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### XIX.—On a new and natural grouping of some of the Oriental genera of Mygalomorphæ, with descriptions of new genera and species

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transversis bi- vel tri-angulatis (ultimo rapide accrescente), transversim obscure angulato-costatis, simul ac ad basin, circa umbilicum, et confertim (præcipue circa anfractum ultimum) punctis vel foveis interstitialibus regularibus transversim clathrato-succinctis; apertura rotunda, ochracea; peristomate albo, continuo, simplici, parum reflexo; operculo paucispirali, normali. Long. 17·50, lat. 15 mill.

*Hab.* "S. Africa."

This particularly interesting form seems uniformly to differ from both the protean *C. ligatum*, Müll., and all other allies in the deep transverse interstitial pitting, especially conspicuous on the penultimate and last whorls, and giving a character to the shell at first sight. We have seen several specimens, all precisely similar in character, but differing in marking, some being plain and ash-coloured, without any transverse banding. That this banding is present (though often obscured) in all specimens is, however, evident by the markings showing through the ochraceous interior; the peristome is white, continuous, slightly reflexed. The specimens we have seen have the ordinary normal operculum of *ligatum* &c.

We also give additional figures of *Natalina Chaplini* and *Dorcasia inhluzana*, supplementary to those in our last paper (Ann. & Mag. Nat. Hist. ser. 6, vol. xiv., August 1894, plate i.).

EXPLANATION OF PLATE XII.

- Figs.* 1, 1 *a.* *Zingis delicata.*  
*Figs.* 2, 2 *a.* *Trachycystis Alcocki.*  
*Fig.* 3. *Achatina Churchilliana.*  
*Fig.* 4. *Cyclostoma foveolatum.*  
*Fig.* 4 *a.* Ditto, showing sculpture (enlarged).  
*Figs.* 5-5 *b.* *Natalina Chaplini.*  
*Figs.* 6, 6 *a.* *Dorcasia inhluzana.*

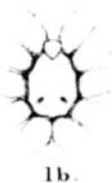
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XIX.—On a New and Natural Grouping of some of the Oriental Genera of Mygalomorphæ, with Descriptions of new Genera and Species. By R. I. POCCOCK.

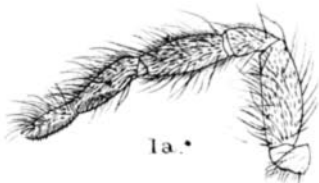
[Plate X.]

THE spiders which form the subject of the present paper have been recently referred by Mons. E. Simon \* to three distinct

\* Hist. Nat. des Araignées, i. pt. 1, pp. 132, 174.



1b.



1a.



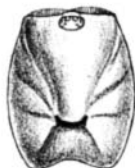
1.



2b.



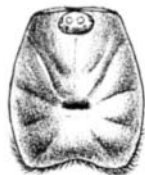
2a.



2.



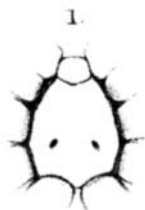
3a.



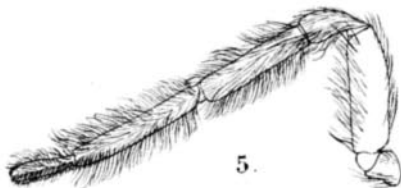
3.



3b.



4a.



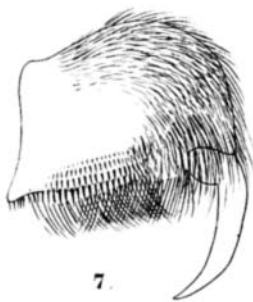
5.



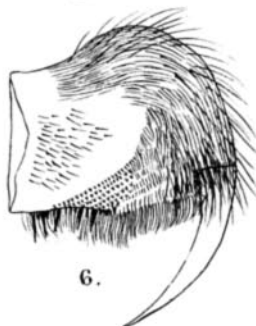
4.



4b.



7.



6.

sections of his subfamily Aviculariinae, namely the Phlogiæ, Selenocosmiæ, and the Pœcilotheriæ, which may be tabulated in the following order :—

1. PHLOGIÆ.—\**Orphnæcus*, Luzon; *Chilobrachys*, Ceylon; *Phlogius*, Indo- and Austro-Malaya; *Coremiocnemis*, Pinang.
2. SELENOCOSMIÆ.—\**Loxomphalia*, *Phoneyusa* (syn. *Harpaxotheria*), *Hysterochrates*, *Harpactira*, \**Pelinobius*, Ethiopian Region; \**Encycocrates*, Madagascar; \**Ephebopus*, loc. ?; *Selenocosmia*, Indo-Malaya; \**Lampropelma*, Ins. Sangir; \**Haplopelma*, Borneo; \**Cyriopogopus*, Tenasserim; *Haploclastus*, S. India; and, possibly, *Omothymus*, Pinang.
3. PÆCILOTHERIÆ.—*Pæcilotheria*, S. India, Ceylon; *Scodra*, W. Africa.

It is to be supposed that the above were regarded as natural groups; and since the Pœcilotheriæ were treated quite apart from the rest of the Old-World genera and in connexion with the Neotropical group of Aviculariæ, we may conclude that these two groups were looked upon as related to each other, and that the Indian genus *Pæcilotheria* was not regarded as having any near relationship with other Oriental forms. Moreover, the above-given arrangement of the genera indicates, I take it, that the Oriental genera of Selenocosmiæ are more nearly allied to the African genera of the same group than they are to the Oriental Phlogiæ. But, after working over some of the material of the Aviculariidae contained in the British Museum, the conclusion has been forced upon me, firstly, that Simon's sections are largely artificial, and, secondly, that the genera referred to them may be otherwise grouped, so as to form assemblages which may be regarded as natural, inasmuch as they agree, (1) in the possession of constant characters, and (2) in their geographical distribution.

In the first place it may be stated that none of the Oriental genera appear to me to be especially related to the Ethiopian, or, to put it more accurately, the genera composing either of the two groups into which the Oriental genera fall are more nearly related *inter se* than any one of them is to any Ethiopian genus known to me. This conclusion serves at once to separate off the Ethiopian genera, which I do not propose to deal further with here, except to state that I provisionally divide them into the following three sections :—

\* Genera that are unknown to me in nature are marked with an asterisk.

- a. *Scodra*.
- b. *Loxomphalia*, *Phoneyusa* (sic), *Hysterochrates*, *Pelinobius* \*.
- c. *Harpactira*.

But I do not yet wish to express any opinion regarding the relationship of these groups to each other or to any other section of the Aviculariidæ.

Turning now to the Oriental forms, we find that they fall into two distinct sections, which I propose, at least provisionally, to regard as families. They may be grouped as follows:—

1. ORNITHOCTONIDÆ.—*Ornithoctonus*, Poc., Mergui; *Omothymus*, Thorell, Pinang; *Phormingochilus*, nov., Borneo; *Citharognathus*, nov., Borneo; *Melopæus*, nov. (= *Selenocosmia*, Simon, in part), Siam.
2. SELENOCOSMIIDÆ.—*Haploclastus*, Sim., S. India; *Pæciliotheria*, Sim., S. India, Ceylon; *Chilobrachys*, Karsch, S. India, Ceylon; *Musagetes*, nov., Burma to Mergui (? *Phlogius* of Simon and Thorell, in part); *Lyrognathus*, nov., Assam; *Coremiocnemis*, Simon, Pinang; *Selenotypus*, nov., Queensland; *Selenocosmia*, Auss., Java &c.; *Phlogius*, Simon, Austro-Malaya; *Psalmopæus*, nov., East Indies.

These two families are based mainly upon the presence of the stridulating-organs that they possess between the outer surface of the mandible and the inner surface of the coxa of the palp. One of these organs, which was briefly described many years ago by Prof. Wood-Mason, is found well developed in all the genera of Selenocosmiidæ, with the single exception of *Haploclastus*, where the club-shaped rods are wanting; and the other, which has already been described by myself in 'Natural Science' for January 1895 †, is found with but little structural variation in all the genera of Ornithoctonidæ. Of course I have not been able to establish the presence of either of these organs in genera that are unknown to me; but analogy leads me to suppose that either one or the other will be found in *Haplopelma*, *Lampropelma*, *Cyriopagopus*, and

\* Mons. Simon appears to me to have fallen into error over the determination of some of these genera. For instance, the type of *Phoneyusa* is not *Greefi* of Karsch, as he states, but *belandana* of Karsch (cf. Berl. ent. Zeitschr. 1884, p. 348), because this was the *only* species referred to the genus when the latter was first established. But since, according to Simon, *belandana* is congeneric with his species *antilope*, which is the type of *Harpavotheria*, it necessarily follows that *Harpavotheria* is synonymous with *Phoneyusa*. This leaves the so-called genus of which *Greefi* of Karsch is the type without a name. I hesitate, however, to supply this apparent deficiency, on the ground that the material at my disposal seems to indicate that *Greefi* is congeneric with the type of *Hysterochrates*.

† "Musical Boxes in Spiders." Fig. 9 of this paper should have been described as a *Musagetes*, and not as a *Phormingochilus*.

*Orphnæcus*. And if one may be permitted to guess, I would suggest that the first-named will perhaps fall into the Ornithotonidæ and the last three into the Selenocosmiidæ.

No organ resembling either of those mentioned above is found in any genus that I have examined of the following Neotropical groups:—Aviculariæ, Eurypelmateæ, Theraphosæ, and Homœommateæ; nor yet in the African genera above enumerated. The South-African *Harpactira*, however, has a peculiar arrangement of hairs on the outer surface of the mandible, there being a dense scopula above and a naked space below it; but upon this naked area there is one or more curved rows of hairs which have evidently been derived from the fringe which borders the lower edge of the mandible.

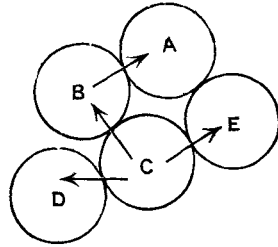
#### Family Selenocosmiidæ, nov.

With the exception of *Haploclastus*, which will, perhaps, have to be separated from it, this new family is tolerably compact. It is characterized by the possession of a stridulating-organ, composed of a series of thickened rods, upon the inner surface of the coxa of the palp, and of a corresponding series of spiniform hairs or of spicules upon the lower half of the external surface of the mandible. The fovea on the carapace is generally small, linear, transverse or crescentic, with the concavity forwards (it is larger in *Psalmopæus*). The legs are either without spines or with merely a few short ones at the apex of the protarsi or tibiæ. In the male, so far as is known, there is no spur on the tibia of the anterior legs. This, at least, is the case in the male of *Pæcilotheria*, *Chilobrachys*, *Musagetes*, *Phlogius*, and *Selenocosmia*.

Yet, although thus intimately allied, the genera with which I am acquainted fall readily into the following sections:—

- A. *Pæcilotheria*.
- B. *Chilobrachys*, *Musagetes*.
- C. *Selenocosmia*, *Phlogius*.
- D. *Coremiocnemis*, *Lyrognathus*, *Selenotypus*.
- E. *Psalmopæus*.

The mutual affinities of these sections are at present puzzling, and it is impossible to represent them accurately in a dichotomous synoptical table. It seems to me that A is related to B, B to C, C to D, C to E, and E to A. I venture therefore to attempt to express this roundabout relationship by the following diagram:—



At present I am disposed to think that, on the whole, the most primitive of these groups is C or D. For example, the strikers on the mandible in C are much less specialized than in A or B, since they are clearly nothing but long thickened hairs, whereas in A and B the hairs have been modified into granuliform spicules or genuine rigid spines. Moreover, A appears to be more specialized than B in the great development of its scopulæ, which, I take it, is a criterion of specialization. In the same way E is more specialized than C, and thus approaches A; and, lastly, if the larger size of the fourth leg is a primitive character, as seems not unlikely, the group D is more primitive than C.

N.B.—The species coming from British India, Burma, and Ceylon, which are here briefly described, I propose to discuss at greater length on some future occasion.

*Synopsis of the Genera.*

- a. Coxa of palp furnished inside with scattered irregularly arranged longer and shorter spines and spiniform setæ; without a fringe below the suture; mandible with a few irregularly arranged, long, stout, but apically filiform setæ, mixed up with the inferior fringe of red hairs. . . *Haploclastus*, Sim.
- b. Coxa of palp furnished inside with a cluster or row of club-shaped rods.
  - a<sup>1</sup>. The outer surface of the mandible furnished below and behind with long stout setæ, as in *Haploclastus*; the inner surface of the coxa of the palp without so definite a fringe below the suture, the "keys" composed of a thick cluster of club-shaped rods (except *Psalmopæus*).
  - a<sup>2</sup>. Legs of the fourth pair noticeably stronger than those of the first and clothed distally with long erect setæ; tarsal pads of the fourth leg completely divided by a row of setæ.
  - a<sup>3</sup>. The fourth leg stouter than the first, its protarsal pad entire and extending, at least on the inner side, almost up to the



- base of the segment; pad on protarsus of third covering almost the whole of the segment. . . . . *Lyrognathus*, nov.
- b*<sup>3</sup>. The fourth leg scarcely stouter than the first; its protarsal pad divided and situated on the distal fourth of the length of the segment; protarsal pad of third covering about half or two thirds of the segment.
- a*<sup>4</sup>. Eyes of anterior row straight, the lateral only a little smaller than the median, the posterior lateral of largish size; fovea small, narrower than ocular tubercle; labium narrower, only a little wider, than the ocular tubercle. . . . . *Coremiocnemis*, Sim.
- b*<sup>4</sup>. Eyes of the front row recurved, the lateral a little behind the median and only about half their size; the posterior lateral eyes also minute; ocular tubercle high, not wide, narrower than the fovea, which is very deep and strong; labium very large, nearly twice as wide as the ocular tubercle . . . . . *Selenotypus*, nov.
- b*<sup>2</sup>. Legs of the fourth pair shorter and thinner than those of the first, and normally hairy.
- a*<sup>5</sup>. Pads on the legs narrower, those on the third protarsus covering only half the segment; pad on tarsus of fourth wholly or partially divided by setæ; mandible without an external scopula, but with many spiniform setæ below; keys on the coxa of palp numerous; fovea on the carapace shallow and crescentic. . . . . *Selenocosmia*, Auss., and *Phlogius*, Sim.
- b*<sup>5</sup>. Pads and hairs on the legs developed almost as in *Pæcilotheria*; protarsus of third leg scopulate to the base; pad of the fourth tarsus entire; mandible with external scopula and only a few spiniform setæ; keys composed of a single series of rods; fovea deep and straight transversely . . . . . *Psalmopæus*, nov.
- b*<sup>1</sup>. The outer surface of the mandible furnished below and behind with a cluster of granules or short spines, which increase in length towards the lower edge, which bears, in addition, a few longer spines; the "keys" on the coxa of the palp composed of a single series of rods, between which and the suture there lies a thick fringe of long hairs.
- a*<sup>6</sup>. Pads on the feet very wide; the tarsal pad of the fourth undivided; fovea small, transversely linear; with one or more tubercles amongst the keys on the coxa of palp . . . . . *Pæcilotheria*, Sim.
- b*<sup>6</sup>. Pads on the feet narrower; the tarsal pad of the fourth wholly or partially divided by

setæ; keys on the palp and strikers on the mandible more numerous; no tubercles mixed up with the keys on the palp.

- a*<sup>7</sup>. Claws of the legs toothed ..... *Chilobrachys*, Karsch.  
*b*<sup>7</sup>. Claws of legs simple, unarmed ..... *Musagetes*, nov.

## Genus PÆCILOTHERIA, Simon.

*Synopsis of the Species.*

- a*. Femora of all the legs brown or black beneath, at least not striped; fringes of hairs on the maxillæ and mandibles brighter red; carapace adorned with very distinct fine whitish lines, radiating from the fovea; sides of the upper surface of the abdomen blacker, the median band shorter and generally indistinctly divided into two series of large pale spots; the tubercle on the coxa of the palp lying in the middle of the line of keys ..... *subfusca*, sp. n.\*
- b*. Femora of some or all of the legs white or yellow beneath and ornamented with strong black stripes; carapace without distinct radiating whitish lines, but (at least in the female) with a pair of brown bands, which extend from the ocular tubercle to the posterior border; the pale band on the abdomen larger and defined by a narrowish brown border, from which brown stripes extend externally on to the paler sides of the abdomen; fringes round the mouth less brightly coloured, often blackish; the tubercles on the maxillæ at the end of the line of keys.
- a*<sup>1</sup>. Black bands on the under surface of the femora of the first and second legs narrow, only a little wider than the yellow area above them; these femora clear lemon-yellow, the others greyish white..... *fasciata* (Latr.) †.
- b*<sup>1</sup>. Black bands on the under surface of the anterior two pairs of femora very wide, at least twice the width of the pale area above them.
- a*<sup>2</sup>. The anterior two pairs of femora yellower; the under surface of the femora, patellæ and tibiæ, and proximal end of protarsi of the second and third pairs of legs yellowish or greyish white, with a broad black band on the femora and tibiæ; only a very small black stripe at the base of the four femora; with two tubercles on the inner surface of the

\* Of this species, which appears to be the commonest of the genus, the British Museum has thirteen specimens (male and female) from Ceylon. I have little doubt that hitherto it has been confounded with *P. fasciata*.

† I have seen five specimens (male and female) of this species from Ceylon. These are, I think, referable to the species figured by Koch, Walckenaer, and Seba.

- maxilla; scopula on fourth protarsus covering only about one fourth of the segment . . . . . *striata*, sp. n. \*
- b<sup>2</sup>. The anterior two pairs of femora much whiter beneath; the under surface of the third and fourth legs not distinctly banded, covered with long hairs of a brownish-grey tint; the black stripe at the base of the femora larger; the maxilla with only one tubercle on its inner side; pad on fourth protarsus covering half the segment . . . . . *vittata*, sp. n. †

## Genus MUSAGETES, nov.

I select *M. Masoni* as the type of this genus. The species known to me may be recognized by the following table:—

- a. The keys distally increasing in size, strength, and distinctness, proximally fusing almost indistinguishably with the fringe above them; strikers on the mandible arranged in definite parallel rows. . . . . *fumosus*, sp. n.
- b. The keys proximally increasing in size and distinctness, distally becoming crowded together, smaller, and more or less blending with the fringe above them; the strikers on the mandible not arranged in definite rows.
- a<sup>1</sup>. The keys distally lying two or three layers deep, the cluster much wider at this end than at the other, the row close to the internal (lower) fringe composed of short distinct rods. . . . . *Andersonii*, sp. n.
- b<sup>1</sup>. The key cluster narrower at its distal end than in the middle, and composed of only about one row of longer and shorter hairs, which blend with the fringe.
- a<sup>2</sup>. The upperside of the femora of the palpi and legs much darker than the rest of the segments; the lower surface of the coxa, trochanter, and femur of the palpi and first and second legs internally black, externally ochre-yellow, the two colours meeting but not blending in the middle of the segments . . . . . *bicolor*, sp. n.
- b<sup>2</sup>. All the appendages of a normal and uniform pattern of colouring.
- a<sup>3</sup>. Legs longer; body and legs clothed with chocolate-brown hairs, relieved by pale stripes on the legs . . . . . *Masoni*, sp. n.
- b<sup>3</sup>. Legs shorter; body and limbs clothed with pale yellowish hairs; legs not striped. . . . . *Hardwickii*, sp. n.

*Musagetes Andersonii*, sp. n.

*Selenocosmia javanensis*, Pocock, "On the Fauna of the Mergui Archipelago," Journ. Linn. Soc., Zool. xxiv. p. 317 (1892).

*Colour*.—Trunk and limbs covered above and below with

\* A single female specimen from Pinang (Hardwicke Coll.).

† A single male example from S. India.

a clothing of uniformly brownish-yellow hairs; the longer setæ of very much the same tint.

*Carapace* oval, considerably longer than wide, not very high anteriorly, the radiating grooves well-marked; the fovea strong, crescentic, a little wider than the ocular tubercle; tubercle of medium size, scarcely a trace of any clypeal border; distance between anterior eyes and anterior edge equal to about twice a diameter. *Eyes* of anterior row slightly procurved, large, subequal, and equidistant from each other, the distance between them distinctly less than the diameter of a median eye; eyes of posterior row straight, the two on each side not very unequal in size, the lateral considerably smaller than the anterior lateral.

*Mandible* with 14 teeth along the outer edge of the lower border, which is granular behind; keys on the maxilla about four rows deep distally, the rows near the oral (internal) fringe quite distinct from the fringe below the suture: proximally the keys are arranged in two distinct rows near the middle of the segment; one row, close to the external fringe, is composed of small spiniform setæ, the other, nearer the oral fringe, of stout distinct rods, which rapidly decrease in length towards the base of the segment.

*Labium* nearly square, only a little wider than long, with its sides slightly converging, densely spinulose, its width much greater than that of the ocular tubercle and greater than that of the fovea. *Sternum* a shade longer than wide, as wide between the coxæ of the first as of the third legs; distance between the posterior impressions almost equal to the width of the labium.

*Legs* long and slender, the first stouter than the fourth, but a little shorter, all of them attenuate, with narrow scopulæ; scopula on protarsus of third covering nearly the whole of the segment, that on the fourth covering about half the segment and divided; that on the fourth tarsus divided by a band of setæ in its basal half; patella and tibia of fourth shorter than of first and equal to length of carapace; protarsus of fourth just exceeding width of carapace and about equal to the length of the protarsus and tarsus of the second leg; patella of second and of fourth about equal; tarsus of fourth a little longer than of first. Spinners as long as tibia of fourth.

*Measurements in millimetres.*—Length of carapace 23·5, width 20; length of sternum 10·2, width 10; length of labium 3·5, width 4; length of palp 45, of first leg 70, of second 62, of third 56, of fourth 74·5.

*Loc.* Mergui (*Dr. John Anderson*). A single female example.

*Musagetes Masoni*, sp. n. (Pl. X. fig. 6.)

This species, of which the British Museum has a considerable number of specimens from Silhet, much resembles *M. Andersonii* in general features.

The carapace, mandibles, and bases of the limbs are clothed with yellowish-brown hairs; the legs with blackish-brown hairs relieved by paler lines, especially noticeable on the patellæ, and by a spot of the same colour upon the distal extremity of the femur and following three segments; the lower surfaces of the trunk and limbs are deep velvety blackish brown.

The legs closely resemble those of *Andersonii*, but the fourth do not appear to be quite so long, *e. g.*, the protarsus is noticeably shorter than the width of the carapace; moreover the scopulæ of the front legs are rather wider than in *Andersonii*.

Total length 40 millim.; length of carapace 19·5, width 17·5.

*Musagetes Hardwickii*, sp. n.

A smaller species than *M. Masoni*, with yellowish-brown colouring and shorter legs, the patella and tibia of the fourth being less than the length of the carapace (which is about equal to these segments in the first leg), and with the fourth protarsus also much shorter than the width of the carapace.

Total length 33 millim.; length of carapace 17·5, width 14·5.

*Loc.* Burdwan, India (Hardwicke coll.).

*Musagetes bicolor*, sp. n.

This species is based upon a handsome male example obtained by Mr. E. W. Oates in Kijouske (Upper Burma). The colouring of the appendages is perhaps its most striking feature.

*Musagetes fumosus*, sp. n. (Pl. X. fig. 7.)

A uniform brownish-black colour all over, with the fourth legs longer than the first apparently, the patella and tibia of the first being only a little longer than of the fourth, the protarsus of the fourth shorter than the width of the carapace.

Total length 37 millim.; length of carapace 17·5, width almost 15.

*Loc.* North India (probably Assam). A single dried female.

In addition to the above it is probable that the Burmese species referred to *Phlogius* by both Simon and Thorell,

namely *P. soricinus*, Thor., and *P. flavopilosus*, Sim., will fall into this genus, and also *Mygale stridulans* of Wood-Mason, the type of which I hope is still in the Museum at Calcutta. The figure of *stridulans* is not accurate enough to do more than show that the anterior legs are stronger than the posterior, which seems to prove that specimens which Mr. Peal has subsequently sent to England from Assam as *stridulans* are not in reality that species; for these specimens, for the opportunity to examine which I am indebted to Mr. O. E. Janson, are referable to my genus *Lyrognathus*, with very strong hind legs.

Genus LYROGNATHUS, nov.

*Lyrognathus crotalus*, sp. n.

This species is based upon a spider from Assam which offers the characters pointed out in the generic diagnosis. I may further add that the carapace is moderately high in front, is much longer than wide, and has a crescentic fovea. The scopulæ on the legs are very well developed, especially that on the fourth postarsus, and all are entire, except that on the tarsus of the fourth, which is completely divided.

The cluster of keys on the maxilla blends both proximally and distally, and externally with the external fringe of hairs, the two together occupying nearly the whole of the area between the suture and the internal or oral fringe; the keys lying next the oral fringe are the longest of all, distinct from the rest, and strongly clavate. There appear to be only 8, or perhaps 9, teeth, which posteriorly decrease in size, on the internal side of the lower edge of the mandible.

Total length 26 millim.; length of carapace 13·5, width 10.

In some of its characters, *e.g.* in the approximate equality in length of the protarsus and tibia of the fourth leg, and the much greater length of the patella and tibia of the fourth than of the first, as well as in the large size of the scopulæ, this genus approaches *Cyriopagopus* of Simon from Tavoy. But in the latter the scopula on the fourth protarsus is divided by a line of setæ, and occupies only the distal third of the segment.

Genus COREMIOCNEMIS, Simon.

*Coremiocnemis*, Simon, Hist. Nat. Araignées, 1892, p. 146.

*Coremiocnemis validus*, sp. n. (Pl. X. fig. 5.)

Apparently resembling the type, *C. cunicularius*, from

Pinang (Ann. Soc. Ent. Fr. 1892, p. 279), in the structure of its legs, but differing in size (*cf.* measurements), colour, and probably in many other characters.

♀. *Colour* reddish brown, clothed with yellowish hairs.

*Carapace* not high, flattish, a little longer than wide; *eyes* decreasing in size in the following order—ant. median, ant. lateral, post. lateral, post. median; fovea strongly crescentic, small, narrower than the ocular tubercle.

*Labium* much wider than long; its width less than half the length of the posterior edge of the maxilla, and only a little greater than the width of the ocular tubercle. *Sternum* wide, oval, width between the posterior impressions about equal to the length of the labium.

*Mandible* with strikers composed of a relatively small number of stout, apically filiform setæ situated close to the fringe of red hairs, and passing above into fine whitish hairs; the area on which the fang closes bounded externally with 15 teeth, and granular behind.

*Palp* with the keys or notes composed of a thick cluster (3 or 4 rows) of clavate apically-pointed rods.

*Legs* unarmed, except for a few (1 or 2) spines at the apex of the protarsi; long and slender; scopulæ normal, that on the protarsus of the third covering two thirds of the segment; that on the tarsus of the fourth divided by a very fine line of setæ; patella and tibia of fourth longer than of first; protarsus of fourth longer than protarsus and tarsus of first.

*Measurements in millimetres.*—Length of carapace 20, width 17·5; length of abdomen 25, of palp 35, of first leg 55, second leg 48, third leg 46·5, fourth leg 68, of posterior spinner 11·5.

*Loc.* East Indies. A single specimen.

#### Genus SELENOTYPUS, nov.

*Selenotypus plumipes*, sp. n. (Pl. X. figs. 2–2*b.*)

♀. *Colour* a uniform reddish brown, covered with brownish-red hairs, those on the three distal segments of the posterior legs long.

*Carapace* considerably longer than broad, radiating grooves conspicuous; head-region high; fovea very strong, crescentic, the area around it slightly depressed, wider than the ocular tubercle; ocular tubercle elevated, not wide, running right up to the edge of the carapace, so that there is no true clypeus, the distance between the anterior median eye and the front edge of the tubercle nearly or perhaps quite twice the diameter of the eye; the anterior eyes about equidistant from each other, the distances being about equal to the diameter of the

lateral or half the diameter of the median; eyes of posterior row recurved, the lateral separated from the anterior lateral by at least twice their diameter, and much smaller than them; the median nearly as large as the lateral, and very distinctly separated from them.

*Labium* very wide, densely spinulose, its width almost equal to half the posterior length of the maxilla, and nearly twice as great as the distance between the posterior sternal impressions.

*Sternum* oval, only a little longer than wide.

*Mandible* not scopulate externally, but furnished behind with a depressed setose area; strikers composed of a large number of stout spiniform, but apically filiform, setæ, lying above behind and fusing with the fringe, the groove for the fang granular behind and bordered externally with 12 stout teeth; the *keys* on the maxilla composed of a long cluster of numerous club-shaped rods, which proximally and distally decrease in size and blend with the hairs of the fringe lying above them.

*Legs* unspined, except on the apices of the protarsi; length 4, 1, 2, 3, the fourth longer than the first by nearly twice the length of the former's tarsus; all the legs rather slender; scopulæ narrow, that on the third protarsus covering about half the segment, that on the fourth protarsus covering about one third of the segment and completely divided; scopula on fourth tarsus divided by a very narrow band of setæ; patella of first and of fourth about equal; tibiæ very unequal; protarsi of fourth longer than tarsus and protarsus of first, and just about equal to the width of the carapace, the patella and tibia of fourth slightly exceeding the length of carapace; the long hairs on the posterior legs straight and not woolly.

*Posterior spinner* a little longer than the fourth tarsus, its apical segment one third longer than the second.

*Measurements in millimetres.*—Length of carapace 21, width 17; length of abdomen 31, width 19; length and width of sternum 8·8; width of labium 4·3, length 2·3; length of palp 41·8, of first leg 62, of second 53, of third 50·2, of fourth 74; first leg: femur 14·5, patella 9, tibia 10·5, protarsus 9, tarsus 6; fourth leg: femur 16·2, patella 9, tibia 12·2, protarsus 17, tarsus 8·2.

*Loc.* Major's Creek, Townsville in Queensland. One example.

This spider was discovered by Mr. Dodd S. Clarke at a distance of two feet below the surface of the ground. It was kindly presented to the British Museum by Mr. Florence O'Driscoli.



## Genus PSALMOPÆUS, nov.

*Psalmopæus Cambridgii*\*, sp. n. (Pl. X. figs. 3-3b.)

♀. *Colour* (possibly faded): upperside of trunk and limbs clothed with greyish-yellow hairs; the lines on the limbs with whitish hairs; a reddish-yellow pad on the upperside of the tarsi and a stripe of the same colour on the protarsi; lower surface of carapace and coxæ chocolate-brown; the long fringes on the appendages yellowish red; the fringe on the mandible and maxillæ blood-red; the upperside of the abdomen marked with a darker median band.

*Carapace* moderately high in front, a little longer than wide, the radiating grooves strongish; the *fovea* strong, deep, transverse, a little narrower than the tubercle; *tubercle* large, wide, projecting slightly beyond the anterior border, which is thus convex at this spot; distance between front edge of tubercle and median eye about equal to diameter of latter. *Eyes* of front row about straight, equidistant, median the largest and separated by a space which is less than their diameter; posterior lateral a little smaller than anterior lateral; length of carapace a little less than that of patella and tibia of fourth leg, width equal to length of protarsus and half the tarsus of the same leg.

*Sternum* oval, noticeably longer than wide, equally wide between the coxæ of the legs of the second and third pairs; distance between the posterior impressions less than the width of the tubercle, equal to that of the fovea, and greater than that of the labium. *Labium* as long as wide, parallel-sided, densely spinulose, separated from the sternum by a very deep smooth groove.

*Mandible* with a well-developed external velvety pad of long simple hairs, naked below, the strikers consisting of a small number of apically filiform spiniform setæ arranged on the lower edge behind the red fringe; the margin granular behind, armed internally with eleven large teeth.

*Maxilla* scantily clothed with setæ below the suture; the keys composed of a single curved row of fourteen stout rods; proximally these rods are short and stout, but distally they become gradually longer, thinner, and more club-shaped, and ultimately pass into the hairs of the thick fringe, each is tipped with a minute hair.

*Palp* with its trochanter and base of femur furnished externally and internally with a scopula of short brown hairs.

*Legs* long, the first pair the longest, the second as long as the fourth, unarmed except for a few small spines at the apices of the tibiæ; the tibiæ, protarsi, and tarsi furnished

\* In honorem amici mei, F. O. P. Cambridge.

externally and internally with thick fringes of long silky hair, the femora also, especially the anterior pair, with a strong external fringe; all the scopulæ wide, well-developed, and entire, except that on the fourth protarsus, which is divided and extends over the distal third of the segment, the scopula on the lower surface of the third protarsus covering nearly the whole of the segment.

(Spinners fractured.)

*Measurements in millimetres.*—Length of carapace 20, width 18.5; length of palp 38, of first leg 69, of second and fourth about 63, of third 52.

A single female specimen, ticketed 'East Indies,' possibly from Pinang, since the specimen was taken from a bottle which also contained an *Omothymus*.

#### Family *Ornithoctonidæ*, nov.

Mandible furnished externally and below with a dense pad (scopula) composed of short feather-like hairs; the area below this pad smooth, but bearing at the base a small number of large, curved, barbed setæ, which spring from the scopula above. The adjacent surface of the maxilla sparsely setose, but armed above and below the suture with tuberculiform spines. Pads on the tarsi large and entire. Tibiæ and protarsi of legs apically spined.

#### *Synopsis of Genera.*

- a. Legs of the fourth pair measured from base of femur longer than those of the first and noticeably stouter; their tibiæ thicker than their femora, and, like the protarsi, spinulose . . . . *Citharognathus*, nov.
- b. Legs of the fourth pair not longer than those of the first, and thinner; their tibiæ much narrower than their femora.
- a<sup>1</sup>. Legs short and robust; width of anterior and posterior tibiæ more than a third of their length; ocular tubercle small; clypeus wide . . . . . *Ornithoctonus*, Poc.
- b<sup>1</sup>. Legs longer and thinner; width of anterior and posterior tibiæ less than a third of their length.
- a<sup>2</sup>. Carapace high; ocular tubercle small, high, not much wider than long; clypeus longish . . . . . *Melopæus*, nov.
- b<sup>2</sup>. Carapace lower; ocular tubercle low, very wide, nearly twice as wide as long; clypeus short.
- a<sup>3</sup>. Sternum oval, as wide between the first coxæ as between the third (tarsal pads wider, protarsal pads shorter, protarsi slenderer) . . . . . *Omothymus*, Thor.
- b<sup>3</sup>. Sternum narrowed in front, much wider between the third than between the first coxæ . . . . . *Phormingochilus*, nov.

Genus *OMOTHYMUS*, Thorell.

*Omothymus*, Thor. K. Sv. Vet.-Akad. Handl. xxiv. no. 2, p. 11 (1891).

Type, *O. Schiædtei*, Thorell, from Pinang.

The British Museum has specimens (male and female) of this genus. The female from Pinang is probably to be named *Schiædtei*; possibly also the male, which has no nearer locality than East Indies, is the same species. At all events it does not differ apparently in any characters that are to be relied upon from the male of *Schiædtei* as described by Thorell.

Genus *ORNITHOCTONUS*, Poc.

*Ornithoctonus Andersonii*, Poc.

*Ornithoctonus Andersonii*, Poc. Journ. Linn. Soc., Zool. xxiv. pp. 317, 318, pl. xxii. figs. 1-3 (1892).

Loc. Mergui; also Burma (Mus. Brit.).

Genus *MELOPÆUS*, nov.

This genus is based upon several specimens in the British Museum from Siam and Hong Kong, which I believe are referable to the species described by Simon as *Selenocosmia albo-striata*\*. The male is unknown to me, but according to Simon it has a short process upon the tibia of the first leg.

Genus *PHORMINGOCHILUS*, nov.

*Phormingochilus Everetti*, sp. n. (Pl. X. figs. 4-4b.)

♀. *Colour*. Carapace, mandibles, and limbs covered with a yellowish-ashy clothing of short hairs; the long setæ reddish grey, black at the base; the abdomen reddish yellow, with an obscure median blackish band, from which blackish stripes pass laterally; lower surface of abdomen, the sternum, and the coxæ blackish; fringes of blood-red hairs on the maxillæ and mandibles.

*Carapace* somewhat as in *Selenocosmia* but lower, the radiating grooves conspicuous; the fovea shallowish, its anterior and posterior walls nearly contiguous, transverse, straight, not so wide as the ocular tubercle; *tubercle* low, very wide, wider than long, distance between it and the front edge of the carapace equal to about half the length of the tubercle. *Eyes* of anterior row procurved, anterior edge of the median on a level with the middle of the lateral; lateral elliptical; median circular and a little larger, evenly spaced, the distances between them about equal to the small diameter of one of the lateral; posterior row straight, the median small, the lateral elliptically elongate, smaller than anterior lateral.

\* Actes Soc. Linn. Bord. xl. p. 161 (1886).

*Mandible* armed below with about 11 teeth, which are larger in front and behind, and mixed up in the middle with small teeth, continuous with the granules which cover the hinder half of the area.

*Labium* smallish, much wider than long, narrower than the ocular tubercle, separated by a deep groove from the sternum, densely spinulose like the internal angle of the base of the maxilla.

*Sternum* considerably longer than wide, widest between the coxæ of the third leg, narrower forwards, distance between the posterior impressions about equal to the width of the ocular tubercle.

*Legs* 1, 4, 2, 3, long and slender, the first pair stouter as well as longer than the fourth; patella and tibia of first longer than of fourth, and a little longer than the carapace, the length of which is a little greater than the patella and tibia of the fourth; tarsus and protarsus of first equal to width of carapace, shorter than those of fourth by one third of the tarsus; tarsus of first the longest, of second and fourth about equal; tarsus of palp longer than that of first leg, and measured to apex of scopula longer than tibia of palp; protarsi of first only slightly longer than that of third; tibiæ of first and fourth about equal; patellæ of third and fourth almost equal, and shorter than that of the second; *scopulæ* wide, entire, except that on protarsus of fourth, which is divided and covers rather more than one third of the segment, that on the third covering more than half. Posterior spinners about equal in length to the protarsus of the third; second segment shorter than first or third, which are about equal.

*Measurements in millimetres.*—Carapace, length 28·5, width of tubercle 4·5, length 3·2; abdomen (somewhat shrivelled), length 26, width 18; length of sternum 12·5, width between coxæ of third legs 10, between those of first legs 8. Appendages: length of palpi 50, of first leg 81, of second 74, of third 65, of fourth 79; posterior spinner 12·5.

*Loc.* N.W. Borneo (probably mainland opposite Labuan). One specimen obtained by A. Everett, Esq., in 1888.

*Phormingochilus tigrinus*, sp. n.

♀. *Colour.*—Carapace clothed with yellowish-red hairs, redder at the sides; abdomen reddish, with strongly defined, lateral, fuscous spots and stripes and a median fuscous band; the lower side of the body, and of the coxæ and femora, a very deep blackish green; scopulæ olive-green; the long setæ on the limbs and trunk reddish.

*Carapace* a little wider than in *Everettii*, the width being

about equal to the distance lying between the posterior edge of the tubercle and the hindermost point of the posterior border, whereas in *Everettii* it is distinctly less; moreover, the slope from the tubercle, along the middle line, to the posterior edge is gradual, whereas in *Everettii* there is a very noticeable and abrupt alteration of level in front of the fovea; in the eyes of the anterior row the lateral are larger and closer to the median and to the posterior lateral, which are also relatively larger than in *Everettii*.

*Sternum* wider than in *Everettii*, the length only just exceeding the width, which, between the coxæ of the second leg, is greater than the length of the tibia of the palp; whereas in *Everettii* the sternum at this spot is, if anything, less than the tibia of the palp; distance between the posterior impressions less than the width of the tubercle.

*Legs* as in *Everettii*, except that the first is a little shorter than the fourth (the two measured along the upperside from the base of the proximal end of the trochanter to the apex of the claws); the femur and trochanter of the first shorter than the carapace (just about equal in *Everettii*); the first leg only excelling the length of the third by a little more than its tarsus, whereas in *Everettii* the excess amounts to the tarsus and nearly half the protarsus.

*Measurements in millimetres.*—Length of carapace 18·5, width 16·5; length of abdomen 17, of palp 32, of first leg 53, of second 47·5, of third 44, of fourth 54, of posterior spinner 8·5.

*Loc.* Kuala Lama, N. Borneo (*A. Everett, Esq.*). One specimen

With this specimen was the following note in Mr. Everett's handwriting:—"Found in a bird's nest, in which it had killed the young bird. Under surface of feet iridescent, with fine metallic-blue and green reflections. The small spider was taken on the large one." The said small spider proves to be a *Scytodes* of some kind or other.

I separate this species from *Everettii* on the characters mentioned in the diagnosis. The specimen appears to be mature, so there are no reasons for supposing that the species has been based upon immature characters.

In addition to the types of the two above-described species the British Museum has a third specimen, a male, from Borneo, which is, I think, probably the male of *Everettii*. The palpi and legs are very long, as in the male of *Omothymus*—the palpi being about  $2\frac{1}{2}$  times the length of the carapace, with the tibia twice the length of the patella. The carapace, which

measures 15.5 millim. long and 13 wide, is much flatter than in the females. The tarsus of the palp is apically truncate, the bulb is furnished with a stout shortish process, which seems to be semicircularly curved when viewed from the outside, its internal edge being carinate.

Unlike the male of *Omothymus*, there is no trace of a process on the tibia of the first leg.

Genus CITHAROGNATHUS, nov.

*Citharognathus Hosei*, sp. n. (Pl. X. figs. 1-1 b.)

♀.—*Colour*. Carapace, abdomen, and limbs clothed with yellowish-grey hairs; the abdomen and posterior legs finely spotted with black spinules, the former with an obscure, median, fuscous, longitudinal stripe and transverse fuscous stripes parting from it: legs apically redder, the long setæ on legs and abdomen yellowish red; apices of femora, patellæ, tibiæ, and protarsi whitish; lower side chocolate-brown.

*Carapace* low, head-region but little elevated, much longer than wide, the radiating grooves shallow; the fovea straight, conspicuous, with anterior and posterior walls nearly in contact, not so wide as the ocular tubercle; ocular tubercle about one third wider than long, its front edge close to edge of carapace; the width of the clypeus not more than half the diameter of anterior median eye; the anterior lateral eye separated from the edge by a space which is distinctly less than its long diameter. *Eyes* large, the anterior row procurved, the median the largest, the distance between them equalling about half their diameter and equalling the distance between the median and lateral; the lateral not much more than half the size of the median, elliptical; the posterior lateral about as large as the anterior lateral and the same shape, the distance between them a little less than their short diameter; posterior median largish and closer to the lateral than to the anterior median.

*Mandible* furnished below with a series of 14 teeth bounding the internal edge of the inferior area; this area granular behind.

*Labium* small, wider than long, its sides converging forwards, its anterior border lightly concave, spinulose. *Sternum* wide, a little longer than wide, as wide between the coxæ of the first as of the second; distance between the posterior impressions a little greater than the width of the labium.

*Abdomen* large, closely covered above with short backwardly directed spinules.

*Legs* 1, 1, 2, 3, the patella and tibia of the first a little

shorter than those of the fourth, and about equal to the length of the carapace; the tibia about three times as long as wide, armed at its distal end externally and internally with a row of small close-set spines; the scopulæ covering the protarsi below, except for a fringe of hairs at the base: second leg like the first, except shorter, its coxa noticeably shorter than that of the first: third leg stout, with its protarsus, tibia, patella, and the distal end of the femur closely studded with spiniform setæ; the tibia a little wider than the tibia of the first, its width half its length; its protarsus as long as that of the first, slightly bowed at the base above, its basal third below not covered with the scopula: fourth leg much like the third, but considerably longer and much stouter; the tibia the widest segment, wider in the middle than at the two ends, lightly convex when viewed from the side or from above, a little more than twice as long as broad and a very little shorter than the protarsus, which is slightly bowed at the base and has its distal half covered below by a divided scopula; the tarsal scopulæ are all wider than the tarsi, and the claws are, so far as can be seen, unarmed.

*Palpi* stretching past the middle of the tibia of the first leg; the tarsus (not including claws) about equal to the patella and slightly shorter than the tibia.

*Spinners* about as long as the tibia of the first leg; the first and second segments subequal, the third the longest.

*Measurements in millimetres.*—Length of carapace 17·5, width 14; length of abdomen 26, width 16; length of palp 29, of first leg 48·5, of second 44, of third 41, of fourth 53, of posterior spinner 9.

*Loc.* Sarawak (type); Baram. Collected by C. Hose, Esq.

#### EXPLANATION OF PLATE X.

- Fig. 1.* *Citharognathus Hosei*, sp. n.; carapace, nat. size. 1 *a.* Ditto, posterior leg, nat. size. 1 *b.* Ditto, sternum, nat. size.  
*Fig. 2.* *Selenotypus plumipes*, sp. n.; carapace, nat. size. 2 *a.* Ditto, posterior leg, nat. size. 2 *b.* Ditto, sternum, nat. size.  
*Fig. 3.* *Psalmopæus Cambridgii*, sp. n.; carapace. 3 *a.* Ditto, external surface of mandible. 3 *b.* Ditto, inner side of maxilla.  
*Fig. 4.* *Phormingochilus Everetti*, sp. n.; carapace of ♀, nat. size. 4 *a.* Ditto, sternum of ♀, nat. size. 4 *b.* Ditto, external view of mandible of ♂.  
*Fig. 5.* *Coremiocnemis validus*, sp. n.; ♀, posterior leg.  
*Fig. 6.* *Musagetes Masoni*, sp. n.; external view of mandible.  
*Fig. 7.* *Musagetes fumosus*, sp. n.; external view of mandible.