

VII. *Notes on the Butterflies of Mauritius.*

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[Read 3rd September, 1866.]

HAVING during last year paid a brief visit to Mauritius, I am enabled to lay before the Entomological Society a few Notes on the *Rhopalocera* of that island, so interesting in its relation and propinquity to Madagascar. My stay in the island was very short, being confined to the first three weeks of July; but, through the kindness of many residents, I enjoyed such good opportunities of collecting, that very few of the insular butterflies escaped my notice.

Boisduval, in his "Faune Entomologique de Madagascar, Bourbon, et Maurice," published in 1833, enumerates 20 species of *Rhopalocera* as inhabitants of Mauritius, or, including his *Thymele* (*Ismene*) *Ramanatek*, a doubtful native, 21 species. Of these I met with 16, and was presented with 3 others by Mr. Caldwell and Mr. Colville Barclay. Since my return to the Cape, Lady Barkly has sent me another species; so that but one of Boisduval's list is wanting to my collection, and that is the doubtful Mauritian insect just named.

In addition to the above I captured 4 species not known to Boisduval as Mauritian, and was presented with another by Mr. Barclay. These 5 insects, new to the Mauritius catalogue, are distinguished by an asterisk *, while those species which I did not myself capture, but which are included in Boisduval's enumeration, are marked thus †.

1. *Papilio Phorbanta*, Linn.

This beautiful *Papilio* is common in Mauritius, and was the first butterfly that I saw in the gardens about Port Louis. I met with it also at Pamplémousses, Réduit, Riversdale, Rivière du Rempart, and Vakoia. Its flight (that of the ♂ at least) is strong and rapid, even more so than that of its African ally, *P. Nireus*, though I did not see it soar to the height the latter commonly reaches. When on the wing the bright green-blue patches are conspicuous, causing the butterfly to resemble a large *Diadema* of the *Bolina* group. In the Botanic Gardens at Pamplémousses I

noticed that specimens were continually visiting trees of the *Citrus* group, upon which Boisduval notes that the larvæ feed. I never saw a living specimen of the ♀, and from what Mr. Caldwell, who kindly gave me an example, stated as his experience, I believe it to be very scarce. In connection with the apparent rarity of this sex, it is interesting to observe that M. Maillard* notes the ♀ of the very closely-allied *Papilio disparilis* of Bourbon is much rarer than the ♂, the proportion of ♂ to ♀ being 20 to 1. Mr. Bates (Proc. Zool. Soc., November, 1863), with some doubt, includes a single specimen of *P. Phorbanta* in a collection of Mr. Caldwell's as a native of Madagascar. Judging from what is known concerning the nearly-related forms in other Archipelagic groups, it seems to me highly improbable that *Phorbanta* co-exists with its very close ally *Epiphorbas*, in Madagascar. In looking over Mr. Caldwell's collection at Port Louis, I found that his Madagascarene and Mauritian captures were mingled together, and it is not improbable that in the collection submitted to Mr. Bates for examination, an example of *Phorbanta* may have been inadvertently substituted for *Epiphorbas*.

2.* *Callidryas Florella*, Fabr.

This did not appear to be a common insect in Mauritius; but I met with several specimens in Port Louis, at Réduit, and at Pamplémousses. It is a species widely distributed over Africa, and is found in the Cape de Verde Islands; but I am not aware of its occurrence in Madagascar, though, as Dr. Peters met with it at Querimba, and M. Maillard found it "very common" in Bourbon, there is good ground for imagining that it does inhabit the great island.

A specimen of *Florella* was among a few other butterflies shown to me as having been collected by Dr. Burrowes, of H.M.S. "Ariel," at Zanzibar.

3.* *Callidryas Rhadia*, Boisd.

A species rather scarcer than *C. Florella*, but of quite similar flight and habits. Taken at Réduit and at Pamplémousses, and seen at Riversdale. This *Callidryas* has also an extensive African range, though I find no record of its inhabiting Eastern Africa.

* "Notes sur l'Ile de la Réunion (Bourbon)," Paris, 1862; a work, the knowledge of which I owe to the kindness of Mr. Edward Newton, of Mauritius.

There is a specimen from Mauritius in the collection of the British Museum.

4.* *Terias Rahel*, Fabr.

I refer to this well-known African species *Terias pulchella* of Boisduval, having been unable to discover any characters sufficient to separate the latter from the continental form. The breadth of the black border varies slightly in the ♂. Specimens from Madagascar, given me by Mr. Caldwell, are smaller and darker than those I captured in Mauritius, and resemble the example figured in the "Faune Entomologique de Madagascar, &c." The insect is very common in some localities, especially at Réduit and in the Pamplémousses Gardens. Its flight is rather active, but it usually keeps close to the ground, and settles among the herbage at short intervals.

5. *Terias Floricola*, Boisd.

There is little to separate this insect from *T. Hecabe*, Linn., excepting its smaller size and the much narrower black border of the fore-wing; but as these characters appear to be constant, it is perhaps as well, in a group of species so extremely difficult to determine as are those of the genus *Terias*, to keep *Floricola* distinct until further knowledge afford the means of deciding the question. This butterfly is more generally common in Mauritius than *T. Rahel*, and may be found in the same localities. In the Pamplémousses Gardens I found it flying in company with *T. Rahel*, and on one occasion captured a specimen of each species, as the two were sporting and chasing each other. M. Maillard states that, in Bourbon, "the ♀ is much less abundant than the ♂."

6. *Euploea Euphone*, Fabr.

A common and conspicuous species, gregarious in its habits, and to be found in gardens and wooded spots. Its flight is usually about trees and shrubs, especially such as are in flower; and is not unlike that of *Danaüs Chrysippus*, though more floating. The ♀ is rather duller in colour than the ♂, and has less of the faint violaceous gloss. Both sexes have the peculiar odour so remarkable in butterflies of this family; and the ♂, when handled, protrudes a pair of curious anal appendages, consisting of an elongate bright yellow filament, ending in a fascicle or tassel of

radiating hairs of the same colour.* The species has been met with in Madagascar, but there is no record of its inhabiting Bourbon. In Mauritius I found the insect most common at Réduit and Pamplemousses. In the collection above referred to, said to have been made by Dr. Burrowes in Zanzibar, I found a specimen of *Euphone*, which differed in no respect from Mauritian examples.

7. *Danaïs Phædone*, Fabr.

Mr. Bates has very rightly (Proc. Zool. Soc., Nov. 1863) placed this butterfly in the genus *Danaïs*, as it presents all the structural characters of that group, though its peculiar facies and colouring give it a strong superficial resemblance to *Euploea Euphone*. In connexion with this likeness between the two species, I may mention that I found *D. Phædone* much scarcer than *E. Euphone*, but almost invariably flying in company with the latter. The ♀ is readily distinguished from the ♂ by the broader ochreous band of the hind-wing, which occasionally unites with some of the spots of the sub-marginal row. Mr. Bates (*loc. cit.*), in noting a specimen from Madagascar in Mr. Caldwell's collection, observes that *Phædone* "has hitherto been recorded only as inhabiting the island of Mauritius;" but I find that Boisduval (Faune Ent. de Madag. &c., p. 37) mentions its occurrence in Madagascar, "aux environs de Tamatave." Its nearest ally seems to be the abundant *D. Echeria*, Stoll, of southern and south-eastern Africa, the fore-wings of the two species almost coinciding in colours and markings.

8. *Danaïs Chrysippus*, Linn.

I took a specimen of this well-known and widely-ranging species in the woods at Vakoas, in the south-west of the island. This was the only living example I saw. M. Maillard notes that in Bourbon this insect is richly coloured.

* Similar appendages exist in many *Euploæ*;—I possess a ♂ of *E. superba*, Herbst, in which these organs are exerted and conspicuous. A ♂ *Danaïs Echeria*, Stoll, lately forwarded to me from Port Natal, also exhibits the same appendages; though, among the many ♂'s of this insect that I have captured, I never found one that protruded them. Mr. Bates has recorded a similar structure in two genera (*Lycoræa* and *Iluna*) of *Danaoid Heliconidæ*,—a fact interesting as tending to confirm his view of that group being closely related to the true *Danaidæ*.

9. *Atella Phalanta*, Dru.

This butterfly is by no means uncommon in Mauritius, but it is smaller and with stronger markings than those occurring on the African continent. The largest specimens that I have seen are from China. I found *Phalanta* most numerous at Pamplémousses, but took it also at Terre Rouge and at Vakoā. It is stated by M. Maillard to be "very common" in Bourbon, the ♀ being, however, much rarer than the ♂.

10.† *Pyrameis Cardui*, Linn.

I was surprised not to meet with this familiar acquaintance in Mauritius, seeing that Boisduval mentions it as one of the insular inhabitants. A Mauritian example, given me by Mr. Caldwell, differs in no respect from the usual appearance of the species. M. Maillard records the butterfly as a native of Bourbon.

11.† *Pyrameis Hippomene*, Boisd.

This handsome insect appears to be decidedly scarce in Mauritius, and, according to M. Maillard, is rare in Bourbon. Mr. Colville Barclay showed me the wings of a specimen taken by him, some years ago, in the Moka district. From these, from some specimens which I hastily examined in the Port Louis Museum, and from Boisduval's figures and description, I think that the Mauritian form of the species may well be held distinct from the south African form as a marked variety, if not as a sub-species. The examples from Mauritius are considerably larger and darker, with the apical region of the fore-wings and the tails of the hind-wings much more produced; the apical white spots of the fore-wing are smaller, and the under-surface markings of the hind-wing are brighter, with the striæ more angulated.

12.* *Junonia Rhadama*, Boisd.

I was rejoiced to find this brilliant butterfly not uncommon in Mauritius. I first saw it flitting about a grassy bank at the side of the road at Terre Rouge, between Port Louis and Pamplémousses, and instantly recognised the species by its size and colour. The richness and glitter of the metallic-blue upper-surface in a fresh ♂ is exquisitely beautiful, as the insect basks with fully expanded wings in the tropical sunlight; and the ♀, though less splendid, is by no means inconspicuous. In flight the

insect is a thorough *Vanessa*, often settling, but active, wary and rapid. Boisduval's figure (*Faune Ent. de Mad. &c.*, pl. vii. fig. 2) gives but a faint idea of the size and beauty of *Rhadama*. The outline of the wings varies much, but the angulation is more marked in the ♀ than in the ♂. In both sexes there is a double streak of a lighter blue than the ground-colour along the hind-margin of the hind-wing; and, in the same wing, between the lower sub-costal and discoidal nervules, a second ocellus, dull-red, black-ringed (with a black-dotted violaceous pupil), which is occasionally almost obsolete in the ♂, but always large and well-marked in the ♀. In the latter sex, the small ocellus in the fore-wing is more distinct; the apical white dots in the same wing are larger, while there is a row of four other white spots from the costa, conspicuously margining the outer edge of the transverse black streak; and the blue is duller, and much obscured in the basal regions of both wings. Some ♀ specimens present a fuscous surface, in which the blue is almost obsolete. As in most species of *Junonia*, the under-surface is very variable in both sexes, chiefly in the number and distinctness of the ocelli: in some examples it is throughout suffused with greyish, while in others the whitish and blackish streaks and shadings are conspicuous.

I found this species at Réduit, in the Pamplémousses Gardens (where it frequented the attractive flowers of *Lantana*), and once in Port Louis. It was very interesting to learn, on the testimony of many residents (including M. Bouton, Superintendent of the Museum, Mr. Caldwell and Mr. Colville Barclay), that the butterfly was unknown in Mauritius till a few years ago. It appeared suddenly in 1857 or 1858, and was not rare from the first, several specimens having been brought to the Museum at that time from different parts of the Island. M. Maillard observes, that it is a "very common" insect in Bourbon, and Dr. Peters found it at Querimba on the Mozambique Coast; so that *Rhadama*, until lately supposed to be a peculiar product of Madagascar, appears to be not only extending its range, but to have been probably African in its origin.

13.† *Junonia Augustina*, Boisd.

This fine and very peculiar looking *Junonia* is only known to occur in Madagascar, Bourbon and Mauritius. In the latter island it is rare, and, according to M. Maillard, is seldom to be met with in Bourbon. I saw some faded examples in the Port Louis Museum, and two or three, much damaged by insects, in a

case of *Lepidoptera* collected in Pamplemousses Gardens by the son of the Superintendent. Mr. Colville Barclay gave me one of two specimens in his possession, taken in the Moka district. This example is a ♀, and presents on the fore-wing a transverse sub-marginal row of four bluish-white spots, of which the first is largest and is edged both above and below by violaceous scales. On the under surface, the greenish-bronzy lustre is very apparent; and there is a conspicuous white marking (not mentioned or delineated by Boisduval) on the costa of the hind-wing, immediately before and adjoining the reddish transverse streak. In spite of the very different outline of wings, the general coloration of this butterfly bears considerable resemblance to that of *Euphala Euphonia*, and I can well imagine its escaping notice if flying in company with the latter species.

14. *Neptis Frobenia*, Fabr.

This does not appear to be common, as I only met with about half-a-dozen examples. It haunts sheltered wooded spots, usually keeping about a particular tree or tall shrub for some time. Its flight is quite that of a *Limenitis*. I only found it in the Moka district, at Réduit and Riversdale. Boisduval records the species as a native of Madagascar. In Bourbon, where *Frobenia* does not occur, its place is occupied by the nearly related form *N. Dumetorum*, Boisd.

15. *Diadema Bolina*, Linn.

I chanced suddenly upon the only specimen of this well known butterfly that I observed in Mauritius, at the edge of a small plantation in the Moka district. Sir Henry Barkly saw another example while I was in pursuit of the first: both were males. M. Maillard notes the species as "not rare" in Bourbon, and (as well as Boisduval) records the occurrence there of the pale variety of the ♀, named *Inaria* by Cramer. It is very interesting to observe how this insect, the ♀ of which so precisely imitates the appearance of *Danaüs Chrysippus*, almost rivals its model in geographical range, though it does not appear to have yet extended into Southern Europe. Its occurrence in parts of the New World,* where *Chrysippus* is unknown, seems to be regarded by many Lepidopterists as accidental; among others by Mr. Bates (Proc.

* A specimen from Jamaica is included in the British Museum Catalogue; Boisduval gives "Guiana," and Doubleday and Westwood, "Guiana, Cayenne and Surinam," as habitats of *Bolina*.

Zool. Soc., Nov. 1863), whose laborious researches for eleven years in South America give great weight to his opinion.

16. *Cyllo Leda*, Linn.

A very common butterfly in Mauritius, and distributed throughout the greater part of Africa, Asia and Australia. It is always found in shady spots, where it rests upon the ground or upon dead leaves, often under low bushes, and, when disturbed, rises with a heavy, flapping, but very irregular flight, and almost invariably settles before it has gone many yards. In the dark alleys between the rows of sugar canes this butterfly may always be found, though it is not easily caught in such narrow spaces. Towards sunset the insect seems to become more active, and is often met with flying about roads and open spots: indeed, at Flacq, on the Eastern coast of the Island, I watched several specimens of *Leda* chasing each other in the dusk of the evening till it became too dark to see their movements any longer, but, as long as they were visible, I noticed that their flight was circular in its direction, and always near the ground, about one spot. Many of the moth-like *Hesperidæ*, as is well known, are on the wing about, or even a little after sunset, but *Leda* is the only instance known to me of a butterfly belonging to the higher groups that keeps such late hours. Besides the place named, Port Louis, the mountain La Ponce, Réduit, Riversdale, and Rivière du Rempart, are localities in which I met with the species. M. Maillard describes it as "very common" in Bourbon.

17. *Mycalesis Narcissus*, Fabr.

This appeared to me to be certainly the most abundant butterfly in Mauritius. It was to be found everywhere in shady spots, but seemed especially to prefer wood-paths, and the dry channels of watercourses on the mountain sides. It is an active flier for a *Satyrus*, though constantly settling. I took specimens in every locality that I visited. It is "common" in Bourbon, according to M. Maillard, and "very common" in Madagascar according to Boisduval. The latter author's remark that this insect presents a paler and yellower under-surface in Madagascar is borne out by some specimens from that Island given me by Mr. Caldwell, which are both larger and universally paler than the Mauritian examples.

18.* *Libythea Cinyras*, sp. nov.?

I am unable to reconcile with any figure or description to which I have access a *Libythea* given me by Mr. Colville Barclay. Though at first inclined to consider it a variety of *L. Myrrha*, Godt., I find upon examination that the differences it presents warrant its being held a distinct species. In the *fore-wing* there is no longitudinal stripe from the base, but only a narrow, oblique, fulvous spot at the end of the discoidal cell, and a good-sized, rounded, fulvous spot (much as in the Indian *L. Lepita*, Moore), situated upon the second median nervule, between the oblique spot and the hind-margin; while the three apical spots are fulvous in colour and narrowed and contiguous, forming an oblique angulated streak. The *hind-wing* presents a rather broad irregular fulvous sub-marginal band, commencing narrowly and abruptly below the first sub-costal, and elbowed just below the second sub-costal nervule; and an additional quadrate fulvous spot on the costa beyond the middle. On the *underside* the spots of the *fore-wing* are paler, that at the end of the cell being much larger than above, while those near the apex (which is irrorated-grey) are almost whitish; in the discoidal cell there is some faint fulvous colouring before the spot. The *hind-wing* is universally grey, with brown hatchings; there is not any dark stripe along the cellular fold, and the spot and band of the upper surface are indicated by paler spaces.

A specimen in the South African Museum, captured by Mr. E. L. Layard in Madagascar, does not differ from that just described; and, to the best of my recollection, a *Libythea*, shown me by Mr. Waller, of the Zambesi Mission, which was taken near the River Shirè, presented the same characters. Mr. Layard's specimen possesses palpi and antennæ, both of which are more slender than those of *L. Myrrha*, the former being also shorter and convergent.

If this species be undescribed, I propose for it the name of *Libythea Cinyras*.

Mr. Barclay informed me that this butterfly is very scarce in Mauritius, and that the specimen he gave me was taken in the Moka district.

19. *Lycæna Bætica*, Linn.

This species, so very widely distributed in the Old World, was not so common in Mauritius as I had expected to find it, being

almost confined to gardens, where it kept about the cultivated pea. I met with it at Port Louis, Réduit, Pamplémousses and Riversdale. M. Maillard notes the insect as occurring in Bourbon, and Boisduval states that it also inhabits Madagascar.

20. *Lycæna Telicanus*, Herbst.

Far more abundant than *L. Bætica*. Lawns in gardens are quite alive with this insect in the early forenoon; and I noticed the species in every locality I visited. The great majority of Mauritian examples consists of individuals considerably smaller and darker than those generally met with in South Africa. The range of the species is almost identical with that of *Bætica*, though the latter occurs further to the North.

21. *Lycæna Lysimon*, Godt.

This is the third very widely distributed *Lycæna* that inhabits Mauritius, and to it I refer a butterfly that I found very common in the island; though, in the absence of any careful figure or minute description of *Lysimon*, I cannot positively affirm it to be that species. The specimens exactly resemble others from different parts of South Africa and from Ceylon. Numerous examples were met with in waste ground in all parts of the island.

22. *Pamphila Borbonica*, Boisd.

Syn.—*P. Fatuellus*, Hpfr. (Peters' "Reise nach Mossambique," Ins. p. 417, pl. xxvii. figs. 3, 4).

An abundant insect, frequenting flowers in gardens. Found at Port Louis, Réduit and Riversdale. Boisduval observes that this species is known in Bourbon as *Hesperia Mathias*, but at the same time remarks that the Fabrician *Mathias* inhabits Coromandel, and that Fabricius's description "convient moins à notre *Borbonica* qu'à trente autres espèces différentes." On examining Latreille's description of *Mathias*, Fabr., I find that there are two points of distinction from *Borbonica*, viz., the possession of "eight or nine" vitreous spots in the fore-wing, while *Borbonica* has but seven at the most; and of five white spots on the underside of the hind-wing, while the number in *Borbonica* is constantly three. The Mauritian insect inhabits South Africa, and is there asso-

ciated with a closely allied form, *P. Mohopaani*, Wallengren, which may be easily distinguished by two viteous spots in the discoidal cell of the fore-wing, and (in the ♂) by the discal streak.

23. *Pamphila Marchalii*, Boisd.

I did not meet with this insect, but observed a much injured *Pamphila* in Mr. Caldwell's collection which I referred to the species. Since my return to the Cape, Lady Barkly has sent me a ♂ example, which was, I believe, taken in the grounds at Réduit. The species is easily distinguished from *P. Borbonica* by its rufous-brown colour, orange-mixed cilia and under surface, and by the absence of spots, there being only two small discal vitreous ones in the fore-wing (between the first and third median nervules), and none in the hind-wing. The outline of the wings also differs, being considerably less prominent in the apical region of the fore-wing and in the anal-angular region of the hind-wing.

24. *Nisoniades Sabadius*, Boisd.

I met with this species only in wooded ground at Réduit, where I noticed six or seven examples and took three. It is rapid and active in its movements, frequently settling on the under surface of leaves. It frequented the small blue flowers of a species of *Salvia* abundant on the estate. The wings are held fully expanded when the butterfly is at rest. Mauritian specimens are smaller, redder in tint, and less distinctly marked than the South African examples of the species.

25. *Ismene Florestan*, Cram.

Not a common butterfly in Mauritius: I saw but four specimens on the wing during my stay. Its flight is very swift, but is somewhat *bustling*, reminding one of that of the diurnal *Noctuina*, e. g. the *Plusiæ*. Like the moths referred to, *Florestan* seems to require much nourishment, and keeps steadily to flowers, from which its long proboscis pumps the nectar in a most effectual and business-like manner. The wings are elevated when the insect is settled, the hinder pair being held slightly apart from the forewings. I found this species at Port Louis, Pamplemousses and Vakoas; and Lady Barkly has sent me examples taken at Réduit. All these individuals belong to the type-form of the species; the

form which has some black spots on the underside of the hind-wings (*I. Valmaran*, Wlgr.), and which co-exists with the type in Southern Africa, apparently does not inhabit Mauritius.

26. *Ismene Ramanatek*, Boisd.

I have not seen this species, but it is evident from Boisduval's description and figure in the "Faune Entom. de Madag. &c.," that the insect is allied to *Ismene Florestan*. It is, however, considerably smaller, and the white band on the underside is not only much narrower and more sinuated, but continuous throughout as well as closer to the hind margin.

The following Table exhibits the distribution, so far as known to me, over the neighbouring islands, of the few butterflies inhabiting Mauritius, and also indicates very roughly the range of such of the species as prevail over wider regions of the globe.

Tabular View of the Geographical Distribution of the Butterflies of Mauritius.

Mauritius.	Bourbon.	Madagascar.	Africa.	Asia.	Europe.	Australia.	America.
<i>Papilio Phorbanta.</i>	<i>C. Florella.</i>	..	<i>C. Florella.</i>				
<i>Callidryas Florella.</i>	<i>C. Rhadia.</i>				
<i>Callidryas Rhadia.</i>	..	<i>T. Rahel.</i>	<i>T. Rahel.</i>				
<i>Terias Rahel.</i>	<i>T. Floricola.</i>	<i>T. Floricola.</i>	<i>T. Floricola.</i>				
<i>Terias Floricola.</i>	..	<i>E. Euphone.</i>					
<i>Euphœa Euphone.</i>	..	<i>D. Phædone.</i>					
<i>Danaïs Phædone.</i>	<i>D. Chrysippus.</i>	<i>D. Chrysippus.</i>	<i>D. Chrysippus.</i>	<i>D. Chrysippus.</i>	<i>D. Chrysippus.</i>		
<i>Danaïs Chrysippus.</i>	<i>A. Phalanta.</i>	<i>A. Phalanta.</i>	<i>A. Phalanta.</i>	<i>A. Phalanta.</i>			
<i>Atella Phalanta.</i>	<i>P. Cardui.</i>	<i>P. Cardui.</i>	<i>P. Cardui.</i>	<i>P. Cardui.</i>	<i>P. Cardui.</i>	<i>P. Cardui.</i>	<i>P. Cardui.</i>
<i>Pyrameis Cardui.</i>	<i>P. Hippomene.</i>	..	<i>P. Hippomene.</i>				
<i>Pyrameis Hippomene.</i>	<i>J. Rhadama.</i>	<i>J. Rhadama.</i>	<i>J. Rhadama.</i>				
<i>Junonia Rhadama.</i>	<i>J. Augustina.</i>	<i>J. Augustina.</i>					
<i>Junonia Augustina.</i>	..	<i>N. Frobenia.</i>					
<i>Neptis Frobenia.</i>	<i>D. Bolina.</i>	<i>D. Bolina.</i>	<i>D. Bolina.</i>	<i>D. Bolina.</i>	..	<i>D. Bolina</i>	<i>D. Bolina.</i>
<i>Diadema Bolina.</i>	<i>C. Leda.</i>	<i>C. Leda.</i>	<i>C. Leda.</i>	<i>C. Leda.</i>	..	<i>C. Leda.</i>	
<i>Cullo Leda.</i>	<i>M. Narcissus.</i>	<i>M. Narcissus.</i>	<i>M. Narcissus.</i>				
<i>Mycalesis Narcissus.</i>	..	<i>L. Cinyras.</i>					
<i>Libythea Cinyras.</i>	<i>L. Bætica.</i>	<i>L. Bætica.</i>	<i>L. Bætica.</i>	<i>L. Bætica.</i>	<i>L. Bætica.</i>		
<i>Lycena Batica.</i>	<i>L. Telicanus.</i>	<i>L. Telicanus.</i>	<i>L. Telicanus.</i>	<i>L. Telicanus.</i>	<i>L. Telicanus.</i>		
<i>Lycena Telicanus.</i>	<i>L. Lysimon.</i>	<i>L. Lysimon.</i>	<i>L. Lysimon.</i>	<i>L. Lysimon.</i>	<i>L. Lysimon.</i>		
<i>Lycena Lysimon.</i>	<i>P. Borbonica.</i>	..	<i>P. Borbonica.</i>				
<i>Pamphila Borbonica.</i>	<i>N. Sabadius.</i>	..	<i>N. Sabadius.</i>				
<i>Pamphila Marchalii.</i>	<i>I. Florestan.</i>	<i>I. Florestan.</i>	<i>I. Florestan.</i>				
<i>Nisoniades Sabadius.</i>	<i>I. Ramanatek.</i>	<i>I. Ramanatek.</i>					
<i>Ismene Florestan.</i>							
<i>Ismene Ramanatek.</i>							
Total, 26 species.	18 species.	19 species.	18 species.	8 species.	5 species.	3 species.	2 species.

The very small amount of local peculiarity is markedly apparent when shown in a tabular form, the only species which are endemic being *Papilio Phorbanta* and *Pamphila Marchalii*; or but $\frac{1}{13}$ of the whole Rhopalocerous fauna. As might be inferred from the relative position of the islands, there is a large proportion of the Mauritian species common to Bourbon (Réunion) and to Madagascar, amounting in the former case to nearly, and in the latter to quite, $\frac{3}{4}$ of the entire number. As regards Madagascar, it must be borne in mind how very little is known of its insect, and indeed of its general, fauna; for it is worthy of note that the five Mauritian species (apart from the endemic forms mentioned above) not recorded to occur there are all natives of the African Continent, and it seems most improbable that these species, common to South Eastern Africa and Mauritius, should not inhabit the great intermediate region.

Looking to Asia, one cannot but be struck by the entire absence of any Oriental butterflies in Mauritius, the eight species common to Asia and Mauritius being not only of universal distribution throughout Africa, but, without exception, remarkable for all but cosmopolitan range. The same remark applies to the *Rhopalocera* of the neighbouring Island of Bourbon, the only species common to it and to Asia being the eight just referred to. Those naturalists who are disposed to assign an Indian (or South East Asian) affinity to the fauna of Madagascar ought to find some confirmation of their theory in the zoology of the islands lying further to the eastward, but such evidence has not, to the best of my knowledge, been forthcoming,* and, certainly, all that is

* As regards the Avi-fauna of Mauritius, I take the opportunity of mentioning that Mr. Edward Newton, who has for some years resided in that Island, and availed himself to the utmost of his excellent opportunities of investigating the ornithology of the Mascarene group, has most kindly given me notes on the range and affinities of the birds found in Mauritius. I have thus Mr. Newton's authority (and it is a high one), for stating that, of the sixteen species which may be considered actual *natives* (there are thirty-two *residents*) of the island, not one is known to inhabit Asia, and only one (*Ardea atricapilla*) to occur in Africa. Yet the insular endemic species are but two in number (*Tinnunculus punctatus* and *Palæornis eques*); while seven species also inhabit Bourbon, and three range to Madagascar. Mr. Newton himself sees reason to incline to the theory of Indian affinities; but, from his notes, I find that (excluding the Seychelles fauna from consideration) the balance is fairly struck, when we turn to the bird *genera*, between Africa and Asia, two genera of either region not occurring in the other having Mauritian representatives. (Sea-birds are not included in the numbers given.)

known of the butterflies inhabiting those islands, as well as Madagascar itself,* tends to establish an opposite conclusion.

The only indication† of connexion with typical Asiatic forms is to be found in the two *Euplaea*, *E. Euphone* of Mauritius and *E. Goudotii* of Bourbon, but neither species is known to inhabit Asia, the latter being a native of Natal, and the former of Madagascar and (if I am correctly informed as to Dr. Burrowes' collection) of Zanzibar.

It is reasonable to suppose that the collections of M. Maillard and others have made fully known to us the *Rhopalocera* of Bourbon, and it thus becomes interesting to note any differences which occur between them and those found in the neighbouring island. The two islands are not unlike in general character, and are of nearly equal size, but Bourbon is much more rugged, with mountains of greatly higher elevation, and possesses at least one active volcanic centre. But twenty-two species of butterflies are recorded as natives of Bourbon, and eighteen of these are also found in Mauritius. Of the remaining four, two, *Papilio disparilis* and *Neptis Dumetorum*, seem to be peculiar to the island; a third, *Lycæna Mylica*, recorded by Guénée in M. Maillard's volume, is quite unknown to me; and the fourth, *Euplaea Goudotii*, as already stated, is African. A certain parallelism is observable between the species of either island which are not found in the other; thus, in Bourbon, *Papilio disparilis* takes the place which in Mauritius is occupied by *P. Phorbanta*; *Euplaea Goudotii* takes that of *E. Euphone*; while *Neptis Dumetorum* fairly represents *N. Frobenia*. For the Mauritian *Danaïs Phædone* no analogue appears to exist; and, similarly, the Bourbon *Lycæna Mylica* finds no answering species in Mauritius.

It is much to be regretted that no record exists of the butterflies inhabiting Rodriguez, the third and smallest island of the group, which lies much further to the eastward; for there can be little doubt that an island which can boast its own Dodo, as well

* See my paper "On the Butterflies of Madagascar," in the "Quarterly Journal of Science," 1864, p. 648.

† The two species of *Neptis* can hardly be held to be evidence of Indian relations; for, though the genus is far more fully represented in South-eastern Asia than in Africa, both *N. Frobenia* and *Dumetorum* belong to the African group of *Neptis*, which wants the longitudinal stripe from the base of the fore-wings, and includes such species as *N. Melicerta*, Fabr. (= *Agatha*, Cram.) of Western, Southern and Eastern Africa; *N. Saclava*, Boisd., of Southern and Eastern Africa; and *N. Ophione*, Cram., of Western Africa.

as one or more endemic species of existing birds, and its peculiar palm, contains an entomological fauna of much interest, which probably includes some endemic species, and would, if duly investigated, afford valuable data as to the eastward range of many African forms, as well as further evidence on the *vexata quæstio* of Indian affinities.

In conclusion I will only remark as regards Bourbon and Mauritius, that the facts already placed on record afford the very strongest grounds for believing that those islands have received nearly all, if not the whole, of their *Rhopalocera* from Africa, through the intervening region of Madagascar.