

nucleolulus and its irregular, variable form: n' , nucleus; n'' , nucleolus; n''' , nucleolulus.

- Figs.* 12, 13. More advanced stages of the development of the ovum, associated with an enlargement of the ovum.
- Fig.* 14. A second observed case of a nucleolus in process of division: n'' , nucleolus.
- Fig.* 15. A nucleolus (n''), much magnified, with a nucleolulus (n''') in the middle and an aureole of five small granules.
- Fig.* 16. The apex of a stem of *Obelia flabellata*, in which the cœnosarc has become detached as a cylinder with a cavity.
- Fig.* 17. A hydrotheca in which the cœnosarc has formed, instead of a cylinder, a sphere with a cavity, ectoderm, endoderm, and perisarc.

PLATE XIV.

- Fig.* 1. *Leptoscyphus Grigoriewi*, nov. sp., magnified, drawn with the camera lucida.
- Fig.* 2. Two varieties presented by the hydrothecæ of *Leptoscyphus Grigoriewi*, more highly magnified. Drawn with the camera lucida.
- Fig.* 3. *Sertularia albimaris*, nov. sp., principal stem and lateral branches. Enlarged; drawn with the camera lucida.
- Fig.* 4. A colony of *Sertularia albimaris*, natural size.
- Fig.* 5. Portion of the hydrorhiza of the same, much enlarged (camera lucida): *a*, the spines; *b*, the vertical partitions formed by the lateral walls of the tubes, which are joined in growing.
- Fig.* 6. *Sertularella gigantea*, mihi, natural size.
- Fig.* 7. The same, enlarged.

PLATE XV.

- Fig.* 1. A very fine colony of *Polyserias Hincksii*, nov. gen. et sp.
- Fig.* 2. Part of a stem of the same Hydroid, enlarged (camera lucida).
- Fig.* 3. A mature gonotheca of *Polyserias Hincksii*.
- Fig.* 4. A young gonotheca of the same.
- Fig.* 5. *Polyserias mirabilis*, with immature gonothecæ (camera lucida).
- Fig.* 6. A mature gonotheca of the same Hydroid.
- Fig.* 7. Part of a colony of *Oorhiza borealis*, nov. gen. et sp., enlarged, from a sketch by M. Wagner.
- Fig.* 8. Sporosacs of *Oorhiza borealis*, issuing from the hydrorhiza.
- Fig.* 9. Tip of a tentacle of *Oorhiza borealis* with pseudopodium-like filaments and red pigment grains (eye-pigment).
- Fig.* 10. A body on a peduncle, moving like an *Amæba*, and giving origin to filaments.
- Fig.* 11. Another tip of a tentacle, to show the arrangement of the filaments.

XXXVII.—*Descriptions of twenty new Species of Hesperidæ from his own Collection.* By W. C. HEWITSON.

Plesioneura Tola.

Alis utrinque nigro-fuscis: anticis fascia media, regulari, nervis albis quinquepartita, nivea.

Both sides dark brown. Anterior wing crossed in the

middle from the subcostal nervure to a little below the first branch of the median nervure, below which it is narrow, by a broad oval, regular, transparent snow-white band, divided by the nervures, which are of the same colour.

Exp. 2 inches.

Hab. Tondano (*Wallace*).

Plesioneura Crona.

Alis utrinque fuscis: anticis fascia media, regulari, nervis fulvis tripartita, aurantiaca.

Both sides dark brown. Anterior wing crossed in the middle from the subcostal nervure, where it is narrow, to the first branch of the median nervure, where it is broadest, by a semitransparent regular band of orange.

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

Hab. Batchian (*Wallace*).

Plesioneura Cythna.

Alis utrinque rufo-fuscis: anticis fascia media hyalina alba, nervis albis tripartita: posticis basi margine costali albo nitido.

Upperside rufous-brown. Anterior wing crossed in the middle from the subcostal nervure, where it is narrow, to the first branch of the median nervure, where it is broadest, by a transparent band of white. Posterior wing with the costal margin from the base to its middle white and polished.

Underside as above, except that the white band is continued to the inner margin.

Exp. $1\frac{3}{20}$ inch.

Astictopterus Verones.

Alis utrinque rufo-fuscis: anticis infra macula apicali fulva.

Both sides rufous-brown.

Underside of the anterior wing marked by a subapical rufous spot.

Exp. $1\frac{5}{20}$ inch.

Hab. Sumatra (*Wallace*).

Astictopterus Harmachis.

Alis utrinque fuscis: anticis fascia lata, irregulari, angulata, nervis nigris quadripartita, hyalina, flava.

Both sides dark rufous-brown. Anterior wing crossed in the middle from the subcostal nervure to the submedian nervure by a very irregular angular transparent band of yellow, divided into four parts by the nervures, which are black: the

first part large and oblong within the cell, the second triangular between the second and third branches of the median nervure, the third oblong and bounded by the first and second branches of the median nervure; two small spots, one of which is very minute, towards the apex.

Underside as above.

Exp. 2 inches.

Hab. Sumatra (*Buxton*).

This species is also in the collection of Dr. Staudinger, from Malacca.

Astictopterus Ozias.

Alis utrinque fuscis: anticis supra fascia media sinuata, nervis flavis quadripartita, hyalina, flava: infra, anticis apice, posticis fasciis duabus latis cinereis.

Upperside dark rufous-brown. Anterior wing crossed at the middle, from the subcostal nervure to the submedian nervure, by a broad irregular transparent band of yellow, divided by the nervures, which are of the same colour, and twice indented on its inner border: the first part within the cell triangular; the second triangular, formed by the median nervure and its second and third branches; the third oblong between the first and second median branches.

Underside. Anterior wing as above, except that the apex is broadly grey. Posterior wing crossed below the middle by two broad bands of grey.

Exp. $1\frac{9}{10}$ inch.

Hab. Java.

This species is also in the collection of Dr. Staudinger, from Java; my specimen is without a locality.

This and *Harmachis* have the appearance of *Hesperia*.

Astictopterus Othonias.

Alis utrinque rufo-fuscis: anticis fascia media tripartita maculaque aurantiacis.

Both sides rufous-brown. Anterior wing crossed at the middle from the subcostal nervure to near the submedian nervure by an irregular band, broken into three orange spots by the nervures: the first in the cell; the second oblong, bounded by the first and second branches of the median nervure; a fourth spot, outside of these, placed between the second and third branches of the median nervure.

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

Hab. Borneo.

Astictopterus Vibius.

Alis utrinque fuscis : anticis macula magna media, sub apice sinuata, aurantiaca.

Both sides dark rufous-brown. Anterior wing with a large central orange spot, circular, except opposite the apex, where the brown is obtruded in a quadrate form.

Exp. $1\frac{3}{20}$ inch.

Hab. Gaboon.

Ceratrachia flava.

Alis utrinque flavis : anticis margine postico late nigro punctis duobus minutis sub apice notato : posticis apice nigro. Infra : anticis maculis apicalibus albo notatis : posticis semicirculo punctorum nigrorum.

Upperside bright yellow. Anterior wing with the outer margin black, marked beyond the end of the cell by a minute yellow spot, and near the apex by a very minute spot of the same colour. Posterior wing with the apex black ; some minute black spots on the outer margin.

Underside yellow. Anterior wing as above, except that the apex is rufous, marked by black spots, each marked by a minute white spot ; the margin black, traversed by a line of yellow ; the fringe black and white alternately. Posterior wing with two or three subbasal brown spots, followed by a semicircular series of brown spots, some of which are marked with yellow ; a submarginal series of minute black spots ; the margin also spotted with black.

Exp. $1\frac{3}{20}$ inch.

Hab. Cameroons (*Rutherford*).

Ceratrachia Aretina.

Alis rufo-fuscis : anticis maculis sex albis hyalinis maculaque opaca, posticis maculis tribus : posticis infra flavo minioque tinctis.

Upperside dark rufous-brown. Anterior wing with six transparent white spots : one near the inner margin, one intersected by the median nervure, the third beyond this, and three near the apex. Posterior wing with two transparent central spots : one before the middle ; the other below it, bifid.

Underside. Anterior wing as above, except that the base of the costal nervure is white, and that there are some pale spots near the apex. Posterior wing with the costal half yellow-white, marked by two or three small brown spots, and on the costal margin by a carmine-brown spot ; anal half, except the

abdominal fold, which is pale yellow, carmine-brown, marked by the transparent spots as above.

Exp. $1\frac{1}{10}$ inch.

Hab. Calabar.

The two species which I have described, together with *C. nothus* and *C. Cæsar*, form Mr. Butler's well-marked genus *Ceratrachia*.

Pterygospidea grisea.

Alis utrinque griseis, fasciis tribus macularibus nigris: anticis punctis octo albis hyalinis.

Upperside dark brown, so thickly irrorated throughout with white as to give it the appearance of being dark grey. Both wings crossed by three irregular bands of black spots. Anterior wing with eight small transparent spots: three from the middle of the costal margin (two of which are in the cell), two between the branches of the median nervure, and three near the apex.

Underside as above, but paler.

Exp. $1\frac{3}{20}$ inch.

Hab. Gaboon (*Rogers*).

Pterygospidea Kehelatha.

Alis utrinque rufo-brunneis: supra fasciis duabus transversalibus nigris: anticis macula nigra subbasali maculisque septem albis hyalinis, quatuor in medio positis.

Upperside bright rufous-brown. Both wings crossed beyond the middle by a band of brown and by a submarginal band of the same colour, partly broken into spots. Anterior wing with a distinct black spot not far from the base of the inner margin; seven transparent white spots, four of which are in the middle, one on the costal margin, one in the cell large and quadrate but sinuated on its inner border, and two below it between the branches of the median nervure. Posterior wing with two or three subbasal indistinct brown spots; the outer margin angular at the middle.

Underside rufous-brown. Anterior wing as above. Posterior wing marked by several black spots: three (one of which is bifid) in a semicircle before the middle, and seven in pairs, also forming a semicircle beyond the middle.

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

Hab. Macassar (*Wallace*).

Pterygospidea Sephara.

Alis utrinque rufo-brunneis: anticis punctis tredecim hyalinis,

fascia media, fascia subapicali fasciaque anali fuscis: posticis basi apiceque fuscis, fasciisque duabus pallide brunneis.

Upperside rufous-brown, marked by thirteen transparent white spots, all of which, with one exception, are very minute: five near the middle of the costal margin, three of which are in the cell, where two of them are upon a spot of brown; four below these between the branches of the median nervure and the submedian, one of which is square and larger than all the rest, one very minute, and one linear; and four near the apex, all placed upon a transverse brown band; a band of brown near the apex and also near the anal angle. Posterior wing with the base and apex dark brown, a brown spot on the costal margin, and two transverse bands of paler brown.

Underside as above, except that it is without the brown at the middle of the anterior wing, as well as that at the base of the posterior wing.

Exp. $1\frac{3}{10}$ inch.

Hab. Brazil.

This and the last described are most nearly represented by *P. truncata*.

Hesperia Netopha.

Alis fuscis: anticis maculis quinque hyalinis maculaque opaca alba: posticis macula media bipartita alba. Infra anticis radiis apicalibus flavis: posticis flavis maculis margineque posteriore nigris.

Upperside dark brown. Anterior wing with six white spots, five of which are transparent: two in the cell; four in a longitudinal central band, the first near the inner margin, opaque, the last towards the apex, very minute. Posterior wing with a trifid pale yellow central spot.

Underside. Anterior wing as above, except that the outer margin is ochreous and that there are rays of yellow at the apex. Posterior wing yellow, marked by several black spots: two at the base, two before the middle, followed by a transverse curved band of six; the outer margin and some of the nervures where they touch it dark brown; the fringe yellow.

Exp. $1\frac{3}{20}$ inch.

Hab. West Africa.

Hesperia Nyassæ.

Alis fuscis: anticis maculis quatuor hyalinis maculaque opaca alba: posticis macula media bipartita flava. Infra anticis apice cinereo, fusco striato: posticis cineraceis, maculis nigris notatis.

Upperside dark brown. Anterior wing with five white spots: one in the cell bifid, four in a central longitudinal band, the first near the inner margin opaque, the last towards

the apex scarcely visible. Posterior wing with a bifid ochreous central spot.

Underside. Anterior wing as above, except that the costal margin is rufous, the apex broadly lilac-grey, intersected between the nervures by lines of dark brown. Posterior wing lilac-grey, marked by several black spots: two at the base, three in a transverse band before the middle, and four beyond the middle.

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

Hab. Nyassa (*Thelewall*).

This and the last described are very different from any other species, but singularly like each other in marking, though upon a totally different ground-colour.

Hesperia vermiculata.

Alis supra fuscis: anticis punctis quinque hyalinis punctoque opaco flavis, puncto in cellula punctisque in fascia longitudinali positus: posticis fascia margineque anali flavis. Infra anticis radiis apicalibus flavis: posticis flavis maculis nigris albisque.

Upperside dark brown. Anterior wing with six spots, five of which are transparent and slightly tinted with yellow: one in the cell, oblong; five in a longitudinal central band, the first of which near the inner margin is opaque, the last, towards the apex, minute. Posterior wing with an oblique short central band and the fringe yellow; the anal angle also broadly yellow. The abdomen dark brown, banded with yellow.

Underside. Anterior wing as above, except that there are two lines of yellow from the base of the costal margin, which are united near its middle; rays of the same colour at the apex, and a triangular white spot at the end of the cell. Posterior wing yellow, spotted with black and white; the base and costal margin dark brown, with the nervures yellow; two white spots below the middle of the costal margin, a white spot near the inner margin; a transverse series of black spots below the middle, followed by a series of white spots, and again by an apical series of black spots. The white spots slightly tinted with blue.

Exp. $1\frac{7}{10}$ inch.

Hab. Sumatra (*Buxton*).

A beautiful species, near *H. Liburnia* and *H. Latoia*.

Syrichthus Cenchreus.

Alis fuscis, fascia submarginali macularum albarum: posticis fascia media maculari alba: posticis infra albis, fasciis tribus fuscis.

Upperside dark brown. Both wings with a submarginal

series of white spots; the fringe brown, bordered inwardly with white. Posterior wing with a spot in the cell, and a central band of oblong white spots.

Underside. Anterior wing as above, except that it is white near the base. Posterior wing white, crossed by three bands of dark brown: one before the middle, short; one below the middle, longer; and one submarginal, broadest and longest and irrorated with white.

Exp. $1\frac{1}{10}$ inch.

Hab. Para (*Bates*).

Arteurotia Cambyses.

Alis supra nigro-fuscis, fascia submarginali maculari cineracea.

Infra fuscis: anticis margine interiore cinereo: posticis fasciis duabus indistinctis.

Upperside black. Both wings with a submarginal series of grey spots, largest at the apex of the anterior wing, scarcely visible towards its anal angle. Anterior wing with a very indistinct short band of grey from the middle of the costal margin. Posterior wing with a similar band in its middle.

Underside. Anterior wing dark brown, the apex paler, the inner margin grey. Posterior wing red-brown, with the costal margin and two indistinct transverse bands of darker brown.

Exp. $1\frac{6}{10}$ inch.

Hab. Bolivia (*Buckley*).

This species is nearly allied to *Mycteris cœrula* of Mabilie, which belongs to this genus.

Arteurotia Castolus.

Alis utrinque fuscis: anticis punctis tribus subapicalibus hyalinis.

Infra anticis puncto cinereo apicali: posticis angulo anali late cineraceo, fusco undulato.

Upperside dark brown. Both wings indistinctly variegated by grey. Anterior wing with three minute subapical transparent spots.

Underside as above, except that there is a small grey spot at the apex of the anterior wing, and that the anal half of the posterior wing is grey undulated with brown.

Exp. $1\frac{3}{10}$ inch.

Hab. Brazil.

Arteurotia Celendris.

Alis utrinque fuscis: anticis punctis duodecim minutis hyalinis: posticis dimidio inferiore cinereo, fascia submarginali fusca: his infra fascia media maculari alba maculaque anali magna nigra.

Upperside dark brown. Anterior wing with twelve minute transparent spots: three at the middle of the costal margin, two of which are in the cell; six in a central oblique band, two of which are lunular; and three near the apex; a minute white spot on the fringe at the apex, and a lunular spot of the same colour near the anal angle. Posterior wing with the outer half grey, bordered above with white, crossed near the outer margin by a band of dark brown.

Underside. Anterior wing as above, except that there are two minute white spots above the lunular spot near the anal angle. Posterior wing with a band of white spots at the middle, a series of smaller white spots below these, and a large black spot at the anal angle bordered above and below with white.

Exp. $1\frac{7}{20}$ inch.

Hab. Amazons (*Bates*).

Conognathus Platon of Felder is the typical representative of this genus; but as Mr. Kirby informs me that *Conognathus* is preoccupied, I have adopted *Arteurotia* of Butler and Druce. *Thracides Aristoteles* of Westwood also belongs to this genus, and bears very little resemblance to the species which Hübner puts into his genus *Thracides*.

XXXVIII.—Note on *Artamus monachus*.

By Dr. F. BRÜGGEMANN.

IN 1850 Prince Bonaparte established a new species of *Artamus* from Celebes (*A. monachus*), with the following diagnosis:—"Capite, alis caudaque nigris" (*Consp. Avium*, i. p. 343).

In 1877 Dr. Sclater established a new species of *Artamus* from New Ireland (*A. insignis*), with the following diagnosis:—"Diversus ab *A. monacho* capite alis et cauda nigris" (*Proc. Zool. Soc.* 1877, p. 101).

Going further into the question, it may be mentioned in advance that *A. monachus* was first distinguished and named by Temminck; but as the Dutch ornithologist never gave a description of it, we have not at all to deal with an *A. monachus* of Temminck, as quoted by most authors. The next account of the species was given by the illustrious traveller Wallace, who described specimens from North Celebes and the Sula Islands (*P. Z. S.* 1862, p. 340), as having the head, wings, and tail ashy grey instead of black. Upon this, Lord Walden, in his elaborate memoir on the birds of Celebes (*Trans. Zool. Soc.* viii. p. 67), where also a good figure of the