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XLV.—Descriptions of new species of Papilionidæ, Pieridæ, and Lycænidæ

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to regard the two as identical. What relation, then, does the ovum bear to the gemmule?

Finding a long time ago, viz. in 1859, that the seed-like body of *Spongilla* and the so-called "winter egg" of the Bryozoa were so much alike ('Annals,' vol. iii. p. 331, pl. viii.), I have been induced latterly to use the term "statoblast" for the seed-like body or gemmule, but have not introduced it here, as the latter terms are most generally understood.

I have also omitted to allude to the peculiarities in the ovigerous reproduction of *Suberites domuncula* (and there may be many others which have not come under my notice), in which the ova are deposited about the summit of a small conical shell apparently enclosed by the sponge for this purpose, in the form of yellow, corneous, spherical capsules possessing a distinct and beautiful structure, preferring rather to direct the reader's attention to my illustrated description of this ('Annals,' vol. xii. 1883, p. 30) than to confuse him with unnecessary detail, as I have already stated at the commencement generally that neither the form, nor the location, nor the composition of the elements of reproduction in the Spongida are exactly the same in all species.

P.S.—Having had to consult Keller's excellent memoir "On the Organization and Development of the Chalinida" while writing the above, I find that what I have stated of the position and form of the ampullaceous sac &c. in the 'Annals' for March last (p. 209) is amply confirmed by Keller's delineation of the structure of his *Chalinula fertilis* (Zeitschrift f. wiss. Zoologie, Bd. xxxiii. Taf. xviii. fig. 1).

XLV.—*Descriptions of new Species of Papilionidæ, Pieridæ, and Lycænidæ.* By W. F. KIRBY, F.E.S.

In the present paper I give descriptions of one *Papilio* from New Guinea, two *Pieridæ* from South America, and sixteen *Lycænidæ* from Africa. The tailless African *Lycænidæ* are but little known; and I have ventured to propose two new genera for some of the species here described. Figures of most of the species described in the present paper will probably appear at a later period. The types are all contained in the collection of Mr. Henley Grose Smith.

Papilio bicolor.

Exp. al. circa $4\frac{1}{2}$ in.

Black; eyes partly surrounded with white; incisions white: fore wings with a white band at three fourths of their length, extending from the costa to two fifths of the width of the wing, and composed of a series of linear or subbifid stripes: hind wings tailed, with a broad white band of a slightly creamy or greenish shade, commencing on the outer half of the costa, which it nearly covers in the male, though narrower at this point in the female; it is then indented within in the male, and curved outwards towards the cell in the female; basally it covers the extremity of the cell, and then curves towards the anal angle, before reaching which it ceases; on the outer side this pale band is greatly indented, especially on its upper portion. On the under surface of the fore wings the series of subapical stripes extending from the costa are larger and more numerous, but, except the basal part of the upper ones, consist only of grey dusting: the pale band on the hind wings is reduced to five white spots running from the costa, corresponding to the outer part of the band; the first and last are simply lunules, and the three middle ones are deeply indented on the outside, and are followed by blue dusting; towards the anal angle are two yellow spots, that nearest the base rounded, and that beyond the white spot in the anal incision linear; in the female there is also a submarginal row of linear yellow spots on the under surface of the hind wings.

Hab. New Guinea.

Daptonura limbata.

♀. Exp. al. 2 in.

White; fore wings dusted with ashy at the base and along the costal third, beyond which the costa, which is narrowly black from the base, becomes more distinctly so; the hind margin is moderately broadly brown, most broadly on the costa; opposite the middle of the hind margin is a long shallow excavation into the white, and the brown border is again slightly continued along the inner margin at the anal angle: hind wings with a narrower ashy border, not indented externally and hardly extending either to the tip or anal angle. Under-side white, immaculate: hind wings a little yellowish. Club of the antennæ tipped with yellow.

Hab. Ecuador.

Allied to *Pieris iloire*, Godart.

Pieris subflavescens.

♀. Exp. al. $2\frac{1}{4}$ in.

White, dusted with bluish grey at the base and on the basal part of the cell of the fore wings; the costa of fore wings narrowly and the hind margin broadly blackish, and twice broadly indented with white: hind wings white, with a black border slightly extending along the nervures, and ceasing before the anal angle; fringe white. Fore wings beneath as above, but the costa narrowly yellow, and the inner and lower part of the black border only present, the tip being obliquely yellowish, divided by the black nervures, and shading into whitish internally: hind wings buff-yellow, with narrow black veins (except the discocellular nervule), and slightly marked with orange at the base.

Hab. New Granada.

Allied to *P. tovaria*, Feld., and hardly distinguishable on the upperside.

Liptena parva.

Exp. al. $1\frac{1}{4}$ in.

Wings brown along the margins and the costa of fore wings, red at the base for half their length on the fore wings below the cell in the male, and partly including the cell in the female (in which there is a notch in the middle of the front edge of the red colouring), and for two thirds of their length on the hind wings. Under surface of female yellow: fore wings red in the same place as above; two black stripes on the costa running down to the cell, and marked outside with white before the end of the cell, where stands a large black spot, bordered with white before and behind, followed by an irregular series of about five black white-bordered spots running towards the anal angle; hind margins of both wings with a row of black spots marked within with white dashes; on the basal half of the hind wings are several large black spots, partly bordered with white, and (except those close to the base) arranged in two irregular rows. In the male the ground-colour is less defined and the spots are larger and more irregular, the spot at the end of the cell of the fore wings and the band beyond being suffused into one large irregular blotch.

Hab. Cameroons.

The smallest described species, not nearly allied to any other.

Larinopoda varipes.

Expands $1\frac{1}{2}$ in.

White: fore wings, with the costa, tip, and hind margin blackish brown; costal border with a rounded projection just above the cell, and shortly afterwards passing into the marginal border, which occupies the apical third of the wing, but rapidly narrows, becoming very narrow and ceasing at the anal angle; its inner edge is a little irregular, especially towards the costa and anal angle: hind wings with a narrow, ill-defined, blackish hind-marginal border, commencing below the tip. Underside: fore wings with a black basal streak on the costa, projecting downwards above the extremity of the cell, where it ceases; apical and hind-marginal border ashy grey rather than black, and narrower than above, hardly reaching the anal angle: hind wings with a narrow ashy-grey border, longer and better defined than above, and with three conspicuous round black spots—one near the end of the cell, one between this and the inner margin below the origin of the lower branch of the submedian nervure, and a third near the tip between the first two branches of the median nervure. Legs reddish, the tips of the tibiæ, and the greater part of the tarsi, black.

Hab. Ashanti.

Tingra maculata.

Exp. al. $1\frac{1}{4}$ – $1\frac{1}{2}$ in.

White, tinged with tawny yellow at the base: fore wings with the tip ashy, marked with three white spots on the costal margin and three on the hind margin, and followed by three ashy spots (nearly confluent with the dark tip in the male) before the anal angle; four dark spots in the cell, the second transverse, the fourth at the end of the cell, rather widely separated from the others; above the cell are two or three more spots, alternating with those in it, and below the cell is a large spot near its extremity and sometimes a smaller one nearer the base: hind wings with seven submarginal spots—a spot at the end of the cell, and sometimes another obliquely below it, and a third above the middle of the cell. Under surface similar, with a double row of submarginal spots on the fore wings, and in the male on the hind wings also.

Hab. Cameroons.

Differs from *T. abraxas* in the double submarginal row of spots on the underside of the fore wings.

The insect figured by Hewitson (Ex. Butt. iii., *Pentila* and *Liptena*, f. 1) as a variety of the female of *Pentila* (*Tingra*)

tropicalis, Boisd., is another allied species, and may be called *T. Hewitsonii*.

Tingra torrida.

Exp. al. $1\frac{2}{3}$ in.

White, tinged with orange towards the base: fore wings with the tip ashy, and two brown spots below it on the hind margin; a brown spot at the end of the cell on all the wings: hind wings with six marginal brown spots. Underside similar; fore wings with a second spot at half the length of the cell, the apex not ashy, but the hind margin with six spots, preceded at the end of the costa by three linear ones.

Hab. Gaboon.

Closely allied to *T. abraxas*, Doubl.

Pentila evanescens.

Expands 1 inch 3 lines.

Yellowish white, shading into tawny yellow towards the hind margins: the costa of the fore wings narrowly edged with black, rather more broadly for the last fourth of its length before the tip; the upper half of the hind margin of the fore wings and the hind margin of the hind wings from the middle to the anal angle very narrowly edged with black. Underside uniform dull yellowish white, the hind margins a little yellower and the fringes tawny yellow, edged within with a dull brown line; an obscure tawny spot at the end of the cell on the fore wings.

Hab. Cameroons.

A very obscure species, somewhat resembling a small pale *Cænonympha* in appearance.

Genus TERIOMIMA.

Upper median nervure five-branched, third branch emitted beyond the end of the cell; palpi rather long, ascending.

Type *T. subpunctata*.

The species I have placed together under this heading agree in neurulation, but differ somewhat in the length and texture of the wings. In the type they are almost entire, while in *T. erastus*, Hew., &c. they are visibly scalloped; but the gap is partially bridged over by other species.

Allied to *Liptena* &c.

Teriomima subpunctata.

Expands 1 inch 1 line.

White, costa blackish at the immediate base; tip blackish

for one third of the costal length, and for the upper two thirds of the length of the hind margin; two brown spots (one at the anal angle) below. Under surface thickly spotted with brown: fore wings with one spot in the cell and two at the extremity: a row along the costa, and two submarginal rows from the costa, the outermost consisting of six small spots, but not extending to the anal angle, and the innermost slightly oblique and consisting of four larger spots: hind wings with two submarginal rows of spots, most of which are linear, and many spots nearer the base, which might be regarded as forming two or three irregular rows, the most conspicuous being two in the cell, and a large irregular one marked with white in the centre, which stands second from the costa.

Hab. West Africa (?).

Teriomima puella.

Expands 1 inch 1 line.

Tawny yellow: fore wings with a black costal streak at the base, three costal spots beyond, and the tip black for the apical fourth, then rather irregularly narrowing along the hind margin, and disappearing before the anal angle. Underside of fore wings tawny yellow, with four spots on the costa towards the base, followed by a black stripe running downwards and outwards but ceasing at one third of the width of the wing; beyond this is another costal spot, and an interrupted black line on the upper half of the hind margin. Hind wings paler tawny, the fringes with indistinct linear spots, the centre with eight spots, the centre one at the end of the cell, and the remainder forming nearly a circle round it, two on the costa, one in the cell near the base, and the other four curving round near the inner margin and the lower part of the hind margin.

Hab. West Africa.

Teriomima tenera.

Expands 1 inch 1 line.

Wings yellow: fore wings with the costa narrowly but very distinctly irrorated with black and yellow; the tip from two thirds of the length of the costa broadly black, the colour sloping outwards and then curving round the hind margin moderately broadly, but ceasing just before reaching the anal angle, which is marked with a black dot: hind wings with seven marginal spots at the extremity of the nervules. Underside: fore wings, costa irrorated with black at the base, then with four small black spots on the nervules between

the middle and a larger black spot at the tip, followed by small elongated black spots on the hind margin, on the nervules, which are nearly connected; a conspicuous black spot at the end of the cell: hind wings with no spot in the cell, but with a black spot at the tip, followed by five marginal spots at the extremities of the nervules, larger, more separated, and better defined than on the fore wings. Antennæ black, very narrowly ringed with white.

Hab. Gaboon.

Teriomima similis.

Expands 1 inch.

Yellow, fore wings with the tip and hind margin rather broadly black: hind wings with the hind margin from below the subcostal nervure with a moderately broad black border. Underside rather paler, the costa and hind margin irrorated with black, forming indistinct spots at the extremities of the nervures, most conspicuous towards the tip of the fore wings and on the hind wings; there are more conspicuous black dots at the end of all the cells, and the costal area, the cell of the fore wings, and the greater part of the hind wings are marked with scattered black scales. Antennæ black, annulated with white.

Hab. Ashanti.

Teriomima erasmus.

Exp. al. $1\frac{1}{2}$ inch.

♂. Yellow, more intense towards the base: fore wings with the costa black, and irrorated with blackish at the base and over the basal and upper part of the cell; the tip and hind margin black, the latter strongly bidentate: hind wings with a broad black marginal band, slightly angulated, but not indented within. Undersurface pale yellow, flushed with orange towards the costa to the end of the cell on the hind wings, and considerably beyond it on the fore wings: fore wings with the costa sparingly irrorated with black, a large black spot at the tip and anal angle, and three other spots on the hind margin between: hind wings with six black spots on the hind margin, that at the tip larger, and that at the anal angle smaller than the others.

Hab. Angelo.

Allied to *Pieris erastus*, Hew.

Teriomima flaveola.

Very similar to *T. erastus*, Hew., but the male of a deeper yellow, especially at the base; the band of the fore wings is

much less deeply indented with the ground-colour, and the spots of the hind wings are either separate or all connected in the male; and in the female, which is paler, the band is entirely connected, except that the spot at the anal angle is a little irregular. Under surface as in *T. erastus*, but the orange extends over most of the cell in the male, and the black marginal markings of the upperside are visible in sulphur-yellow in the male.

Hab. Ashanti and Cameroons.

Teriomima dispar.

Exp. al. $1\frac{1}{4}$ inch.

♂. Dark brown, fringes grey, underside paler brown, with three obsolete reddish-grey stripes in the cell, some obsolete pale dots towards the costa, and a still more indistinct double row of submarginal dots: hind wings with a red submacular band across the middle, two rows of less distinct reddish spots nearer the base, and a double row of very indistinct submarginal markings.

♀. Brown: fore wings with a tawny stripe commencing just beyond the cell and widening towards the hind margin, which it does not quite reach. Under surface nearly as in the male, but with the markings much better defined, and the band of the fore wings reproduced, but paler.

Hab. Cameroons (♂) and Ashanti (♀).

The insects here described as sexes may prove to be distinct when more specimens are received. They have some resemblance to *Lucia emperamus*, Snell.

Teriomima (?) *Hildegarda.*

Exp. al. 1 inch.

Tawny: hind margins and tip of fore wings rather broadly brown, between which and the cell are four brown transverse stripes on the costa; they are partly connected, and below the third is a black spot at the end of the short cell. Underside of fore wings reddish (paler on the inner margin), with four anastomosing leaden-brown bands running from the costa near the base, not extending much below the cell; towards the tips are two oblique anastomosing bands, branching to the fringes, which are also brown: hind wings brown, with about six rows of nearly connected red spots.

Hab. Ashanti.

Allied to *Liptena aslanga* (sic), Trimen.

Genus CITRINOPHILA.

Allied to *Teriomima*. Upper median nervure six-branched;

first branch emitted at the end of the cell, the second some distance beyond, dividing into three very short branches at the extremity, the lowest reaching the tip.

Type *C. marginalis*.

Citrinophila marginalis.

Exp. al. 11 lines.

Lemon-yellow; the costa and hind margins broadly black; at the base of fore wings the black covers even the cell, but leaves its lower and outer half free; at the extremity of the cell the black descends along the discocellular, forming a small tooth; inner margin of hind wings irrorated with black. Underside paler yellow: fore wings with the costa indistinctly spotted with brown on the nervules, a small black dot at the upper angle of the cell, and the hind margin narrowly black: hind wings with a black dot on the subcostal nervure just before the end of the cell, and a smaller one between this and the inner margin below the cell; the rest of the wing is indistinctly irrorated with scattered black scales; hind margin with small black irregular spots on the nervules, becoming continuous beyond the middle, but again interrupted before the last spot at the anal angle. Antennæ ringed with white.

Hab. Ashanti.

Citrinophila limbata.

Closely allied to *C. marginalis*, but rather larger and the wings rather more rounded; the upperside is of a more orange-yellow, with the borders broader, blacker, and a little more irregular. Under surface paler than above: fore wings with the costa narrowly and irregularly black, a large square spot at the end of the cell, and the tip marked with a square black spot continuous with a slightly irregular and submacular marginal band sparingly dusted with yellow and continued narrowly to the anal angle: hind wings with a similar band, commencing with an irregular blotch at the tip and narrowly continued to just within the anal angle. Abdomen yellow (black above in *C. marginalis*).

Hab. Cameroons.

Lucia (?) brunnea.

Exp. al. 1 inch.

♀ (?). Brown, an obsolete pale curved stripe running across both wings at two thirds of their length, and expanding on the inner margin into a large yellow spot. Underside much paler, the band yellowish grey, narrow and curved on the

fore wings, nearly straight and uniformly broad on the hind wings; there is also a submarginal row of obsolete blackish spots indistinctly bordered with yellowish grey on both sides on all the wings beneath.

Hab. West Africa (?).

XLVI.—Description of two new Species of Danainæ.

By H. GROSE SMITH.

Mangalisa timorica.

Female.—*Upperside.* Brown. Anterior wings with a submarginal row of small spots, two subcostal spots, beneath which are two elongated spots, the upper one less than half the length of the lower, below which between the discoidal nervules is a small lunular spot; beneath the first, second, and third median nervules are three elongated quadrate spots divided by the nervules: all the spots pale yellow and transparent. Posterior wings with a submarginal row of spots, the space between the costa and the cell as far as the first subcostal nervule, a small spot below the latter, the cell and two spots beyond it, and the basal two thirds of the space beneath the cell intersected by the brown nervules pale transparent yellow.

Underside. Same as above but paler.

Exp. 2 $\frac{3}{8}$ inches.

Habitat. Timor (*Forbes*). In the collection of H. Grose Smith.

In shape resembles *tytia*, but the wings are narrower, and it is much smaller than any of this group.

Amauris bulbifera.

Differs on the anterior wings from *damocles* and *hecate* in having a large bulb-shaped spot with a neck elongated to the central band, situated between the second discoidal nervule and the first median nervule; the central band is larger, and both wings are broader and rounder than in either of the above-named species. The posterior wings in the male brown, somewhat lighter towards the base; in the female the basal portion is white.

On the underside is a submarginal regular row of seven white spots, the uppermost beneath the first subcostal nervule, and the lowest beneath the first median nervule.

Exp. 3 $\frac{3}{8}$ inches.

Habitat. Cameroons; in the collection of H. Grose Smith.

Two specimens only, male and female.