

in fact, more like *Mal. inornata* of the Vera Paz, from which, however, it appears likewise distinguishable on comparison, the latter having a rufescent tail, the breast of a less decided fulvous, and the fulvous colour more equably distributed over the lower surface.

2. DESCRIPTIONS OF BUTTERFLIES FROM THE COLLECTIONS OF
A. R. WALLACE AND W. C. HEWITSON. BY W. C. HEWITSON.

(Plates IX., X.)

NYMPHALIDÆ.

MYNES LEUCIS, Boisduval. (Pl. IX.)

This species was first described by Dr. Boisduval, in the 'Voyage of the Astrolabe,' under the name it bears above. It was also described by Guérin Méneville, in the 'Voyage of the Coquille,' under the same name, but is figured in the plates which accompany the work as *Nymphalis australis*. The figure there given is a very good one; but as it only represents the upper side, I have thought that a figure of its remarkable under side, together with some of the strange varieties into which it runs, from the rich collection of Mr. Wallace, may be of interest to those who make the Lepidoptera their study.

Greatly as the varieties of this insect differ above, they bear a much closer resemblance to each other on the under side, and do not wander very far from the accompanying figure.

The examples figured in the plate are all females. A male in my own collection, from Mysol, is entirely black, with the exception of the central spot of the posterior wing. I have described below all the varieties which I have with me, for the whole of which we are indebted to Mr. Wallace. They were all collected in the New Guinea group of islands. I have indicated each variety by a separate letter, following the good example of Dr. Boisduval in his 'Spécies Général,' not being myself able to see that any good whatever can arise from the modern custom of giving names to varieties and thus elevating them to the same importance as the typical species, from which they are sometimes scarcely to be known. On the contrary, I believe that it will produce great and endless confusion.

Var. A. ♂. Anterior wing black, spotless. Posterior wing black, with a large central bifid white spot, and two smaller spots between it and the inner margin bordered with grey.

Hab. Mysol.

Var. B. ♀ (Pl. IX. fig. 1). Anterior wing black, with a spot near the middle of the costal margin, two spots beyond the middle of the wing, and a submarginal band of eight spots all white. Posterior wing with the central spot quinquefid.

Hab. Dorey.

Var. C (Voyage Coquille, pl. 14 *bis*). Anterior wing black, with a small spot near the middle of the costal margin, followed by two

bands of rather large spots, all pale yellow; the first band irregular, of six spots; the second band submarginal, of eight spots.

Hab. Offack.

Var. D. ♀. Anterior wing black, with the white spot near the middle of the costal margin, a large bifid spot at the centre of the wing, a small spot below it and the submarginal band of white spots, two of which (the sixth and seventh) are obliterated. Posterior wing with the central white spot distinctly quinquepartite.

Hab. Batchian.

Var. E. ♀ (Pl. IX. figs. 2, 3). Anterior wing black, irrorated with grey, with the costal spot larger, the large central white spot tripartite; a band of four white spots between it and the costal margin, and the submarginal band of eight spots. Posterior wing with the central spot as in the last; the base and inner margin of the wing grey.

Hab. Batchian.

There is a further variety of this with all the spots the same, but yellow.

Var. F. ♀. Anterior wing dark brown; the base grey, with *two* white spots on the costal margin, the large central spot quinquepartite, *extending nearly to the outer margin, and absorbing two of the white spots of the submarginal band.*

Hab. Aru.

Var. G. ♀ (Pl. IX. fig. 4). Anterior wing black, with a broad, transverse, irregular, emarginate band of white extending from the costal margin nearly to the inner margin, connected on its outer side before the middle with one of two small white spots, and again near its anal angle with one of two white spots, the only spots of the submarginal band which are distinct, the other six being scarcely visible.

Hab. Dorey.

TERINOS TETHYS, n. s. (Pl. X. figs. 1, 2.)

Upper side: male, brown. Anterior wing dark brown, rufous at the base; the apex white, with its outer margin brown. Posterior wing rufous brown, paler towards the inner margin; the outer margin, from its middle to the anal angle, rufous white, traversed by two bands of lunular brown spots.

Under side rufous brown; both wings crossed by numerous undulating pale lines. Anterior wing with a line of brown within the cell, and one on each side of the discocellular nervules; the apex rufous white. Posterior wing with, below the middle, a transverse irregular band of oblong dark-brown spots, followed (between the middle of the wing and the inner margin) by three lunular orange-yellow spots; the outer margin beyond these rufous white, traversed by a pale-rufous band.

Exp. $3\frac{4}{10}$ inches.

Hab. Mysol.

In the collections of A. R. Wallace and W. C. Hewitson.

TERINOS TAXILES, n. s. (Pl. X. figs. 3, 4.)

Upper side : male, dark rufous brown. Anterior wing with a rufous spot near the apex. Posterior wing with the outer margin, from its middle to the anal angle, broadly rufous, marked by three dark-brown conical spots and an undulating dark-brown band.

Under side rufous brown ; both wings crossed by several pale undulating lines. Anterior wing with three lines across the cell—one on each side of the disco-cellular nervules, followed by a band of spots, all rufous brown. Posterior wing with some indistinct spots near the base, followed by two broken bands of rufous brown ; crossed beyond the middle by a band of five dark-brown spots, followed by a deeply indented band of rufous orange.

Female, dark rufous brown ; the outer margin of the anterior wing more emarginate than in the male. Anterior wing crossed beyond the middle by two undulating rufous bands, and a submarginal band of spots of the same colour ; the first of these bands commences near the costal margin with two sagittate spots. Posterior wing with the outer margin broadly rufous, clouded near the apex, traversed by six lunular spots and an undulating band of dark brown. On the under side it does not differ from the male, except in having a small white spot on the costal margin near the apex, and the outer margin of both wings much paler.

Exp. $3\frac{1}{2}$ inches.

Hab. Celebes.

In the collections of A. R. Wallace and W. C. Hewitson.

TERINOS TEUTHRAS, n. s.

Alis fuscis : harum anticis versus marginem costalem purpureo micantibus ; posticis purpureis, macula magna rosea quadripartita prope medium marginis costalis lunulis nigris notata.

Upper side : male, brown ; the portion composed of the plush-like scales dark brown ; the remainder of the anterior wing tinted with purple. Posterior wing tailed, purple, with a spot of rufous white near the middle of the outer margin divided into four by the median nervules, and marked by two or three brown lunules.

Under side light rufous brown, paler towards the margins. Both wings crossed beyond the middle by a continuous undulating band of white. Anterior wing with three rufous zigzag transverse lines across the cell, and a fourth oblique line marking the disco-cellular nervures and forming a triangle with one of the three bands just mentioned ; beyond the cell there is another rufous band, and below it two indistinct rufous spots ; a white spot, black in the middle, near the apex, and below it a submarginal band of white having its outer border rufous. Posterior wing crossed by two zigzag rufous bands before the middle, and, beyond the middle and the continuous band, by five rufous spots (the middle spot scarcely seen), followed by a zigzag band of orange, bordered on both sides with white.

Exp. $3\frac{3}{10}$ inches.

Hab. East India.

In the collection of W. C. Hewitson.

This species differs from *T. clarissa*, in the anterior wing, by having a larger portion of it covered with the plush-like scales. In *T. clarissa* they extend upwards very little beyond the lower discoidal nervure. In *T. teuthras* they go beyond the upper discoidal nervure. The two species are, however, so closely allied that I should have hesitated to describe this as a distinct species if I had not discovered that the third disco-cellular nervure meets the median nervure differently. In *T. clarissa* the lower disco-cellular meets the median at some distance before the base of its second branch; in *T. teuthras* exactly at the base of the said branch.

TERINOS TERPANDER, n. s.

Alis fuscis: harum anticis versus marginem costalem purpureo micantibus; posticis magna parte dimidii posterioris fulva, fascia anali nigra.

Upper side: male, brown. Anterior wing slightly tinted with purple near the costal margin. Posterior wing, without a tail, with most of its outer half pale orange, traversed *near the margin* and the anal angle by a curved brown band.

Under side rufous brown. Both wings crossed at the middle by a broad rufous band bordered on both sides with lilac-white. Anterior wing with some indistinct rufous bands near the base, bordered with lilac white, followed towards the anal angle by two other indistinct bands; a white spot near the apex. Posterior wing with two spots, a broad band, and a narrow zigzag band, all rufous and bordered on both sides with lilac white; crossed beyond the middle by a band of five brown spots, followed by a narrow zigzag rufous band bordered on both sides with brown, by a zigzag broad band of white, and by a narrow submarginal line of lilac-white.

Exp. $2\frac{3}{10}$ inches.

Hab. Borneo.

In the collection of W. C. Hewitson.

This species, which is much smaller than the others, is closely allied to *T. clarissa*. The plush-like scales extend above the higher discoidal nervure, as in *T. teuthras*; the lower disco-cellular nervure meets the median, nearly as in *T. clarissa*.

In this genus the nervures, which are generally closely examined as affording materials for generic distinction, give most valuable aid in determining closely allied species. I have in this paper described four new species of a genus which before contained but one, and find that they all differ in the position of the disco-cellular nervules. It would almost seem as if the variations of these nervures were only specific, as I have before found them a valuable aid in separating two very closely allied species of *Callithea*.

In *Terinos clarissa*, the lower disco-cellular nervure meets the median nervure *considerably before* the base of its second branch.

In *Terinos terpander*, the lower disco-cellular nervure meets the median nearly at the same point as in *T. clarissa*, but somewhat nearer the base of its second branch.

In *Terinos taxiles*, the lower disco-cellular nervure meets the median nervure *a little before* the base of its second branch.

In *Terinos teuthras*, the lower disco-cellular nervure meets the median nervure *at the base* of its second branch.

In *Terinos tethys*, the lower disco-cellular nervure meets the median nervure *a little beyond* the base of its second branch.

3. ON THE RED CORPUSCLES OF THE BLOOD OF VERTEBRATA, AND ON THE ZOOLOGICAL IMPORT OF THE NUCLEUS, WITH PLANS OF THEIR STRUCTURE, FORM, AND SIZE (ON A UNIFORM SCALE), IN MANY OF THE DIFFERENT ORDERS. BY GEORGE GULLIVER, F.R.S., PROFESSOR OF COMPARATIVE ANATOMY AND PHYSIOLOGY TO THE ROYAL COLLEGE OF SURGEONS.

The object of this communication is to give a summary of the value and import of the red corpuscles of the blood as regards systematic zoology, deduced from my observations published, piecemeal, during the last twenty-three years, in the 'Proceedings' of this Society and elsewhere. Such notices will be given of the labours of others in this interesting field, up to the year 1845, as the present confused state of physiological history may seem most to require.

The drawings now exhibited to the Society are selected from a much larger number in my possession, and are all on the same scale, exhibiting plainly to the eye the relative form and size of the corpuscles in 171 species of the different classes and orders of the Vertebrate subkingdom, and the difference of structure in the corpuscles of the two great divisions of this subkingdom—*i. e.*, 1, *Vertebrata apyrenæmata*, or Mammalia; 2, *Vertebrata pyrenæmata*, or Oviparous Vertebrata.

Structure of the Corpuscles of Apyrenæmatous Vertebrates.

In Man and other Mammalia there are two sets of red corpuscles. The first or temporary set disappears at an early period of intra-uterine life, and is replaced by the second or permanent set.

The corpuscle of the temporary set is composed of a vesicle including a nucleus, is larger than the corpuscle of the second set, and is, in short, a cell containing a nucleus. This cell is, both in structure and size, the true analogue of the red corpuscle of oviparous Vertebrata. (See Phil. Mag. for Aug., 1842, p. 107; and my Note to Wagner's Physiology, Lond., 1844, p. 242, fig. 148.)

The corpuscles of the second set are those which replace the first set, and, subject to waste and supply, are the red corpuscles of the blood from birth, and during the greater part of the period of uterogestation, until death; and to these corpuscles the following observations will always be applied, unless otherwise expressed.

This corpuscle is not homogeneous, but is composed of a colourless membranous part, with a semifluid or viscid matter in which



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