

This article was downloaded by: [McGill University Library]
On: 05 February 2015, At: 15:50
Publisher: Taylor & Francis
Informa Ltd Registered in England and Wales Registered Number:
1072954 Registered office: Mortimer House, 37-41 Mortimer
Street, London W1T 3JH, UK



Annals and Magazine of Natural History: Series 5

Publication details, including instructions for authors and subscription information:
<http://www.tandfonline.com/loi/tnah11>

XXXIII.—On a collection of Lepidoptera recently received from Madagascar

Arthur G. Butler F.L.S. F.Z.S.
Published online: 15 Oct 2009.

To cite this article: Arthur G. Butler F.L.S. F.Z.S. (1878) XXXIII.—On a collection of Lepidoptera recently received from Madagascar , Annals and Magazine of Natural History: Series 5, 2:10, 283-297, DOI: [10.1080/00222937808682427](http://dx.doi.org/10.1080/00222937808682427)

To link to this article: <http://dx.doi.org/10.1080/00222937808682427>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs,

expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

EXPLANATION OF PLATE XIII.

Fig. 1. *Pentacheles enthrix*.

Fig. 2. The same : eye, seen from beneath.

Fig. 3. The same : chela of the posterior pair of pereiopoda.

Fig. 4. *Willemoesia leptodactyla* : anterior portion of one side of the carapace, showing eye and 1st and 2nd antennæ.

Fig. 5. The same : frontal margin of carapace, showing eyes, seen in front.

Fig. 6. *Polycheles crucifer* : anterior portion of one side of carapace, showing eyes and the 1st and 2nd antennæ, seen from above.

Fig. 7. The same : eye, seen beneath and in front.

Fig. 8. The same : fifth pair of pereiopoda.

XXXIII.—*On a Collection of Lepidoptera recently received from Madagascar.* By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.

THE Lepidoptera here enumerated were collected by the Rev. William Dean Cowan.

The series of butterflies in the collection represents rather less than one third of those hitherto recorded as occurring in Madagascar ; and, owing to the careful manner in which Mr. Cowan has recorded upon each envelope all facts known to him respecting the species therein contained, not a little information respecting the habits and distribution of the Mascarene forms has been gained.

The collection contains forty-one butterflies and fifteen moths, as follows.

RHOPALOCERA.

Nymphalidæ.*SATYRINÆ*, Bates.

MYCALESIS, Hübner.

1. *Mycalesis ibitina*.

Mycalesis ibitina, Ward, Ent. Mo. Mag. x. p. 60 (1873).

One female found in the forest, Fianarantsoa.

This is the first time that I have seen this species. It is a singular form, having the under surface of the secondaries clouded and striated like a *Pedaliodes*.

2. *Mycalesis perditia*, n. sp.

Upper surface chocolate-brown, with a slight purple gloss ; secondaries with an ill-defined blackish submarginal line. Wings below a little paler than above, with the exception of a

broad central belt bounded by darker lines, the inner line arched and sinuous on each wing, the outer line irregularly zigzag; a submarginal blackish line: primaries with whitish-brown internal area; a very minute black ocellus with white pupil and ochreous iris near the apex, and an ocellus similarly coloured, but of about six times the size, on the first median interspace: secondaries with a white-pupilled black ocellus on the first median interspace, followed on the second interspace by a much smaller (almost punctiform) ocellus, and on the subcostal interspaces by three white dots. Expanse of wings 1 inch 10 lines.

♂. Caught in the forest, Fianarantsoa.

This species seems to be allied to "*Erebia*" *passandava* of Ward; but in the colouring of the upper surface and position of the ocelli it differs from that butterfly.

YPTHEMA, Westwood.

3. *Ypthima Batesii*.

Ypthima Batesii, Felder, Reise der Nov. Lep. iii. tab. 68. figs. 10, 11 (1867).

♂. Found only in the forest, Fianarantsoa.

NYMPHALINÆ, Bates.

HETEROPSIS, Westwood.

4. *Heteropsis drepana*.

♂. *Heteropsis drepana*, Doubleday and Hewitson, Gen. Diurn. Lepid. pl. 63. fig. 5 (1850); ♀, Hewitson, Ent. Mo. Mag. xi. p. 227 (1875).

One female. Ankafana, Betsileo.

This singular species, with its acuminate primaries and rounded secondaries, I have hitherto only known from the figure of the male. To my mind it has been wrongly located in the Satyrinæ; it seems to find a natural position near *Cænophlebia* and *Siderone*, notwithstanding its more slender antennæ and the general coloration of the male. The colouring of the female is quite as near to that of *Tenaris* as to that of any Satyrid, and the leaf-like under surface agrees with that of the group to which I propose to transfer it.

CORYPHÆOLA, n. gen.

Allied to *Paphia*, *Kallima*, and *Doleschallia*; the form of the wings in the male like *Kallima*, that of the female more like *Doleschallia* owing to the apex being obliquely truncate; the secondaries of both sexes terminating in a long tail continuous with the abdominal margin; antennæ more abruptly

clubbed than in the genera with which I have compared it. Type *C. eurodoce*.

5. *Coryphæola eurodoce*.

Kallima eurodoce, Westwood, Gen. Diurn. Lepid. p. 325 (note), pl. 54*. fig. 1 (1850).

Doleschallia eurodoce, Kirby, Cat. Diurn. Lepid. p. 193 (1871).

Found only in the forest, Ankafana.

CHARAXES, Ochs.

6. *Charaxes Cowani*, n. sp.

Allied to *C. candiope*, but altogether smaller and darker, with smaller tawny spots; basal half of wings above deep fulvous-tawny; apical half dark chocolate-brown (almost black) with an undulated ferruginous border; primaries with apex more acuminate than in *C. candiope*; veins of the costal border tinted with green as far as the middle of the wing; discoidal lines normal; an ill-defined ferruginous spot just beyond the cell, above and beyond which are two or three subconfluent spots of the same colour; a sinuous discal series of seven dark tawny spots, smaller than in *C. candiope*; marginal ferruginous border interrupted near the external angle: secondaries with the abdominal half of wing dusky, the depression whitish to the end of the body; blackish apical area broader than in *C. candiope*, and with a straight inner edge; eight submarginal transverse dark tawny dashes, the last four of which are followed by lilac spots bounded externally by black and green crescents; the margin much more strongly dentated than in the African species, and the tails more slender and acuminate, the inner one slightly curved outwards (as in *C. antamboulou*). Colouring of the under surface more uniform than in *C. candiope*, the two discal ocelloid patches and a belt crossing the middle of the discoidal cell being the only yellowish portions of the primaries, and the secondaries having no trace of either the green patch or the yellow belt which follows it; costal border and veins of primaries tinted with green. Expanse of wings 3 inches 2 lines.

Found in the forest, Fianarantsoa.

This species is allied to *C. antamboulou*† of Lucas; the

† I much regret to see the gradual increase in the number of these unwarrantable names amongst butterflies; in one page of Kirby's catalogue the following occur:—*Pamphila metacomet*, *P. ahaton*, *P. wamsutta*, *P. monoco*, *P. kiowah*, *P. pontiac*—names which may either be meant for jokes, or be given in honour of savage chieftains; no explanation accompanies them. If *met-a-comet* and *a-hat-on* are tolerated by scientific men, I presume that any thing would equally pass muster.

latter, however, seems to be more nearly allied to *C. candiope*, excepting that no mention is made of the discal series of tawny spots.

JUNONIA, Hübner.

7. *Junonia andremaia*.

Vanessa andremaia, Boisduval, Faun. Madag. p. 45. n. 6 (1833).

♂. Fianarantsoa.

This species has been supposed to be the female of *J. musa*, but only because it agrees with that species in the form of its wings. The sexes of both are common in collections; but nobody seems to have troubled himself to examine their sexual characters, and therefore the error has remained unchallenged. In the present series *J. andremaia* is a male and *J. musa* a female.

J. andremaia is said by Mr. Cowan to be "common in houses on warm days."

8. *Junonia musa*.

Vanessa musa, Guérin, Icon. Règne Anim. Ins. texte, p. 474 (1844).

♀. Fianarantsoa.

"Very common near Fianarantsoa; can be caught in hundreds, in any shady place, during the heat of the day. The chrysalis has brilliant silvery spines."

9. *Junonia rhadama*.

Junonia rhadama, Boisduval, Faun. Madag. p. 44. n. 4, pl. 7. fig. 2 (1833).

♂ ♀. Very common. Betsileo.

10. *Junonia epiclelia*.

Vanessa epiclelia, Boisduval, Faun. Madag. p. 44. n. 2, pl. 7. fig. 3 (1833).

♂. "Common."

"Bred by me: fifteen days in chrysalis of a dark colour" (*Rev. W. D. Cowan*). Chiefly differs from *J. clelia* in the narrower cream-coloured markings of the upper surface.

PYRAMEIS, Hübner.

11. *Pyrameis cardui*.

Papilio cardui, Linnæus, Faun. Suec. p. 276. n. 1054 (1761).

"Very common round the house, flitting about in the sun" (*Rev. W. D. Cowan*).

SALAMIS, Boisduval.

12. *Salamis Duprei*.

Salamis Duprei, Guénée, in Vinson's Voy. Madag. Lep. p. 573, pl. 5 (1865).

In the forest, Ankafana.

The figure of this species represents an imperfect example, from which the tails of secondaries have been broken off.

ATERICA, Boisduval.

13. *Aterica rabena*.

Aterica rabena, Boisduval, Faun. Madag. p. 47, pl. 8. fig. 2 (1833).

"Found in the Tanala, in shades by the river; not found here" (*W. D. C.*).

HYPOLIMNAS, Hübner.

14. *Hypolimnas misippus*.

Papilio misippus, Linnæus, Mus. Lud. Ulr. p. 264 (1764).

♂. "Found commonly on bare uplands, mostly near summits. Fianarantsoa."

HYPANIS, Boisduval.

15. *Hypanis anvatara*.

Hypanis anvatara, Boisduval, Faun. Madag. p. 56, pl. 7. fig. 5 (1833).

"Takarana."

ACRÆINÆ, Bates.

TELCHINIA, Doubleday.

16. *Telchinia manjaca*.

Acræa manjaca, Boisduval, Faun. Madag. p. 33. n. 9, pl. 4. fig. 6, pl. 5. figs. 6, 7 (1833).

♂ ♀. Fianarantsoa.

"Feeds on a species of *Labiata*. Thirteen days in chrysalis. Common."

17. *Telchinia lycia*.

Papilio lycia, Fabricius, Syst. Ent. p. 464. n. 94 (1775).

"Found on grassy uplands. Betsileo."

ACRÆA, Fabricius.

18. *Acræa zitja*.

Acræa zitja, Boisduval, Faun. Madag. p. 32. n. 7, pl. 4. figs. 4, 5 (1833).

“Common about cultivated places.”

19. *Acræa calida*, n. sp.

Allied to the preceding species, much smaller, with no regular black border to the outer margin: the primaries with longitudinal streaks running from the margin up the nervures to near the middle of the disk; a large black spot upon the discocellulars and three smaller ones in an oblique series half-way between the cell and the margin: secondaries with a blackish patch divided by the median vein at the base; a black spot above the cell, two in the cell, one below it and one discocellular; a curved discal series of seven small black spots; a marginal series of six triangular blackish spots terminating the nervures. Veins below black, with cream-coloured borders: primaries with a cream-coloured dash from the front of the discal black dots: secondaries with the discoidal cell, a dash on the second median interspace, and a narrow regular external border cream-coloured; the black discal spots of the upper surface only represented by one spot at the abdominal margin; the basal blackish patch and the marginal spots (as also the longitudinal dashes of the primaries) wholly wanting. Expanse of wings 1 inch 9 lines.

♀. Fianarantsoa.

Mr. Cowan says that this species is “common;” unfortunately he has only sent one example.

20. *Acræa punctatissima*.

Acræa punctatissima, Boisduval, Faun. Madag. p. 31. n. 5, pl. 6. fig. 2 (1833).

“Common on grassy plains.” Fianarantsoa.

21. *Acræa obeira*.

Acræa obeira, Hewitson, Proc. Zool. Soc. 1863, p. 65.

♀. “Found near towns.”

22. *Acræa piva*.

Acræa piva, Guénéé, in Vinson's Voy. Madag. Lep. p. 34 (1865).

♀. “Common.” Fianarantsoa.

This species is extremely close to the preceding, but is

larger and redder, and the border of the secondaries is interrupted by large red spots.

Erycinidæ.

NEMEOBIINÆ, Bates.

SARIBIA, n. gen.

Allied to *Abisara*, but the secondaries tricaudate; two rather slender tails emitted at the termination of the first and second median branches, and a third shorter one at the anal angle. Type *S. tepahi*.

23. *Saribia tepahi*.

Emesis tepahi, Boisduval, Faun. Madag. p. 27, pl. 3, fig. 4 (1833).

"Found only in the forest by the pathway. Betsileo."

Lycænidæ.

LAMPIDES, Hübner.

24. *Lampides lingens*.

Papilio lingens, Cramer, Pap. Exot. iv. pl. 379, figs. F, G (1782).

♂ ♀. "Found in the forest. Ankafana."

25. *Lampides pulcher*.

Lycæna pulchra, Murray, Trans. Ent. Soc. 1874, p. 524, pl. 10, figs. 7, 8.

♂. "Found amongst grass. Fianarantsoa."

26. *Lampides bæticus*.

Papilio bæticus, Linnaeus, Syst. Nat. i. 2, p. 789. n. 226 (1767).

♂. "Found amongst grass. Fianarantsoa."

27. *Lampides catharina*.

Lycæna catharina, Trimen, Trans. Ent. Soc. ser. 3, vol. i. p. 281 (1862).

"Common on grassy plains. Fianarantsoa."

28. *Lampides aberrans*, n. sp.

♂. Above like the preceding species, excepting that the orange spots of secondaries are much smaller. Wings below pale greyish brown, whitish towards external angle; a black discocellular line edged with white; two white-edged black

Ann. & Mag. N. Hist. Ser. 5. Vol. ii.

20

spots on the median interspaces, followed by white-edged crescents of the ground-colour: secondaries with a black discocellular line; a longitudinal fusiform black spot above the cell, followed by three black dots, a fusiform spot in the cell, and one or two small spots on the space between the first and second subcostal branches, all white-edged; outer border marked with whitish orange and green-speckled black dots as in the preceding species. Expanse of wings 1 inch 4 lines.

"Found in grass. Fianarantsoa."

LYCÆNA, Fabricius.

29. *Lycæna knysna*.

Lycæna knysna, Trimen, Trans. Ent. Soc. ser. 3, vol. i. p. 282 (1862).

Fianarantsoa.

30. *Lycæna atrigemmata*, n. sp.

Wings above bright lavender-blue, with rather narrow dark brown borders; fringes whitish flecked with brown: secondaries with an ill-defined series of submarginal brown dots: body blackish; antennæ white, with brown annulations above. Wings below pale greyish brown, with a double marginal series of white-bordered dusky spots, the sixth and eighth of the external row on the secondaries with black centres; the inner row lunate: primaries with two subcostal dots at the middle of the wing, a large round spot in the cell, a second closing the cell, and four (the lowermost one small) beyond the cell in a transverse series, black with white borders: secondaries with a small spot at the base, a lunule closing the cell, and an annular series of eleven spots surrounding it black, bordered with white: body below whitish. Expanse of wings 9 lines.

"Found amongst grass. Fianarantsoa."

Papilionidæ.

PIERINÆ, Bates.

MYLOTHRIS, Hübner.

31. *Mylothris phileris*.

Pieris phileris, Boisduval, Faun. Madag. p. 17. n. 2, pl. 2. figs. 3, 4 (1833).

"Very common. Fianarantsoa."

NYCHITONA, Butler.

32. *Nychitona sylvicola*.

Leucophasia sylvicola, Boisduval, Faun. Madag. p. 20 (1833).

"Common in dark shades of the forest. Fianarantsoa."

TERIAS, Swainson.

33. *Terias pulchella*.

Xanthidia pulchella, Boisduval, Faun. Madag. p. 20. n. 1, pl. 2. fig. 7 (1833).

♂ ♀. "Common on bare ground. Betsileo."

34. *Terias Desjardinsii*.

Xanthidia Desjardinsii, Boisduval, Faun. Madag. p. 22. n. 3, pl. 2. fig. 6 (1833).

"Seen everywhere. Fianarantsoa."

CATOPSILIA, Hübner.

35. *Catopsilia thauruma*.

Callidryas thauruma, Reakirt, Proc. Acad. Nat. Sci. Phil. 1866, p. 238. n. 4; Butler, Lep. Exot. pl. xxii. figs. 3-6 (1870).

C. fiaduna, Hewitson, Exot. Butt. iv. *Call.* pl. i. figs. 1-4 (1867).

♂ ♀, Ikaryosoa. ♀, Fianarantsoa.

Said to be common at Fianarantsoa in January, and to have a strong flight.

BELENOIS, Hübner.

36. *Belenois helcida*.

Pieris helcida, Boisduval, Faun. Madag. p. 17. n. 1, pl. 2. figs. 1, 2 (1833).

"Very common in Tanala in August; rare at Fianarantsoa."

37. *Belenois agrippina*.

Pieris agrippina, Felder, Reise der Nov. Lep. ii. p. 173. n. 159 (1865).

♂. "Very local; found at Ambohinamboarna, and seen to the west."

In the Museum we have this species from D'Urban, the forests of Antananarivo, and Abyssinia. I think it doubtful whether it will prove constantly distinct from *B. lordaca* of Walker, to which it is extremely closely allied; from *B.*

mesentina, with which M. Boisduval confounded it, it is very easily separated.

PAPILIONINÆ, Bates.

PAPILIO, Linnæus.

38. *Papilio demoleus*.

Papilio demoleus, Linnæus, Mus. Lud. Ulr. p. 214 (1764).

"Very common, feeding on the orange-trees. Caterpillar of a lovely green. Fianarantsoa."

39. *Papilio meriones*.

Papilio meriones, Felder, Reise der Nov. Lep. i. p. 93. n. 73 (1865); Trimen, Trans. Linn. Soc. xxvi. pl. 42. fig. 1 (1869).

♂ ♀. "Found in the Tanala; uncommon at Fianarantsoa."

40. *Papilio Delalandii*.

Papilio De Lalande, Godart, Mém. Soc. Linn. Paris, ii. pl. i. figs. 1, 2 (1823 ♀).

Papilio Delalandii, Lucas, Lep. Exot. pl. 20. fig. 2 (1835).

♀. "Found only in the forest. Fianarantsoa."

41. *Papilio epiphorbas*.

Papilio epiphorbas, Boisduval, Faun. Madag. p. 13. n. 3, pl. 1. fig. 1 (1833).

"Common near the forest. Fianarantsoa."

These common species are seldom brought to England in any numbers; of this black-and-green *Papilio* we have hitherto only had a single example.

HETEROCERA.

Sphingidæ.

CHÆROCAMPINÆ, Butler.

CHÆROCAMPA, Duponchel.

42. *Chærocampa osiris*.

Deilephila osiris, Dalman, Anal. Entom. p. 48. n. 21 (1823); Boisduval, Icon. Hist. Léop. p. 18, pl. 49. fig. 1 (1832).

"Feeds on the vine plant." Fianarantsoa.

ACHERONTIINÆ, Butler.

ACHERONTIA, Hübner.

43. *Acherontia atropos*.

Sphinx atropos, Linnæus, Mus. Lud. Ulr. p. 348. n. 8 (1764).

"Caught in the forest, and only seen there." Fianarantsoa.

The European death's-head moth occurs also in Mauritius and Rodriguez.

SPHINGINÆ, Butler.

NEPHELE, Hübner.

44. *Nephele Densoi*.

Zonilia Densoi, Keferstein, Entom. Notiz. p. 14, fig. 5 (1870).

Fianarantsoa.

Zygænidæ.

PSEUDONACLIA, Butler.

45. *Pseudonaclia sylvicolens*, n. sp.

Primaries chocolate-brown; a subtriangular basal spot, a large central transverse subovate spot, and two smaller discal spots (one below the other) pale stramineous or yellowish white and semitransparent: secondaries ochreous, with chocolate-brown outer border: antennæ black and broadly pectinate; thorax black; shoulders and abdomen ochreous. Body below ochreous. Expanse of wings 1 inch 2 lines.

"Found in the forest. Fianarantsoa."

The primaries of this species are unusually long and ample.

Nyctemeridæ.

HYLEMERA, n. gen.

Allied to *Secusio*, but the primaries shorter and broader and with entirely different neurulation; costal vein united to the first subcostal branch, which is forked, by a short oblique veinlet; second subcostal branch emitted just beyond the first and trifurcate, the first furcation being emitted from below the nervule, and the other two forming a fork to apex; radials emitted near together from the end of the cell; three median branches emitted normally: secondaries with the costal vein running from the base, but touching the subcostal near the base; first and second subcostal branches emitted from the end of the cell instead of from a footstalk. Type *H. tenuis*.

46. *Hylemera tenuis*, n. sp.

White, semitransparent: primaries ochreous at the base; basal two fifths limited by a dusky line, which terminates upon the costa in a large black spot; a small black spot at the end of the cell; apex and outer border broadly black: secondaries with a small blackish spot at the end of the cell: antennæ and thorax black; head, collar, and tegulæ ochreous; abdomen white; legs sordid white. Expanse of wings 1 inch 3 lines.

"Found in the forest. Fianarantsoa."

Liparidæ.

DASYCHIRA, Stephens.

47. *Dasychira mascarena*, n. sp.

♂. Primaries dull green, crossed near the base by two interrupted white-bordered black lines followed by two widely separated irregular dentate-sinuate white-bordered black lines; a sinuous discal series of white-bordered black spots and a regular submarginal series; fringe whitish brown, spotted with black: secondaries pale greyish brown, with whitish costal area: thorax whitish, abdomen brown. Under surface whitish, without markings. Expanse of wings 1 inch 11 lines.

♀. Altogether whiter than the male, the borders of the black markings being broader, the secondaries white with the exception of a cuneiform submedian patch, and the body white. Expanse of wings 2 inches 2 lines.

"♂ ♀. Common about Fianarantsoa. Caterpillar has tufts of black bristles. In cocoon 21 days."

This species seems to be nearly allied to *Desmeocræra nugatrix* of Felder; but (besides the *specific* difference of straight and continuous black lines across the primaries) the artist has represented *D. nugatrix* with a filiform termination to its antennæ, such as exists in no true *Dasychira*, but which may appear to exist if the antennæ are looked at from above.

Saturniidæ.

CALIGULA, Moore.

48. *Caligula suraka*.

Saturnia suraka, Boisduval, Faun. Madag. pl. 12. fig. 4 (1833).

♂ ♀. In bad condition. Fianarantsoa.

I have never yet seen a really good specimen of this magni-

ficent silk-moth ; yet it seems to be not uncommon in Madagascar.

Lasiocampidæ.

BOROCERA, Boisduval.

49. *Borocera madagascariensis*.

Borocera madagascariensis, Boisduval, Faun. Madag. pl. 12. figs. 5, 6 (1833).

♂. Fianarantsoa.

"Called 'Land-amboa.'"

This species is so poorly figured in the "Faune de Madagascar" that it is by no means surprising to find a second species of the same genus described by Mr. Walker under the name of *Gonometa postica*, and separated from *B. madagascariensis* by 495 pages.

Hadenidæ.

DIANTHÆCIA, Boisduval.

50. *Dianthæcia graminicolens*, n. sp.

Very near to "*Hadena* (?) "*leucosoma* of Felder ; but the primaries dark shining cupreous brown with white-edged greyish-brown markings, the submarginal white dots replaced by an interrupted zigzag white line, which borders the inner edges of the black triangular marginal spots : secondaries also of a slightly brownish rather than greyish tint. Expanse of wings 1 inch 4 lines.

"Found amongst grass. Fianarantsoa."

But for the submarginal white dots in Felder's figure and the absence of the submarginal zigzag line, I should have taken it for an undercoloured representation of this species.

Catephiidæ.

AUDEA, Walker.

51. *Audea ochreipennis*, n. sp.

Primaries ashy grey, the internal area and apex clouded with brown ; an abbreviated zigzag black litura at the base, followed at a short distance by a zigzag black line which crosses the wing ; a slightly curved and irregular transverse central dusky line ; two parallel zigzag blackish lines just beyond the middle, the outer one very indistinct and followed by a series of hastate white spots, two of which (near the

apex) are externally edged with black; a nearly marginal series of elongated black dots: secondaries clear ochreous; upper half of discoidal cell pearly; a quadrate blackish patch at the centre of external border; thorax ashy grey, clouded with brown: abdomen ochreous, with dusky anal tuft; tarsi brown, banded with white. Under surface pale creamy ochraceous: primaries with the external half dusky, crossed externally by a broad whitish belt; apex pale: secondaries with the quadrate blackish patch on the border as above. Expanse of wing 2 inches.

Fianarantsoa.

"The caterpillar of this is so like the bark of the tree as to be almost indistinguishable."

Ommatophoridae.

PATULA, Guénée.

52. *Patula Walkeri*.

Patula Walkeri, Butler, Ann. & Mag. Nat. Hist. ser. 4, vol. xvi. p. 406 (1875).

"Not uncommon; often found in houses and caves."

CYLIGRAMMA, Boisduval.

53. *Cyligramma duplex*.

Cyligramma duplex, Guénée, Noct. iii. p. 187. n. 1579, pl. 20. fig. 2 (1852).

"Found in nearly all the caves; many may be found dead, covered with white fungus."

C. raboudou of Lucas seems to be allied to this species.

54. *Cyligramma disturbans*.

Nyctipao disturbans, Walker, Lep. Het. xiv. p. 1307 (1857).

"Common in shady woods. Fianarantsoa."

This is the second specimen that I have seen of *C. disturbans*.

Botyridae.

BOTYS, Latreille.

55. *Botys phyllophila*, n. sp.

Bright clear straw-yellow, with an undulated disco-submarginal reddish stripe spotted with pearly whitish; cells terminating in spots of the same colour: primaries with two short reddish stripes across the basal area; a reddish oblique

rectangular crank-shaped stripe just beyond the middle; a pearly-centred reddish spot within (as well as at the end of) the cell: secondaries with a zigzag reddish stripe beyond the middle: palpi red-brown above, white below; head and thorax yellow, centre of prothorax reddish; abdomen brownish (perhaps discoloured). Under surface altogether paler, without markings. Expanse of wings 1 inch 5 lines.

"This was brought in amongst leaves, which it had bound closely by its cocoon-silk." Fianarantsoa.

Nearly allied to *B. caldusalis* of India.

SCOPULA, Schranck.

56. *Scopula*, n. sp.

Near to *S. martialis*, but much larger; it is too much rubbed for description.

XXXIV.—On the *Syringosphæridæ*, an Order of Extinct *Rhizopoda*. By Prof. P. MARTIN DUNCAN, M.B. (Lond.), F.R.S., &c.

THE late Dr. Ferd. Stoliczka collected some very remarkable spheroidal fossils in the Karakorum range of mountains, in strata beneath the Lias, and of an age which may be Rhætic or Triassic. His lamented death prevented his describing these so-called "Karakorum stones;" and Mr. W. T. Blandford, F.R.S., forwarded me the specimens, with a request from Mr. Medlicott, F.R.S., Director of the Geological Survey of India, that I should describe them for the forthcoming volume on the "Mission to Yarkand." Having carefully investigated the nature of these remarkable forms, I can come to no other conclusion, than that they will not fall within any known order in our classification, and that two genera must be founded to receive them.

As the description of the forms, illustrated by drawings, is to be published, it is only necessary to give an abstract at the present time. But, first of all, it must be noticed that these large spherical and spheroidal stones are not quite new to science. In 1867 Dr. Vauchère, in a paper on the geology of Kashmir, mentions them, and describes some as *Sphæronites*, giving very bad drawings of the outside only.

In the museum of the Geological Society there is a specimen derived from Kashmir, and presented by Captain (now Col.) Godwin-Austen in 1864. It bears the title *Sphæro-*