

confined to the Transvaal, which is, however, decidedly improbable. I brought home two specimens with me in 1896, and during a visit to the Pretoria Museum last October I was able to inspect a fair series of both sexes.

Tibicen sirius, sp. n.

Head and thorax chocolate-brown. Head with the central area to face, anterior margin, apex of front, and area of the ocelli black. Pronotum with two blackish, narrow, central, contiguous fasciæ, widened anteriorly and posteriorly. Mesonotum with four obconical black spots, the central two smallest, the lateral ones very long; central area of cruciform elevation black. Abdomen rufous-brown, the segments more or less transversely streaked with piceous, and with a distinct series of linear black spots on each lateral margin. Head beneath and sternum palely tomentose; legs chocolate-brown, streaked with piceous; tarsi piceous, posterior femora and tarsi ochraceous; opercula dull ochraceous; abdomen beneath rufous-brown, with a faint central, longitudinal, macular, piceous fascia.

Tegmina and wings pale hyaline, both with a very distinct basal ochraceous patch; venation fuscous; wings with a small fuscous spot at apex of radial area, posterior margin of abdominal area also very distinctly fuscous.

Long. excl. tegm., ♂, 17 millim.; exp. tegm. 47 millim.

Hab. Transvaal, Lydenburg District (*Pret. Mus. and Coll. Dist.*).

This species is superficially to be recognized by the basal ochraceous areas to the tegmina and wings. The rostrum reaches the intermediate coxæ; the anterior femora are provided with two long acute spines.

XII.—*The Genus Pœcilotheria: its Habits, History, and Species.* By R. I. POCOCK, of the British Museum of Natural History.

[Plate VII.]

Part 1.—*Observations on the Habits and History of the Genus.*

THE genus *Pœcilotheria* is a representative of that great and almsot cosmopolitan group of spiders which was formerly included under the comprehensive title *Mygale*—a term which is still to be found in many recent text-books of zoology and

also in popular works on natural history, where special reference to them is made on account of their size and alleged propensity for killing and eating small birds. The truth on this point appears to be as follows:—

Madame Merian, who was one of the first to make known the existence of these large spiders, although stating that the species she observed in Surinam feeds mostly on ants, asserted that they also take young humming-birds from their nests when the supply of insects runs short; and this description is accompanied by a coloured figure of a spider devouring one of these birds. The accuracy of this observation was subsequently confirmed by Mr. Bates, who also gave an illustration of the destruction of a small bird by one of these great spiders. A similar story accompanied by another figure is told in 'The Illustrated Natural History' by the late Rev. J. G. Wood. Thus from the small substratum of fact established by Madame Merian arose the widespread and sensational belief that the staple article of food of these spiders consists of small birds. As a matter of fact, there is no doubt that they feed almost entirely upon insects; but they will certainly also kill and devour any living animal they are powerful enough to overcome. In support of this statement and of those made by Madame Merian and Mr. Bates it may be added that during his stay in Borneo Mr. A. Everett captured a specimen of the species I have described as *Phormingochilus tigrinus* in a bird's nest, where it had killed the young bird; and that the specimen of *Pœcilotheria* described below as *P. regalis* and figured on Pl. VII. was, when captured, devouring a small rat which presumably it had killed.

Apart from diet, these large spiders differ somewhat in mode of life. Most of them live on the ground beneath stones or in deep burrows which are excavated in the soil and lined with a layer of silk, to prevent the infall of loose particles of earth or sand. Others, again, are found in trees, where they spin a light silken domicile either between forked branches, or in the hollow trunk, or in leaves rolled up for the purpose. The species of *Pœcilotheria* are now known to be tree-living forms. Colonel Yerbury, for instance, tells me that in Ceylon he discovered *P. fasciata* on trunks of trees, where they spin a light web in the angle formed by a projecting branch; and a specimen of a species closely allied to *P. regalis* that was sent from the Thana district in the Bombay Presidency by Mr. A. G. Edie fell off a tree when it was struck with an axe; lastly, the specimens of the three S.-Indian species recorded below were captured in the stacks of timber cut in the forests for fuel.

In addition to their great size, a feature in which they are scarcely surpassed by any spider in any country, the species of *Pæcilotheria* are remarkable for their varied colouring. The upperside of the body and limbs is ornamented with blotches and stripes of brown and grey; and since it is now known that the spiders live on trees, there can be no doubt that this type of coloration subserves the purpose of concealment, since it must harmonize very closely with the pattern of a tree-trunk overgrown with patches of grey lichen and moss. But the colouring of the lower side is startlingly different from that of the upper, and is quite unlike anything that is to be met with in the spiders allied to *Pæcilotheria*, though coloration of a similar kind is known to occur in many species of the families Lycosidæ, Heteropodidæ, &c. This coloration in most species consists of a deep chocolate-brown or black tint on the lower side of the thorax, abdomen, and coxæ, while the legs are nearly white or lemon-yellow, beautifully slashed with black bands and tipped with hairy pads of iridescent hue. It is at first sight puzzling to account for the existence of such colours on the lower surface of a spider, where under ordinary circumstances they cannot possibly be seen. But it is known that when molested these animals rear themselves on their hind legs and brandish the fore pairs and palpi in the air, adopting, in fact, a position in which the colours are plainly displayed to view. Some of the other spiders mentioned above belonging, *e. g.*, to the Heteropodidæ, which, although small as compared with *Pæcilotheria*, are yet of considerable dimensions, are known actually to turn on their backs when molested. Taking these facts into consideration, and remembering that black and white or black and yellow stripes constitute the badge with which Nature, for purposes of protection, has endowed poisonous or inedible animals, so that they may be at once recognized by their foes and let alone—remembering, too, that these spiders possess poison-glands of large size and are armed with irritating bristles, I have no hesitation in ascribing the unusual coloration of the under surface to the category of warning characters. They also possess a method of self-advertisement, which no doubt subserves the same end, in the form of a stridulating-organ lodged between the mandible and the palp, and consisting of vibratile club-shaped rods and of bristles which set them a-sounding.

During 1898 the British Museum received from Mr. H. R. P. Carter* representatives of three new species of *Pæcilotheria*;

* I gladly take this opportunity of expressing my great obligation to

and since the British Museum has examples of all the known species of this genus, I hasten to describe these three new forms, together with one from Ceylon, and to give a brief recapitulation of the history of the genus and of the habits of the species, so that those willing to avail themselves of the opportunity of collecting material of this group may know where to search for specimens and may learn what has been ascertained up to the present time of the species. It is hoped, too, that they may be able to determine the specimens they procure, and, particularly, may be brought to realize that in all probability many more specific representatives of this genus exist than have hitherto been discovered, so that the trouble of collecting even in localities where these spiders have already been found will be well repaid by results.

Apart from the chance that it offers of bringing new species to light, the acquisition of fresh material will teach us a great deal about such matters as the variations to which these spiders are subject as they pass from the young to the adult condition, and of the differences that obtain between the two sexes both before and after maturity.

For example, out of the four species that are here recorded from S. India, we only know the two sexes in one instance, that is to say, in the case of *P. regalis*. Of the others, *P. vittata* is represented in the British Museum collection by a single male, *P. metallica* by a single female, and *P. formosa* by several females but no male. Again, the alleged Pinang species *P. striata* is also only known from the female sex. This is true as well of the Ceylon species *P. ornata*, although fortunately in the case of the remaining two species from this island, namely *P. fasciata* and *P. subfusca*, we possess examples of both sexes. And since, owing to the great sexual differences that spiders present, our knowledge of a species is very incomplete until both male and female have been captured, it is clear that much still remains to be accomplished in the case of more than half the species that have been established.

Judging of the species of *Pœcilotheria* of which the males and females are known, it may be asserted with regard to specimens of the former sex that they resemble the females in the coloration of the *lower* surface of the body and limbs, but that the *upper* surface is much more uniformly tinted, the

Mr. Carter, who, upon learning that the National Collection was in want of these spiders, kindly wrote to his friends in S. India and used his influence to such good purpose that I am now able to add three fresh species of this genus to the faunistic lists of India.

pale bands and patches being far less clearly defined. They also resemble the females in the development of the femoral fringes on the legs; but they differ strikingly from them in the much smaller size of the body and the relatively much greater length of the limbs, and also, as in the case of all spiders, by the presence of the so-called palpal organ on the tarsal segment of the palpus or short limbs of the first pair. This is the intromittent organ of the male, and in *Pæcilotheria* takes the form of a horny pear-shaped structure with three sharp crests running spirally round its narrow apical portion.

The earliest known species of the genus *Pæcilotheria* was described by Latreille as *Mygale fasciata*, and was based upon the figure of a large spider named *Aranea maxima ceilonica*, published in Seba's 'Thesaurus,' vol. i. pl. lxxvii. The true *fasciata*, therefore, is a Ceylonese species.

C. Koch, who was practically the first to dismember the old genus *Mygale* of Latreille and Walckenaer, in 1850 gave to this Ceylon spider the generic name *Scurria*. Unfortunately this name had three years earlier been applied to a mollusk, and since it is against the rules of zoological nomenclature for the same name to be used for two distinct animals, Simon in 1885 proposed *Pæcilotheria* to replace *Scurria* of C. Koch.

Up to 1885 the genus *Pæcilotheria*, with its supposed single species *fasciata*, was considered to be peculiar to the island of Ceylon. In that year, however, Simon recorded the occurrence of the species from Ramnad, in the Madura district of S. India (Bull. Soc. Zool. France, 1885, p. 38). Touching the accuracy of this determination, it is permissible to have doubts; nevertheless the discovery that the genus is not confined to Ceylon was important. No one, however, seems to have suspected the existence of more than one species of *Pæcilotheria* up to 1895. Early in that year I worked out the material of this genus contained in the British Museum, with the result that two well-marked, sharply defined species of the genus were found to occur in Ceylon, another in S. India, and a third in the island of Pinang*. These species were briefly described in the February number of the 'Annals.' The discovery of two species in Ceylon of course raised the whole question as to which of the two was the genuine *fasciata*. The two species seem to be equally common in the island, and it was quite certain that specimens

* For correction of this locality see note on p. 96.

of both species were preserved in the various collections in Europe and were passing under the name *fasciata*.

Reference, however, to Seba's original figure, imperfect in many respects though it be, shows that the pattern of the upperside of the abdomen in the original *fasciata* consists of a pale longitudinal band surrounded by a narrow dark brown border, whence narrow stripes of the same colour run on to the sides of the abdomen very much as is shown in the case of *P. regalis* on Pl. VII. This type of coloration is very noticeable in one of the Ceylonese species, but not so in the other. To the former therefore I restricted the name *fasciata*, and described the latter as a new species *subfusca*. The most striking differences between the two, however, do not consist so much in the pattern of the abdomen and carapace, as in that of the underside of the legs, the femoral segments of which are beautifully banded black and yellow in *fasciata*, while in *subfusca* they are of a uniform chocolate-brown tint. The other two species that were described in that paper, namely the one from Pinang and the one from S. India, have the femora banded somewhat as in *fasciata*, and two out of three from S. India and the one from Ceylon established in the following pages are similarly coloured, while the fourth more nearly approaches *subfusca* in having the femora unstriped.

Part 2.—*Descriptions of the Species.*

(1) *Pœcilotheria fasciata* (Latr.). (Pl. VII. fig. 2.)

Mygale fasciata, Latreille, Nouv. Dict. d'Hist. nat. xv. p. 304 (1803); also Hist. nat. Crust. et Ins. vii. p. 160 (1804), &c.; Walckenaer, Hist. nat. des Aranéides, iv. 1, with fig. (1806); Hahn, Monographie der Spinnen, pl. i. (1820); id. Die Arachniden, ii. p. 65, fig. 157 (1834); C. Koch, Die Arachniden, ix. p. 41, fig. 717 (1842).

Scurria fasciata, C. Koch, Uebersicht des Arachnidensyst. pt. v. p. 74 (1850).

Pœcilotheria fasciata, Simon, Bull. Soc. Zool. Fr. 1885, p. 38; Pocock, Ann. & Mag. Nat. Hist. (6) xv. p. 171*.

Loc. Ceylon (Trincomali, Kandy).

* In the above list no attempt has been made to give a complete quotation of the references to this species. The works that are cited are those that contain the original references to the name, those that contain figures of the species to which the name "*fasciata*" has been applied, and those that contain changes in the nomenclature of the genus. Nor must the inclusion of these references under one heading be taken as evidence that I consider as conspecific all the spiders that have been referred to *fasciata* by the various authors cited above. They may all belong to the same species, but the published figures and descriptions are not sufficiently accurate and detailed to carry conviction on the point.

The Museum has specimens of this species merely ticketed "Ceylon." The only examples with exact localities are an adult male and a young female from Kandy (*Col. Yerbury*) and an adult male from Trincomali (*P. Bassett-Smith*).

For the sake of comparison I append measurements * of an adult female and male example of this species:—

♀. Total length 46; length of carapace 24, width 20; length of first leg 77, of second 67, of third 55, of fourth 67; patella and tibia of first 28, of fourth 23; protarsus of fourth 17.

♂ (from Kandy). Total length 35; length of carapace 16·5, width 13·8; length of first leg 66, of second 57, of third 47, of fourth 60, of palp 31·5; tibia of fourth 13·8; protarsus of fourth 16·5, of first 15.

(2) *Pœcilotheria subfusca*, Poc.

Scurria fasciata, Ausserer, Verh. z.-b. Ges. Wien, 1871, p. 199, ♂ (not *fasciata*, Latr., C. Koch, &c.).

Pœcilotheria subfusca, Pocock, Ann. & Mag. Nat. Hist. (6) xv. p. 171 (1895).

Loc. Ceylon (Peradenia, Pundaloya).

As in the case of *P. fasciata* the British Museum has many specimens of this species from Ceylon, but only four of these have a definite locality. These are an adult male (type) and female from Pundaloya (*E. E. Green*) and a pair of females from Peradenia (*Freeman coll.*).

Ausserer failed to identify this species from want of material wherewith to check the constancy of the differences between it and *P. fasciata*. The latter was known to him only from the female, and his example of this species was a male. The colour variation between the two he regarded to be of a sexual nature.

* In this and all cases the length of the leg is taken from the base of the femur to the tip of the tarsal claws, and does not include the trochanter and coxa.

The leg measurements must, however, in certain cases be used with caution, for, as compared with the carapace, these appendages are longer in smaller (younger) than in larger specimens; in other words, with increase of size the carapace increases in length more rapidly than the legs. The total length in the table of measurements includes the carapace and abdomen, but not the jaws (mandibles). The length of the abdomen, however, is of little importance, since in living specimens it varies greatly in size in accordance with the full-fed or fasting condition of the spider, and in Museum specimens in accordance with the method of preservation, whether in a dry state or in alcohol. Since the carapace is not subject to these alterations, the relative size of two spiders may be estimated by the length of this plate, which may be taken as the standard in Arachnoid mensuration.

The following are the measurements in millimetres of the adult female collected by Mr. Freeman at Peradenia, and of the adult male obtained by Mr. Green at Pundaloya:—

♀. Total length 48; length of carapace 25, width 21; length of second leg 67, of third 58, of fourth 69; patella and tibia of second 25, of fourth 25; protarsus of fourth 17.

♂. Total length 31; length of carapace 15, width 13; length of first leg 61, of second 56, of third 48, of fourth 60; tibia of fourth 14; protarsus of fourth 16, of first 13·3.

(3) *Pœcilotheria vittata*, Poc.

Pœcilotheria vittata, Poc. Ann. & Mag. Nat. Hist. (6) xv. p. 172 (1895).

Loc. S. India or Ceylon (*Mr. Fanshawe's coll.*).

A single male example only is known.

This specimen presents the following measurements in millimetres:—

Total length 34; length of carapace 17, width 15·2; length of first leg 72, of second 63, of third 57, of fourth 66; protarsus of fourth 18, of first 17·8; tibia of fourth 15.

(4) *Pœcilotheria striata*, Poc.

Pœcilotheria striata, Poc. Ann. & Mag. Nat. Hist. (6) xv. p. 172 (1895).

Loc. Pinang (*Hardwicke coll.*).

One specimen only of this species is known. The locality assigned to it is, perhaps, erroneous, since no spider resembling a *Pœcilotheria* has been taken in Pinang by any collectors of recent years. Nevertheless, until this particular species is discovered elsewhere, which up to the present time has not taken place*, there are no conclusive reasons for rejecting the authenticity of the label on the type specimen.

The measurements of the type specimen are as follows:—

Total length 45; length of carapace 25, width 21·5; length of first leg 85, of second 72, of third 59, of fourth 74; patella and tibia of first 31, of fourth 26; protarsus of fourth 19.

(5) *Pœcilotheria regalis*, sp. n. (Pl. VII. figs. 1–1 b.)

Colour.—Head-shield or *carapace* covered above at the sides with grey hairs, tinged here and there with yellow, its middle third occupied by a pair of sinuous longitudinal bands which start on each side of the ocular tubercle and pass backwards to the posterior margin, uniting with each other

* For correction of this statement see note on p. 96.

for a short distance midway between the ocular tubercle and the thoracic fovea. *Abdomen* ornamented above with a broad whitish-yellow band, with its sinuous lateral edges bordered with deep blackish brown; sides of the upper surface pale mouse-brown, and furnished with chocolate-brown obliquely transverse stripes, which pass from the black edging of the median band to the deep chocolate-brown colouring of the lower surface; lower surface of abdomen and the epigastric area in front of the generative fold deep chocolate-brown or black, but behind the epigastric fold there is a broad transverse yellowish-red band passing right across the abdomen from side to side and embracing the posterior breathing-organs. *Mandibles* dirty greyish-brown above, black below towards the tip. *Palpi* greyish-white above, brownish on the upperside of the femur and tarsus, with black lines on the tibia and patella; lower and inner sides of femur deep velvety black; patella white below, with a brown spot on each side; tibia whitish below, tinted with brown in the middle, with a large brown patch on each side. *Legs* brown, variegated with grey; the extremities of the segments greyish white, a pair of lines of white spots on the tibiæ; tarsi with two pairs of reddish-brown spots—one pair at base, one at apex; coxæ and trochanters pale above; lower and under sides of femora, patellæ, and tibiæ of first and second legs bright lemon-yellow, of third and fourth pairs bluish white; the femora and tibiæ ornamented with a broad blackish-brown band in the distal half, but with only a very small brownish spot or stripe at the base of the inner side; these bands are narrower than the pale area at the base of the femora, but thicker than that at the tip; patella also with a brown stripe or spot at the tip, this stripe on patella of third and fourth very narrow; base of protarsus of third and fourth bluish grey.

Carapace shorter than patella and tibia of first leg, almost equal to those of second, exceeding those of fourth; patella and tibia of fourth less than of second.

Femora of *palp* fringed externally and internally; femora of first and second leg also fringed externally and internally at the apex; the trochanters of the first and second legs also fringed in front.

Measurements in millimetres.—Total length 53; length of carapace 25, width 21; length of first leg 75, of second 65, of third 55, of fourth 67; patella and tibia of first 28, of fourth 23·5; protarsus of fourth 15·8.

Loc. Arkonam in the north Arcot District of the Madras

Presidency. Taken in timber brought from the eastern Ghats (*H. R. P. Carter*).

The type of this species is a fine adult female example which Mr. Carter brought alive from India and deposited in the Zoological Gardens at Regent's Park. Unfortunately the animal did not long survive the journey to London. I am much indebted to Mr. Arthur Thomson, the head keeper, for the pains he took in the preservation of the specimen and for bringing it to the British Museum, at Mr. Carter's request, when it was thoroughly dried.

The species much resembles the Ceylonese *P. fasciata* in the colouring of the body and limbs, but may be at once distinguished as from all the other known species of the genus by the presence of the broad reddish band on the lower side of the abdomen. It further differs from *fasciata* in the breadth of the bands on the lower side of the legs and the presence of the fringes of hairs on the femora of the palpi and front legs. In both of these respects it approaches the Pinang species *P. striata*. *P. striata*, however, is a longer-legged form, having the carapace shorter than the patella and tibia of the fourth leg &c. (Compare measurements of the types.)

The British Museum possesses a dry example of what appears to be a male specimen of this species from Koorg (*Mr. Macgilligan's coll.*). It presents the following measurements:—

Total length 32; length of carapace 17·5, width 15·5; length of first leg 73, of second 63, of third 52·5, of fourth 65; protarsus of first 16·3, of fourth 17·2; tibia of fourth 14·5.

We also have an immature and badly preserved female specimen from the Nilgiri Hills (*E. W. Oates*) and a very much rubbed adult female from Dahanee in the Tana district, North Konkan (*A. G. Edie*).

(6) *Pœcilotheria formosa*, sp. n.

Colouring of the upperside of trunk and limbs much like that of *P. regalis*; the brown bands on the thorax much wider and spreading more over towards the margins; the pale band on the upperside of the abdomen less noticeably lobate posteriorly, with the brown band that circumscribes it and the brown stripes that radiate from it less clearly defined; there is also a larger pale area at the extremities of the tibiae and protarsi of the legs, and the uppersides of the tarsi of the legs are not distinctly spotted; the lower sides of the legs and palpi are strongly striped, but the tibia of the palp is entirely

brown beneath, and the legs are much more of a uniform dirty white, the anterior pairs being only tinted with yellow, and the posterior pairs without the bluish tinge; the dark stripes, too, are blacker and narrower; there is, moreover, a largish black patch on the inner side of the anterior femora at the base, and there is no white distal band on the lower side of the femora of the third and fourth legs, or, at all events, at most a very narrow one spreading down from the dorsal side; and the bands on the patella of the third and fourth legs are broader than in *P. regalis*. Finally, the lower side of the abdomen is entirely chocolate-brown, without a pale band.

Legs of first and second pairs shorter than in *P. regalis*, the carapace being as long as the patella and tibia of the first leg and longer than those of the second by the grey spot on the protarsus; patella and tibia of fourth a little longer than of second; femora and trochanters of palpi and anterior legs not, or at all events only very slightly, fringed.

Stridulating-organ on maxilla consisting of a short cluster of two rows of longer and shorter clavate bristles, with usually two or three strong black tooth-like ridges removed a little distance from the distal end of the cluster.

Measurements in millimetres of type specimen.—Total length 54; length of carapace 26, width 21; length of first leg 69, of second 61, of third 54, of fourth 65; patella and tibia of first 26, of fourth 23; protarsus of fourth 16.

Loc. Kadiampatti and Mullapúram, in the Salem District, Sheveroy Hills (*H. R. P. Carter* and *H. C. West*). Taken in stacks of locomotive fire-wood.

This species differs from *P. regalis* in the characters pointed out in the diagnosis. It resembles *P. fasciata* in the absence of the femoral fringes of hair, these being the only species with banded legs in which these fringes are not developed. It, however, differs entirely from *P. fasciata* in the much whiter colour of the lower side of the legs, the much greater width of the black femoral bands, and the uniform chocolate colour of the lower side of the tibia of the palp. It is also a much shorter-legged species than *P. fasciata*, a species in which the carapace is considerably shorter than the patella and tibia of the first leg.

That this species is not based upon females of the S.-Indian species already described as *P. vittata*, which might perhaps be suspected from the fact that the two somewhat resemble each other in the whitish colour of the underside of the anterior femora, is shown by the absence of the femoral fringes, which are highly developed in *P. vittata*, by the pale

colour of the under surface of the tibia of the palp in *P. vittata*, this segment being uniformly chocolate-brown in *P. formosa*, by the presence in *P. formosa* and the absence in *P. vittata* of a dark basal patch on the inner side of the anterior femora, and by the darker colour of the underside of the femora of the third and fourth legs in *P. vittata*.

(7) *Pœcilotheria metallica*, sp. n. (Pl. VII. fig. 3.)

Colour of carapace and abdomen much as in the other species, but dark bands on the carapace more widely separated mesially and the pale band on the abdomen much less distinct and traversed by a darker stripe; upperside of legs and palpi tolerably uniformly coloured and becoming darker towards the extremities, showing faint metallic lustre; tarsi not spotted above; protarsi with a thin brown stripe; tibiæ with very indistinct lines of yellow spots; lower side of palpi entirely deep brown, with faint metallic blue lustre; lower side of anterior legs blackish brown, with strong metallic blue lustre, and a large orange-yellow patch on the under and inner sides of the base of the tibia; third and fourth legs uniformly coloured below with a similar but smaller tibial spot and much less metallic blue tint; lower side of abdomen uniformly chocolate-brown.

Carapace shorter than patella and tibia of first leg, a little longer than those of second and fourth leg; patella and tibia of fourth a little longer than of second.

Measurements in millimetres.—Total length 52; length of carapace 23.5, width 20; length of palp 37, of first leg 65, of second 59, of third 52, of fourth 64 (all measured from base of femur); patella and tibia of first 25, of second 22, of fourth 23; protarsus of fourth 15.

Loc. Near Gooty, 257 miles from Madras. A single female specimen, taken in the engineer's bungalow on the north-west line of the Madras Railway, and sent to Mr. H. R. P. Carter by Mr. H. C. West, chief engineer.

This species may be easily recognized by the uniformity of the colouring of both the upper and under sides of the legs and body, by the metallic lustre of the under surface of the legs, and the single orange-yellow patch on the tibiæ.

(8) *Pœcilotheria ornata*, sp. n.

Colour very like that of *P. fasciata*; femora of anterior legs yellow, with a black basal internal patch as in *fasciata*, but with the stripe in the distal half of the segment much broader; femora of third and fourth legs whitish below, as in

fasciata, but with the distal black stripe very broad on the third leg, and broader than the pale basal portion, and on the fourth leg as broad as the basal pale portion. In *fasciata* the black stripes on these femora are narrow, much narrower than the pale basal portion.

Further differing from *P. fasciata* in possessing, like the Indian species, a thick fringe of hairs along the outer side of the femora of the first and second leg, and in a lesser degree of the third leg. In the examples of *fasciata* known to me these fringes are not present.

Measurements in millimetres.—Total length 46; length of carapace 19, of first leg 64, of second 58, of third 49, of fourth 61; patella and tibia of first 24, of fourth 21; protarsus of fourth 15.

Loc. Ratnapura, S. Ceylon (*Rev. J. Burrows*).

The differences between this species and *P. fasciata* have been sufficiently dealt with in the description. In most of the characters in which it differs from *P. fasciata* it approaches *P. striata*, but has the femoral stripes much narrower and possesses a black patch on the inner side at the base of the anterior femora, which is absent in *P. striata*.

*Table for the Determination of the known Species of
Pœcilotheia, based upon Females.*

- a. Femora * of legs a uniform dark colour beneath and on inner side, not striped black and white or black and yellow; (anterior femora not fringed).
- a¹. Legs and palpi conspicuously banded on their upper sides, the lower and inner sides of the palpus and of the first and second legs showing a conspicuous yellow spot on the apex of the femur, the basal half of the patella and at both ends of the tibiæ, the spot on the base of the tibia occupying barely one third of the length of the segment; third and fourth legs similarly banded, but with smaller spots; legs without strong metallic blue reflections below *subfusca*, Poc.
- b¹. Legs and palpi scarcely noticeably banded above, lower side of palpi uniformly dark-coloured; lower side of legs similarly dark-coloured, but with a large orange-yellow spot at the base of the tibia and extending over nearly half its length; legs (especially the anterior two pairs) with strong metallic blue reflection below *metallica*, sp. n.

* The legs of spiders consist of seven segments, named as follows from base to apex:—coxa, trochanter, femur, patella, tibia, protarsus, tarsus. In the palpus (the small front leg) the protarsus is absent.

- b*. Femora of legs whitish or yellow beneath and on the inner side, the first and second pairs, and usually the third and fourth also, with a conspicuous black stripe on the distal half beneath; (femora fringed or not).
- a*². Lower side of abdomen with a broad reddish transverse band behind the genital fold; (femora of palpi and anterior legs fringed; anterior legs lemon-yellow beneath, with broad black stripes; posterior legs bluish white, with broad stripes; no internal basal spot on anterior femora) *regalis*, sp. n.
- b*². Lower side of abdomen a uniform chocolate-brown or black, without a broad reddish band behind the genital fold.
- a*³. Tibia of palpus a uniform deep chocolate-brown beneath; (lower side of legs whitish; the anterior femora with inner basal patch and broad distal stripe; femur of third leg at most weakly banded, of fourth not banded below; their segments on the anterior legs without fringes) *formosa*, sp. n.
- b*³. Tibia of palpus pale beneath, with at most traces of black patches extending inwards from the sides of the segments.
- a*⁴. Femora of legs without well-developed fringes; black stripes on the lower side of anterior femora narrow, also very narrow on femur of third leg, and absent on lower side of femur of fourth (with a basal spot on inner side of anterior femora; anterior legs lemon-yellow, posterior bluish white). *fasciata*, Latr.
- b*⁴. Femora of legs with well-developed fringes; black stripes on lower side of femora of all the legs very broad as compared with *fasciata*.
- a*⁵. With a distinct black basal spot on inner side of femora of first and second pairs; black band on inner side of anterior femur only about half the width of the lemon-yellow basal portion *ornata*, sp. n.
- b*⁵. Without a distinct internal basal patch on the anterior femora; black band on lower side of anterior femur almost as wide as brownish-yellow basal portion of segment. *striata*, Poc.

The males may be determined as follows, neglecting for the present certain differences in the structure of the palpal organ, which are easy to detect and figure, but difficult to describe :—

- a*. Lower side of femora brown, not banded; (femora of palpi and of first and second legs not fringed either externally or at the apex internally). *subfusca*, Poc.
- b*. Lower side of femora of first and second legs yellow or white, with a conspicuous black stripe near the distal extremity.

- a*¹. Femora of palpi and of first and second legs with at most a small external fringe; black stripe on femora of legs narrow; a black patch at the base of these segments on the inner side; (anterior femora lemon-yellow; posterior femora chalky or bluish white) *fasciata*, Latr.
- b*¹. Femora of palpi and anterior legs with well-developed external fringe; bands on femora broader; no basal internal black patch on these segments.
- a*². Abdomen uniformly brown below, as in *fasciata*; femora of anterior two pairs of legs nearly white, of third and fourth pairs uniformly greyish brown, not distinctly banded *vittata*, Poc.
- b*². Abdomen with broad transverse pale band behind genital fold; anterior legs lemon-yellow beneath; posterior legs bluish white and very distinctly banded with black *regalis*, sp. n.

Note on the Locality of Pæcilotheria striata.

During the passage of this paper through the press, I have received from the Bombay Natural History Society a specimen of *Pæcilotheria* ticketed S. India, and apparently specifically identical with the type and hitherto only known representative of *P. striata*. Thus the suspicions that I have always held that the alleged locality for this species, namely Pinang, would prove to be more than doubtful, and that the species itself would turn up either in India or Ceylon, are amply confirmed. In view of this discovery, I think we may confidently regard *Pæcilotheria* as peculiar to S. India and Ceylon, where it is now known to be represented by eight species.

In the same consignment of spiders from Bombay is a specimen of *P. regalis* from Matheran, which shows that this species has a wide range in S. India.

EXPLANATION OF PLATE VII.

- Fig. 1.* *Pæcilotheria regalis*, sp. n., nat. size, drawn from photograph of female example from Arkonam.
- Fig. 1 a.* Ditto. Lower side of abdomen of same specimen, showing pale yellowish-red band (*a*) behind genital fold.
- Fig. 1 b.* Ditto. Front leg from inner aspect, showing black band (*a*) and fringe (*b*) on femur.
- Fig. 2.* *Pæcilotheria fasciata*, Latr. Inner view of front leg for comparison with 1 *b*, showing thin stripe (*a*) and basal black patch (*b*) on femur; also the absence of femoral fringe.
- Fig. 3.* *Pæcilotheria metallica*, sp. n. Inner view of front leg, showing uniform dark colour with exception of orange-yellow tibial spot.



Pocock, R. I. 1899. "The genus Poecilotheria: its habits, history and species." *The Annals and magazine of natural history; zoology, botany, and geology* 3, 82–96.

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