

XLII.—*Notes on Phasmidæ in the Collection of the British Museum (Natural History), South Kensington, with Descriptions of new Species.*—No. I. By W. F. KIRBY, F.L.S., F.E.S.

THE Phasmidæ have been less studied than any other family of Orthoptera, and the classification is still in a rather unsatisfactory state. Many genera are at present somewhat isolated, owing probably to the incompleteness of our collections, and many others include discordant sections which require new names. Nor do we appear to possess sufficient material to enable us to judge of the real value of even such important characters for defining natural groups as the length and structure of the antennæ and of the median cell, and the presence or absence of the areole at the end of the tibiæ beneath. I would suggest that the shape of the median segment may perhaps be found to be of great importance, especially whether it is pointed, rounded, or truncated in front.

As I find myself unable to adopt Brunner von Wattenwyl's arrangement of 1893 in its entirety, I have drafted out the following provisional arrangement of subfamilies:—1. Lonchodinæ; 2. Bacteriinæ; 3. Bacillinæ (including Bacillidæ and Clitumnidæ of Brunner); 4. Diaphomerinæ; 5. Bacteriinæ; 6. Phryganistriinæ; 7. Palophinæ; 8. Necrosciinæ; 9. Acrophyllinæ; 10. Eurycanthinæ; 11. Heteropteryginæ; 12. Anisomorphinæ; 13. Prisopinæ; 14. Pseudophasminæ; 15. Aschiphasminæ; 16. Phylliinæ.

Subfam. I. *LONCHODINÆ*.

Lonchodidæ, Brunner (pt.).

Includes Old-World species with long antennæ and a short median segment. Most of the genera are apterous, but one or two (*Oxyartes*, Stål, for instance) have rudimentary wings.

Genus *STÆLONCHODES*, Kirb., n. n.

Lonchodes, pt., Gray (nec sect. typ.); Stål (restr.).

Type, *L. geniculatus*, Gray.

This is Gray's second species, but his own description actually contradicts the characters of the genus *Lonchodes*; yet Stål has selected it as the type, an utterly unwarrantable action. A considerable number of species may be temporarily included in *Stælonchodes*, but the genus will probably be soon subdivided.

Stælonchodes gracillimus, sp. n.

Long. corp. 100–116 mm.

Male.—Long and slender, rufous or rufous-brown, more or less varied with blackish bronze or olive-green; antennæ bronzed; head and pronotum rufous; mesonotum, metanotum, and median segment bronzy brown, except at their extremities, which are rufous; one specimen, however, is uniform olive-green over nearly the whole of these parts; abdomen either bronzy black, with tawny bands at the extremities of the segments, or rufous as far as the sixth or seventh segment and black beyond, with or without two white spots at the end of segments 8 and 9; legs very long and slender, the middle legs somewhat shorter than the others; all the femora rufous nearly to the extremity; the rest of the legs bronzy black above and somewhat paler below; middle and hind femora finely serrated beneath towards the extremities, hind femora extending beyond the base of the sixth segment of the abdomen.

Hab. Tonkin (Than Moi), June and July (*Fruhstorfer*).

Allied to *S. praon* and *stomphaa*, Westw., but larger. The very long and slender legs, with red femora, are very characteristic.

Genus LONCHODES, Gray et auct.

Dixippus, Stål.

Gray's description of this genus and of his first species, *L. longipes*, clearly indicates that as the type.

Lonchodes (?) *viridis*, sp. n.

Female.—Bright green, with the following exceptions:—antennæ, except towards the base, a square spot at the extremity of the first four segments of the abdomen (reckoning the median segment as the first), and a dot on the sides of each corresponding suture black or blackish; and a salmon-coloured streak on the sides of the meso- and metanotum, separated below by a green line from a salmon-coloured line, bordered below by a yellow one. Legs short, of nearly equal length; femora thick, straight, except for the usual curve at the base of the front femora, and with a semicircular lobe at the extremity of each lower carina, those on the front femora small, those on the others conspicuous. First joint of front tibiæ lobate above and nearly as long as the remaining joints. Head and body unarmed, but with a fine carina running

down the whole length, and thickly but finely granulated, especially on the thoracic segments, which causes them to appear very finely denticulated on the sides. Prothorax with a raised carina in front and a central transverse sulcus. Abdominal segments 2-7 at least twice as long as broad, the eighth to tenth strongly carinated, the ninth shortest and transverse, the others only slightly longer than broad; the tenth indented in the middle, to expose the small but strongly carinated eleventh; operculum boat-shaped, strongly carinated on its hinder half, and not excavated at the extremity, which extends as far as the tenth segment.

Hab. Tonkin (Than Moi), June and July (*Fruhstorfer*).

Described from two specimens.

This interesting species will probably become the type of a new genus when the *Lonchodinæ* are revised.

Dimensions.

	mm.
Long. corporis	105-118
„ capitis	7
„ pronoti	4 $\frac{1}{2}$
„ mesonoti	19-21
„ metanoti, cum segm. med. ..	18-19
„ fem. ant.	19-20
„ „ med.	14-16
„ „ post.	17-19

Genus *OXYARTES*, Stål.

Oxyartes lamellatus, sp. n.

Male.—Rather slender, brown; head with six tubercles on the hinder edge; antennæ pubescent, greenish brown, darker towards the ends of the joints, nearly as long as the body, and composed of about sixty joints, irregularly longer and shorter; pronotum with two erect spines near together in front, and two longer ones (wider apart) behind the first lobe; mesonotum smooth, inclining to greenish, with a pair of strong spines near together in front and five pairs behind (one pair on each side of the median line, one pair in front of these, separated by the median line, and one pair on each side before the base of the almost obsolete tegulæ), there is also a lateral row of shorter spines, followed by a lower row of tubercles; metanotum with two spines between the bases of the wings and three larger ones on the metapleura; wings black, paler at the base and on the costa, narrowly oval, and extending as far as the middle of the median segment; meso- and metaplectus studded with black tubercles, a distinct tubercle on the

median line above towards the extremity of each abdominal segment. Legs pubescent, carinated; femora with two or three small teeth on each side beneath before the extremity.

Female.—Larger and stouter than the male and darker brown, but inclining to grey on the head, pronotum, antennæ, and legs; antennæ spotted with brown on most of the joints; head with four short and broad tubercles on the hinder edge, two central and two lateral; mesonotum rugose, covered with tubercles and laterally with short spines, continued on the meso- and metapleura; mesonotum with two strong spines near the middle in front, the left-hand one with a smaller spine adjoining it; there are also two strong spines, wider apart, towards the hinder extremity, and at the hinder edge itself three or four close together on each side; metanotum and abdomen rugose and more or less granulated, two short spines on the latter between the wings, which are blackish and broader than in the male; abdomen with a short tooth near the extremity of each segment in the median line, and from the sixth segment to the extremity strongly carinated, the carina on the seventh segment rising into a large lamella for the greater part of the segment, preceded by a smaller one on the sixth.

Hab. Tonkin (Than Moi), June and July (*Fruhstorfer*).

Described from one male and two females.

Allied to *O. despectus*, Westw., but larger, and with stronger and differently arranged spines.

Dimensions.

	♂. mm.	♀. mm.
Long. corporis	84	102-125
„ capitis	8	7-9
„ pronoti	5	7-9
„ mesonoti	19	20-29
„ metanoti, cum segm. med.	11	13-15
„ segm. med.	6	8-9
„ fem. ant.	25	21-25
„ „ med.	19	18-21
„ „ post.	31	21-25
„ al.	6	8-9
Lat. al.	1½	3-4

Genus PROMACHUS, Stål.

Promachus (?) *lætus*, sp. n.

Apora læta, Brunner, MS.

Long. corp. 65-82 mm.

Male.—Green; rather slender, front and hind legs of

nearly equal length, the latter extending nearly to the extremity of the fifth segment of the abdomen; middle legs shorter than the others. Face varied with whitish, and base of the antennæ shading from green into blue. Pronotum with a transverse sulcus just before the middle; mesonotum with four or five large asymmetrical black spines, thickened at the base, and with a row of concolorous denticulations on the sides, followed by a black spine before the base of the four hinder legs; hind femora slightly denticulated beneath at the extremity; median segment about two fifths of the length of the metanotum, rounded in front; segments 2-6 of the abdomen with a small terminal tooth on the median line; all the segments of the abdomen longer than broad, except the tenth, which is carinated, but scarcely indented at the tip; operculum boat-shaped, scarcely longer than the ninth segment; cerci short, stout, slightly incurved.

Female (long. corp. 110 mm.).—Bright green; rather stout, but tapering towards both the head and tail; a brownish line running along the lateral borders of the thorax and abdomen; mesonotum with some small scattered black tubercles, or, rather, granules; meso- and metapleuræ spinose on the dark lateral line already referred to; abdomen with some more or less complete double carinations on the median line of the hinder segment, and with a single slightly undulating carina on each side; there is a small tubercle or spine at the end of the first seven segments, including the median segment; on segments 2-7 stand two or three green tubercles above the lateral line; the tenth segment is twice suddenly contracted at the sides and terminates in an obtuse triangle above; the double median carina on the ninth coalesces into a single steep carina, which continues to the extremity of the tenth; operculum pointed and channelled, extending beyond the tenth segment to more than twice the length of the latter.

Hab. Tonkin (Matton Mountains, 2000-3000 metres), April and May (*Fruhstorfer*).

The male of this species is closely allied to *P. Wallacei*, Westw., from Aru, the type of the genus, but is easily distinguished by the spineless head and the black spines on the mesonotum. The female, however, like that of the following species, wants the long, projecting, spear-like process above the operculum, so conspicuous in that of *P. Wallacei*. The specimens were received under the MS. name of *Apora læta*, Brunn. The specific name I have of course retained, but the generic name is preoccupied in Polyzoa, and is therefore inadmissible.

Promachus (?) *bicolor*, sp. n.

Long. corp. 55-57 mm.

Male.—Rufous ; the antennæ, spines, a broad band down the middle of the body, bisected by the rufous carina, an interrupted lateral line, and the legs beyond the apical fourth of the femora black or blackish. Head with two pairs of spines near the back ; pronotum deeply sulcated before the middle, with a pair of long spines on the front lobe and small lateral ones at the front angles, and two pairs of spines (the first longest) on the second lobe. Mesonotum with five pairs of spines (the last pair approximating) on the central region, and a row of six spines on each side on the lateral black line ; metanotum, median segment, and several of the basal segments of the abdomen with a pair of central spines, diminishing in size hindwards ; there are also two strong lateral spines on the metanotum and two on the meso- and metapleuræ. Segments of the abdomen hardly twice as long as broad ; hind legs rather longer than the others, extending as far as the extremity of the seventh segment of the abdomen.

Female (?).—Larger and stouter ; testaceous, mottled with blackish ; the spines arranged nearly as in the male ; legs shorter, stouter, and carinated ; hind femora extending rather beyond the fifth segment of the abdomen ; abdomen with a sinuous carina on the sides of the segments, segment 10 tripartite at the extremity ; except the front lobe of the pronotum, the whole median line of the thorax and abdomen is traversed by a very strong raised carina. Abdomen without terminal spine ; operculum not projecting beyond the last segment.

Hab. Tonkin (Than Moi), June and July (*Fruhstorfer*).

XLIII.—On the Genus *Ortmannia*, Rathb., and the Mutations of certain *Atyids*. By E. L. BOUVIER*.

THE shrimps of the family Atyidæ belong exclusively to fresh water. Despite their adaptation to this special medium and the strange aspect of their most typical forms, they attach themselves by a series of genera to the most primitive of the marine shrimps. From *Xiphocaris*, of which the chelæ are normal and are furnished with exopodites on all the feet, one passes to *Atyaephyra*, in which the exopodites have disappeared on the three posterior pairs of feet, to *Caridina*, which have no exopodites and whose anterior

* Translated from the 'Comptes Rendus,' t. cxxxviii. p. 446.



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