

middle in a transverse series; apex and a patch upon the outer margin sparsely mottled with ferruginous; fringe stramineous, spotted with brown at the ends of the veins; a slightly irregular discal series of brown-edged silvery spots; a blackish discocellular spot: secondaries with a clear, transversely elliptical patch just beyond the middle of the subcostal area; apex and some spots on the outer border sparsely speckled with ferruginous; fringe and silvery discal spots as in the primaries: body pale. Under surface of wings pale ochraceous, the mottling ill-defined, excepting upon the external third of the wings; pale patches as above; silvery spots obsolete; all the wings with blackish discocellular spots: body whitish. Expanse of wings 1 inch 11 lines.

Old Calabar.

E. stellata comes nearest to *E. ludovicata* (a common Malayan form), the pattern of the under surface being somewhat similar; it, however, bears a greater resemblance, in the colour and pattern of the upper surface, to the little genus *Stegania*.

Ophthalmodes squalida, n. sp.

Wings pale greyish testaceous, clouded with pale olivaceous and densely mottled with dark brown; the usual discoidal spots outlined in brown; a marginal series of black spots; two very ill-defined, parallel, sinuated, discal brownish lines; fringe and the costa of primaries testaceous, spotted with black: body pale brown, mottled with darker brown. Wings below with the basal two thirds sordid white, mottled with grey; discoidal spots dusky; external third fuliginous brown; fringes as above: primaries with a dusky line beyond the cell; costa yellowish, spotted with grey; apex and a spot on external border white: secondaries with a white apical spot: body very pale greyish brown. Expanse of wings 2 inches 3 lines.

Old Calabar.

LII.—*Additions to the Crustacean Fauna of New Zealand.*

By T. W. KIRK, Assistant, Colonial Museum, Wellington, N. Z.

Caprella lobata.

A single specimen of this species dredged in Cook Strait in January 1876.

Caprella novæ-zealandiæ, sp. nov.

Cephalon furnished with a spinous tooth directed forwards.
Ann. & Mag. N. Hist. Ser. 5. Vol. ii. 31

First segment of pereion rather short, second long, third and following gradually decreasing. Superior antennæ two fifths of the length of animal; flagellum with the infero-distal extremity of each articulus produced, but without cilia. Inferior antennæ not so long as the peduncle of the superior by one joint. Second pair of gnathopoda articulating behind the centre of the second segment of the pereion; propodos ovate; palm armed with a prominent posterior tooth, and a smaller but distinct anterior tooth (not lobe); dactylos very much curved. Three posterior pairs of pereiopoda have the anterior margins excavate, the part against which the closed dactylos impinges armed with a tooth. Length 1 inch.

Hab. Cook Strait.

This species approaches *C. geometrica*, Say, from which it differs, however, in the form of the spine on the cephalon, in the length of the antennæ, and in the articulation and arming of the second pair of gnathopoda.

Squilla indefensa, sp. nov.

Rostral plate semioval and pointed at its distal extremity. Carapace retracted in front, expanded and rounded behind, smooth, the antero-lateral angles rounded and slightly produced forwards. Large prehensile limbs with terminal joint as long as the preceding one, and armed with *nine* spines (exclusive of the terminal one, which is very large). Abdomen smooth; terminal segment with six marginal spines and three depressed longitudinal ridges, which terminate posteriorly in spines. Length $2\frac{1}{2}$ inches.

Hab. Chatham Islands and Kapiti.

Porcellana rupicola, Stimpson.

A single specimen obtained at Lyall Bay, Wellington, in May 1878.

Xantho spino-tuberculatus, Lockington.

A fine pair of this species was obtained at Porirua, near Wellington, by Mr. R. B. Gore, in January 1877.

Ebalia tumefacta, Mont.

A complete female and the right anterior leg of another specimen were obtained by dredging in Cook Strait in January 1876.

Elamena producta, sp. nov.

Carapace flat, broader than long; margin with two teeth,

or rather angles, which, however, vary much in size; rostrum very prominent. Anterior legs in male large, equal; hand and wrist much swollen, fingers curved and armed with hairs along their inner margin; in the female these legs are slight and their fingers almost straight. Ambulatory legs very flat; anterior margin of first joint produced so as to form a very prominent point, almost a spine; claws half the length of preceding joint. Whole animal destitute of hair, except on the fingers. First and second pairs of ambulatory legs very long, more than twice the length of the carapace. Breadth $\frac{3}{8}$ inch, length $\frac{4}{8}$.

Hab. Wellington.

LIII.—*Studies on Fossil Sponges*.—II. *Lithistidae*.

By KARL ALFRED ZITTEL.

[Concluded from p. 394.]

Family 4. *Tetracladina*.

AULOCOPIUM, Oswald, 1846.

(Schles. Gesellsch. für vaterl. Cultur, 1847, p. 68; F. Römer, Foss. Fauna von Sadewitz, 1861, p. 2.)

Sponge free (not attached), hemispherical, rarely globular or top-shaped, with impressed central cavity; lower surface coated with a wrinkled dense siliceous membrane. From the lower extremity of the central cavity numerous water-canals radiate to the periphery; curved canals of larger diameter, parallel to the contour line, open into the stomachal cavity. Skeleton formed of smooth, irregular, quadriradiate elements, each ray branched root-like at the end. These are usually arranged in rows so that the ramified ends of two neighbouring rows meet in a plane parallel to the radial canals, greatly enhancing the radiate appearance seen in a transverse section of the sponge-body.

The *Aulocopia* occur as chalcedonic pebbles in the North-German diluvium, especially on the island of Sylt. The microscopic structure is then generally well preserved, and may be shown in thin slices. In other places, as at Sadewitz, the whole sponge is filled with calc spar, and the originally siliceous skeleton converted into calc spar. The same unfavourable conditions prevail in specimens obtained *in situ* from the Silurian beds of Esthonia, sent by Prof. F. Schmidt of St. Petersburg. In those from Sadewitz the

THE ANNALS
AND
MAGAZINE OF NATURAL HISTORY,

INCLUDING
ZOOLOGY, BOTANY, AND GEOLOGY.

(BEING A CONTINUATION OF THE 'ANNALS' COMBINED WITH LOUDON AND
CHARLESWORTH'S 'MAGAZINE OF NATURAL HISTORY.')

CONDUCTED BY
ALBERT C. L. G. GÜNTHER, M.A., M.D., Ph.D., F.R.S.,
WILLIAM S. DALLAS, F.L.S.,
WILLIAM CARRUTHERS, F.R.S., F.L.S., F.G.S.,
AND
WILLIAM FRANCIS, Ph.D., F.L.S.

~~~~~  
VOL. II.—FIFTH SERIES.  
~~~~~

LONDON:
PRINTED AND PUBLISHED BY TAYLOR AND FRANCIS.
SOLD BY LONGMANS, GREEN, READER, AND DYER; SIMPKIN, MARSHALL,
AND CO.; KENT AND CO.; WHITAKER AND CO.: BAILLIÈRE, PARIS:
MACLACHLAN AND STEWART, EDINBURGH:
HODGES, FOSTER, AND CO., DUBLIN: AND ASHER, BERLIN.
1878.

CONTENTS OF VOL. II.

[FIFTH SERIES.]

NUMBER VII.

	Page
I. On the Genera <i>Dipterus</i> , Sedgw. & Murch., <i>Palædaphus</i> , Van Beneden and De Koninck, <i>Holodus</i> , Pander, and <i>Cheirodus</i> , M'Coy. By R. H. TRAQUAIR, M.D., F.G.S., Keeper of the Natural-History Collections in the Museum of Science and Art, Edinburgh. (Plate III.)	1
II. Preliminary Notices of Deep-Sea Fishes collected during the Voyage of H.M.S. 'Challenger.' By Dr. ALBERT GÜNTHER, F.R.S., Keeper of the Zoological Department, British Museum.....	17
III. <i>Stromatopora</i> as distinguished from <i>Millepora</i> . By Dr. DAWSON, F.R.S. &c.	28
IV. Notes on Carboniferous Mollusca. By R. ETHERIDGE, Jun., F.G.S. (Plate I.)	30
V. On <i>Teichonia</i> , a new Family of Calcareous Sponges, with Descriptions of two Species. By H. J. CARTER, F.R.S. &c. (Plate II.)	35
VI. On the <i>Dascillidæ</i> of New Zealand. By D. SHARP, Honorary Member of the New-Zealand Institute.....	40
VII. On the <i>Saleniæ</i> , Wright.—Part III. On a third Form of Recent <i>Saleniæ</i> , and on the <i>Saleniæ</i> from the Tertiary Deposits. By Prof. P. MARTIN DUNCAN, M.B. Lond., F.R.S., &c.....	59
VIII. The Foraminiferal Nature of <i>Haliphysema Tumanowiczii</i> , Bow. (<i>Squamulina scopula</i> , Carter), demonstrated. By W. SAVILLE KENT, F.L.S., F.Z.S., &c. (Plates IV. & V.)	68
IX. On the <i>Nauplius</i> Stage of Prawns. By C. SPENCE BATE, F.R.S.	79
X. On <i>Stromatopora</i> . By H. J. CARTER, F.R.S. &c.	85

	Page
XI. Descriptions of three Species of <i>Doryphora</i> from Peru and the Amazons. By J. S. BALY, F.L.S.	86
XII. On the Structure of <i>Haliphysema Tumanowiczii</i> . By E. PARFITT	88
Proceedings of the Geological Society	90
On the Classification of the Stellerida, by M. C. Vignier; On the Aerial Respiration of some Brazilian Fishes, by Prof. Jobert, report by Prof. Milne-Edwards; Fossil Mammal from the Jurassic of the Rocky Mountains, by Prof. O. C. Marsh; on a rare Form of the Hepatic Organ in the Vermes, by M. J. Chatin; <i>Wartelia</i> , a new Genus of Annelids, erroneously regarded as Embryos of <i>Terebellæ</i> , by M. Giard; On the Molluscan Fauna of New Guinea, by M. C. Tapparone-Canefri; On a remarkable new Generic Type of Characins, by Theodore Gill	103—112

NUMBER VIII.

XIII. Studies on Fossil Sponges.—II. Lithistidæ. By KARL ALFRED ZITTEL	113
XIV. On <i>Bellidia Huntii</i> of Gosse. By C. SPENCE BATE, F.R.S.	135
XV. Characters of four new Longicorn Coleoptera from Borneo. By CHARLES O. WATERHOUSE.....	136
XVI. Note on <i>Cetonia opalina</i> , L. & G., with a Description of an allied Species. By CHARLES O. WATERHOUSE.....	138
XVII. Notes on the Embryology of Sponges. By W. SAVILLE KENT, F.L.S., F.Z.S., &c. (Plates VI. & VII.)	139
XVIII. Parasites of the Spongida. By H. J. CARTER, F.R.S. &c.	157
XIX. Measurements of the Red Blood-corpuscles of the American Manatee (<i>Manatus americanus</i>) and <i>Beluga leucas</i> . By GEORGE GULLIVER, B.A., Pemb. Coll. Oxon	172
XX. Note on <i>Tethea muricata</i> , Bowerbank. By H. J. CARTER, F.R.S. &c.	174
XXI. Descriptions of several new Species of Lepidoptera in the Collection of the British Museum. By ARTHUR G. BUTLER, F.L.S. &c.	177
XXII. Preliminary Notices of Deep-Sea Fishes collected during the Voyage of H.M.S. 'Challenger.' By Dr. ALBERT GÜNTHER, F.R.S., Keeper of the Zoological Department, British Museum	179

	Page
XXIII. On <i>Lütkenia</i> , a new Genus of Ophiuroidea from Discovery Bay. By Prof. P. MARTIN DUNCAN, M.B. Lond., F.R.S., &c. (Plate IX.)	188
<i>New Book</i> :—A Manual of Zoology for the Use of Students, with a General Introduction on the Principles of Zoology. By HENRY ALLEYNE NICHOLSON, M.D., D.Sc., M.A., Ph.D., F.R.S.E., F.G.S.	198
On a new Opisthocœlous Dinosaur, by Dr. E. D. Cope; On the Propagation and Metamorphoses of the Suctorial Crustacea of the Family <i>Cymothoadae</i> , by M. Schiödte; On <i>Avenardia Priei</i> , a Gigantic Nemertean of the West Coast of France, by M. A. Giard; Observations and Experiments on the Migrations of <i>Filaria rhytipleurites</i> , a Parasite of Cockroaches and Rats, by M. Osman Galeb	194—199

NUMBER IX.

XXIV. On the Occurrence in North America of rare Extinct Vertebrates found fragmentarily in England. By Prof. R. OWEN, C.B., F.R.S., &c. (Plates X. & XI.)	201
XXV. Characters of undescribed Species of <i>Halticinae</i> . By JOSEPH S. BALY, F.L.S.	223
XXVI. On the <i>Nauplius</i> and Pupa Stage of Suctoria. By Prof. ALFRED GIARD	233
XXVII. Studies on Fossil Sponges.—II. Lithistidæ. By KARL ALFRED ZITTEL. (Plate VIII.)	235
XXVIII. Preliminary Notices of Deep-Sea Fishes collected during the Voyage of H.M.S. 'Challenger.' By Dr. ALBERT GÜNTHER, F.R.S., Keeper of the Zoological Department, British Museum	248
XXIX. On the Mode of Development of the Tentacles in the Genus <i>Hydra</i> . By M. C. MERESCHKOWSKY. (Plate XII.)	251
XXX. Descriptions of new Species of Rhopalocera from Central and South America. By F. DU CANE GODMAN and OSBERT SALVIN.	257
XXXI. On the Identity of the Ophiuran Genera <i>Ophiopleura</i> , Danielssen and Koren, and <i>Lütkenia</i> , Duncan, with Notes on the Species. By Prof. P. MARTIN DUNCAN, M.B. Lond., F.R.S., &c.	266
Proceedings of the Geological Society	268
Probable Distribution of a Spider by the Trade-Winds; On the Relation of <i>Amœba quadrilimeata</i> and <i>Amœba verrucosa</i> , by Dr. Leidy; On the Fossil Mammalia of South America, by M. P. Gervais	270, 271

NUMBER X.

	Page
XXXII. On the <i>Willemoesia</i> Group of Crustacea. By C. SPENCE BATE, F.R.S. (Plate XIII.)	273
XXXIII. On a Collection of Lepidoptera recently received from Madagascar. By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.	283
XXXIV. On the Syringosphæridæ, an Order of Extinct Rhizopoda. By Prof. P. MARTIN DUNCAN, M.B. (Lond.), F.R.S., &c. ..	297
XXXV. Remarks upon the Thalassinidea and Astacidea of the Pacific Coast of North America, with Description of a new Species. By W. N. LOCKINGTON.....	299
XXXVI. On the probable Nature of the Animal which produced the <i>Stromatoporidæ</i> , traced through <i>Hydractinia</i> , <i>Millepora alcornis</i> , and <i>Caunopora</i> , to <i>Stromatopora</i> . By H. J. CARTER, F.R.S. &c. ..	304
XXXVII. Studies on Fossil Sponges.—II. Lithistidæ. By KARL ALFRED ZITTEL	324
Proceedings of the Geological Society	341
On the Parasitic Isopoda of the Genus <i>Entoniscus</i> , by M. A. GIARD; Note on the <i>Saurus lucioceps</i> of Ayres, by W. N. Lockington; On the Causes of the Buzzing of Insects, by M. J. PÉREZ; Reproduction of <i>Hydra</i> , by M. KOROTNEFF	346—351

NUMBER XI.

XXXVIII. On the Structure and Affinities of the Genus <i>Catagma</i> . By W. J. SOLLAS, M.A., F.G.S., &c. (Plate XIV.)	353
XXXIX. On two new Species of Amphipodous Crustaceans. By the Rev. T. R. R. STEBBING, M.A. (Plate XV.)	364
XL. Descriptions of Longicorn Coleoptera. By FRANCIS P. PASCOE, F.L.S. &c.....	370
XLI. Notes on some British Land and Freshwater Shells. By J. GWYN JEFFREYS, LL.D., F.R.S.	377
XLII. "On the <i>Willemoesia</i> Group of Crustacea." By the Rev. A. M. NORMAN	382
XLIII. Studies on Fossil Sponges.—II. Lithistidæ. By KARL ALFRED ZITTEL	385
XLIV. Remarks upon the Porcellanidea of the West Coast of North America. By W. N. LOCKINGTON	394
XLV. On a small Collection of Crustacea made by Major BURTON in the Gulf of Akaba. By EDWARD J. MIERS, F.L.S. &c.	406

	Page
XLVI. Descriptions of new Genera and Species of <i>Gallerucinæ</i> . By JOSEPH S. BALY, F.L.S.	411
XLVII. Description of <i>Didrepanephorus bifalcifer</i> , the Type of a new Genus and Species of <i>Rutelidæ</i> , remarkable for the huge Sick- le-shaped Mandibular Horns of the Males. By J. WOOD-MASON, Deputy Superintendent, Indian Museum, Calcutta	422
The <i>Nauplius</i> Stage of Prawns, by Fritz Müller and C. Spence Bate; Amphipoda in Sponges, by the Rev. T. R. R. Stebbing, M.A.; On the Oviposition of the Queen Bee and Dzierzon's Theory, by M. J. Pérez; on the Cause of Buzzing in Insects, by M. Jousset de Bellesme; On the <i>Ascarides</i> of Seals and Toothed Wales, by Dr. H. Krabbe	426—430

NUMBER XII.

XLVIII. New Hydroida from Ochotsk, Kamtschatka, and other Parts of the North Pacific Ocean. By C. MERESCHKOWSKY. (Plates XVI. & XVII.)	433
XLIX. Descriptions of two new Species of Spiders. By T. WORKMAN, Esq. (Plate XVIII. figs. 1 & 2.)	451
L. Note on <i>Diastylis bimarginatus</i> from the Coast of Aberdeenshire. By GEORGE SIM. (Plate XVIII. figs. 3-5.)	453
LI. Descriptions of some new Genera and Species of Lepidoptera from Old Calabar and Madagascar. By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.	455
LII. Additions to the Crustacean Fauna of New Zealand. By T. W. KIRK, Assistant, Colonial Museum, Wellington, N. Z.	465
LIII. Studies on Fossil Sponges.—II. Lithistidæ. By KARL ALFRED ZITTEL	467
LIV. Descriptions of two new Species of Land Shells from New Granada. By EDGAR A. SMITH, F.Z.S.	482
LV. On the <i>Willemoesia</i> Group of Crustacea. By C. SPENCE BATE, F.R.S.	484
<i>New Books</i> :—The Geology of Sussex; or the Geology and Fossils of the Tertiary and Cretaceous Formations of Sussex. By the late FREDERICK DIXON, Esq., F.G.S. New Edition. Revised and augmented by Prof. T. RUPERT JONES, F.R.S., F.G.S.—A Catalogue of Australian Fossils (including Tasmania and the Island of Timor) stratigraphically and zoologically arranged. By ROBERT ETHERIDGE, Jun., F.G.S. &c.	489, 492