

indications or remains of the strongly marked tegumentary ornamentation of the more ancient *Pemphix* and *Glyphea*.

The entire body of *Aræosternus* is covered with little tufts of yellow hairs, with here and there isolated longer hairs scattered among the tufts. The fossil *Glyphea* present no hairs. It might be supposed that the tubercles of the surface of the carapace of these latter Crustacea were peduncles which at one time bore tufts of hairs, and that these hairs were lost during fossilization. There are, however, Crustaceans which lived in the same ages and in the same waters, side by side with the *Glyphea*, such as the *Megachiri*, the *Microchiri*, and others, the remains of which, preserved in the Lithographic Limestone of Bavaria, still allow us to perceive a multitude of hairs, which are very visible along the antennæ, the anterior limbs, &c. of these animals. Why, if the *Glyphea* were ornamented with hairs, should not their fossil remains show us hairs, preserved as perfectly as those of their contemporaries the *Megachiri*? We may therefore suppose that the *Glyphea* were not furnished with hairs like *Aræosternus*. But no one will assert that an animal the skin of which is covered with hairs, cannot descend from another of which the skin is naked, or that a hairy animal could not have had an ancestor with a skin unfurnished with hairs. The elephant of the present day is completely destitute of hairs, while its ancestor, the mammoth, was provided with them; but no one doubts as to the degree of relationship which unites these two forms. No one will see a generic difference in the more or less hairy state of the outer integument of animals.

The limits of our investigation do not allow us to dwell further upon these interesting subjects. What we have said will suffice, we believe, to demonstrate that the genus *Glyphea* existed as long ago as the Trias under the form of *Pemphix*, and that it will probably become extinct in the present epoch under the form of *Aræosternus*.

XXXI.—*List of Lepidoptera recently collected by Lieut. Alfred Carpenter at Yedo and Oö-Sima.* By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.

THE following species, collected by Lieut. Carpenter, of H.M.S. 'Magpie,' were received in two consignments, the first of which (collected in Porpoise Strait, Oö-Sima or Harbour Island, Lu-chu group, off China, during the month

of March) contained only five specimens of *Lepidoptera*, of which three had suffered so much in transit as to be barely recognizable; the second consignment (from Tateyama Bay, entrance to Gulf of Yedo, Japan, collected in May and June) contained thirty-four examples, for the most part in very fair condition.

As adding to our knowledge of the geographical distribution of the *Lepidoptera*, these two little series are interesting; and therefore I have thought it worth while to draw up a list of them.

As usual, the butterflies are greatly in excess of the moths; otherwise it is probable that more novelties would have been received.

List of Species.

RHOPALOCERA.

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| 1. <i>Lethe sicebis</i> , <i>Hewits.</i> , Yedo. | 10. <i>Amblypodia asinarus</i> , <i>Feld.</i> ,
Lu-chu*. |
| 2. <i>Gareris perdiccas</i> , <i>Hewits.</i> ,
Yedo. | 11. <i>Terias mandarina</i> , <i>De L'Orza</i> ,
Lu-chu. |
| 3. <i>Ypthima argus</i> , <i>Butl.</i> , Yedo. | 12. <i>Ganoris crucivora</i> , <i>Boisd.</i> ,
Yedo. |
| 4. <i>Vanessa angelica</i> , <i>Cram.</i> , Yedo. | 13. <i>Papilio xuthus</i> , <i>Linn.</i> , Yedo. |
| 5. — <i>glaucania</i> , <i>Motsch.</i> , Yedo. | 14. — <i>asiaticus</i> , <i>Ménétr.</i> , Yedo. |
| 6. <i>Pyrameis indica</i> , <i>Herbst</i> , Yedo. | 15. — <i>japonicus</i> , <i>Butl.</i> , Yedo. |
| 7. <i>Lycæna japonica</i> , <i>Murr.</i> , Yedo. | 16. — <i>Carpenteri</i> , <i>Butl.</i> , Yedo. |
| 8. <i>Lampides hellotia</i> , <i>Ménétr.</i> ,
Yedo. | 17. — <i>spathatus</i> , <i>Butl.</i> , Yedo. |
| 9. <i>Chrysophanus timæus</i> , <i>Cram.</i> ,
Yedo. | |

HETEROCERA.

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|---|---|
| 18. <i>Zonosoma interlectum</i> , <i>Walk.</i> ,
Lu-chu. | 22. <i>Saraca trimantesalis</i> , <i>Walk.</i> ,
Yedo. |
| 19. <i>Adris tyrannus</i> , <i>Guénée</i> , Yedo. | 23. <i>Timandra comptaria</i> , <i>Walk.</i> ,
Yedo. |
| 20. <i>Remigia virbia</i> , <i>Cram.</i> , Yedo. | 24. <i>Abraxas miranda</i> , <i>Butl.</i> , Yedo. |
| 21. <i>Hypena thermesialis</i> , <i>Walk.</i> ,
Lu-chu. | |

New Species.

Papilio Carpenteri, sp. n.

♂. Allied to *P. demetrius*. Primaries above blackish grey, with the borders, veins, and internervular streaks black: secondaries greenish black; a large jet-black spot at anal angle, bordered above by an orange-red lunule enclosing a black dash, and sprinkled in front with a few pearly whitish scales, below by a triangular golden-orange spot; fringe

* Too much damaged for insertion in the collection.

white between the veins; the usual sulphur-yellow costal streak: body black; abdomen greenish. Primaries below ash-grey, the black streaks and veins narrower than above: secondaries greenish black; a decreasing submarginal series of four orange lunules from apex to lower radial interspace; a few scales in the second median interspace, a large crescent in the first median interspace, and a large irregular patch enclosing a black spot, sprinkled in front with white scales, and bordered with white on the margin at anal angle: body below black. Expanse of wings 118 millim.

♂. Tateyama Bay, entrance to Gulf of Yedo.

♀. Much larger than the male. Primaries above pale brown, the veins and streaks blackish brown, diffused: secondaries with the basal half smoky brown, with a central nebula of bluish scales; external half blackish brown; a few orange scales on the second median interspace, a crescent on the first median interspace, and a large patch enclosing a round black spot and sprinkled in front with white scales, at anal angle: body smoky brown; head, as usual, black, dotted with white. Primaries below whiter than in the male, the cell slightly tinted with sulphur-yellow: secondaries dark chocolate-brown, the cell dark green; a continuous submarginal series of orange crescents, the first, second, and sixth large, the first sprinkled with pearly scales; anal orange patch larger than in the male, its upper portion extending inwards to beyond the second median branch, and more distinctly sprinkled with pearly scales: body below smoky brown, a whitish line down each side of the venter. Expanse of wings 136 millim.

♂ ♀. Nagasaki (*Whitely*). B.M.

The male from *Whitely's* collection is a little smaller than that obtained by Lieut. Carpenter, and agrees with its female in having a complete submarginal series of orange lunules on the under surface. The species stands nearest to *P. demetrius*, from which it differs in its smaller size, not much exceeding that of *P. macilentus*, the paler and not greenish colour of the primaries, the narrower tails of the male and the shorter tails of the female, the larger reddish-orange borders to the anal spot on the male, and the more uniform blackish colour of the secondaries below; from *P. macilentus* it differs in its superior size, broader wings, and shorter tails, and from *P. tractipennis* in its shorter wings and tails.

In identifying this group of *Papiliones* it must always be borne in mind that the males have longer or narrower tails to the secondaries than the females, and consequently without due care the examples of the latter sex are likely to be confounded.



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