

through the cell to near the outer margin pale cream-colour; the inner margin and the fringe cream-colour; secondaries pale buff, in some specimens almost white, with the outer margin brownish black: head and thorax black; abdomen dark bluish green; antennæ black; legs metallic green.

Expanse $1\frac{1}{2}$ inch.

Hab. Ecuador, Chiguinda (*Buckley*).

This species is closely allied to *H. nantana*, Walker, its chief difference being the colour of the secondaries. I have a good series of specimens of both sexes before me; they do not show the faintest trace of carmine in the hind wings.

EXPLANATION OF THE PLATES.

PLATE XXXIX.

- | | |
|---|---|
| Fig. 1. <i>Eupyras herodes</i> , p. 372. | Fig. 7. <i>Erruca lycopolis</i> , p. 375. |
| 2. — <i>cephalena</i> , p. 372. | 8. <i>Sphecosoma surrentum</i> , p. 375. |
| 3. <i>Calonotos flavicornis</i> , p. 373. | 9. <i>Dycladia felderi</i> , p. 377. |
| 4. <i>Isanthrene thyestes</i> , p. 374. | 10. — <i>chalonitis</i> , p. 378. |
| 5. <i>Homœocera buckleyi</i> , p. 374. | 11. <i>Eunomia ocina</i> , p. 379. |
| 6. — <i>ozora</i> , p. 374. | 12. <i>Argyrodes boliviana</i> , p. 379. |

PLATE XL.

- | | |
|--|---|
| Fig. 1. <i>Charidea berthæ</i> , p. 381. | Fig. 7. <i>Automolis asara</i> , p. 382. |
| 2. — <i>imperialis</i> , p. 380. | 8. — <i>superba</i> , p. 382. |
| 3. — <i>cleusa</i> , p. 380. | 9. <i>Zatrephes buckleyi</i> , p. 383. |
| 4. — <i>buckleyi</i> , p. 381. | 10. — <i>chaon</i> , p. 383. |
| 5. <i>Zatrephes grandis</i> , p. 383. | 11. <i>Androcharta cassotis</i> , p. 382. |
| 6. <i>Evius polyxenus</i> , p. 383. | |

5. Note on the Variation of certain Species of *Agrias*.

By F. D. GODMAN, F.R.S., and O. SALVIN, F.R.S.

[Received May 5, 1883.]

Since writing our paper on *Agrias stuarti* (P. Z. S. 1882, p. 338, t. 19), Mr. A. Maxwell Stuart has again visited the Amazons, and at Yquitos, where he captured the original type, has succeeded in taking four more specimens, three males and one female, of this magnificent Butterfly, all of which he has most generously placed in our collection.

Noticing considerable variation in the series thus acquired, and hearing that Dr. Staudinger had also recently received two specimens from his excellent collector, Dr. Hahnel, from Pebas on the Amazons, we wrote to the former gentleman asking him if he would kindly allow us to see his specimens. These, together with two of *A. phalcidon*, which will be referred to below, he has most obligingly sent us. Thus, with the type of *A. beatifica* in the British Museum and the female described in our paper from our own collection, we have before us seven males and two females of these insects.

The characters on which we relied in separating *A. stuarti* from *A. beatifica* were the greater extent of the purplish-blue colour at

the expense of the green on the upper surface, and the greater size of the black submarginal spots of the secondaries beneath. To this we may add that the blue of the primaries is almost uninterruptedly black, whereas in *A. beatifica* a nearly continuous black band extends across from the costa to the inner margin. These differences are entirely broken down by the series now before us.

One of Mr. Stuart's specimens has a broader green submarginal band than even the type of *A. beatifica*, another has still less than the type of *A. stuarti*, while the remaining specimens, including those of Dr. Staudinger, serve to link the whole series together. There are other points of variation to which it is necessary to allude. One of these refers to the innermost or first band of black spots on the secondaries beneath. In the type of *A. beatifica* and in one of the Pebas specimens they are clearly defined; in the other Pebas specimen they are entirely absent, while in the remaining Yquitos examples they appear to a variable extent. The colour of the base of the secondaries on the underside varies from Indian red to orange. Seeing, therefore, that no two of the series are alike, and that the two extremes of variation are found in insects flying in the same forest, we are compelled to alter our views as to the distinctness of *A. stuarti*, and to consider it but a variety of *A. beatifica*.

Respecting the habits of this insect, Mr. Stuart informs us that though he frequently observed this species in the forests of Yquitos, they were nowhere abundant, two specimens or so appropriating a limited portion of the forest to themselves. Their rapid and lofty flight is well known; but Mr. Stuart observed that they passed the same place about once only in every four hours during the day.

The synonymy of *A. beatifica* will now stand as follows:—

AGRIAS BEATIFICA.

Agrias beatifica, Hew. Equat. Lep. p. 30; Ex. Butt. iii. t. 2. f. 5, 6; Godm. & Salv. P. Z. S. 1882, p. 338, t. 19. f. 3, 4.

Agrias stuarti, Godm. & Salv. P. Z. S. 1882, p. 338, t. 19. f. 1, 2.

Hab. Ecuador, Sarayacu (*Buckley*); Upper Amazons, Yquitos (*A. M. Stuart*), Pebas (*Hauxwell* and *Hahnel*).

Mus. Brit., Godm. & Salv., Dr. O. Staudinger.

The two specimens of *A. phalcidon* already referred to as sent us by Dr. Staudinger are interesting as showing that a similar state of variation exists in this species as we have already stated is found in *A. beatifica*.

A. phalcidon was discovered at Villa Nova on the Lower Amazons by Mr. H. W. Bates during his memorable expedition. Seven specimens in the British Museum (including four in the Hewitson collection) and four in our own were all probably taken by Mr. Bates. The two examples in Dr. Staudinger's collection were captured by Dr. Hahnel at Villa Bella, a more recent name apparently than Villa Nova for the same village, which is situated on the south bank of the Amazons between the mouths of the Tapajos and Madeira rivers.

These eleven specimens are all males, and the green submarginal

band in most of them is well defined, but in some it is wider than in others. In one of Dr. Staudinger's examples, however, this band is evanescent, and the rich blue of the upper surface of the wings almost reaches to the transverse spots which cross the apex of the wing. There is a black spot within the cell, but this colour does not extend beyond it as in more typical examples. Between this extreme example and the type, the specimens before us may be arranged so as to some extent to bridge the gap between them; but the series is not so complete as that of *A. beatifica* described above.

6. Report on a Collection of Reptiles and Batrachians from the Timor Laut Islands, formed by Mr. H. O. Forbes.
By G. A. BOULENGER, F.Z.S.

[Received April 30, 1883.]

(Plates XLI. & XLII.)

The Reptiles and Batrachians collected by Mr. Forbes in the Timor Laut Islands, and presented to the British Museum by the British Association, belong to 17 species, which, with the exception of two new to science, were already well known from different parts of the Austro-Malayan Subregion. The two new species are a Lizard of the Australian genus *Lophognathus*, Gray, and a Snake of the Indian genus *Simotes*, D. & B. The latter is the most remarkable discovery, as no species of this genus was known to occur eastwards of Java.

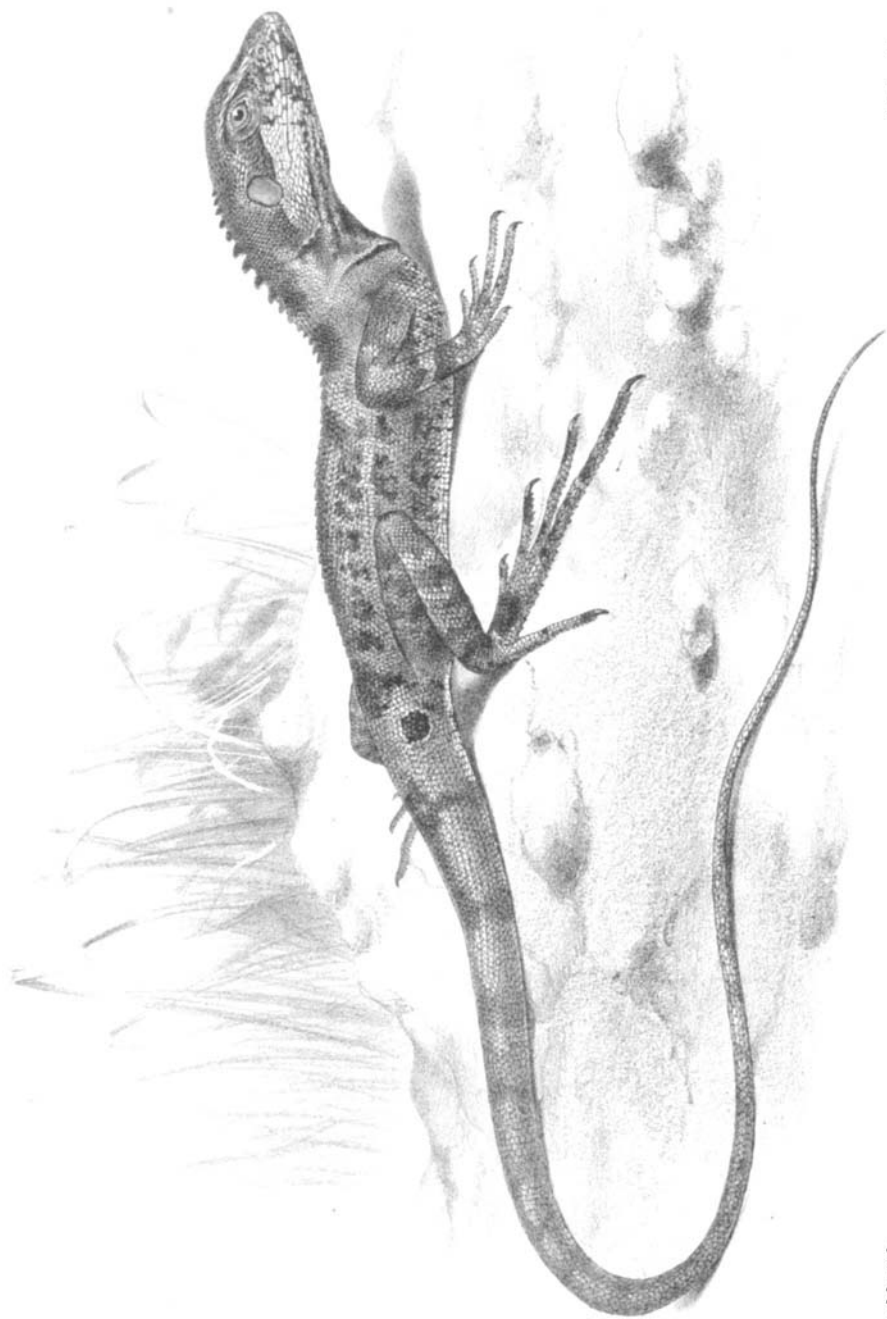
The following is a list of the species collected:—

REPTILIA.

LACERTILIA.

1. *GECKO VERTICILLATUS*, Laur.
2. *PERIPIA MUTILATA* (Wiegman).
3. *VARANUS INDICUS* (Daud.).
4. *ABLEPHARUS BOUTONII* (Desj.) [*A. pæcilopleurus*, Wiegman].
5. *EUPREPES RUFESCENS* (Shaw).
6. *EUPREPES CYANURUS* (Less.).
7. *LYGOSOMA SMARAGDINUM* (Less.).
8. *BRONCHOCELA MOLUCCANA* (Less.).
9. *LOPHOGNATHUS MACULILABRIS*, sp. n. (Plate XLI.)

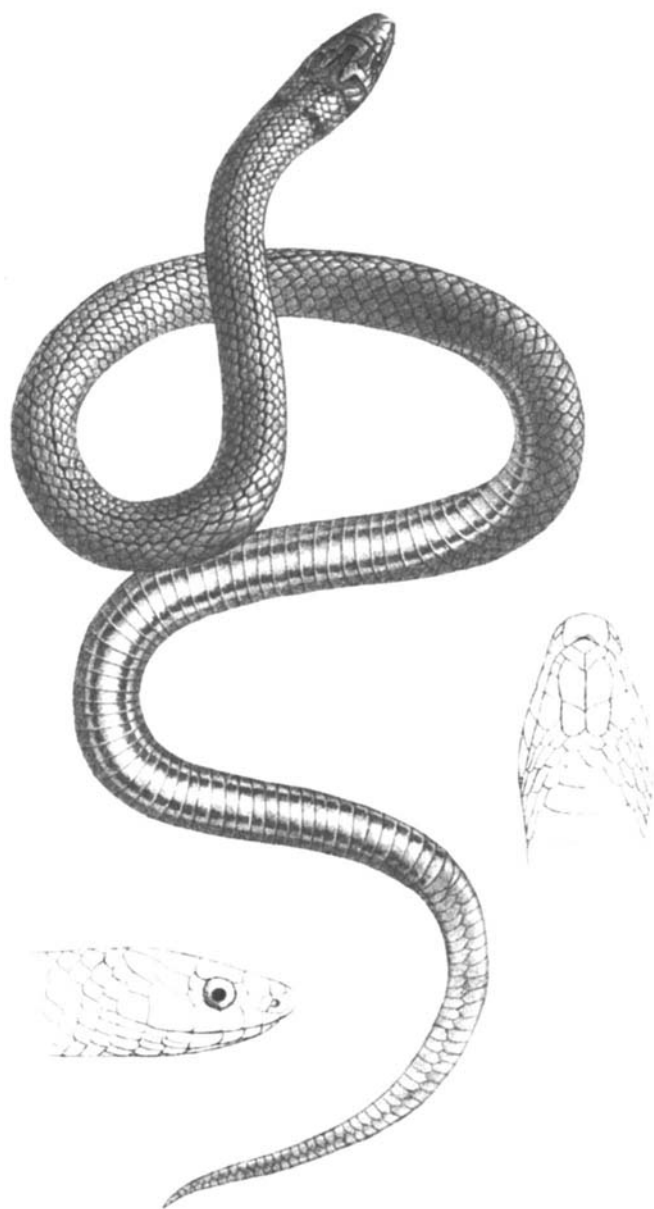
Snout obtuse, as long as the distance between the orbit and the posterior border of the ear. Nostril equally distant from the orbit



J. Smith del et lith.

LOPHOGNATHUS MACULILABRIS.

Mountain Bros. nup.



R. Minton del. et lith.

Minton Bros. imp.

SIMOTES FORBESI

and the tip of the snout. Upper surface of head covered with very strongly keeled scales. Dorsal scales small, the upper largest, strongly keeled, all obliquely directed upwards. Gular and ventral scales strongly keeled, the latter larger than the largest dorsal scales. No femoral or præanal pores. Upper surfaces olive, with blackish transverse markings across the back, tail, and limbs; upper surface of head with three obsolete blackish transverse bands, separated by light lines; a broad blackish band from orbit to tympanum, bordered inferiorly by a light band extending to above the fore limb; lips light-coloured, variegated with blackish; lower surfaces whitish, dotted all over with blackish.

Two specimens; the largest measures:—

	millim.
Total length	388
From tip of snout to vent	98
fore limb	43
Length of head (to occiput)	22
Width of head	17
Fore limb	46
Hind limb	94
Tail	290

OPHIDIA.

10. *PYTHON RETICULATUS* (Schn.).

11. *LIASIS AMETHYSTINUS* (Schn.).

12. *ENYGRUS CARINATUS* (Schn.).

13. *SIMOTES FORBESI*, n. sp. (Plate XLII.)

Length of snout measuring twice the diameter of the eye. Nasal divided; loreal slightly higher than broad; one præ- and two post-oculars; temporals 1+2; seven upper labials, the third and fourth entering the orbit; four inferior labials in contact with anterior chin-shields; latter, hinder pair three fifths the length of anterior pair. The portion of the rostral seen from above is as long as the suture between the internasals and the præfrontals; latter considerably higher than internasals. Frontal longer than its distance from the tip of the snout, as long as parietals. Scales in 17 rows. Ventrals slightly keeled on the sides, 155 or 165; anal entire; subcaudals 45. Upper surfaces greyish brown, the borders of the scales darker; head with the ordinary symmetrical dark markings; the inner border of the seventh longitudinal series of scales, counted on each side from the gastrosteges, darker, thus forming two fine vertebral lines separated from each other by three rows of scales; belly yellowish, each ventral shield with a brown spot near the lateral edge, these spots more or less confluent into a dark streak, separated from the dorsal brown colour by a pure yellowish streak of equal width; in one of the two specimens the ventrals become gradually entirely brown towards the posterior part of the body,

except the lateral outer streak, which remains pure yellowish. Head and body $30\frac{1}{2}$ centim. ; tail 58 millim.

14. *DENDROPHIS PUNCTULATUS* (Gray).

15. *CHRYSOPELEA RHODOPLEURON* (Reinw.).

BATRACHIA.

16. *RANA PAPUA*, Less.

17. *HYLA DOLICHOPSIS* (Cope).

June 19, 1883.

Prof. Flower, LL.D., F.R.S., President, in the Chair.

The Secretary read the following report on the additions to the Society's Menagerie during the month of May 1883 :—

The total number of registered additions to the Society's Menagerie during the month of May was 123, of which 48 were by presentation, 29 by purchase, 7 by birth, 1 by exchange, and 38 were received on deposit. The total number of departures during the same period, by death and removals, was 134.

The most noticeable additions during the month of May were as follows :—

1. A hen Cabot's Tragopan (*Ceriornis caboti*), from South-west China, purchased May 18th, being the first example of the female of this fine Pheasant which we have received.

2. Four Pygmy Hogs (*Porcula salvania*), born in the Gardens, May 23.

These diminutive Pigs, of which I exhibit a drawing of the natural size (Plate XLIII.), did not, unfortunately, survive their birth; but the fact of the species having bred in captivity is of great interest, and we may hope for better success on a future occasion, as although we have lost one of our specimens, which will be the subject of Dr. Garson's paper to-night, the others are alive and well.

3. A fine example of the Surucucu or Bush-master Snake of South America (*Lachesis mutus*), presented by Henry Y. Barkley, Esq., of Pernambuco, on the 22nd of May.

The following extract was read from a letter addressed to the Secretary by Mr. Albert A. C. Le Souëf, C.M.Z.S., dated Melbourne, April 18th, in which attention was called to a curious fact in connexion with the Satin Bower-bird (*Ptilonorhynchus holosericeus*):—

"I have frequently noticed in the hill-country east of Melbourne large flocks of the Satin Bower-bird, sometimes over a hundred together, but have hardly ever seen more than three or four black individuals, the rest being green; and it has always seemed singular to me that there should be such a small proportion of adult males.

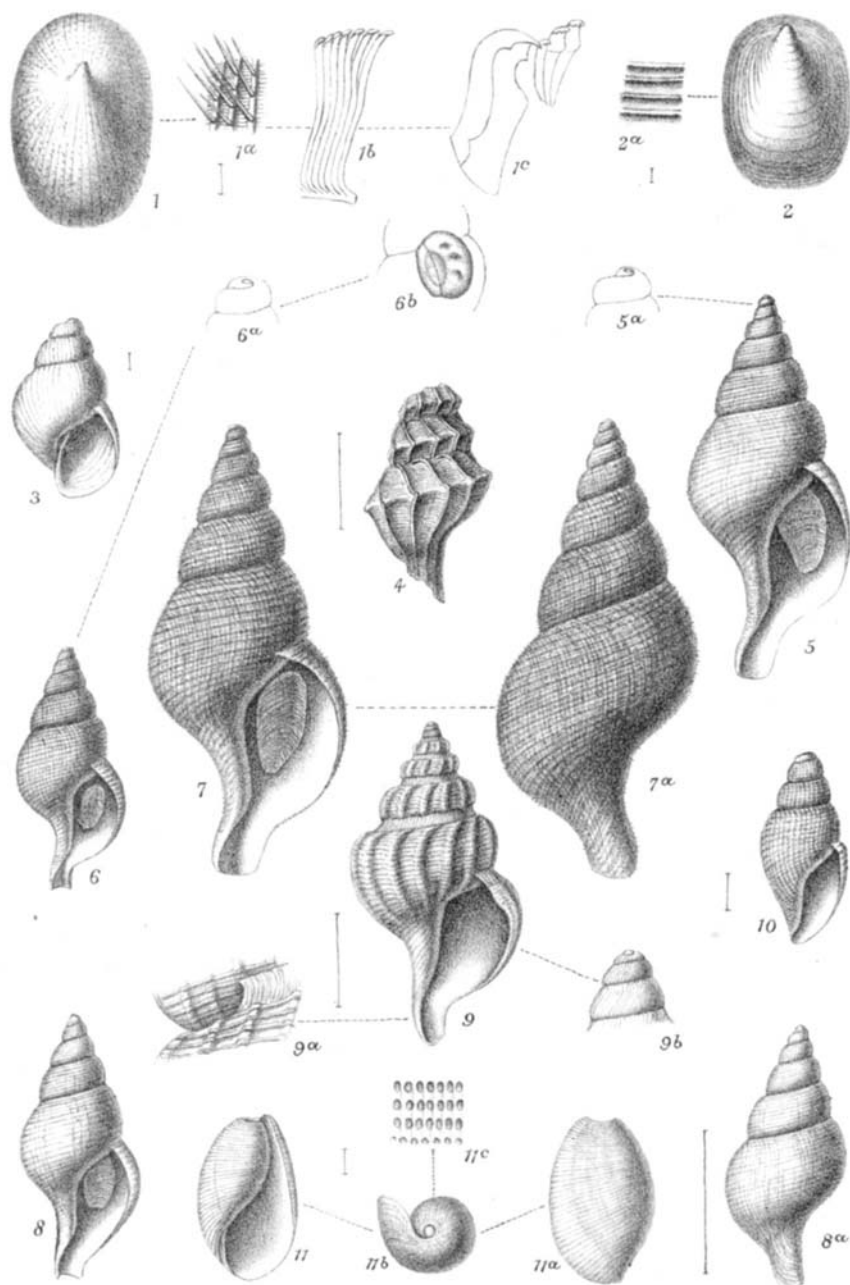
"About eight years ago I caged a number of these interesting birds, eight or ten green and two black. The black birds died



J. Smit lith

PORCULA SALVANIA, *pull*

Herhart imp



C. Benjeau del. et lith.

Hanhart imp.

MOLLUSCA COLLECTED DURING
THE CRUIZE OF HMS. "TRITON".

within two years; but most of the green ones are still living, and one of them has just changed its plumage. I first noticed the black feathers appearing about two months ago, and now it is altogether of a glossy blue-black, being, I suppose, about ten years old, but possibly more. This proves, I think, that only the very old cocks change their colour, and soon die off afterwards, which would account for the very few black cocks to be met with in the bush."

Remarking upon this, Mr. Slater said that there was no doubt that these Bower-birds were a long time assuming the adult dress, but that male birds in full plumage had certainly lived for several years in the Society's Gardens.

Prof. E. Ray Lankester, F.R.S., read a memoir on the muscular and endoskeletal systems of *Limulus* and *Scorpio*, drawn up by himself with the assistance of his two pupils, Mr. W. J. Barham and Miss E. M. Beck. These investigations seemed to confirm Prof. Lankester's previously expressed views as to the near affinity of these two forms, hitherto usually referred to different classes of the animal kingdom, and to justify the association of *Limulus* with the Arachnida.

This paper will be printed entire in the Society's 'Transactions.'

The following papers were read :—

1. On the Mollusca procured during the Cruise of H.M.S. 'Triton' between the Hebrides and Faroes in 1882.
By J. GWYN JEFFREYS, LL.D, F.R.S., F.Z.S.

[Received June 10, 1883.]

(Plate XLIV.)

The sea-bed lying between the Hebrides and the Faroe Islands, or the submarine region now known as the "Faroe Channel," has been partially examined during the last few years for zoological and physical purposes.

In 1868 the first experimental or tentative expedition was made in one of our small Government steam-ships, to explore the deeper parts of the sea around our coasts; and the Surveying-ship 'Lightning' was assigned and equipped for that service. The expedition was placed under the scientific charge of Dr. Carpenter and the late Sir Wyville Thomson; and the results were given by Dr. Carpenter and published in the 'Proceedings of the Royal Society' for December 1868. In that short cruise, part of the submarine region above mentioned was described as the "Warm area," and another part as the "Cold area"—the bottom temperature of the former ranging from 46° to 50° F. and of the latter from 32° to 41°. Dr. Carpenter noticed that the Fauna inhabiting the "Warm" area was comparatively of a North-British type, and that of the "Cold" area more Scandinavian or Boreal. The depths examined in the cruise were from 60 to 650 fathoms.

In 1869 succeeded the Expedition in the Surveying steam-ship 'Porcupine;' and the third cruise in that year was devoted to the further examination of the "Faroe Channel." The Mollusca obtained during this cruise did not show so great a difference between the "warm" and "cold" areas as appeared to be the case in other departments of the Invertebrata.

During the following ten years took place the further and more extended cruises of the 'Porcupine,' and the Expeditions in H.M.S. 'Valorous' and 'Challenger,' all of which originated in the first mentioned cruise of the 'Lightning.'

In 1880, previous to the lamented death of Sir Wyville Thomson, the Government was induced on his application to grant the use of a hired ship, the 'Knight Errant,' for the reexamination of the Faroe Channel. The vessel was small and the weather bad; but some results were obtained, and communicated by Mr. John Murray, the naturalist in charge, to the Royal Society of Edinburgh, who published the account in their 'Proceedings.' I contributed a list of the Mollusca. Staff-Commander Tizard conducted this cruise as well as that in H.M.S. 'Triton'; he had been one of the officers in the 'Challenger' Expedition. Mr. Murray was one of the naturalists on board the 'Challenger,' and is well known for his admirable work on deep-sea deposits.

In 1882 the Government ordered the 'Triton,' a composite steam-ship of 410 tons, which was employed in the Surveying service, to resurvey and explore the sea-bed lying between 59 and 61 degrees of North Latitude, and especially the "Wyville-Thomson ridge," which was supposed to separate the "warm" from the "cold" area. Mr. Murray had also the scientific charge of this short cruise. It was made in August. The weather was, on this occasion also, bad; but the results as regards the Mollusca were most interesting, and include the discovery of several undescribed species.

The following is a list of the Stations with other particulars :—

No. of Station.	Lat. N.			Long. W.		Depth in faths.	Bottom Temperature.		Remarks.	Warm or cold area.	
	°	'	"	°	'		°	°			
1. ...	59	51	30	6	21	240	47·5-47·6	...	On the ridge.	Warm.	
2. ...	59	37	30	6	21		530	46·2	...		West of ridge.
3. ...	60	39	30	9	6	87	49·5	...	Faroe Banks.		
4. ¹ ...	60	22	40	8	21	327-430	31·5-32·0	...	East of ridge.	Cold.	
5. ² ...	60	11	45	8	15	433	43·5	...	West of ridge.	Warm.	
6. ...	60	9		7	16	30	466	29·5-30·0	...	East of ridge.	Cold.
7. ...	60	19		7	10		585	29·9-30·5	...	East of ridge.	Cold.
8. ...	60	18		6	15		640	30·0	...	East of ridge.	Cold.
9. ...	60	5		6	21		608	30·0	...	East of ridge.	Cold.
10. ...	59	40		7	21		516	46·0-46·5	...	West of ridge.	Warm.
11. ...	59	39	30	7	13		555	45·5	...	West of ridge.	Warm.
12. ...	60	31		7	34		580	31·0	...	East of ridge.	Cold.
13. ...	59	51	2	8	18		570	45·7	...	West of ridge.	Warm.

¹ Partly on the ridge.

² The trawl had been carried right over the ridge and came up in the Cold area.

Besides the above stations, the trawl was used off the Butt of Lewis in 40 fathoms.

LIST OF MOLLUSCA.

Station 2. Warm area.

1. *Pecten sulcatus*, Müller.
2. *Amussium hoskynsi*, Forbes.

Both widely distributed in the North Atlantic and Mediterranean.

Station 3.

1. *Anomia patelliformis*, Linné.
2. *Pecten pusio*, L.
3. *Aporrhais serresianus*, Michaud.
4. *Fusus norvegicus*, Spengler.

The third is a southern, and the fourth a northern form.

Station 4. Cold area.

1. *Morvillia undata*, Brown.
2. *Buccinum hydrophanum*, Hancock.

Both Arctic species.

Station 8. Cold area.

1. *Leda frigida*, Torell.
2. *Leda tenuis*, Philippi.
3. *Leda subæquilatera*, Jeffreys.
4. *Neæra subtorta*, G. O. Sars.
5. *Natica affinis*, Gmelin.
6. *Cerithiopsis costulata*, Möller.
7. *Fusus islandicus*, Chemnitz.
8. *Fusus sabini*, Gray.
9. *Fusus delicatus*, Jeffr., n. sp.
10. *Fusus berniciensis*, King; var. *elegans*.
11. *Mohnia mohni*, Friele.

See Nyt Mag. 1877; Jahrb. mal. Ges. 1878 & 1879; and Norske Nordhavs-Exped. 1882.

12. *Pleurotoma (Bela) scalaroides*, G. O. Sars.
13. *Pleurotoma scalaroides*, G. O. Sars; var. = *Bela scalaris*, G. O. Sars. Not *Defrancia scalaris*, Möller.
14. *Pleurotoma tenuicostata*, M. Sars.

From typical specimens of all these three species. Mostly northern. Nos. 1 and 2 are generally distributed in the North Atlantic and Mediterranean. No. 10 ranges southwards to the Bay of Biscay.

Station 9. Cold area.

1. *Arca pectunculoïdes*, Scacchi; var. *septentrionalis*.
2. *Natica affinis*, Gm.
3. *Pilidium radiatum*, M. Sars.
4. *Fusus sabini*, Gray.

5. *Fusus delicatus*, Jeffr.
 6. *Fusus turgidulus*, Jeffr.; Friele in der Norske Nordhavs-Expedition, 1882, p. 11, pl. i. f. 13-18, and pl. iv. f. 14-28; 223-649 fms., and 'Porcupine' Exp. 1869, 155-345 fms.
 7. *Fusus concinnus*, Jeffr., n. sp.
 8. *Fusus hirsutus*, Jeffr., n. sp.
 9. *Fusus lachesis*, Mörch.
 10. *Fusus islandicus*, Chemn.
- All are either arctic or new species.

Station 10. Warm area.

1. *Anomia ehippium*, L.; var. *squamula*.
2. *Pecten vitreus*, Chemn.
3. *Idas argenteus*, Jeffr. See Proc. Zool. Soc. 1879, p. 570, and 1882, p. 683.
4. *Leda frigida*, Tor.
5. *Leda lucida*, Lov.
6. *Nucula corbuloides*, Seguenza.
7. *Nucula tumidula*, Malm.
8. *Limopsis minuta*, Ph.
9. *Limopsis cristata*, Jeffr.
10. *Scrobicularia alba*, W. Wood.
11. *Teredo norvegica*, Spengl.
12. *Teredo megotara*, Hanley.
13. *Cocculina spinigera*, Jeffr., sp. n.
14. *Cocculina corrugata*, Jeffr., sp. n.
15. *Odostomia electa*, Jeffr., sp. n.
16. *Natica montacuti*, Forb.
17. *Aporrhais serresianus*, Mich.
18. *Cerithium metula*, Lov.
19. *Columbella haliæti*, Jeffr.

It now appears that *Fusus costulatus* of Cantraine, to which this species had been referred by Italian conchologists, as well as lately by myself, belongs to the genus *Pleurotoma*, together with his *Fusus semicostatus*. The former species is in all probability *P. striolata* of Scacchi, and the latter is certainly (from Cantraine's type) *P. maravignæ* of Bivona. The type of Cantraine's *Fusus costulatus* has been unfortunately lost. Under these circumstances I must retain my name *haliæti*. *Buccinum acute-costatum* of Philippi = *B. testæ* of Aradas is allied to the present species; but it is not, in my opinion, identical with *C. haliæti*.

20. *Cylichna alba*, Brown.

All these species, except the last and those which are new, have an extensive range in the North Atlantic.

Station 13. Warm area.

1. *Amussium hoskynsi*, Forb.
2. *Lima subauriculata*, Montagu.
3. *Lima subovata*, Jeffr.

4. *Leda lucida*, Lov.
 5. *Arca pectunculoides*, Sc.; var. *septentrionalis*.
 6. *Nucula tumidula*, Malm.
 7. *Dacrydium vitreum*, Tor.
 8. *Dentalium striolatum*, Stimpson.
 9. *Puncturella hoachina*, L.
 10. *Ganesa nitidiuscula*, Jeffr.
 11. *Trochus otto*, Ph.
 12. *Cithna tenella*, Jeffr.
 13. *Aporrhais serresianus*, Mich.
 14. *Natica grælandica*, Beck; var. *contracta*.
 15. *Natica montacuti*, Forb.
 16. *Trophon carinatus*, Jeffr., sp. n.
 17. *Fusus berniciensis*, King.
 18. *Columbella halicæti*, Jeffr.
 19. *Defrancia formosa*, Jeffr., sp. n.
 20. *Pleurotoma exigua*, Jeffr., sp. n.
 21. *Cylichna alba*, Brown.
 22. *Cylichna ovata*, Jeffr., = ? *conuloïdes*, S. V. Wood.
 23. *Cryptaxis crebripunctatus*, Jeffr., n. sp.
 24. *Scaphander puncto-striatus*, Mighels and Adams.
- All except No. 21 and the new species have an extensive range in the North Atlantic.

The species of Mollusca procured during the cruise of the 'Triton' were 62.

For the geographical distribution, synonymy, and other remarks with respect to the above-named species, I would refer to my work on 'British Conchology,' my "Report of the 'Valorous' Expedition" and account of the Mollusca in the 'Proceedings' of the Royal Society for 1876 and the 'Annals and Magazine of Natural History' for 1876 and 1877, and to my papers on the Mollusca from the 'Lightning' and 'Porcupine' Expeditions in the 'Proceedings' of the Zoological Society for 1878, 1879, 1881, 1882, and 1883, as well as in other publications.

Descriptions and figures of some of the species, particularly those which are new to science, are subjoined.

1. *COCCULINA SPINIGERA*¹, Jeffreys. (Plate XLIV. figs. 1, 1 a, 1 b, 1 c.)

SHELL oval, convex, rather thin, semitransparent, somewhat glossy, especially on the upper part, where the spines have disappeared: *sculpture*, extremely numerous and delicate striæ which radiate towards the margin; these striæ are crested by rows of minute tubercles, each of which supports a fine short hair-like spine or prickle; the spines are easily removed, and disappear when the shell is subjected to the action of potash-water, showing that they are of a chitinous nature; the apex is quite smooth: *colour* white: *beak* very small, incurved and twisted downwards, forming a single whorl; it is persistent, but sometimes broken or injured by attrition; its

¹ Prickly.

propinquity to the hinder margin is in the proportion of $2\frac{1}{2}$ to 6 as representing the total length of the shell: *mouth* oval: *inside* polished; there is no septum. L. 0.175, B. 1.25.

Station 10, 516 fathoms.

A great number of living specimens occurred in the tubes of *Teredo megotara*, which had perforated a sunken log of pine-wood. In these tubes, as well as in the crevices of the wood, also lived numerous specimens of *Idas argenteus*, which were attached by a strong byssus. See P. Z. S. for November 1882, p. 683. But the statement which I there made as to the present shell having been infested by a sponge is questionable, as I now believe that the hair-like spines which cover the shell belong to it, and are not parasitic. The mollusk is eyeless. Mr. Dall has ascertained that it has different sexes. Herr Friele has kindly supplied me with a sketch of the odontophore (laterals and uncini), which I am now enabled to represent in the accompanying Plate. He could not detect any central or rhachidian tooth.

2. COCCULINA CORRUGATA¹, Jeffreys. (Plate XLIV. figs. 2, 2a.)

SHELL oval, convex, but somewhat depressed, thin, opaque, and lustreless: *sculpture*, regular, fine, and close-set concentric striæ or wrinkles, which are chiefly observable and stronger round the margin, especially in front or at the broader end: *colour* chalky-white, except at the margin, which is yellowish-brown: *beak* small, incurved and slightly twisted to one side; the spire has a single whorl; the beak is placed close to the hinder margin, and nearly overlaps it: *mouth* oval: *inside* smooth: no septum. L. 0.075, B. 0.05.

A few specimens, with the last, and occurring under the same circumstances. This species differs from *C. spinigera* in size, sculpture, and the position of the beak. It is also eyeless.

3. ODOSTOMIA ELECTA², Jeffreys. (Plate XLIV. fig. 3.)

SHELL conical, thin, nearly transparent, and glossy: *sculpture*, slight but numerous microscopically visible striæ in the line of growth: *colour* clear white: *spire* short and oblique, somewhat turreted, and abruptly pointed; apex globular: *whorls* 4, rather swollen; the last is much broader than the next, and occupies three fourths of the shell when placed with its mouth upwards: *suture* distinct but not deep: *mouth* oval, occupying half the shell: *outer lip* rounded and thin, inflected and angulated above, expanded below: *inner lip* thickened and reflected on the umbilicus, disunited above from the outer lip: *umbilicus* forming a narrow chink: *tooth* small and sunken, but conspicuous, situate on the upper part of the inner lip or pillar: *operculum* withdrawn and not visible. L. 0.085, B. 0.06.

A single but living specimen from Station 10, 516 fathoms.

Its nearest ally is *O. rissoides*, which differs from the present species in having a much longer and tapering spire, and in the whorls more gradually enlarging.

¹ Wrinkled.

² Choice.

4. *TROPHON CARINATUS*¹, Jeffreys. (Plate XLIV. fig. 4.)

SHELL distinguishable from *T. clathratus* in having a prominent keel in the middle of each whorl; the laminar ribs are fewer and obtusely angulated; the spiral striæ, which cover the interstices of the ribs, are numerous, regular, comparatively strong, and flexuous or curved: colour white: inner lip glazed and lustrous. L. (if perfect) 0·6, B. 0·25.

An imperfect but characteristic specimen from Station 13, 570 fathoms.

5. *FUSUS SABINI*, (*sabinii*) Gray. (Plate XLIV. fig. 5.)

Buccinum sabinii, Gray in Suppl. to App. of Parry's First Voyage, p. cxi (1824).

SHELL forming a somewhat short spindle, rather thin, semi-transparent and rather glossy: sculpture, numerous fine and thread-like spiral striæ, of which there are from 20 to 30 on the last, and 8 to 12 on the penultimate whorl; these are crossed by microscopic and far more numerous striæ in the line of growth: colour under the epidermis chalky-white: epidermis pale yellowish-brown, filmy, and easily removed; it is fibrous towards the mouth: spire tapering to a blunt point; apex irregular, sometimes flattened at the top, but occasionally twisted: whorls 6-7, moderately convex; the last occupies rather more than two thirds of the shell when placed with the mouth upwards: suture rather deep: mouth pear-shaped, acut-angular above; length (including the canal) exceeding the rest of the spire; inside slightly notched by the impression of the spiral striæ: canal shortish, turning somewhat abruptly to the left, equally wide and open throughout, and ending in a large and obliquely curved notch: outer lip flexuous and sharp-edged: inner lip polished by the continual attrition of the foot: pillar flexuous, obtusangular at its junction with the canal: operculum triangularly oval, strong, yellowish-brown or light horn-colour, marked with close-set lines of growth; nucleus terminal on the inner side, and falciform. L. 1·75, B. 0·75.

Many living specimens from Stations 8 and 9, in 608 and 640 fathoms.

Having carefully compared these and other specimens with the types of Reeve's *Fusus tortuosus* in my possession from the collection of the late Admiral Sir Edward Belcher, I must adhere to my opinion expressed in the 'Annals of Natural History' for April 1877, that both belong to one and the same species. *Sipho tortuosus* of G. O. Sars is a different species, and is the *Tritonium turritum* of M. Sars; my *Fusus attenuatus* is not a variety of that species. Besides the numerous localities there given, I am enabled, through the kindness of my friend Herr Friele, to add the Norwegian Arctic Expedition, Station 324, 123 fathoms, as well as the cruise of the 'Knight Errant,' in 540 fathoms. Gray contrasted his species with *F. gracilis* (his *Buccinum corneum*), and said it was "not so long and slender,

¹ Keeled.

and the whorls more convex, the aperture ovate instead of roundish-ovate." He called the striæ longitudinal, as being in the direction of the spire.

6. *FUSUS DELICATUS*¹, Jeffreys. (Plate XLIV. figs. 6, 6 a, 6 b.)

SHELL differing from *F. sabini* in the following respects:—It is smaller, more slender and cylindrical, and regularly tapering; the spiral striæ are much finer and more numerous; the epidermis is filmy and of a paler colour; the whorls gradually increase in size, and the last whorl is not so large in proportion to the others; the canal is shorter and considerably narrower; the operculum is ear-shaped and marked not only with close-set lines of growth but with a few oblique striæ in the opposite direction. L. 1.25, B. 0.5.

Several specimens from Stations 8 and 9, 608 and 640 fathoms; but they were mostly inhabited by a species of *Sipunculus*. Also from 540 fathoms in the 'Knight Errant' cruise, and erroneously named in my list of the Mollusca "*Fusus turritus*."

7. *FUSUS HIRSUTUS*², Jeffreys. (Plate XLIV. figs. 7, 7 a.)

SHELL turreted, rather solid, opaque, and of a dull hue: *sculpture*, numerous fine and sharp spiral striæ, which are alternately but irregularly larger and smaller; they extend to the end of the canal; there are about 50 on the body-whorl, 20 on the penultimate, and 12 to 15 on the next whorl; besides these the surface is covered with minute and close-set longitudinal striæ, which produce by their intersection a decussation on the upper whorls: *colour* under the epidermis chalky-white: *epidermis* brownish-yellow, pilose, each of the spiral striæ being thickly clothed with countless short bristly hairs: *spire* long, tapering to a blunt point; apex regular, button-shaped: *whorls* 7-8, tumid, gradually enlarging; the last occupies about two thirds of the shell with the mouth upwards: *suture* excavated: *mouth* large, pear-shaped, inflected above; length (including the canal) nearly half that of the shell: *canal* short, very wide and open, turning to the left: *outer lip* curved and thin: *inner lip* broad and polished: *pillar* flexuous as in other species: *operculum* triangular, strong, light horn-colour, marked with fibrous and corrugated but irregular lines of growth; nucleus as in congeners. L. 2.25, B. 0.9.

A single but perfect specimen from Station 9, 608 fathoms. Professor Torell dredged this species at Spitzbergen.

8. *FUSUS CONCINNUS*³, Jeffreys. (Plate XLIV. figs. 8, 8 a.)

SHELL of an elegant shape, thin, semitransparent, and rather glossy: *sculpture*, numerous and delicate spiral striæ which cover the whole of the shell; there are from 30 to 40 on the body-whorl, 12 to 15 on the penultimate, 8 to 10 on the next, and 6 to 8 on the preceding whorl; the uppermost two whorls are apparently smooth, but show under the microscope indistinct traces of the striæ; there

¹ Delicate.

² Bristly.

³ Neat.

are also occasional but irregular lines of growth: *colour* white, with a slight tint of yellow: *epidermis* inconspicuous: *spire* elongated, tapering to a bulbous point; apex slightly twisted: *whorls* 5-6, convex; the last occupies rather more than two thirds of the shell: *suture* deep: *mouth* oblong, inflected above; length (including the canal) nearly half that of the shell: *canal* short, very wide and open, turning a little towards the left: *outer lip* curved and thin: *inner lip* filmy: *pillar* flexuous: *operculum* triangularly oval, pale yellowish-brown, marked as in *F. hirsutus*. L. 0.75, B. 0.35.

A single specimen of this graceful little species occurred at Station 9 in 608 fathoms.

9. *DEFRANCIA FORMOSA*¹, Jeffreys. (Plate XLIV. figs. 9, 9 a, 9 b.)

SHELL having the shape of a small *Buccinum*, usually thin, opaque, and of a dark hue: *sculpture* variable, but ordinarily consisting of longitudinal and spiral thread-like striae, which by their intercrossing produce a more or less regular decussation; the spiral are more numerous than the longitudinal striae, and the latter are sometimes wanting; the points of intersection are occasionally nodulous or tubercular; the longitudinal striae are either almost straight or curved, and in the latter case become strong and rib-like; the outside of the canal is marked lengthwise with oblique striae, and in some specimens with also the spiral striae in a cancelled manner; the fissural groove, lying immediately below the suture, is crossed by crowded and curved minute striae in the line of growth; the apical or top whorls are exquisitely reticulated, as in other species of this genus, but now and then they are angulated in the middle of each whorl: *colour* whitish with a tinge of yellow, and a yellowish-brown apex: *spire* of moderate length, sometimes turreted, gradually sloping to a point; apex pinched up and disproportionately smaller than the rest of the spire; its point is usually sharp, but sometimes blunt and button-shaped: *whorls* 7-8, tumid, in some specimens angulated below the fissural groove; the last whorl occupies two thirds of the spire when the shell is placed with the mouth upwards: *suture* deep; the infrasutural groove is broad, and slopes downwards: *mouth* pear-shaped, somewhat exceeding half the shell in length: *canal* short, wide, and nearly straight, ending in a round notch: *outer lip* flexuous, owing to the incurvity of the fissural groove, acutangular at its junction with the periphery; its front edge is finely crenellated by the termination of the spiral striae: *fissure* remarkably deep and broad: *inner lip* somewhat thickened, smooth and glazed: *pillar* rather long and flexuous. L. 0.5, B. 0.25.

A single specimen from Station 13, 570 fathoms.

Distribution. Norway; 'Porcupine' Expedition 1869, between the Hebrides and Faroes in 345 fathoms, and 1870 from the English Channel to Gibraltar in from 414 to 1095 fathoms; 'Challenger' Expedition, in the North Atlantic, 1000 fathoms.

¹ Beautiful.

10. *PLEUROTOMA EXIGUA*¹, Jeffreys. (Plate XLIV. fig. 10.)

SHELL oblong, solid for its size, semitransparent, and rather glossy: *sculpture*, numerous regular and close-set spiral striæ, which are crossed by less conspicuous longitudinal rib-like striæ; the direction of these last follows the line of growth; the intercrossing of the two sets of striæ produces a delicate reticulation; the uppermost whorl is quite smooth and shining: *colour* milk-white: *spire* somewhat turreted, gradually tapering to a blunt point, and apparently truncated: *whorls* $4\frac{1}{2}$, concave; the last occupies two thirds of the shell; the uppermost whorls form a bulb, and the half-whorl at the point is twisted inwards: *suture* deep: *mouth* or aperture oblong and narrowish, forming above a small ledge; length exceeding half the shell: *canal* very short and wide, nearly straight, ending in an obliquely rounded notch: *outer lip* obtusely angulated at the top, and elsewhere gently curved; edge thin and sharp: *labial slit* or fissural groove short and shallow: *inner lip* broad and glazed: *pillar* flexuous, sloping inwards to a cutting-edge: *operculum* not observable. L. 0.2, B. 0.15.

A single specimen from Station 13, 570 fathoms.

This species is allied to *P. (Bela) tenuicostata* of M. Sars, but is narrower; the longitudinal ribs or striæ are straight as regards the line of growth (instead of being flexuous as in that species); the spire is abrupt or apparently truncated at the top; and the fissural groove is much shallower.

11. *CRYPTAXIS CREBRIPUNCTATUS*², Jeffreys. (Plate XLIV. figs. 11, 11 a, 11 b, 11 c.)

SHELL oval, thin, semitransparent, and glossy: *sculpture*, very numerous and regular fine spiral or revolving striæ, which are closely punctured; they are stronger at the base than at the crown: *colour* white: *spire* deeply sunken, and for the most part concealed in a small cavity in the centre of the crown; but the bulb-shaped apex is visible at the bottom of the cavity: *mouth* semioblong, contracted above and expanding below: *outer lip* slightly raised above the crown and channelled, curved in the middle and at the base: *inner lip* inconspicuous: *pillar* straight on the upper half and incurved below. L. 0.2, B. 0.1.

Three specimens from Station 13, 570 fathoms.

In the 'Annals and Magazine of Natural History' for June 1883 I indicated the probability that a species which was there described and figured as *Cylichna parvula* might be the type of a distinct genus, intermediate between *Cylichna* and *Utriculus*, because the spire was partly concealed; and I suggested the name *Cryptaxis*. I am now encouraged by the discovery of the present species to adopt the above generic name. I would not refer these species to the genus *Bullina* of Férussac, as defined by Messrs. Adams in their 'Genera of Recent Mollusca,' who say "spire rather elevated; . . . coloured markings; . . . outer lip grooved internally, and with the margin crenulated." None of these characters are applicable to either

¹ Little.

² Closely punctured.



W Purkiss lith

Hanhart imp

NEW SPECIES OF GALERUCIDÆ.

of the species now under consideration. They compare the genus with *Actæon*, which, according to them, the shells of *Bullina* greatly resemble. Their figures show the spire more or less raised; and they mention that the species are from Japan, Ceylon, and Australia. Woodward, in his 'Manual,' gives *Bullina* of Férussac as a synonym of *Aplustrum*, Schumacher, which was founded on the well-known *Bulla aplustre* of Linné. *Bullina* of Risso (1826) is the same as *Cylichna* of Lovén, and ought to take precedence of the latter name; its type was *Bulla cylindracea* of Pennant. I have two more undescribed species of *Cryptaxis* from the 'Porcupine' Expedition.

EXPLANATION OF PLATE XLIV.

- Fig. 1. *Cocculina spinigera*, p. 393.
 1 a. Prickles or spines, magnified.
 1 b. Lateral teeth of odontophore, magnified.
 1 c. Uncini of same, magnified.
 2. *Cocculina corrugata*, p. 394.
 2 a. Sculpture, magnified.
 3. *Odostomia electa*, p. 394.
 4. *Trophon carinatus*, p. 395.
 5. *Fusus sabini*, p. 395.
 6. — *delicatus*, p. 396.
 6 a. Apex, magnified.
 6 b. Ovi-capsule, magnified.
 7, 7 a. *Fusus hirsutus*, p. 396.
 8, 8 a. — *concinus*, p. 396.
 9. *Defrancia formosa*, p. 397.
 9 a. Sutural fissure, magnified.
 9 b. Sculpture of apex, magnified.
 10. *Pleurotoma exigua*, p. 398.
 11, 11 a. *Cryptaxis crebripunctatus*, p. 398.
 11 b. Apex, magnified.
 11 c. Sculpture, magnified.

2. Descriptions of some new Species of Beetles of the Family Galerucidæ. By MARTIN JACOBY.

[Received June 2, 1883.]

(Plate XLV.)

1. OIDES, Weber.

1. OIDES APICALIS, sp. nov. (Plate XLV. fig. 1.)

Ovate-oblong, flavous; head and thorax impunctate; elytra finely punctured, dark violaceous blue, the lateral and the posterior parts of the sutural margin flavous.

Length 4-4½ lines.

Hab. Sumatra.

Head rather swollen, with a deep transverse groove between the eyes, above which a small but deep fovea is placed; clypeus transverse, swollen. Antennæ less than half the length of the body, entirely flavous, the third joint double the length of the second,