen in rats and guinea-pigs; formation of latent bodies; Fantham, 153.

So-called "latent-bodies" of Trypanosomes in the internal organs, regarded not as normal developmental forms (phases of a life-cycle) but as involution-forms; Laveran, 271.

Developmental forms and phases of *T. gambiense* in different organs (including salivary glands) of *Gl. palpalis*; Bruce, Hamert, Bateman & Mackie, 60.

Developmental phases of *Trypanosoma gambiense* in *Glossina palpalis*; also of *T. grayi* in the same Insect; Kleine & Taute, 246.

Multiplicative periods in *T. rhodesiense*; Ross & Thomson 390.—

Periodic variations in *T. gambiense* and *T. rhodesiense*; **Fantham & Thomson, 159.**

Forms of *T. brucei* (*pecaudi*) occurring in internal organs—chiefly spleen—of the gerbil regarded as intracorpuseular and extracorpuseular ring forms (encysting); **Buchanan, 62.** [From most of the figures the Rec. would be inclined to regard them as degenerating or involution forms.]

Extension of granules from Trypanosomes (*T. brucei*-type); **Fry, 184.**

Intracellular stage in the development of *Trypanosoma lewisi* in *Ceratophyllus fasciatus*; **Minchin & Thomson, 329.**

Stages of *T. lewisi* in rat-fleas (*Ceratophyllus* and *Pulex* sp.); **Swingle, 466.**

Crithidial and herpetomonad phases in the development of *T. lewisi* in the rat-flea; "*H*" *pattoni* not a distinct parasite; **Swellengrebel & Strickland, 465.**

Sur l'existence des formes trypanosomes ("petits trypanosomes") dans les cultures de *T. lewisi*; **Delanoë, 131.**

Cultural forms of a Trypanosome of cattle; **Swellengrebel, 464.**

Cultural forms of Flagellates from cows' blood in which a Trypanosome (type *T. theileri*) was found; these gave rise, on inoculation, to Trypanosomes of a different type [probably younger forms of the same parasite]; **Behn, 40.**

Cultural forms of Trypanosomes of cattle in Greece; **Cardamatis & Phoinos, 77.**

Fortpflanzungsstadien von *Trypanosoma theileri* (Russ.); **Stolinikoff, 454.**

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Transformation *in vitro* des formes crithidiennes de *T. rotatorium* en formes trypanosomiques (type "*inopinatum*"); **França, 177.**

Binary fission (asexual) and multiple division (micro- and macrogametogony) of *T. rotatorium*; **Machado, 292.**

Developmental forms of different fish-Trypanosomes and also of a *Trypanoplasma* in a leech, *Hemiclepsis marginata*; **Robertson, 387.**

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Formenkreis von *Ceratium tripos* var. *subsalsa* Ostf.; **Apstein, 18.**

Cyst-formation, and division in *Gymnodinium biciliatum*, n. sp.; **Ohno, 350.**

Division in *Oxyrrhis* transverse and corresponding in character to that of Dinoflagellates; **Senn, 426.**

(e) CILIOPHORA.

Phases in the conjugation of *Anoplophrya brasili*; **Collin, 111.**

Karyosom und Centriol beim Teilungsvorgang von *Chilodon uncinatus*; **Nägler, 338.**

La non-copulation du noyau échangé et du noyau stationnaire et la disparition de ce dernier dans la conjugaison de *Paramoecium caudatum*; simple échange micronucléaire; **Dehorne, 128.**

True conjugation, with nuclear fusion, at least in *Colpoda cucullus*; **Dangeard, 120** (5 text figs.).

Further discussion on the question of the nuclear behaviour during the conjugation of Infusoria; **Dehorne, 129, and Dangeard, 121.**

Assortative mating in the conjugation of *Paramoecium*; **Jennings, 238.**

Two thousand generations (divisions) of *Paramoecium*, without conjugation; **Woodruff, 506.**

Rhythms and cycles in the reproductive activity (division-rate) of *Paramoecium*; **Woodruff & Baitzell, 512.**

The reproduction of *Paramoecium aurelia* in a "constant" culture medium of beef extract; **Woodruff & Baitzell, 511.**

On the division and nuclear relations of "amicronucleate" *Paramoecia* resulting from artificial division; **Lewin, 286**.—Regeneration of *Paramoecium* after cutting; formation of monsters; **Calkins, 68**.

Le mode de division du *Strombidium sulcatum* Ch. et Lach; **Fauré-Fremiet, 167**.

Conjugation of closely related individuals of *Stylonychia*; **Baitsell, 30**.

Cell-division and cell-regeneration in *Uronychia transjuga*; **Calkins, 67**.

Behaviour of the micronucleus of Infusoria (*Uronychia*, *Stylonychia*) in regeneration; **Lewin, 285**.

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Mode of life of certain Amoebae from dysentery and liver-abscesses; their association with particular micro-organisms; **Liston & Martin, 290**.

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Biological notes on *Monocystis rostrata*; relation of the life-cycle to seasonal periods; **Mulsow, 334**.

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On the appearance of various Flagellates in different infusions and scums; **Alexeieff, 12**.

Synura, conditions of growth in Lake Cochituate, Massachusetts; **Parker, 355**.

Notes on the behaviour of the Trypanosoma (*T. noctuae*), *Halteridium* and *Leucocytosoon* of the little owl; **Minchin & Woodcock, 330**.

Sur la survie du *Trypanosoma brucei* dans quelques milieux d'origine biologique et non biologique; **Fleig, 170**.

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Notes on the bionomics of Infusoria (seasonal variation, manner of dispersal, etc.); **Enriques, 147**.

A note on learning in *Paramoecium*; **Day & Bentley, 124**.

Habits and reactions of the Ciliate, *Lacrymaria*; **Mast, 304**.

The Protozoan plankton of the ocean, particularly Dinoflagellates, Radiolaria and Tintinnoidea, with especial reference to their numerical abundance; **Hensen, 219**.

Plankton.

Nordische Ciliata mit Ausschluss der Tintinnoidea; **Hamburger & Buddenbrock, 210**.

Dinoflagellates in plankton, Second Norwegian Arctic Exped. 1898-1902; **Gran, 199**.

Marine plankton from the East-Greenland Sea (W. of 6° W. long. and N. of 73° 30' N. lat.) collected during the "Danmark Expedition" 1906-1908. I. Flagellates. II. Foraminifera, Radiolaria, Tintinnoidea; **Ostenfeld, 351**.

North Sea, Protozoa, chiefly Dinoflagellates; **Mielck, 325**.

Plankton, South end Isle of Man, seasonal occurrence of *Ceratium*, *Peridinium* and *Noctiluca*; **Herdman & Scott, 221**.

Die farbigen Flagellaten des Kieler Hafens; **Büttner, 64**.

The marine Flagellate *Phacomonas pelagica* in fresh water; **Pascher, 358**.

Über Nannoplanktonen des Süßwassers; **Pascher, 359**.

Das Phytoplankton des Süßwassers mit besonderer Berücksichtigung des Vierwaldstättersees; **Bachmann, 28**.

Adriatic, *Coccolithophoridae*, with *Syracosphaera lohmanni* n. sp.; **Brunnthaler, 61**.

Adriatic, Istrian and Dalmatian coast, Dinoflagellates; **Schröder, 415**.

Radiolarion aus der Adria; **Stiasny, 451**.

Adriatic, mostly Dalmatian coast, Foraminifera in plankton; **Stiasny, 450**.

Adriatic (Ragusa), on a Copepod, *Tokophrya steueri* n. sp.; **Schröder, 416**.

River Po, Protozoa in plankton; Padovani, 353.

Plankton, Retiro ("estanque grande"), Madrid, Protozoa; Moreno, 332.

Spirodinium ? sp. and *Pouchetia* sp., chief constituent organisms of the "red tide" (Japanese); Nakazawa, 339.

Commensalism.

Ectoparasitic (or commensal) on various pelagic *Hoplophoridae* (*Systelapsis*, *Acanthephyra*), *Ellobiopsis caridurum* n. sp.; parasitic on *Pasiphaca tarda*, *E. racemosus* n. sp.; Coutière, 112.

Commensal with *Pyrosoma giganteum*, in buccal siphons, *Conchophrys davidoffi* n. g., n. sp.; Chatton, 95.

Parasitism.

Hosts of parasitic *Amoebae*, including new forms; Walker, 485.

List of hosts of Gregarines (supplementary to Labbé's list 1899); Sokolow, 440.

Plantae.

In *Euphorbia pilulifera* (Dahomey), latex, *Leptomonas davidi* Lafont; Bouet & Roubaud, 48.—In *E. peplus* and *E. segetalis* (Portugal), latex, *Leptomonas davidi*; França, 178.

Présence de *Leptomonas* dans le latex d'une Euphorbe congolaise; Rodhain & Bequaert, 389.—Présence à la Martinique de *L. davidi*; Noc & Stévenel, 347.

Protozoa.

In *Amoeba*-cysts, a Microsporidian indet.; Nägler, 336.

In *Euglena sanguinea*, *Chytridiaceae* (*Sphaerita* sp.); Nägler, 337.

In *Paramoecium* sp., a Bacterial parasite, *Drepanospira mülleri* n. g., n. sp.; Petschenko, 366.

In *Cestus veneris*, perradial canals, a new Ciliate *Perikaryon cesticola*; Chatton, 95.

In *Diphyes elongata* (Will), *Trypanophis* (*Trypanoplasma*) *grobbei*; Poche, 370.

Turbellaria.

Astasia captiva, n. sp. Euglénien parasite de *Catenula lemnæ* Ant. Dug.; Beauchamp, 38.

Chaetopoda.

In a new Oligochaete, *Isochaeta virulenta*, in body cavity chiefly of genital segments, Flagellate parasites inc. *sedis*; Pointer, 372.

In the earthworm *Kynotus pittarellii* (Madagascar), body-cavity, *Taeniocystis legeri* n. sp.; Cognetti de Martiis, 110.

In epithelium and body-cavity of *Lumbriculus variegatus*, a new Protozoan, *Spirocystis nidula*, n. g. n. sp.; Léger & Duboscq, 282.

In *Lumbricus terrestris*, seminal vesicles, *Monocystis rostrata* n. sp.; in body-cavity, hinder segments, *M. catenata* n. sp.; Mulsow, 334.—In *L. variegatus* (Bernex), digestive tract, *Mesmilella cepedei* n. sp.; André, 15.

In a Polychaete larva (*Ophelia* ?), intestinal cells, a new Cnidosporidian, *Paramyxa paradoxa* n. g., n. sp.; Chatton, 92.

In *Pareudrilus pallidus*, seminal vesicles, *Monocystis pareudrili* n. sp., and *Rhynchocystis hessei* n. sp.; Cognetti de Martiis, 109.

Gregarines aus *Polycirrus albicans*, *Bradaganulata*, *Phascolosoma hanseni*, *Travisia forbesi* (Russ.); Mavrodiadi, 313.

In *Rhinodrilus* (*Thamnodrilus*) *incertus*, body-cavity, *Monocystis thamnodrili* n. sp.; Cognetti de Martiis, 109.

In *Slavira appendiculata*, body-cavity, *Adelina octospora* n. g., n. sp.; Hesse, 224.

In *Zeppelinia branchiata*, intestinal epithelium, Gregarines unsp.; Sokolow 440.

Crustacea.

Ectoparasitic on various bathypelagic Crustacea, (Azores and Gulf of Gascony), new *Ellobiopsidae*; Coutière, 112 & 113.

In Copepods (chiefly *Calanus* and *Paracalanus*), gut and body-cavity, various Gregarine, Flagellate, Ciliate,

Microsporidian and Ichthyosporidian parasites, not sufficiently described for specific determination; **Apstein, 19.**

In Copepods of the North Sea and Baltic (*Calanus*, *Pseudocalanus*, *Paracalanus*, *Centropages* and *Acartia clausi*), digestive tube, a parasite observed by Apstein, regarded as *Blastodinium hyalinum*; **Chatton, 93.**

In *Diaptomus castor*, body-cavity (cephalo-thorax), *Gurleya richardi* n. sp.; **Cépède, 87.**

In *Cyclops* and *Daphnia*, intestinal epithelium, a Sporozoan parasite [most likely a parasitic Dinoflagellate (cf. *Blastodinium*)]; **Grandori & Grandori, 200.**

In *Gammarus marinus*, intestine, *Cephaloidophora* (syn. *Frenzelina*) *maculata* n. sp.; **Léger & Duboscq, 281.**

In *Atyephyra desmaresti*, fresh water, intestine, *Cephaloidophora cuenoti* n. sp.; **Mercier, 316.**

Myriapoda.

In *Scolopendra subspinipes* (Aru Islds.) intestine, *Pterocephalus indicus* n. sp.; **Merton, 317.**

Insecta.

Arthropoda (Myriapods and Insects) of East Prussia as hosts of Sporozoa (mostly Gregarines); **Wellmer, 490.**

In *Auchmeromyia luteola*, intestine, *Cercoplasma caulleryi* n. sp.; **Roubaud, 392.**

In flies (*Calliphora coloradensis* and *Sarcophaga sarraceniae*), digestive tract, *Herpetomonas calliphorae* and *lineata* n. spp.; **Swingle, 466.**—In *Calliphora erythrocephala* ("bluc-bottle"), gut, *Crithidia calliphorae* n. sp.; **Swollen-grebel, 459.**

In *Calotermes castaneus* (Honolulu), *Parajoenia grassii* n. g., n. sp.—In *C. grassii* (Chili), *Stephanonympha silvestrii* n. g., n. sp.; **Janicki, 235.**—In *Calotermes flavicollis*, *Mesojoenia decipiens* n. g., n. sp. and *Microrhopalodina enflata* n. g., n. sp.; **Grassi & Foa, 201.**

In *Cetonia* (larva), intestine, *Mono-cercomonas cetoniae* n. sp.; **Jollos, 241.**

Hemiptera (*Dieuches humilis* Reuter) found to transmit *Leptomonas davidi*

from one *Euphorbia*-plant to another; **Bouet & Roubaud, 48.**

In *Drosophila confusa* and *plurilineata*, intestinal wall, Malpighian tubes and genital organs, *Octosporea muscae-domesticae* and *O. monospora* n. sp.; **Chatton & Krempf, 99.**—In *D. ampelophila*, *plurilineata* and *transversa* var. *phalerata*, *Leptomonas* spp.; **Chatton & Léger, 100.**—In *D. rubrostriata*, *Leptomonas rubrostriatae*; in *D. ampelophila*, *L. ampelophilae* n. spp.; **Chatton & Léger, 480.**

In caddis-fly larvae, intestine, *Em-bidomonas agilis* n. g., n. sp., *Crithidia campanulata* Léger, *Entamoeba* sp., and (in fat-bodies) *Gurleya legeri*; **Mackinnon, 293.**

In a Pentatomid bug (*Erthesina fullo*) (all phases), Flagellate parasites agreeing closely with the forms of *Leishmania* developed in cultures of non-ulcerating Oriental Sore; **Carter, 82.**

Gl. morsitans also acts as a true host for *T. gambiense*; **Taute, 468.**

In *Homalomyia canicularis*, *Leptomonas muscae-domesticae*, also "*Herpetomonas*" m.-d.; **Dunkerly, 142.**

In *Lucilia* sp. (perhaps *sericata*), *Cystotrypanosoma intestinalis* n. g. n. sp.; **Roubaud, 391.**—In *Lucilia* sp. (green-bottle fly), digestive tract, *Herpetomonas luciliae* n. sp.; **Strickland, 455.**

Relation of the young forms of *Gregarina polymorpha* to the host-cells (intestinal epithelium) of the meal-worm; **Ishii, 231.**

In *Musca domestica* (Dutch E. Indies), alimentary canal, also ovaries, *Octosporea muscae-domesticae*, a new Microsporidian; **Flu, 171.**

In *Pterostichus niger*, alimentary canal, *Gigaductus exiguus* n. sp.: in *Crypticus quisquilius* alim. canal, *Gregarina ovoidea* n. sp., in *Lagria hirta*, alim. canal, *G. rostrata* n. sp.; **Wellmer, 490.**

In *Pulex irritans*, digestive tract, "*Crithidia*" *pulicis* n. sp. [most probably the trypanomonad phase of some Trypanosome]; **Porter, 377.**

Pulex serraticeps (and probably also *irritans*) most likely the alternate

hosts (transmissive agents) of *Leishmania* of Mediterranean Kala-Azar; Basile, 33.

In *Pycnosoma* spp., a Leptomonad regarded as distinct, *L. soudanensis* n. sp.; Roubaud, 393.

In *Simulium hirtipes* (larvae), filling up entire body-cavity, *Glugea polymorpha* n. sp.; Strickland, 457.

In *Stegomyia fasciata*, gut, *Lankesteria culicis*; Wenyon, 493.

In *Tabanus secedens* and *thoracinus*, gut, Crithidial parasites [probably phases of some Trypanosome]; Bruce, Hamerton & Bateman, 56.

Polyzoa.

Parasitismus von *Nosema bryozoides* in den Hodenzellen von *Plumatella repens* var., Verhältnis zur Wirtszelle; Braem, 49.

Mollusca.

In the whelk (*Buccinum undatum*), renal organ, a new Coccidian (*Mero-cystis kathae* n. gen. et sp.); Dakin, 119.

In snails (*Helix* and *Limnaea* spp.), Mid-Europe, various genital organs, *Trypanoplasmata* with new forms; Kühn, 260.

In *Littorina* sp., *Balanitidium littorinae* [n. sp. ?]; Chagas, 89.

In *Vittrina elliptica* (?), renal epithelium, *Klossia vittrina* n. sp.; Moroff, 333.

Pisces.

In various fishes (fresh-water, Austria and Adriatic sea) especially on the gills, Myxo- and Microsporidia, with new forms Nemeček, 342.

In various fishes, Tonkin, new Trypanosomes: the following are named, *T. roulei* from *Monopterus javanensis* and *T. pellegrini* from *Macropodus viridi-auratus*; Mathis & Léger, 311.—Trypanosomes of fishes, Tonkin; Mathis & Léger, 308.

Known Piscine hosts of Myxosporidia; Auerbach, 23.

Myxosporidia of fishes of the Lake of Lucerne; Nufer, 343.

Fischparasiten, Ladoga-See (Finnisch); Jääskeläinen, 232.

In Australian fish, new species of Trypanosomes; Johnston & Cleland, 240.

Trypanosomes de poissons brésiliens avec *T. hypostomi* n. sp.; Splendore, 442.

Ein neuer Gehirnparasit des Karpfens (*Lentospira encephalica* sp. n.); Mulsow, 335.

In a Silurid fish (*Clarias macrocephalus*), *Trypanoplasma clariae* n. sp.; Mathis & Léger, .

In *Crenilabrus melops*, liver and between muscle-layers of body-wall, *Pleistophora labrorum* n. sp.; Le Danois, 279.—In *Crenilabrus melops*, skin and mesentery, a Sporozoan regarded [probably wrongly] as a *Pleistophora (gigantea)* Thél.; Swellengrebel, 460 & 462.

In *Osmerus eperlanus*, subcutaneous tissue and body-cavity, *Glugea hertwigii* n. sp.; Weissenberg, 488.

In *Plecostomus punctatus* (Brazil), *Trypanosoma chagasi* n. sp.; Horta & Machado, 223.

In *Solea monochir*: *Trypanosoma dohrni* sp. n.; in *Syngnathus acus*: *T. sp. n.* (Russ.); Yakimoff, 518.

Amphibia.

New Haematozoa from Amphibia and Reptiles, morphological notes; França, 175.

Haemogregarines of Amphibia (*Rana* spp.), Tonkin; Mathis & Léger, 311 & 312.—Trypanosomes from Amphibia and Reptiles, Tonkin; Mathis & Léger, 311.

Trypanosomes of frogs and toads, Tonkin; in *Bufo melanostictus*, *T. chattoni* n. sp.; Mathis & Léger, 310.—In *B. m.* (Tonkin), *Tryp. bocagei* varr. n. *parva* and *magna*; Mathis & Léger, 307.

In Axolotl, intestine, *Rhizomastix gracilis* n. g., n. sp.; Alexeieff, 12.

In *Bufo regularis* (Portuguese Guinea), *Hg. pestanae* n. sp., *Tryp. bocagei* n. sp., and *Toddia bufonis* n. g., n. sp.; França, 175.—In *B. regularis* (Khartoum), various Protozoa; Stevenson, 448.

In *Bujo vulgaris* and *calamita*, *Trichomonas angusta*, in *Triton marmoratus* and *cristatus*, *T. tritonis*, in *Haemopsis sanguisuga*, *T. sanguisugae*, n. spp.; Alexeieff, 10.

In *Triton* spp., *Salamandra* and *Discoglossus*, cysts regarded as of flagellate nature (either *Bodo* or *Trichomonas*) and not vegetable; Alexeieff, 13.

In *Triton taeniatus*, intestine, *Poly-mastix batrachorum* n. sp.; Alexeieff, 12.

Reptilia.

Hémogrégarines de Reptiles et des Batraciens du Tonkin; Mathis & Léger, 312.

In *Boa imperator*, *Haemogregarina imperatoris* [n. sp.]; Seidelin, 421.

In a viper (*Cerastes cornutus*), *Haemogregarina seurati* n. sp.; Laveran & Pettit, 274.

Haemogregarines of Chelonia (*Ocadia sinensis* and *Trionyx cartilagineus*), of Ophidia (*Bungarus fasciatus* and *Hypsi-rhina chinensis*); Mathis & Léger, 312.

The crocodile is the Vertebrate host of *Trypanosoma grayi*; Kleine & Taute, 246.

In *Lacerta* sp., blood-plasma, amoeboid and irregular, perhaps flagellate bodies [possibly contamination with, or unusual presence of, intestinal parasites]; Seidelin, 421.

In *Mabuia perroteti*, *Tryp. perroteti* n. sp.; França, 175.

In a tortoise (*Sternothaerus derbianus*), Portuguese Guinea, *Haemogregarina sternothaeri* n. sp.; França, 195.—In *Varanus niloticus* (Portuguese Guinea), H. sp.; id. 175.

In *Testudo graeca*, *Balantidium testudinis* [n. sp. ?]; Chagas, 89.

Aves.

In various birds, *Leucocytozoon zie-manni* [and probably other spp.]; Cardamatis, 72.

In various birds, Tonkin, *Halteridium* spp. indet.; Mathis & Léger, 311.

In various birds, Tonkin, *Leucocytozoon* spp., including *L. kerandeli* from

Francolinus sinensis and *dubreuilii* from thrush, n. spp.; Mathis & Léger, 311.

In various birds, Tonkin, Trypanosomes with new species; Mathis & Léger, 306 & 311.

In various Japanese birds, intracellular blood-parasites (*Halteridium*, *Leucocytozoon* and *Protozooma*) and Trypanosomes; Ogawa, 349.

In various birds (Brazil), mononuclear leucocytes, new Haemogregarines; Aragao, 20.

Trypanosomes of the trumpeter hornbill (*Bycanistes buccinator*); Dutton, Todd & Tobey, 143.

In domestic fowl, caecum, *Trichomonas gallinarum*, *Trichomastix gallinarum* and *Chilomastix gallinarum*, n. spp.; Martin & Robertson, 303.

Trypanosomes in Hühnern (u. a. *Tr. numidae* sp. n.); Haan, 206.

In a "laughing jackass" (*Dacelo gigas*), *Halteridium* sp.; Welsh & Priestley, 492.

In an eagle (*Haliaeetus vocifer*), French Congo, *Leucocytozoon audieri* n. sp.; Laveran & Nattan-Larrier, 273.

In peacock, *Ardetta sinensis*, and *Munia topela*, Tonkin, new species of *Leucocytozoon*; Mathis & Léger, 306.

In *Lanius excubitor* (butcher-bird) and goldfinch, Trypanosomes, spp. indet.; Cardamatis, 74.

Leucocytozoon des oiseaux (*Nycticorax* n., *Centropus senegalensis*) du Congo français; Aubert & Heckenroth, 22.

In partridge and marsh-bird, Trypanosomes; Plimmer, 369.

Occurrence of *Halteridium* in a sparrow (*Passer domesticus*), apparently the first observation of this parasite in Swiss birds; Galli-Valerio, 187.

In *Syrnium aluco*, *Halteridium syrni* n. sp.; Mayer, 314.

Mammalia.

Blutprotozoen bei Säugetieren (Holländisch); Vrijburg, 481.

In blood of various animals (chiefly Marsupials), the bodies known as *Anaxplasma marginale*; possibly not

parasitic Protozoa at all; Gilruth, Sweet & Dodd, 190.

A Sarcosporidian in the opossum; Darling, 123.

Le rôle des Carpinchos (Capybara) comme réservoir de virus (hôte alternative) dans la conservation du mal de Caderas (*T. equinum*); Migone, 326.

Im Blute des Iltis, ein neuer Parasit, *Microsoma mustelae*, mit Beziehungen zu den Piroplasmen; Lebedeff & Tscharnotzky, 278.

In *Mus decumanus*, *Trichomonas parva* n. sp.; Alexieff, 10.

In *Spermophilus musivus*, *guttatus* and *eversmanni*, *T. spermophili* n. sp.; Laveran, 272.

¶ In *Erinaceus algirus*, *Piroplasma weissii* n. sp.; Galli-Valerio, 186.

Piroplasma im Blut der Schweine; Dementjef, 133.

In ponys (from Togoland), *T. frobenius* n. sp.; Weissenborn, 489.

In goats (German E. Africa), *Trypanosoma caprae* n. sp.; Kleine & Taute, 246.

In oxen (Uganda), *Trypanosoma uniforme* n. sp.; Bruce, Hamerton, Bateman & Mackie, 57.

Antelope (water-buck, bush-buck and reed-buck) as "potential" hosts of *T. gambiense*; Bruce, Hamerton & Bateman, 54.

Ein neues, bei Rindern in Uruguay (Südamerika) gefundenes *Trypanosoma*; Peter, 365.

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III. SYSTEMATIC. 0431

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Mycetozoa, chiefly from neighbourhood of Westport, Mayo, notes; LISTER Proc. R. Irish Acad. 31 (Clare Island Survey Pt. 63) 20 pp.

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Amœbae, parasitic forms, hosts, cultivation, specific distinctions and synonymy, pp. 379-441 pls. xxia-xxiv; *A. cobayae* p. 442 pl. xxiii

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Diffugia lingula p. 302 pl. x fig. 6, *echinulata* p. 304 fig. 8, spp. n., Sierra Leone; PENARD J. Quak. Microsc. Cl. Ser. 2 11.

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Euglypha armata p. 37 pl. iii fig. 16 *bryophila* (Brown, sp. n.) p. 38 fig. 17, *rotunda* p. 41 pl. iv fig. 19, *scutiigera* (Penard sp. n.) p. 41 fig. 20, spp. n., *strigosa* var. n. *muscorum* p. 42, *cristata* var. n. *major* pp. 40 & 62; WAILES & PENARD Proc. R. Irish Acad. 31 (Clare Island Survey 65).—*E. bryophila* sp. n., occurrence and diagnosis; BROWN J. Linn. Soc. Zool. 32 p. 82 pl. ix figs. 14 & 15.

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†*Assilina gemmellaroi* p. 143 pl. iv fig. 7, *subgemmellaroi* p. 144 fig. 8, spp. n. Tertiary, Bagheria; CHECCHIA-RISPOLI Giorn. Sc. nat. econ. 28.

†*Bifarina adela* sp. n. Eocän, Norddalmatien; LIEBUS SitzBer. Ak. Wiss. Wien Abth. I 120 p. 924 pl. i

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fig. 15.—*B. hungarica* sp. n. Trias, Bakony; VADÁSZ Res. wiss. Erforsch. Balatonsees 1 i Anhang Palaeontol. 1 p. 16 pl. i figs. 9 & 10.

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†*B. haddoniana* sp. n. Estuarine Clay Limavady (also Recent); WRIGHT Belfast Rep. Nat. F. Cl. Ser. II 6 iv (Appendix No. 2) p. 14 pl. ii fig. 22.

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†*B. punctata* d'Orb. var. n. *semi-striata* Eocän, Norddalmatien; LIEBUS SitzBer. Ak. Wiss. Wien Abth. I 120 p. 922 pl. i fig. 11.

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†*Cristellaria tricarinnella* Rss. var. n. *striata* Eocän, Norddalmatien; LIEBUS SitzBer. Ak. Wiss. Wien Abth. I 120 p. 914 pl. i figs. 4 & 5.

†*Cymbalopora hungarica* p. 30 pl. ii figs. 1-3 18 & text-fig. 20, *oblonga* p. 31 pl. i fig. 33, spp. n., Trias, Bakony; VADÁSZ Res. wiss. Erforsch. Balatonsees 1 i Anhang Palaeontol. 1.—*C. radiata* Hag. var. n. *minima* Mittel-eocän, Norddalmatien; LIEBUS SitzBer. Ak. Wiss. Wien Abth. I 120 p. 952 pl. iii fig. 7.

Dendrophrya tolli sp. n. Siberian Polar Sea; AWERINZEW Mem. Ac. Sci. St. Peterburg Ser. 8 29 3 p. 13 fig. 1.

Discorbina wrightii var. n. *spinifera*, *imperatoria* var. n. *nuda*, Adriatic (Istrian coast); WIESNER Zool. Anz. 38 pp. 509 & 510.

†*D. inaequilateralis* sp. n. p. 328 pl. xi figs. 3-5, *patelliformis* Brady var. n. *corrugata* p. 329 pl. x figs. 22-24, *rosacea* (d'Orb.) var. n. *selseyensis*, occurrence and notes; HERON-ALLEN & EARLAND J. R. Microsc. Soc. 1911.—*D. millettii* sp. n., Estuarine Clay, Limavady (also Recent); WRIGHT Belfast Rep. Nat. F. Cl. Ser. II 6 iv (Appendix No. 2) p. 13 pl. ii figs. 14-17.

†*Ehrenbergina foveolata* sp. n. Tertiary, Neu-Mecklenburg; SCHUBERT Abh. geol. Rchsanst. 20 H. 4 p. 61 pl. vi fig. 1.

†*Ellipsoidella* H.-A. & E., syn. *Ellipsopleurostomella* Silv.; HERON-ALLEN & EARLAND J. R. Microsc. Soc. 1911 p. 317.

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†*Lingulina carinata* var. n. *biloculi*, Estuarine Clays, Magheramorne and Limavady; WRIGHT Belfast Rep. Nat. F. Cl. Ser. II 6 iv (Appendix No. 2) p. 13 pl. ii fig. 10.

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†*Miogypsina burdigalensis* Gümb. var. n. *suralilensis*, Tertiary; SCHUBERT Abh. geol. Rehsanst. 20 H. 4 p. 120 pl. iii fig. 2.—*M. irregularis* var. n. *orientalis*, Tertiary, Philippine Is.; DOUVILLÉ Philippine J. Sci. D. 6 p. 74 pl. D figs. 9 10.

†*Nodosinella clarkei* sp. n. Carbonic, Magdalen Is.; BEEDE N. Y. St. Mus. Bull. No. 149 p. 175 3 figs.

†*Nonionina quadriculata* sp. n., Selsey Bill; HERON-ALLEN & EARLAND J. R. *Microsc. Soc.* 1911 p. 342 pl. xi figs. 12-15.

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†*Nummulites bayhariensis* sp. n. p. 131 pl. iv figs. 9-11, *N. gentilei* Prev. var. n. *regularis* p. 132 fig. 41, *N. tchihatcheffi* d'Arch. var. n. *apiculata* p. 136 fig. 39, Eocene, Bagheria; CHECCHIA-RISPOLI Giorn. sc. nat. econ. 28.—*N. (Bruguieria) uhligi* p. 177 pl. vii fig. 4, *N. (Paronaea) pillai* p. 180 figs. 2 & 3, *tondii* p. 181 fig. 10, spp. n., Eocene, Bagheria; CHECCHIA-RISPOLI T.c.—*N. subniasi* sp. n. Tertiary, Philippine Is.; DOUVILLÉ Philippine J. Sci. D. 6 p. 58 pl. A fig. 1.

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†*Orbitoides (Lepidocyclina) acuta* p. 1130 text-fig. 2, *flexuosa* p. 1132 fig. 3, *polygona* p. 1133 *glabra* p. 1137, fig. 4, spp. n., *sumatrensis* Brady var. n. *minor* p. 1136, *neodispansa* Jones & Chapman var. n. *minor* p. 1136, *O. (Lepidosemicyclina) thecideaiformis* p. 1135, *polymorpha* p. 1137, spp. n., Post-Eocene, Borneo; RUTTEN Amsterdam Proc. Sci. Akad. Wet. 13.

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35-37, *sporophilae* p. 62 figs. 38-58, *tanagrae* p. 62 figs. 60-63, *sicalidis* p. 63 figs. 64-74, *brachyspizae* p. 63 figs. 75-79, spp. n., from various birds, described; ARAGAO Mem. Inst. Oswaldo Cruz 3.

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Pleistophora labrorum sp. n., from *Crenilabrus melops*, note; LE DANOIS Bul. soc. sci. méd. Rennes 19 pp. 210 & 211 1 fig.—*P. periplanetae* (Lutz & Splendore), Sporenbildung und feinere Struktur; ERFSTEIN Biol. Centralbl. 31 pp. 676-682.—“*P. gigantea*” Thél., account of a parasite from *Crenilabrus* regarded as this form [this does not appear to be a true *Pleistophora*, for no polar capsule was observed]; SWELLENGREBEL Parasitol. 4 pp. 345-363 pls. xvii & xviii & 20 text-figs.

Thelohania vide also *Octosporea*.

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A parasite of the intestinal wall of *Cyclops* and *Daphnia*, regarded as a Monocystid Gregarine [much more probably akin to the parasitic Dinoflagellates such as *Blastodinium*]; GRANDORI & GRANDORI Monit. zool. ital. 22 pp. 287-292 1 text-fig.

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“*Cytorrhycles*” *luis* of Siegel, formerly regarded as a Protozoan organism now considered to be Bacterial, a *Coccus*-form; SIEGEL Centralbl. Bakt. Abth. I 57 Orig. pp. 68-81 1 pl.—*C. vaccinae* (Guarnieri’s bodies) also regarded as Coccid in nature; SIEGEL Centralbl. Bakt. Abth. I 59 Orig. pp. 406-415 2 pls.—*Cytoryctes variolae* of small-pox, notes on minute “ultimate granules”; CASAGRANDE Centralbl. Bakt. Abt. I 57 Orig. pp. 402-415 4 text-figs.—*C. variolae* methods pp. 140-143, life-cycle pp. 143-157 pls. xvi-xix figs. 1 & 2, biology pp. 158-167; CALKINS J. Med. Res. 11 (N. Ser. 6).

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Neurocyctes hydrophobiae, the parasite of hydrophobia regarded as indirectly related to *Plasmodiophora* and more allied to Haplosporidia than to Mycetozoa; POLLACCI Rend. Acc. Lincei Ser. 5 20 ii pp. 218-222.

4. MASTIGOPHORA.

(a) Flagellata.

Notes on various intestinal Flagellates (of Amphibia); ALEXEIEFF Arch. Zool. exp. (sér. 5) 6 pp. 491-504 text-figs. 1-8.—Notes on certain Flagellates (*Bodo* spp., *Cercomonas* spp. *Chilomonas*) appearing commonly in infusions; ALEXEIEFF T.c. pp. 504-525 text-figs. 9-15.

Flagellates of house-flies described: "*Herpetomonas*" *muscae-domesticae* and trypanosome-forms, probably both connected with a *Leptomonas*; WENYON Parasitol. 4 pp. 332-338 text-figs. 9-36.

Intestinal Flagellates (*Trichomonas*, *Lambliina*), as pathogenic Protozoa, general account; RODENWALDT in "Handbuch der pathogenen Protozoen" Lfg 1 pp. 78-97 pl. iii & 9 text-figs.

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Bodo asiaticus Cast. & Chalm., should be placed in the genus *Prowazekia*, on account of its binucleate character; WHITMORE Arch. Protistenkunde 22 pp. 370-378 pl. xviii.—*B. caudatus* (Duj.) Stein, morphologie et division nucléaire; ALEXEIEFF C. R. soc. biol. 70 pp. 130-132 10 text-figs.—*B. lucertae* (Grassi) placed back again in the genus *Heteromita*, on the ground that this form differs essentially from other *Bodos*; ALEXEIEFF Arch. Zool. exp. (Sér. 5) 6 p. 500 text-figs. 6 & 7.

Cercomonadina Bütschli emend., to include *Cercomonas*, *Bodo* (*Heteromita*),

which is removed from the *Bodonidae*, and *Rhizomonas*; ALEXEIEFF C. R. soc. biol. 71 pp. 506-508 6 text-figs.

Cercoplasma gen. n. (*Leptomonadinae*) points of distinction from *Leptomonas*, *C. caulleryi* sp. n., occurrence and different forms; ROUBAUD C. R. soc. biol. 71 pp. 503-505 26 text-figs.

Chilcmastix gallinarum sp. n., observations on; MARTIN & ROBERTSON Q. J. Microsc. Sci. 57 pp. 62-65 figs. 1-10.—[*Chilcmastix*, vide Addendum, end of Systematic.]

Chromulina spectabilis p. 324 figs. 28-33, *obconica* p. 338 fig. 48, spp. n.; SCHERFFEL Arch. Protistenk. 22.

Chrysmonadinae, morphological notes on; SCHERFFEL Arch. Protistenkunde 22 pp. 299-344 pl. xvi.

Chrysopyxis stenostoma, pseudopodia instead of flagella, comparison with *Chrysamoeba*; LAUTERBORN Zool. Anz. 38 pp. 46-51 1 fig.

Chrysostephanosphaera gen. n. (near *Chrysamoeba*), *globulifera* sp. n. Austria; SCHERFFEL Arch. Protistenk. 22 pp. 307-313 figs. 17-21.

Costia necatrix (Henneguy), general account; NERESHEIMER [In: Handbuch der pathogenen Protozoen, hrsg. v. S. v. Prowazek Lfg 1 pp. 98-100 4 figs.

Critithidia campanulata Léger, from caddis-fly larvae, notes; MACKINNON Parasitol. 4 p. 32 pl. iii figs. 4-12.—*C. calliphorae* sp. n., occurrence and description; SWELLENGREBEL Parasitol. 4 p. 110 text-figs. 1 & 2. [This form appears to be rather a *Leptomonas* with "leptotrypanosome" phase.]—"C." *melophagia* considered to be a parasite distinct from the Trypanosome of the sheep [the author's experiments cannot be regarded as by any means conclusive]; SWINGLE Trans. Amer. Micr. Soc. 30 pp. 275-283.—"C." *pulicis* sp. n., account of forms found in gut of *Pulex irritans* [the authoress has not proved that this form is not the trypanomonad phase of some Trypanosome]; PORTER Parasitol. 4 pp. 237-254 pl. x.—Critithidial parasites [probably phases of some Trypanosome] from *Tabanus* spp., notes on different forms; BRUCE, HAMERTON & BATEMAN Proc. R. Soc. B 83 pp. 355-357 pl. xvi.—"C." occurring in blood-sucking Invertebrates, discussion as to

the individuality of these forms or their connection with Trypanosomes; PORTER Parasitol. 4 pp. 22-23 & 154-163, and WOODCOCK T.c. pp. 150-153.

Cryptomonas marina sp. n. Kiel harbour; BÜTTNER Wiss. Meeresunters. Abth. Kiel N.F. 12 p. 129 text-fig. 8.

Cyanomonas gen. n. (near *Rhodomonas*), *baltica* sp. n., Kiel harbour; BÜTTNER T.c. p. 129 text-fig. 9.

Cyathomonas From., Stellung im System; ULEHLA Ber. D. bot. Ges. 29 pp. 284-292.

Cyrtophora gen. n. (*Chrysomonadineae*) *pedicellata* sp. n., Franzensbad, described, relationships; PASCHER Ber. D. bot. Ges. 29 pp. 112-125 1 pl.

Cystotrypanosoma subgen. n. (*Trypanosoma*) p. 308, for *intestinalis* sp. n. from *Lucilia*, with formation of cysts; ROUBAUD C. R. Soc. Biol. 71 pp. 306-308 27 text-figs.

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Fanapepea gen. n. *intestinalis* sp. n., occurrence and descriptive note; PROWAZEK Arch. Protistenk. 23 pp. 99 & 100 text-figs. 9-16.

Helcomastix globosa Senn, occurrence and description; SENN Zs. wiss. Zool. 97 pp. 648-649 pl. xxxi fig. 28.

Herpetomonas aspongopi described; ADERS Rep. Wellcome Res. Lab. 4 Vol. B (General Science) pp. 202-205 text-fig. 37.—*H. calliphorae* and *lineata* spp. n., occurrence and description; SWINGLE J. inf. diseases 8 pp. 137-146 pls. iii & iv.—“*H.*” *pattoni* sp. n. [probably a phase of *T. lewisi*] in the rat-flea, note on; ID. T.c. pp. 134-137 pls. ii & iii.—*H. calliphorae* Swingle (“biflagellate” form), life-history, degenerative changes; SWELLENGREBEL Parasitol. 4 p. 112 text-figs. 3-12 [Cf. *Leptomonas (Crithidia) calliphorae*.]

—*H. luciliae* sp. n., biology and life-cycle; STRICKLAND Parasitol. 4 pp. 222-236 pls. viii & ix.—*H. lygaei*, described; ARCHIBALD Rep. Wellcome Res. Lab. 4 Vol. A (Med.) pp. 179-184 pl. xi.—*Herpetomonas* (type *H. muscaedomesticae* according to Prowazek) and *Leptomonas* (e.g. *L. drosophilae*) formerly regarded as quite distinct, now admitted to be not so separate; only a quantitative distinction between the two; *H. m.-d.* not really biflagellate; CHATTON C. R. soc. biol. 71 pp. 578-580.—“*H.*” *pattoni* not regarded as a distinct, independent form; more probably a phase of *T. lewisi*; SWELLENGREBEL & STRICKLAND Parasitol. 4 pp. 104-107.—[*H.* see under *Leptomonas*.]

Heteromita see under *Bodo*.

Heteronema klebsii Senn, described; SENN Zs. wiss. Zool. 97 pp. 649-652 pl. xxxi figs. 29-31.

Holomastigotoides gen. n. [*Lophomonadidae*?] for “males” of *Trichonympha hertwigi* Hartmann; GRASSI & FOA Rend. Acc. Lincei Ser. 5 20 i p. 729.

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534 & 669-671.—*L. d.* from *Euphorbia pilulifera*, notes on; transmission by a Hemipteran; BOUET & ROUBAUD C. R. Soc. Biol. 70 pp. 65-67 12 text-figs.—*L. d.*, observations; LAFONT Bul. soc. path. exot. 4 pp. 464-467.—*L. drosophilae*, different phases described, leptotrypanosome form compared with *T. drosophilae*; CHATTON & LÉGER C. R. Soc. Biol. 70 pp. 34-36 text-figs.—*L. drosophilae*, structure and significance of axoplast, comparison with axostyle of Trichomonads; CHATTON & LÉGER op. cit. 71 pp. 575-578 6 text-figs.—*L. muscae-domesticae*, morphology of different forms, encystment stages, the question of its relationship to "*Herpetomonas*" *m.-d.*; DUNKERLY Q. J. Microsc. Sci. 56 pp. 645-655 pl. xxxi.—*L. m.-d.* and [or] *H. m.-d.*, different forms described; FLU Centralbl. Bakt. Abt. 1 57 Originale pp. 522-530 2 pls.—*L. (H.) m.-d.*, cytological details, synonymy; ALEXEIEFF C. R. soc. biol. 71 pp. 379-380 text-figs.—*L. rubrostriatae, ampelophilae*, spp. n., occurrence and specific distinctions from *drosophilae*; CHATTON & LÉGER T.c. pp. 663-666.—*L. soudanensis* sp. n. from *Pycnosoma*, characters regarded as distinguishing it from other forms in same hosts; ROUBAUD T.c. pp. 570-573 46 text-figs.—*L.* spp. different forms and phases from various spp. of *Drosophila* compared; CHATTON & LÉGER C. R. soc. biol. 70 pp. 120-122 text-figs.—*L. (H.)* spp. further diagnoses and comparisons, the question of the *Leptomonas-Herpetomonas* synonymy; ALEXEIEFF op. cit. 71 pp. 455-458 17 text-figs.

Mesojoenia gen. n. [*Lophomonadidae*?], *decipiens* sp. n., occurrence and diagnosis; GRASSI & FOA Rend. Acc. Lincei Ser. 5 20 i p. 728.

Microhopalodina gen. n. (*Calonymphidae*) *enflata* [sp. n. ?], diagnosis; GRASSI & FOA T.c. p. 730.

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Monocercomonas cetoniae sp. n., habitat and description; JOLLOS Arch. Protistenk. 23 pp. 311-317 pl. xiii.

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(b) Silicoflagellata (vacant).

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New genera and species of Dinoflagellates, diagnosed. (Reports on the scientific results of the expedition to the eastern tropical Pacific in charge of Alexander Agassiz, by the U. S.

fish commission steamer "Albatross" from October, 1904, to March, 1905, No. 22); KOFOID & MICHENER Bull. Mus. Comp. Zool. Harvard Coll. 54 pp. 265-302.

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Anoplophrya brasili Lég. & Dub., phases in conjugation, comparison with *A. (Collinia) branchiarum*, relationships to other parasitic Ciliates; COLLIN Arch. Zool. exp. Sér. 5 8 N. et R. pp. xx-xxviii 1 text-fig.

Balantidium littorinae and *testudinis* [spp. n. ?], details of nuclear structure and behaviour, with special reference to the cyclical variations of the karyosome; CHAGAS Mem. Inst. Oswaldo Cruz 3 pp. 136-144 pls. ix & x.

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Fabrea salina (Henneguy), minute structure and pigment; FAURÉ-FREMIET C. R. soc. biol. 71 pp. 419-420.

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Opalinopsis nucleolata sp. n., occurrence and note on; SMITH & FOX Univ. Pennsylvania Med. Bull. 21 pp. 343-347 9 text-figs.

Paramœcium aurelia and *caudatum*, distinct species, distinctive characters; WOODRUFF J. Morph. 22 pp. 223-237.—*P. caudatum* and probably other Infusoria, non-copulation du noyau échangé et du noyau stationnaire et la disparition de ce dernier dans la conjugaison; DEHORNE C. R. Acad. sci. 152 pp. 922-925.

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Rhabdostyla amphiruae, synonymy; ANDRÉ Zool. Anz. 38 p. 589.

Sieboldiellina gen. n. for the Ciliate genus *Discophrya* (type *D. planariorum*

Von. Sieb.) pracocc. by an Acinetan COLLIN Arch. Zool. exp. Sér. 5 8 p. 440.

Zoothamnium alternans Bau u. Contractionen des Stiels (Russ. + deutsch. Rés.); KOLTZOFF Biol. Zeitschr. 2 pp. 55-111 113-138 Textf. 1-13.

(b) Suctorina (= Acinetaria).

Acinetaria (chiefly *Tokophrya* and *Paracineta* spp.) experimental variations and alterations due to teratogenic factors described; COLLIN Arch. Zool. exp. Sér. 5 8 pp. 421-497 pls. x & xi.

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Tokophrya steueri sp. n. Adriatic, described; SCHRÖDER SitzBer. Ak. Wiss. Wien Abth. I 120 pp. 757-763 1 pl.

ADDENDUM:—Protozoa 1910.

Systematic: Flagellata.

Chilomastix nom. nov. proposed provisionally for parasitic forms of *Tetramitus*, type *T.* ("Macrostoma") *caulleryi*; ALEXEIEFF Arch. Zool. exp. Sér. 5 6 1910 N. et R. p. xi.

III. PORIFERA OR SPONGIDA

ARRANGED BY

I. B. J. SOLLAS

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I.—TITLES.

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ARRANGED BY

C. L. BOULENGER.

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V. ECHINODERMA

ARRANGED BY

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I.—TITLES.

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soc. sci. Haute-Marne 7 p. 51 fig. 277.

Clypeaster, *C. rosaceus* is type,
CLARK, H. L. Ann. Mag. Nat. Hist.
7 p. 604.

†*C. altus*, †*C. pliocenicus*, NELLI
Roma Rend. Acc. Lincei 20 p. 565.—
†*C. breunigi*, FABIANI Roma Mem. Soc.
XL 15 p. 120 pl. i figs. 19 & 20.

†*C. bassanii* p. 33 pl. i fig. 3, †*C.*
canavarii p. 33 pl. i fig. 4, †*C. capellinii*
p. 31 pl. i fig. 1, †*C. isseli* p. 34 pl. ii
fig. 1, †*C. torquati* p. 32 pl. i fig. 2,
spp. n., Miocene Sardinia, LOVISATO
Riv. ital. paleont. 17.—†*C. biar-*
ritzensis var. *trotteri* nov. Eocene
Cyrene, GREGORY Q. J. Geol. Soc. 67
p. 662 pl. xlvii fig. 1.—†*C. breunigi*
vars. *typica*, *lorioli* and *oppenheimi*
nov. (latter probably a distinct species)
Eocene Egypt, GREGORY T. c. p. 663.—
†*C. douvillei* sp. n. Oligocene Jasper
County, STEFANINI Boll. Soc. geol. ital.
30 p. 682 pl. xxii fig. 1.—†*C. gustavi*
p. 140 pl. xvi fig. 1, †*C. lamarmorai*
p. 141 pl. xvii fig. 1, spp. n., Miocene
Sardinia, LOVISATO Paleontogr. Ital.
16.

†*Clypeolampas ovum* p. 91 pl. iii
figs. 4 & 5, †*C. toucasi* sp. n. Campanian
Sougraigne p. 92. pl. iii figs. 1-3,
LAMBERT Carcassonne Bul. Soc. étud.
sci. 22.

†*Clypeus hugi* p. 261 pl. xiii fig. 6,
†*C. ploti* p. 260 pl. xiii fig. 7, HAWKINS
Geol. Mag. 8 (B).—†*C. mulleri*,
RICHARDSON London Proc. Geol. Ass.
22 p. 102.

†*Codiopsis doma*, FRIČ Arch. Natw.
Ld. Durchf. Böhmen 15 p. 72 fig. 310;
WANDERER Tiervers. Kreide Sachsen
p. 12 pl. ii fig. 7.

†*Coclopleurus equis*, FABIANI Roma
Mem. Soc. XL 15 p. 115 pl. i figs. 14
& 15.

†*Collyrites bicordata* p. 40 fig. 211,
†*C. elliptica* p. 38 fig. 190, THIÉRY
Bul. soc. sci. Haute-Marne 7.

†*Colpotiara sawageli* sp. n. Ox-
fordien Niort, LAMBERT & THIÉRY Essai

nomencl. rais. Ech. fasc. iii p. 184
pl. v figs. 16-19.

†*Conoclypeus delanouei*, HUME Lon-
don Q. J. Geol. Soc. 67 p. 126.

†*Conulus albogalerus*, †*C. subrotundus*,
HAWKINS Geol. Mag. 8 (A) p. 71 pl. iii.
—†*C. albogalerus*, HAWKINS Geol. Mag.
8 (C) p. 451.—†*C. subconicus*, VALETTE
Auxerre Bul. Soc. Sci. hist. nat. p. 147
fig. 9.—†*C. subrotundus*, LAMBERT
Carcassonne Bul. Soc. étud. sci. 22
p. 78.

†*Cotteaudia* nom. nov. pro *Cottaldia*
Desor, LAMBERT & THIÉRY Essai
nomencl. rais. Ech. fasc. iii p. 229.

Ctenocidaris gen. n. near *Rhyncho-*
cidaris p. 3, *C. speciosa* Antarctic Ocean
p. 4 pls. i-ii iii figs. 1-2 pl. iv figs. 1-3
pl. xiii, MORTENSEN Schwed. Südpolar-
Exped. 6 4.

†*Cyathocidaris*, subgen. n. of *Cidaris*,
†*C. cyathifera* (Agassiz) is type p. 4,
†*C. erebus* p. 7 pl. i figs. 1 23-30a, †*C.*
nordenskjoldi p. 5 pl. i figs. 2-18, †*C.*
patera p. 6 pl. i figs. 19-22, spp. n.,
Uppermost Cretaceous, Seymour Isle
(Antarctic), LAMBERT Schwed. Süd-
polar-Exped. Bd III No. 11.—†*C.*
avenionensis, LAMBERT Abh. Schweiz.
Pal. Ges. 37 p. 11 pl. i figs. 20-23.—†*C.*
cyathifera, LAMBERT Carcassonne Bul.
Soc. étud. sci. 22 p. 45 pl. ii figs. 24
& 27.

†*Cyphosoma* cf. *majus*, HUME London
Q. J. Geol. Soc. 67 p. 120.—†*C. pul-*
chrum, FABIANI Roma Mem. Soc. XL
15 p. 117 pl. i fig. 16.

Dendraster, *D. excentricus* is type,
CLARK H. L., Ann. Mag. Nat. Hist. 7
p. 605.

†*Desorella moravica* sp. n. Tithon
Stramberg, BLASCHKE Wien Ann. Nat-
hist. Hofmus. 25 p. 180 pl. vi fig. 11.

Diadema, rediagnosed and synonymy,
D. turcarum is type, LAMBERT &
THIÉRY Bul. Soc. Sci. Nat. Haute-
Marne 6 1909 p. 56.

Dicoptella bigoti sp. n. Tortonien
Manche, LAMBERT & THIÉRY Essai
nomencl. rais. Ech. fasc. iii p. 233
pl. vii figs. 1-3 [plate unpublished].

†*Dictyopleurus haimeii*, HUME London
Q. J. Geol. Soc. 67 p. 135.

†*Disasterinae*, contains genera
Disaster and *Metaporhinus*, LAMBERT

Grenoble, Bul. soc. stat. sci. nat. arts ind. 11 p. 369.

†*Discoidea cylindrica*, HAWKINS Geol. Mag. 8 (A) p. 72; (C) p. 448.

†*Discoides minimus*, LAMBERT Carcassonne Bul. Soc. étud. sci. 22 p. 75.

†*Diplopodia dumasi* v. *Tetragramma dumasi*.

†*D. houdardi* sp. n. Hauterivien, Haute-Marne, LAMBERT & THIÉRY Essai nomencl. rais. Ech. fasc. ii pl. iv figs. 14-17 fasc. iii p. 187.

Dorocidaris papillata, SÜSSBACH & BRECKNER Wiss. Meersunters. 12 p. 174.

†*D. chercherensis*, HUME London Q. J. Geol. Soc. 67 p. 129.—†*D. defrancei*, LAMBERT Carcassonne Bul. Soc. étud. sci. 22 p. 37.—†*D. papillata*, LAMBERT Abh. Schweiz. Pal. Ges. 37 p. 16 pl. i figs. 37 & 38.

†*D. allardi* Molasse Beaucaire p. 14 pl. i fig. 36, †*D. deydierei* Helvétien Reillanne p. 16 pl. iii figs. 4 & 6, †*D. gattungae* Langhien Beaucaire p. 13 pl. i figs. 1-4 & 46, †*D. mingaudi* Pliocène bassin du Rhône p. 18 pl. i figs. 44 & 45, spp. n., LAMBERT Abh. Schweiz. Pal. Ges. 37.—†*D. brasili* sp. n. Aturien Cotentin, LAMBERT Caen Bul. soc. linn. sér. 6 2 p. 7 pl. i figs. 1-4.

†*Echinanthus airaghii*, FABIANI Roma Mem. Soc. XL 15 p. 122 pl. ii fig. 1.

Echinarachnius, *E. parma* is type, CLARK H. L. Ann. Mag. Nat. Hist. 7 p. 605.—*E. parma*, GREGORY Zool. Anz. Leipzig 38 p. 323.

†*E. gibbsii* p. 125 pl. xxxv figs. 1 & 2 pl. xli fig. 2 pl. xlii fig. 7 pl. 1 fig. 4 var. *ashleyi* pl. xli fig. 1, ARNOLD & ANDERSON Bull. U. S. Geol. Surv. 398.

†*Echinobrissus clunicularis*, FUCINI Pisa Atti Soc. tosc. sc. nat. 27 p. 106 pl. i fig. 8.—†*E. humei*, HUME London Q. J. Geol. Soc. 67 p. 120.—†*E. woodwardi*, RICHARDSON London Proc. Geol. Ass. 22 p. 102.

Echinocardium cordatum, KLINGHARDT Innere Organisation-Seeigel u.s.w. pls.—*E. cordatum* p. 191, *E. flavescens* p. 193, SÜSSBACH & BRECKNER Wiss. Meersunters. 12.—*E. flavescens*, HORNOLD Fribourg Mém. Soc. Sci. Nat. 1 p. 34.

†*Echinoconus albogalerus*, †*E. vulgaris*, KLINGHARDT Innere Organisation Seeigel u.s.w. pls.—†*E. roemeri* p. 75, †*E. subconicus* p. 67, †*E. vulgaris* p. 71, LOESCHER Cassel Festschr. Ver. f. Natk. 1911.—†*E.* sp., FRIÖ Arch. Natw. LdDurehf. Böhmen 15 p. 73 fig. 311b.

†*Echinocorys vulgaris*, HUME London Q. J. Geol. Soc. 67 p. 126.

†*E. scutatus* var. *depressus* p. 32 pl. ii figs. 3-5, var. *subconicus* p. 32 pl. iii figs. 6-10, var. *truncatus* p. 32 pl. iii fig. 11 pl. iv fig. 12, varr. n., Upper Chalk Hampshire, GRIFFITH & BRYDONE Zones of Chalk in Hants.

Echinocyamus, *E. angulosus* is type, CLARK H. L. Ann. Mag. Nat. Hist. 7 p. 605.—*E. pusillus*, KLINGHARDT Innere Organisation-Seeigel u.s.w. pls.—SÜSSBACH & BRECKNER Wiss. Meersunters. 12 p. 187; THÉEL Stockholm Vet.-Ak. Handl. 47 p. 10.

†*Echinocyphus matronensis* sp. n. Turonien Marne, LAMBERT & THIÉRY Essai nomencl. rais. Ech. fasc. iii p. 216 pl. v figs. 20-24.

Echinodiscus, *E. bisperforatus* is type, CLARK H. L. Ann. Mag. Nat. Hist. 7 p. 605.

Echinolampas depressus, HAWKINS Geol. Mag. 8 (B) p. 257 pl. xiii fig. 1.

†*E. chercherensis* p. 669 pl. xlvi figs. 1 & 2 pl. xlix figs. 1-3, †*E. discus* p. 671, GREGORY Q. J. Geol. Soc. 67.—†*E. crameri*, fraasi, p. 138, †*E. humei* p. 135, HUME London Q. J. Geol. Soc. 67.—†*E. subaffinis*, FABIANI Roma Mem. Soc. XL 15 p. 125 pl. ii fig. 2.

†*E. cythereus* sp. n. [nom. nud.] "Stefanini," Pliocene, Isola di Citera, NELLI Roma Rend. Acc. Lincei 20 p. 565.—†*E. cytherea* sp. n. Pliocene Mediterranean, STEFANINI Riv. ital. paleont. 17 p. 12 pl. v fig. 3.—†*E. spanoi* sp. n. Miocene Sardinia, LOVISATO Paleontogr. ital. 16 p. 142 pl. xviii fig. 1.

Echinoneus cyclostomus, WESTER-GREN Mem. Mus. Comp. Zool. 39 (2) p. 44 pls. i-xxviii.

†*Echinopsis parisiensis*, LAMBERT Elbeuf Bul. Soc. étud. sci. nat. 1910 p. 1.

Echinus acutus-esculentus (hybrid), MORTENSEN Kjöbenhavn Nath. Medd. 63 p. 61 fig. 1.—*E. acutus* p. 180, varr. *flemingi* and *norvegicus* p. 181, *E. elegans* p. 179, *E. esculentus* p. 183, with var. n. *depressa* p. 184 pl. i figs. 1-3, SÜSSBACH & BRECKNER Wiss. Meersunters. 12.—*E. esculentus depressa* syn. of var. *fuscus*, BRECKNER Zool. Anz. Leipzig 37 p. 254.—*E. microtuberculatus*, BOGOJAVLENSKIJ Izv. Obšč. ljub. jest. 122 p. 30 pls. ii & iii; KONOPACKI Tyg. lek. Lwów 5 pp. 682 & 691; KONOPACKI Arch. Zellforschg. Leipzig 7 p. 139.

†*E. caillaudi*, LAMBERT Abh. Schweiz. Pal. Ges. 37 p. 42.

†*Ellipsechinus miocenicus*, LAMBERT Abh. Schweiz. Pal. Ges. 37 p. 47 pl. iii figs. 21 & 23.

Encope, E. emarginatus is type, CLARK H. L. Ann. Mag. Nat. Hist. 7. p. 605.

†*E. gatunensis* sp. n. Pliocene Panama canal, TOULA Wien Jahrb. Geol. Reichsanst. 61 p. 486.

†*Eodiadema granulatum*, HORWOOD Northampton J. Nat. Hist. Soc. 14 p. 108.

†*Epiaster dallonii* sp. n. Cénomanien Sopeira, LAMBERT Paris Bul. Soc. géol. 10 p. 810 pl. xv figs. 4 & 5.

Eucidaris metularia, DÖDERLEIN Abh. Senckenb. Ges. 34 p. 239.

Encope, err. type for *Encope* q.v., CLARK H. L. Ann. Mag. Nat. Hist. 7 *passim*.

Eurocidaris perrieri sp. n. [nom. nud.] Antarctic, KOEHLER Paris C. R. Acad. Sci. 153 p. 736.

†*Euspatangus formosus*, FABIANI Roma Mem. Soc. XL 15 p. 135 pl. ii fig. 7.

Fibularia, F. trigona is type, CLARK H. L. Ann. Mag. Nat. Hist. 7 p. 605.

†*F. luciani*, GREGORY Q. J. Geol. Soc. 67 p. 664.

†*Galeropygus agariciformis*, HAWKINS Geol. Mag. 8 (B) p. 259 pl. xiii fig. 4.

†*Gitolampas fallax*, HUME London Q. J. Geol. Soc. 67 p. 129.

†*Globator* discussed p. 78, †*G. cornuum* Campanien Mte. des Cornes p. 83 pl. iii figs. 11-14, †*G. haugi* Santonien Bastié

p. 82 pl. iii figs. 6-10, spp. n., *G. nucleus* p. 80 pl. iii figs. 15 & 16, LAMBERT Carcassonne Bul. Soc. étud. sci. 22.

†*Glypticus hieroglyphicus*, THIÉRY Bul. soc. sci. Haute-Marne 7 p. 42 fig. 212.

†*Goniophorus lorioli* sp. n. Albien Basses-Alpes, LAMBERT & THIÉRY Essai nomencl. rais. Ech. fasc. iii p. 209 pl. v figs. 8-11.

†*Goniopygus petrocoriensis*, LAMBERT Carcassonne Bul. Soc. étud. sci. 22 p. 73 pl. ii figs. 6-9.

†*Herbertia*, distinguished from *Echinopsis*, LAMBERT Elbeuf Bul. Soc. étud. sci. nat. 1910 p. 3.

†*Hemiaster*, list of spp., p. 108, †*H. desori* p. 103, LAMBERT Carcassonne Bul. Soc. étud. sci. 22.—†*H. depressus*, FRIED Arch. Natw. LdDurchf. Böhmen 15 p. 75 fig. 317.—†*H. neustriæ* p. 25 pl. i figs. 20-23, †*H. nucula* p. 26 pl. i figs. 24-26, LAMBERT Caen Bul. Soc. linn. sér. 6 2.—†*H. pseudofourneli*, HUME London Q. J. Geol. Soc. 67 p. 123.—†*H. scillæ*, GREGORY Q. J. Geol. Soc. 7 p. 673.—†*H. sublacunosus*, WANDERER Tierversst. Kreide Sachsen p. 15 pl. ii fig. 13.

†*H. aragonensis* p. 811 pl. xv figs. 6 & 7, †*H. dallonii* p. 812 pl. xv figs. 8-10, †*H. incrassatus* p. 813 pl. xv figs. 11 & 12, spp. n., Cénomanien Sopeira, LAMBERT Paris Bul. Soc. géol. 10.—†*H. slocomi* nom. n. pro *H. lacunosus* Slocom non Goldfuss, LAMBERT Rev. crit. paléozool. 15 p. 67.—†*H. vomer* sp. n. Aturien Antarctique, LAMBERT Schwed. Südpolar-Exped. Bd III No. 11 p. 10 pl. i figs. 44-46a.

†*Hemicidaris bravenderi*, RICHARDSON London Proc. Geol. Ass. 22 p. 106.—†*H. crenularis* p. 42 fig. 213, †*H. purbeckensis* p. 51 fig. 266, THIÉRY Bul. soc. sci. Haute-Marne 7.

†*Hemipedina* sp. Lower Lias Somerset, RICHARDSON London Q. J. Geol. Soc. 67 p. 38.

†*H. brasili* sp. n. Toarcien Caen, LAMBERT & THIÉRY Essai nomencl. rais. Ech. fasc. iii p. 197 pl. v figs. 4-7.

†*Hemipneustes radiatus*, KLINGHARDT Innere Organisation-Seeigel u.s.w. pls.

†*Heteraster oblongus*, HAWKINS Geol. Mag. 8 (B) p. 263.

†*Heterodiadema libycum*, HUME London Q. J. Geol. Soc. 67 p. 120.

Hipponoë esculenta, PINNEY Biol. Bull. Woods Hole 21 p. 168.

†*Holaster planus*, KLINGHARDT Innere Organisation-Seeigel u.s.w. pls.; WANDERER Tierverst. Kreide Sachsen p. 13 pl. ii fig. 10.—†*H. suborbicularis*, FRIÖ Arch. Natw. LdDurchf. Böhmen 15 p. 74 fig. 316.

†*H. lorioli* sp. n. Cénomaniens Ant-arctique, LAMBERT Schwed. Südpolar-Exped. Bd III No. 11 p. 8 pl. i fig. 38.

†*Holcotypus depressus*, ALLORGE & BAYZAND London Proc. Geol. Ass. 22 p. 4.—†*H. depressus*, *H. hemisphaericus*, HAWKINS Geol. Mag. 8 (C) p. 447.—†*H. turonensis*, HUME London Q. J. Geol. Soc. 67 p. 123.

†*H.* "sp. n." Kreide Peru, SALFELD Leipzig Wiss. Ver. Erdk. 7 p. 219 pl. iv fig. 1.

†*Homoeaster blayaci* sp. n. Maestrichtien Algérie, BLAYAC & COTTREAU Paris. Bul. soc. géol. (4) 9 p. 428 pl. xiv figs. 7-19.

†*Hyboclypus gibberulus*, THIÉRY Bul. soc. sci. Haute-Marne 7 p. 33 fig. 170.

†*Hypsoclypeus hemisphaericus*, GREGORY Q. J. Geol. Soc. 67 p. 671.

†*Isomicraster dallonii* sp. n. Sénonien Turbon, LAMBERT Paris Bul. Soc. géol. 10 p. 813 pl. xv figs. 13 & 14.

†*Kephrenia*, HUME London Q. J. Geol. Soc. 67 p. 135.

Laganum, *L. laganum* is type, CLARK H. L. Ann. Mag. Nat. Hist. 7 p. 605.

†*Lambertechinus* nom. n. pro *Actinopsis* Lambert 1897, COSSMANN Paris Rév. crit. Paléozool. 3 p. 45.

†*Lambertia* Oppenheim 1899 v. *Oppenheimia*.

†*Lambertiaster auberti*, BLAYAC & COTTREAU Paris Bul. soc. géol. (4) 9 p. 425.

†*Leiocidaris sismondai* p. 18 pl. i fig. 35, †*L. thyrsiger* p. 19 pl. i fig. 34, LAMBERT Abh. Schweiz. Pal. Ges. 37.

†*Leiopodina samusi*, FABIANI Roma Mem. Soc. XL 15 p. 113 pl. i fig. 17.

Linopneustes longispinus, KLINGHARDT Innere Organisation Seeigel u.s.w. pls.

†*Linthia cavernosa* p. 126, †*L. lorioli* p. 134, HUME London Q. J. Geol. Soc. 67.

Lovenia subcarinata, DÖDERLEIN Abh. Senckenb. Ges. 34 p. 247 pl. x fig. 14.

Loxechinus albus, MORTENSEN Schwed. Südpolar-Exped. 6 4 p. 52 pl. vi figs. 1-6 pl. viii pl. xvi figs. 2 4-5 14 16-17.

†*Macropneustes brissoides*, FABIANI Roma Mem. Soc. XI 15 p. 133 pl. ii fig. 6.

†*Magnosia pauperata*, BLASCHKE Wien Ann. Nathist. Hofmus. 25 p. 181 pl. v fig. 9.

Mellita, *M. quinquesperforatus* is type, CLARK H. L. Ann. Mag. Nat. Hist. 7 p. 605.

†*Micraster coranguinum*, †*M. glyphus*, KLINGHARDT Innere Organisation Seeigel u.s.w. pls.—†*M. corbaricus* p. 96, †*M. mathesoni* p. 100, LAMBERT Carcassonne Bul. Soc. étud. sci. 22.—†*M. cortestudinarium*, WANDERER Tierverst. Kreide-Sachsen p. 14 pl. ii fig. 12.—†*M. cf. sweeti* Desert sandstone, Darling Downs, Queensland, CHAPMAN Proc. R. Soc. Vict. n. ser. 23 p. 415.

Micropetalon purpureum, WESTER-GRÉN, Mem. Mus. Comp. Zool. 39 (2) p. 63 pls. xxix-xxxi.

†*Miotoxaster ricordeaui*, THIÉRY Bul. soc. sci. Haute-Marne 7 p. 64 fig. 346.

†*Mistechinus mayeri*, HUME London Q. J. Geol. Soc. 67 p. 138.

Moiria atropos, PINNEY Biol. Bull. Woods Hole 21 p. 168.

†*Moiropsis velaini*, LAMBERT Elbeuf Bul. Soc. étud. sci. nat. 1910 p. 9, pl. i figs. 3-5.

Mortensenia oblonga, DÖDERLEIN Abh. Senckenb. Ges. 34 p. 246.

†*Mortonella* p. 684, †*M. rogersi* p. 685 pl. xxii figs. 2 & 3, STEFANINI Boll. Soc. geol. ital. 30.

†*Noetlingia* nom. n. pro *Protechinus* Noetling 1897, LAMBERT Paris Rév. crit. Paléozool. 2 p. 126.

†*Nordenskjöldaster* gen. n. of *Homoeasteridae*, †*N. antarctica* sp. n. Vraconien Antarctique, LAMBERT Schwed. Südpolar-Exped. Bd III No. 11 p. 10 pl. i figs. 39-43.

Notechinus magellanicus, MORTENSEN
Schwed. Südpolar-Exped. 6 4 p. 36
pl. xvi figs. 3 6 9-12 19.

†*Nucleopygus* "nov. spec." San-
tonien Sougraigne, LAMBERT Carcas-
sonne Bul. Soc. étud. sci. 22 p. 88 pl. iii
figs. 20-22.

†*Oligopygus ovumserpentis*, STE-
FANINI Riv. ital. paleont. 17 p. 10.

†*O. meunieri* sp. n. Eocene Senegal,
LAMBERT Bull. Soc. Natural. Ain. 21
p. 1 pl. i.

†*Oolopygus orbigny* p. 19, †*O. piri-
formis* p. 15 pl. i figs. 15-16, LAMBERT
Caen Bul. soc. linn. sér. 6 2.

†*O. gracilis* sp. n. Aturien Cotentin,
LAMBERT T.c. p. 20 pl. i figs. 17 & 18.

†*Oppenheimia* nom. n. pro *Lambertia*
Oppenheim 1899, COSSMANN Paris
Rév. crit. Paléozool. 4 p. 186.

†*Orthopsis grossouvrei* sp. n. San-
tonien Val. de Bordeneuve p. 63 pl. ii
figs. 14 & 15, †*O. miliaris* p. 64 pl. ii
fig. 16, LAMBERT Carcassonne Bul. Soc.
étud. sci. 22.

†*Ovulaster auberti* var. *sabathensis*
var. n. p. 426 pl. xiv figs. 1-6, †*O.
obtus* sp. n. p. 427 pl. xiv figs. 20-28
Maestrichtien Algérie, BLAYAC & COT-
TREAUX Paris Bul. soc. géol. (4) 9.

†*Palaeodiadema fragile*, VALETTE
Auxerre Bul. Soc. Sci. hist. nat.
p. 145 fig. 8.

Paracentrotus gaimardi, KOEHLER
Ann. Inst. Océan. Paris 2 p. 23 pl. ii
figs. 13 & 14 pl. iii fig. 7.—*P. lividus*,
CHEVROTON & VLÈS Arch. Zool. Paris
8 p. 499; DANTAN Paris C. R. Acad.
Sci. 152 p. 468.

†*Paracidaris florigemma* p. 42 fig. 216,
†*P. spinulosa* p. 30 fig. 142, THIÉRY
Bul. Soc. Sci. Haute-Marne 7.

†*Paralampas*, HUME London Q. J.
Geol. Soc. 67 p. 135.

Parapneustes gen. n. [no species men-
tioned] Antarctic, KOEHLER Paris C. R.
Acad. Sci. 153 p. 736.

†*Parasalenia fontanesi*, LAMBERT
Abh. Schweiz. Pal. Ges. 37 p. 21 pl. i
figs. 48-51.

Parechinus miliaris, SÜSSBACH &
BRECKNERWISS. Meersunters. 12 p. 178;
THÉEL Stockholm Vet.-ak. Handl. 47
p. 10.

†*Pedinothuria barottei* sp. n. Batho-
nien Haute-Marne, LAMBERT & THIÉRY
Essai nomencl. rais. fasc. iii p. 163
pl. v figs. 12-15; THIÉRY Bul. Soc.
Nat. Haute-Marne 1 p. 7 pl. i figs. 15
& 16.

†*Periarchus* p. 687, †*P. pileus-
sinensis* p. 688 pl. xxii figs. 4 & 5,
STEFANINI Boll. Soc. geol. ital. 30.

†*Periaster oblongus*, HUME London
Q. J. Geol. Soc. 67 p. 120.

†*Peribrissus excentricus*, STEFANINI
Riv. ital. paleont. 17 p. 7.

†*Pericosmus spatangoides*, FABIANI
Roma Mem. Soc. XL 15 p. 130 pl. ii
fig. 3.

Peronella, *P. peronii* is type, CLARK
H. L. Ann. Mag. Nat. Hist. 7 p. 605.

†*Phyllobrissus borjesi* sp. n. Cam-
panien Mte. des Cornes, LAMBERT Car-
cassonne Bul. Soc. étud. sci. 22 p. 89
pl. iii figs. 17-19.

†*Phymapatagus* gen. n. of *Spatan-
gidae*, type *Spatangus britannus*, LAM-
BERT Feuille jeunes natural. Paris 41
p. 2.

†*Phymechinus mirabilis*, THIÉRY Bul.
soc. sci. Haute-Marne 7 p. 42 fig. 214.

†*Phymosoma archiaci* p. 65, †*P.
tiara* p. 67, LAMBERT Carcassonne Bul.
Soc. étud. sci. 22.—†*P. tiara* p. 135
fig. 5, VALETTE Auxerre Bul. Soc. Sci.
hist. nat.—†*P. (Gauthieria) radiatum*,
WANDERER Tierversst. Kreide Sachsen
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†*P. pseudomaresi* sp. n. Yonne Cam-
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†*Physaster rasseuri* sp. n. Ceno-
manien Sopeira, LAMBERT Paris Bul.
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†*Plegiocidaris coronata*, THIÉRY Bul.
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†*P. peroni*, LAMBERT Abh. Schweiz.
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†*P. cureti* sp. n. Langhien Beaucaire
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†*Polycyphus jauberti*, LAMBERT & THIÉRY Essai nomencl. rais. Ech. fasc. iii pl. v figs. 19-21.

†*Praescutella cos[s]manni* sp. n. Lutétien Ecos Eure, LAMBERT Elbeuf Bul. soc. étud. sci. nat. 1910 p. 6 pl. i figs. 6-8.

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†*P. drogiaca* sp. n. Bathonien Druyes, LAMBERT & THIÉRY Essai nomencl. rais. Ech. fasc. iii p. 167.

†*Pseudodiadema mendax* sp. n. Oxfordien Jura, LAMBERT & THIÉRY T.c. fasc. ii pl. iv figs. 7-10 fasc. iii p. 178.—†*P.* "sp. n." Lower Lias Keynsham, VAUGHAN & TUTCHER Bristol Proc. nat. Soc. 10 p. 53.

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†*Salenidia bonissenti*, LAMBERT Caen Bul. soc. linn. sér. 6 2 p. 9 pl. i figs. 9 & 10.

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†*Mariocrinus paucidactylus*, †*M. warreni*, KIRK T.c. p. 43.

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ARRANGED BY

II. M. WOODCOCK.

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Corrigendum Titles of 1910.

The Title 309 in Vol. 47 Verm. p. 16 gave a reference to the wrong work. The following should be substituted:—

Murray, James. Antarctic Rotifera [in] British Antarct. Exp. Vol. 1 Biology 1910 (41-76) pls. ix-xiii.

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Gyatrix hermaphroditus subsp. n. *maculata*, N. America; v. GRAFF T.c. p. 68 pl. iv figs. 17-19.

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Turbellaria (Acoela, Rhabdocoelida and Alloiocoela) Eastern United States, described; v. GRAFF Zs. wiss. Zool. 99 pp. 1-108 pls. i-vi.—Brief account in Anz. Ak. Wiss. 1911 pp. 198 & 199.

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†*Pikaidae* fam. n. p. 131; WALCOTT T.c.

Priapululus horridus sp. n., Coast of Uruguay, THÉEL Stockholm Vet.-Ak. Handl. 47 No. 1 p. 24 pl. ii figs. 13-19.

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VII. BRACHIOPODA AND BRYOZOA

ARRANGED BY

F. W. EDWARDS.

(a) BRACHIOPODA

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†*Batostomella dubia* sp. n. Arkansas Mississippian, **GIRTY** U. S. Geol. Surv. Bull. 439 p. 29.

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ARRANGED BY

H. B. PRESTON.

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ABBREVIATIONS employed in Sections II and III:—

descr. = described.
 exp. } = expedition,
 expdn. }
 occ. = occurrence.

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Cockburn Isd., Antarctic, Pleisto-
cene, *Myochlamys*, sp. n.; **Hennig**,
308.

Norway, Ranen River, Pleistocene,
occ. certain spp.; **Grønlie**, 269.

Cyrenaica, Pleistocene, faunal list; Gregory, 267.

California, Pleistocene, *Alabina*, spp. n.; Bartsch, 27.

California, Pleistocene. *Bittium* (*Lirobittium*), spp. & subsp. n.; Bartsch, 35.

California, Pleistocene, Genus *Dia-stoma*; Bartsch, 30.

California, Pleistocene, *Cerithiopsis*, *C.* (*Cerithiopsina*), spp. n.; Bartsch, 29.

California, Pleistocene, *Alvania*, spp. n.; Bartsch, 28.

Post-Tertiary.

Interglaziale und postglaziale Meeres mollusken aus Feuerland und Südpatagonien als Beweis für ein wärmeres Klima als das jetzige; Hägg, 288.

Norway (Forneboland and Snarden), Post Tertiary, faunal list; Werenskiöld, 708.

Cromerian (Forest Bed), Norfolk, *Valvata*, *Sphaerium*, spp. n.; Kennard, 361.

Norway, Fredrikshald region, Post Tertiary, *Portlandia arctica*, occ. of; Øyen, 485.

Norway, Trondhjem region. I.; Øyen, 483 & 484.

Norway, Jarlsberg region; Øyen, 482.

Tertiary.

Tertiary, Europe. Einige Worte zu: Noch einmal „Die Verwandtschaftsbeziehungen der *Helix* Arten aus dem Tertiär Europas“ von Prof. Dr. O. Boettger in Frankfurt (Main); Boettger, 57.

Antarctic, Tertiary, *Nucula*, *Phacoides*, *Venus*, *Cytherea*, *Donax*, *Mactra*, *Lutraria*?, *Panopaea*, *Struthiolarella*, *Cyrtochetus*?, *Trophon*, *Bulla*, *Bullinella*, *Dentalium*, *Chrysodomus*? spp. n.; Wilckens, 713.

Germany, Tertiary, *Arionidae*, with descr. of spp. n.; Wenz, 707.

Germany, Tertiary, *Klikia*, varr. n.; Wenz, 704.

S.-W. Russia, Tertiary, Mollusken der sarmatischen; Spuliskij, 627.

Transbaikalia, Tertiary?, *Cerithium*, *Limnaeus*, *Cyrena*, spp. n.; Reis, 547.

Hungary, Tertiary, *Lima* (*Mantellum*), *Sepia*, *Mitrularia* spp. n.; Lörenthey, 410.

Bohemia, Tertiary, faunal list; Kafka, 358.

Hungary, Tertiary, *Unio*, *Limnocardium*, *Vivipara*, *Bithynia*, *Melanopsis*, *Limnaea*, *Planorbis*, *Helix*, *Pupa*, spp. n.; Holaváts, 292.

Portugal, Tertiary *Donax*, sp. n.; Dollfus & Cotter, 184.

Algeria, Tertiary, *Pleurotoma* (*Eopleurotoma*), (*Hemipleurotoma*), *Surcula*, *S.* (*Apiotoma*), *Xenophora* (*Tugurium*), *Turritella*, *Mesalia*, *Tritonidea*, *Tritonium* (*Sassia*), *Cancellaria*, *Fusus*, *Lyria*, *Mitra*, *Planorbis*, *Cytherea*, *C.* (*Meretrix*), *Lucina*, *Cardita*, *Arca* (*Fossularca*), spp. & varr. n.; Daresté de la Chavanne, 166.

Asia Minor, Tertiary, *Vola*, sp. n.; Broili, 82.

Tasmania, Older Tertiary, *Lorica*, sp. n.; Hull, 330.

France, Gironde, Upper Tertiary, *Cerithium* (*Thericium*), (*Ptychocerithium*), (*Tiaracerithium*), (*Hemicerithium*), (*Semivertagus*), *Bittium* (*Bittium*), *Potamides* (*Tympanotomus*), (*Pirenella*), spp. & varr. n.; Vignal, 685.

Panama, Upper Tertiary, *Arca*, *Cardium*, *Columbella* (*Atilia*), *C.* (*Strombina*), *Conus* (*Cheliconus*), *Conus*, *Corelliophila*, *Crepidula*, *Cyclostrema*, *Dentalium*, *Lucina* (*Codakia*), *Pecten*, *Pectunculus* (*Axinaea*), *Phos*, *Pleurotoma* (*Drillia*), *Terebra*, spp. n.; Toula, 667.

Upper Tertiary of the Isd. of Cos; Newton, 461.

Upper Pliocene, occ. of and notes on; *Monodonta* and certain *Trochidae*; Meli, 433.

Georgia, Pliocene, *Potamides*, *Paludestrina*, *Amnicola*, *Planorbis*, spp. n.; Aldrich, 7.

Tehuantepec, Pliocene, *Cancellaria*, *Marginella*, *Mitra*, *Nassarina*, *Murex* (*Trophon*), *Pleurotoma* (*Clathurella*?), *P.* (*Glyphostoma*), *Lucina*, *Pecten* (*Amussium*), varr. & spp. n.; Toula, 668.

- Hungary, Pliocene, *Congeria unguia*, var. n.; **Vitalis, 688.**
- Costa Rica, Pliocene?, *Dentalium*, sp. n.; **Pilsbry, 520.**
- Italy (Isola Citera), Pliocene, faunal list; **Nelli, 457.**
- Hungary, Pliocene, Faunal list; *Anodonta*, *Monodacna* (*Pseudocatillus*), *Limnocardium*, *Limax*, *Helix* (*Aegista*), *Xerophila*, *Triptychia*, *Planorbis*, *P.* (*Gyranulus*), *P.* (*Segmentina*), *Odonotogyrorbis*, *Pyrghula*, *Vivipara*, *Valvata*, *V.* (*Cincinnati*), gen. spp. & var. n.; **Lörentz, 409.**
- Hungary, Pliocene, *Emmericia*; **Kormos, 376.**
- East Anglia, Pliocene, *Limnæa*, *Planorbis*, spp. n.; **Kennard & Woodward, 363.**
- California, Pliocene, certain spp. of *Pleurotomidae* discussed; **Buell, 88.**
- Italy (S. Benedetto del Tronto), Pliocene, faunal list; **Brest, 81.**
- Mexico, Pliocene, occ. certain spp.; **Böse, 68 & 69.**
- California, Pliocene, *Bittium* (*Lirobittium*), spp. n.; **Bartsch, 35.**
- Lower Pliocene of Millas (Pyrenæes-Orientales), list of spp.; Laurent Maurette Lyon Ann. soc. linn. 57 1910 [1911] pp. 4-6.
- France, Miocene, *Cerithium*, mut. n.; **Wood, 722.**
- Austria, Miocene, *Aequipecten*, *Amiantis*, *Amussipecten*, *Anomia*, *Arca*, *A.* (*Anadara*), *Cardita* (*Actinobulus*), *Cardium*, *Callista*, *Callistotapes*, *Chlamys*, *Cyrena*, *Dosinia*, *Gastrana* (*Fragilia*), *Hemitapes*, *Isocardia*, *Lutraria*, *Macrochlamys*, *Mactra*, *Manupecten*, *Mytilus*, *Ostrea*, *O.* (*Ostreola*), *Pecten*, *Pectunculus* (*Axinea*), *Pholadomya*, *Psammobia* (*Psamotaea*), *Pycnodonia*, *Ringicardium*, *Thracia*, *Trapezium* (*Cypricardia*), *Venus* (*Circumphalus*), *V.* (*Omphalocladrum* ?), spp. varr. & nomm. n.; **Schaffer, 574.**
- Chesapeake Miocene, *Ephora*, sp. n.; **Pilsbry, 511.**
- Cyrenaica, Miocene, faunal list; **Gregory, 267.**
- Mexico, Miocene, *Terebra* (*Myurella*), *Conus*, *Drillia* (*Crassispira*), *Mitra* (*Cancellata*), *Nassa* (*Uzita* ?), *Bittium*; **Engerrand & Urbina, 200.**
- France, Miocene, *Sperulirostra bel-lardi* d'Orb., occ. of; **Courjault, 147.**
- Upper Miocene, *Acme*, spp. n.; **Clessin, 125.**
- Victoria (Australia), Batesford Limestone, list of spp.; **Chapman, 110.**
- France, Miocene, *Scala*, *S.* (*Gyroscale*), spp. n.; **de Boury, 74.**
- Hungary, Upper Oligocene, *Strombopugnellus digitolabrum*, gen. & sp. n.; **Koch, 369.**
- A new Haitian Oligocene horizon; **Pilsbry, 512.**
- Jamaica, Oligocene, *Dentalium* (*Episiphon*), *Cadulus*, spp. n.; **Pilsbry, 520.**
- Haiti, Oligocene, *Potamides*, *Arca*, spp. n.; **Pilsbry, 512.**
- Florida, Oligocene, *Actæon*, *Terebra*, *Conus*, *Pleurotoma*, *Drillia*, *Mangilia*, *Clathurella*, *Glyphostoma*, *Olivella*, *Marginella*, *Persicula*, *Caricella*, *Perpicaria*, *Mitra*, *Fasciolaria*, *Siphonalia*, *Phos*, *Nassa*, *Astyris*, *Murex*, *Trivia*, *Erato*, *Bittium*, *Cerithiopsis*, *Isapsis*, *Litiopa*, *Natica*, *Aedorbis*, *Scala*, *Eulima*, *Niso*, *Syrnola*, *Astrarium*, *Calliostoma*, *Lucajinella*, *Dentalium*, *Cadulus*, *Perna*, *Venericardia*, *Corbula*, *Codakia*, *Phacoides*, *P.* (*Bellucina*), *Bornia*, *Pitaria* (*Lanelliconcha*), *Semele*, spp. & var. n.; **Maury, 427.**
- Rochefortia*, *Kellya*, *K.* (*Bornia*), *K.* (*Planikellya*), *K.* (*Lasacokellya*), *K.* (*Divarikellya*), *Pseudolepton*, *Spaniorinus*, *S.* (*Lasarina*), *S.* (*Abigena*), *Sportella*, *Diplodonta*, *D.* (*Felaniella*), *Lucina* (*Loripinus*), *Miltha*, *M.* (*Gibbulucina*), *M.* (*Homiltha*), *Myrtea*, *Codakia* (*Jagonia*), *Phacoides*, sec. spp. varr. & mut. n.; **Cossmann & Peyrot, 145.**
- Panama, Oligocene, *Terebra*, *Conus*, *Drillia*, *Cancellaria*, *Mitra*, *Marginea*, *Solenosteira*, *Phos*, *Metula*, *Anachis*, *Strombina*, *Murex*, *M.* (*Phyllonotus*), *Typhis*, *Bittium*, *Turritella*, *Cheilea*, *Nucula* (*Acila*), *Leda*, *Arca*, *Glycymeris*, *Pecten*, (*Aequipecten*), *P.* (*Amussium*), *Ostrea*, *Cardium* (*Trachycardium*), *Chione*, *Pitar*, *Teredo*, spp. n.; **Brown & Pilsbry, 84.**
- Santo Domingo, Oligocene, *Strombina*, spp. n.; **Brown & Pilsbry, 84.**
- Costa Rica, Oligocene, *Turritella*, sp. n.; **Brown & Pilsbry, 84.**

France, Lower Eocene, *Cerithiopsis*, *Lima*, spp. n.; Pezant, 504.

France, Eocene, *Cerithium*, *Vicinocerithium*, *Potamides*, *Potamidiopsis*, gen. spp. & mutt. n.; Wood, 722.

Mexico, Eocene, occ. certain spp.; Villada, 687.

Austria-Hungary, Eocene, certain spp. discussed; Kuźniar, 386.

Eozän, Verbreitung der *Gryphaea Eszterházyi* Pávay; Koch, 370.

Midway-Penambuco Fauna; Harris, 297.

Italy, Eocene, *Collonia (Parvirota)*, *Hipponyx*, *Muricopsis*, *Corbis*, *Meretrix (Tivelina)*, spp. n., also list of and notes on certain spp.; Fabiani, 201.

The genus *Belosoepiella* De Al.; Brunati, 85.

Texas, Eocene, *Akera*, sp. n.; Aldrich, 6.

Alabama, Eocene, *Tellina (Angelus)*, *Ervilia*, *Retusa*, *Scobinella*, *Pleurotoma (Bathytoma)*, *Bittium (Stylidium)*, *Thais*, *Turbonilla*, (*Mormula*), *Eulima*, *Cerithiopsis*, *Odostomia (Pyrgulina)*, *Discohelix*, *Chlorostoma*, *Neritina*, *Crassatellites*, spp. n.; Aldrich, 6.

Mississippi, Eocene, *Cardium (Trachycardium)*, *Scobinella*, *Lyrischapa*, spp. n.; Aldrich, 6.

Cyrenaica, Upper Eocene, faunal list; Gregory, 267.

Mesozoic.

Mesozoic Zones, mollusca of; Newton, 459.

Cretaceous.

Crimea, Upper Cretaceous, notes on; Sloudsky, 603.

S. Russia, Upper Cretaceous, *Inoceramus*, sp. n.; Rogala, 550.

Poland, Upper Cretaceous, *Acanthoscaphites*, sp. n.; Nowak, 464.

Kreidefossilien aus der Teufelschlucht bei Kronstadt; Toulia Wien Abh. Geol. Rchs. Anst. 20 1911 pp. 34-35.

Hunton Bridge, Cretaceous, occ. certain spp.; Hertford Trans. Nat. Hist. Soc. 14 p. 191.

England, Cretaceous, *Inoceramus*, sp. & nom. n.; Woods, 724.

Antarctic Cretaceous, *Pinna*, *Lima*, *Ostrea*, *Nucula*, *Malletia*, *Nordenskjoldia*, *Cucullaea*, *Limopsis*, *Trigonia*, *Astarte*, *Phacoides (Cavilucina ?)*, *Veniella*, *Cytherea*, *Panopaea ? (Pleuromya ?)*, *Sphaerium*, *Nacella (Anisomyon ?)*, *Acmaea ?*, *Pleurotomaria*, *Amblerleya*, *Capulus ?*, *Vanikoro*, *Eunaticina ?*, *Turritella*, *Peressoptera*, *Cassidaria*, *Fusus*, *Cryptorhytis*, gen. & spp. n.; Wilckens, 712.

Seistan, Cretaceous, *Chondrodonta* sp. n.; Vredenburg, 691.

West Prussia, Senonian, *Cardium*, *Exogyra*, *Pecten*, spp. n.; Vogel von Falckenstein, 689.

Hungary, Cretaceous, *Rhacophyllites*, sp. n.; Toulia, 670.

France, Cretaceous, *Sauvagesia*, *Biradiolites*, spp. n.; Toucas, 666.

Yorkshire, Cretaceous, *Actinocamax quadratus*, occ. of; Stather, 630.

Transcaspia, Cretaceous, *Aucellina*, sp. n.; Sokolov, 618.

South Russia, Cretaceous, *Sonneratia*, *Desmoceras*, *Turbo*, spp. n.; Sirizow, 601.

Austria-Hungary, Cretaceous, occ. certain spp.; Rydzewski, 567.

Savoy, Cretaceous, lists of spp.; Révil, 549.

Notes on Hippurites; Parona, 495.

Italy (Isola di Lissa), Cretaceous, *Durania*, sp. n.; Parona, 494.

Buckinghamshire, Cretaceous, *Desmoceras*, sp. n.; Noble, 463.

Southern Nigeria, Cretaceous, *Veniella*; Newton, 460.

France, Cretaceous, *Glauconia*, spp. n.; Mazeran, 430.

German East Africa, Cretaceous, *Avicula*, *Pinna*, *Perna*, *Vola*, *Ostrea*, *Trigonia*, *Protocardia*, *Venus*, *Nautilus*, *Phylloceras*, *Lytoceras*, *Holcostephanus*, *Desmoceras (Puzosia)*, *Crioceras*, *Ancyloceras*, spp. n.; Krenkel, 384.

S.-E. France, Cretaceous, occ. certain spp.; Kilian & Reboul, 365; and Kilian, 364.

Midway-Pernambuco Fauna; Harris, 297.

Bohemia, Cretaceous, illustrated faunal list; Frič, 212.

Palestine, Cretaceous, *Hippurites* (*Hippuritella*), *Biradiolites*, *Praeradiolites*, *Durania*, spp. n.; Douvillé, 187.

Egypt, Cretaceous, *Bournonia*, *Rudistes*, spp. n.; Douvillé, 187.

Algeria, Cretaceous, ? *Sphaerocaprina*, *Hippurites* (*Vaccinites*) *rousseli*, *Praeradiolites*, *Bournonia*, *Rudistes*, var. & spp. n.; Douvillé, 187.

Persia, Cretaceous, *Polyptychus*, *Hippurites* (*Hippuritella*), spp. n.; Douvillé, 187.

Elbœuf, Cretaceous, faunal list; Coulon, 146.

Mexico, Cretaceous, occ. certain spp.; Burckhardt, 93 & 94.

Mexico, Cretaceous, *Schleobachia*, *Pinna*, *Lima* (*Mantellum*), *Pecten*, *Vola*, *Plicatula*, *Ostrea* (*Alectryonia*), *Nucula*, *Trigonia*, *Cardita*, *Corbis* (*Mutiella*), *Cardium*, *Cytherea*, *Tapes*, *Homomya*, *Phaladomya*, *Turbo*, *Helio-cryptus*; *Tylostoma*, spp. & nom. n.; Böse, 70 & 71.

Switzerland, Cretaceous, *Azinus*, *Solariella*, *Margaritella*, *Astrarium*, *Eutrochus*, *Trochus*, *T.* (*Ziziphinus*), *Natica*, *Cerithium*, *Drepanocheilus*, *Pyrgulifera*, *Avellana*, *Bullinella*, *Tornatellaea*, *Tetragonites*, *Baculites*, spp. n.; Böhm & Heim, 64.

Saskatchewan, Cretaceous, *Pleuro-limnea* var. n.; Baker, 19.

Germany, Cretaceous, *Inoceramus*, spp. n.; Andert, 10.

Germany, Lower Cretaceous, *Aucellina*, *Modiola*, *Nucula*, *Leda*, *Pleurotomaria*, *Turbo*, *Trochus*, *Scalaria*, *Cerithium*, *Fasciolaria*, spp. n.; Wolle-mann, 720.

Jurassic.

Gervillia, notes on certain lower and middle Jurassic species; Paris, 491.

Hungary, Jurassic, *Reineckia*, *Stephanoceras*, *Cosmoceras*, *Perisphinctes*, *P.* (*Grossouvria*), *Villáma*, *Haploceras*,

Hecticoceras, *Lytoceras*, *Phylloceras*, *P.* (*Sowerbyceras*), gen. spp. & nom. n.; Till, 658 & 659.

Hungary, Jurassic, *Harpoceras*, *Hildoceras*, *Lytoceras*, *Nautilus*, *Phylloceras* spp. & var. n.; Vadasz, 676.

Hungary, Jurassic, *Modiola*, *Solemya* (?), *Homomya*, *Ceromya* (*Iso-cardia*), spp. n.; Toulou, 669.

Cuba, Jurassic, notes on certain Ammonites; de la Torre, 664.

France, Jurassic, *Achidocheilus*, *Hadrocheilus*, *Nautilus* (*Rhyncholithes*), spp. n.; Till, 660.

Egypt, Jurassic, *Nautilus* (*Rhyncholithes*), sp. n.; Till, 660.

N. Siberia, Neocomian, *Olcostephanus*, sp. & var. n.; Sokolov, 617.

Roumania, Jurassic, *Ostrea*, *Placur-opsis*, *Mytilus*, *Lithodomus*, *Cardium*, *Pleurotomaria*, spp. n.; Simionescu, 588.

Savoy, Jurassic, lists of spp.; Révil, 549.

England, Jurassic, *Gervillia acuta*, note on and new name for; Paris, 492.

England, Jurassic, *Gervillia*, *Perna*, spp. n.; Paris, 490 & 491.

New Zealand, Jurassic, *Phylloceras*, *Orthoceras*, *Ægoceras*, spp. n.; Marshall, 419.

Borneo, Lower Lias, *Aegoceras*, sp. n.; Krause, 383.

Italy, Jurassic, *Discohelix*, *Trochus*, *Calliostoma*, *Chrysostoma*, *Teinostoma*, *Promathildia*, *Chemnitzia*, *Zygopleura*?, *Cupeniella*, gen. spp. & var. n.; Gemmellaro, 229.

East Africa, Jurassic, *Aspidoceras*, *Astarte*, *Lytoceras*, *Macrocephalites*, *Pelloceras*, *Perisphinctes*, *P.* (*Virgato-sphinctes*), *Proplanulites*, *Phylloceras*, spp. n.; Daqué, 151.

Portugal, Lias and Dogger, occ. certain spp.; Choffat, 112.

Mexico, Jurassic, *Neumayria*, *Oppelia*, *O.* (*Neumayria*), *Macrocephalites*, *Perisphinctes*, *Simoceras*, *Aspidoceras*, *Idoceras*, *Aulacostephanus*, *Haploceras*, *Craspedites*, *Eurynoticeras*, *Virgatites*, *Phylloceras*, gen. & spp. n.; Burckhardt, 93.

Mexico, Jurassic, occ. certain spp.;
Büchardt, 92 & 94.

Switzerland, Jurassic, occ. certain
spp.; Brändlin, 80.

Austria, Jurassic, *Diceras*, *Alectryonia*, *Aptychus*, *Cerithium*, *Ctenostreon*, *Pseudomelania*, *Purpuroidea*, *Pteroceras*, *Simoceras*, *Turbo*, *Tylostoma*, *Patella* (*Helcion*), *Pecten*, *Perisphinctes* (*Aulacosphinctes*), *P.* (*Virgatosphinctes*), *Pleurotomaria* (*Leptomaria*), *Hamites*?, *Himalayites*, *Holcostephanus* (*Virgatites*), *Isarca*, *Nerinea*, *Nerita*?, *Oppelia*, spp. & var. n.; Blaschke, 53.

Triassic.

Pelecypoden vom Flusse Dalgolach,
Triassic; Wittenburg, 717.

Timor, Triassic, *Flemingites*, *Meekeoceras*, *Aulacoceras*, spp. n.; Wanner, 699.

Zur Kenntnis der arktischen Trias;
Stolley, 645.

Roumania, Triassic, *Ptychites*, *Japonites*, spp. n.; Simionescu, 589.

Roumania (Insula Popina), Triassic,
fauna of; Simionescu, 590.

S. Dalmatia, Triassic, *Proteites*,
Xenaspis, *Arcestes* (*Proarcestes*), *Megaphyllites*, *Ptychites*, spp. n.; Salopek, 571.

Montenegro, Triassic, *Japonites*, sp.
n.; Salopek, 571.

New Zealand, Triassic, *Orthoceras*,
Ægoceras, *Arcestes*, spp. n.; Marshall, 419.

Hungary, Triassic, *Balatonites*, *Celites*, *Gymnites*, *Lecanites*, *Orthoceras*, *Pleuronautilus*, *Ptychites*, *Sirenites*, *Trachyceras*, *T.* (*Protrachyceras*), spp. varr. & mut. n.; Frech, 211.

Hungary, Triassic, *Caronites*, *Cuspidaria*, *Gervilleia*, *Gonodus*, *Leda*, *Macrodus*, *Myophoria*, *Natiria*, *Nucula*, *Pecten*, *Pinacoceras*, *Pseudomonotis*, spp. varr. & mut. n.; Frech, 210.

Hungary, Triassic, *Anolcites*, *Arpadites*, (*Ditmarites*), *Balatonites*, *Ceratitis*, *Hungarites*, spp. n.; Diener, 182,

Neue Cephalopoden-Funde aus den
Werfener Schichten und dem Muschelkalk
de südl. Bakonygebirges und,
Revision der Cephalopoden-Fauna des
Muschelkalks; Arthaber, 17.

Albania, Triassic, *Acrochordiceras*,
Arianites, *Aspidites*, *Beatites*, *Cellites*,
Columbites, *Dagnoceras*, *Epicellites*,
Hedenstroemia, *Isculites*, *Lecanites*,
Meekeoceras, *Paragoceras*, *Paranannites*,
Prenkites, *Pronorites*, *Procarmites*,
Prosphingites, *Proptychites*, *Protropites*,
Tropicellites, *Xenaspis*, *Xenodiscus*,
gen. and spp. n.; Arthaber, 16.

Roumania, lower Triassic, occ. certain
spp. and *Nautilus* (*Mojsvaroceras*),
sp. n.; Simionescu, 591.

Permian.

Nottinghamshire, Upper Magnesian
Limestone, faunal list; Sherlock, 578.

Palæozoic.

Palæozoic zones, Mollusca of; New-
ton, 459.

Persia, Palæozoic, *Orthoceras*, *Xenodiscus* (*Paraterolites*?), *Popanoceras*,
Stephanites, gen. & spp. n.; Stoganow,
644.

Carboniferous.

Yorkshire, Coal Measures, list of
spp.; Culpin, 149.

England, Carboniferous, occ. certain
spp.; Wilson, 716.

Northumberland, Bernician, faunal
list; Smith, 616.

Scotland, Carboniferous, list of spp.;
Smith, 612.

Pennsylvania, Carboniferous, *Gla-
phurochiton*, sp. n.; Raymond, 543.

Clyde Area, Carboniferous, notes on
and occ. of certain genera; Neilson,
456.

Clyde Area, Carboniferous, lists of
Lamellibranchiata and *Cephalopoda*;
Neilson, 454 & 455.

Lancashire, Carboniferous, notes on
certain spp. in Manchester Museum;
Jackson, 346,

Great Britain, Carboniferous, *Glyphioceras vesiculifer*, de Koninck, occ. of; **Hind, 317.**

Great Britain, Carboniferous, *Solenocheilus*, *Cyclonutilus*, *Amphileceras*, *Ephippioceras*, *Pericyclus*, gen. & spp. n.; **Hind, 317.**

Clyde Drainage Area, Carboniferous, faunal list; **Goodchild, 256.**

Wyoming, Carboniferous, *Gastrioceras*, sp. n.; **Girty, 250.**

Idaho, Carboniferous, ? *Grammysia*, *Aviculopecten*, *Naticopsis*, spp. n.; **Girty, 250.**

Wyoming and Idaho, Carboniferous, ? *Edmondia*, *Nucula*, *Yoldia*, *Schizodus*, *Aviculopecten*, *Pleurotomaria*, spp. n.; **Girty, 250.**

The fauna of the phosphate beds of the Park City formation in Idaho, Wyoming and Utah; **Girty, 250.**

Utah, Carboniferous, *Aviculopecten*, *Astartella*, spp. n.; **Girty, 249.**

Arkansas, Carboniferous, *Solenopsis*, *Sanguinolites*, *Sphenotus*, *Edmondia*, *Cardiomorpha*, *Leda*, *Paleoneilo*, *Cypricardinia*, *Conocardium*, *Caneyella*?, *Aviculopecten*, *Cypricardella*, *Euconospira*, *Bembexia*, *Patellosticum*, *Oxydiscus*, *Anomphalus*?, *Platyceras*, *Orthonychia*, *Paraparchites*, *Primitia*, *Halliella*?, *Kirkbya*, *Amphissites*, *Glyptopleura*, *Bairdia*, gonn. spp. & varr. n.; **Girty, 248.**

Devonshire, Carboniferous, notes on certain Cephalopoda; **Crick in Collins, 136.**

England, Carboniferous, occ. certain spp.; **Bolton, 66.**

Nova Zemblaya, Lower Carboniferous, occ. certain spp.; **Roussanof, 563.**

Devonian.

Belgium, Silurian, list of spp.; **Malaise, 414.**

Northern Russia, Ober Devon, *Pterochaenia*, *Buchiolia*, *Paraptyx*, *Ontaria*, spp. n.; **Zamiatin, 729.**

Nova Zemblaya, Upper Devonian, occ. certain spp.; **Roussanof, 563.**

Portugal, Devonian, list of spp.; **Delgado, 177.**

Belgium, Lower Devonian, occ. certain spp.; **Maillieux, 412.**

France, Finistère, Lower Devonian, occ. certain spp.; **Collin, 135.**

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Alexandromenia gen. n. *agassizi* (genotype), *valida*, spp. n., California, HEATH Mem. Mus. Comp. Zool. Harvard Coll. 45 pp. 47 133 142.

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Chaetoderma scabra, *californica*, *nanula*, spp. n., California, *japonica* sp. n. Japan, *robusta* sp. n. Alaska, HEATH Mem. Mus. Comp. Zool. Harvard Coll. 45 pp. 44 63 64 66-68.

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Driomenia gen. n. (Aplacophora) *pacifica* sp. n. Japan, HEATH Mem. Mus. Comp. Zool. Harvard Coll. 45 pp. 46 93.

†*Glupleurochiton simplex* sp. n. Pennsylvania Carboniferous, RAYMOND Pittsburg Pa. Ann. Carnegie Mus. 7 pp. 153-154 figs.

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†*Helminthochiton thraivensis* sp. n. Scotland Ordovician, REED Geol. Mag. London 8 pp. 337-339.

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Ichthyomenia porosa sp. n. California, HEATH Mem. Mus. Comp. Zool. Harvard Coll. 45 pp. 48 & 159.

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ARRANGED BY

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Ianiropsis longiantennata sp. n. Japan, THIELEMANN München Abh. Ak. Wiss. Suppl. 2 Abh. 3 p. 70 figs.

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Aega Dofseini sp. n. Japan, THIELEMANN München Abh. Ak. Wiss. Suppl. 2 Abh. 3 p. 28 figs.—*A. ornata* sp. n. Atlantic coast southern U.S., RICHARDSON Proc. U. S. Nation. Mus. 40 p. 623 figs.

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Cirolana albicaudata subsp. n. *japonica* p. 8 figs., *C. harfordi* subsp. n. *japonica* p. 11 figs., *C. chiltoni* subsp. n. *japonica* p. 15 figs., THIELEMANN t.c.

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Meinertia trigonocephala p. 35 figs., *oxyrrhynchaena* p. 36 figs., THIELEMANN t.c.

Paracassidina gen. n. (*Sphaeromidae*, *platybranchiatae*) *pectinata* sp. n. W. Australia, BAKER Adelaide S. Aust. Trans. R. Soc. 35 p. 90 figs.

Rhexana verrucosa, THIELEMANN München Abh. Ak. Wiss. Suppl. 2 Abh. 3 p. 34 figs.

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Rocinela maculata, THIELEMANN München Abh. Ak. Wiss. Suppl. 2 Abh. 3 p. 31.

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Tridentella japonica sp. n. Japan,
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note, BOUVIER Paris Ann. Inst.
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n. N. Atlantic, KOEHLER Bul. Inst.
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Astacilla mediterranea sp. n. Mediter-
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Cleantis strasseni sp. n. Japan,
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Branchiophryxus caulleryi sp. n.
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Epipenaeon japonica sp. n. Japan,
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Holophryxus richardi sp. n. N.
Atlantic, KOEHLER Bul. Inst. océan.
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Zonophryxus grimaldii sp. n. N.
Atlantic, KOEHLER t.c. p. 16 figs.

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Ireland, keys to all spp., PACK-
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p. 95; STEPHENS Irish Nat. 20 p. 195.
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XI. ARACHNIDA

TO WHICH ARE ADDED

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

ARRANGED BY

W. T. CALMAN, D.Sc.

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Callilepis femoralis sp. n. North Carolina, BANKS Philadelphia Proc. Acad. Nat. Sci. 63 p. 441 fig.—*C. moebii*, STRAND Arch. Natg. Berlin 77 Bd 1 p. 190.

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Gnaphosa canaricola sp. n. Canaren, STRAND Arch. Natg. Berlin 77 Bd 1 p. 191.

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Erigone welchii sp. n. Ireland, JACKSON Irish Nat. 20 p. 28 figs.—*E. welchii*, PICKARD-CAMBRIDGE Dorchester Proc. Dorset Nat. Hist. F. Cl. 32 p. 41 figs.

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Argoctenus aureus sp. n. New Zealand, HOGG London Proc. Zool. Soc. 1911 p. 306 figs.

Castaneira luctifera nom. n. for *Thargalia luctuosa* Banks p. 454, PETRUNKEVITCH New York Bull. Amer. Mus. Nat. Hist. 29.

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Heteropoda annulipoda p. 157 fig., *elatana*, *kobroorica* p. 158 figs., *teranganica* p. 159 figs., spp. n. Aru- u. Kei-Ins., STRAND Frankfurt Abh. Senckenb. Ges. 34.—*H. kabaena* sp. n. Kabaena, STRAND Arch. Natg. Berlin 77 Bd 1 p. 207.—*H. venatoria* varr. n. *minahassae* p. 253, *montana* p. 254, *flavocephala* p. 255, *luwuensis* p. 256, *bonthainensis* p. 257, *striata* p. 257 fig., Celebes, MERIAN Zool. Jahrb. Syst. 31.

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Matidia viridissima sp. n. Aru-Ins., STRAND Frankfurt Abh. Senckenb. Ges. 34 p. 163 fig.

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Palystes nigrocornutus sp. n. Celebes, MERIAN Zool. Jahrb. Syst. 31 p. 267.

Pandercetes niger p. 262 figs., *celebensis* p. 263, spp. n. *P. c.* var. n.

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vulcanicola p. 264, Celebes, MERIAN Zool. Jahrb. Syst. 31.—*P. palliventris* sp. n. Aru-Ins., STRAND Frankfurt Abh. Senckenb. Ges. 34 p. 160.

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Plotius celebensis sp. n. Celebes MERIAN Zool. Jahrb. Syst. 31 p. 322 fig.

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†*Arthrolycosa* sp., POCOCK t.c. p. 34 fig.

†*Eoecteniza* gen. n. (*Mesothelae*) p. 33, *silvicola* sp. n. Carboniferous, Coseley, England, p. 34 fig., POCOCK t.c.

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Anglo-Egyptian Sudan, notes on spp., WERNER Rep. Wellcome Trop. Res. Lab. Khartoum 4 B pp. 190-194 figs.

Galeodes habits, FISCHER Bombay J. Nat. Hist. Soc. 20 p. 886.—*G. arabs*, HIRST Ann. Mag. Nat. Hist. ser. 8 7 p. 220.—*G. caspius* distrib., ZYKOFF Zool. Anz. 37 p. 543 fig.—*G. caspius* subsp. n. *Kozlovi* Mongolia centralis, BIRULA Rev. russ. ent. St. Peterburg 11 p. 199.

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Synopsis with figs. of British and Irish spp., Kew Dublin Proc. R. Irish Acad. 29 B pp. 38-64 pls. iv-vi.—W. Ireland, Kew Dublin Proc. R. Irish Acad. 31 pt. 38.—Suisse, LESSERT Cat. Invert. Suisse fasc. 5 50 pp.—California, BANKS Pomona College J. Ent. 3 pp. 633-640 figs.

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Chernes panzeri rec., EVANS Ann. Scot. Nat. Hist. 1911 p. 185.

Feaella affinis sp. n. Seychelles, HIRST London Trans. Linn. Soc. ser. 2 Zool. 14 p. 394 fig.

Withius subgen. n. of *Chelifer*, type *subruber* Linn., Kew Dublin Proc. R. Irish Acad. 29 B p. 49.

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†*Brachypyge carbonis*, POCOCK London Monogr. Palaeont. Soc. 64 p. 59 fig.

†*Brachypygidae* fam. n. of *Anthracomarti* POCOCK t.c. p. 58.

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†*Eophrynus prestvici*, POCOCK London Monogr. Palaeont. Soc. 64 p. 77 figs.

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p. 58, spp. n., ROEWER Arch. Natg. Berlin 77 Bd. 1 Suppl. 2.

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Gagrellula bimaculata sp. n. Malacca, ROEWER Leiden Notes Mus. Jentink 33 p. 256 fig.—*G. melanotarsus* sp. n. Birma, ROEWER Arch. Natg. Berlin 77 Bd. 1 p. 166.

†*Geraphrynus angulatus* p. 49, *hindi* p. 51, *tuberculatus* p. 52, *eggintoni* p. 53, *torpedo* p. 54, all with figs., *angustus* p. 55, spp. n., Carboniferous, Coseley, England, Pocock London Monogr. Palaeont. Soc. 64.

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†*Haplopoda* ord. n., Pocock London Monogr. Palaeont. Soc. 64 p. 41.

Harmandella aenescens p. 172, *lineata* p. 173, *annulata* p. 174, spp. n., Himalaya, ROEWER Arch. Natg. Berlin 77 Bd. 1.

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†*Kreischeria verrucosa* sp. n. Carboniferous, Wales, Pocock London Monogr. Palaeont. Soc. 64 p. 78 figs.

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†*Maiocercus* gen. n. (*Brachypygidae*) *celticus*, Pocock London Monogr. Palaeont. Soc. 64 p. 60 fig.

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Phalangiinae revision, only new names noted here, ROEWER t.c.

†*Phalangiatarbus subovalis*, Pocock London Monogr. Palaeont. Soc. 64 p. 46 fig.

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†*Plesiosiro* gen. n. (*Plesiosironidae*) p. 43, *madeleyi* sp. n. Carboniferous, Coseley, England, p. 44 figs., Pocock London Monogr. Palaeont. Soc. 64.

†*Plesiosironidae* fam. n. of *Haptopoda*, Pocock t.c. p. 43.

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