

Nouvelle Hollande par MM. Quoy et Gaymard." It has been much distorted in stuffing, but indicates a large brown or brownish-grey animal, like the figure in the 'Voyage de l'Astrolabe,' plate 12. The description quoted above, on the other hand, indicates an animal rather grey than brown, like the skin of the female which I have received from Mr. Ramsay. The adult male, however, at the Fisheries Exhibition, and the second specimen there, which I take to be a young male, agree fairly well with the type specimen at Paris and with the figure. I would suggest that the description may have been taken from a female skin, which MM. Quoy and Gaimard believed to belong to a male, while the figure (which appears to have been drawn on the spot, for the authors say that the attitude is that in which the animal lay after death) was really of a male. We know, however, so little about the external appearance of *Otarias*, and they look so different according as they are young or old, wet or dry, that we must wait for further material before these points can be cleared up. For the same reason I would for the present return to the original generic name, and refer these specimens to *Otaria cinerea*, Péron.

In 1874 Dr. Gray received a somewhat imperfect skull of an *Otaria* from Dr. Hector, which he referred to this species by comparing it with Quoy and Gaimard's figure, though, as was his wont, he made a new genus for it, and called it *Euotaria cinerea*<sup>1</sup>. This skull is now in the British Museum, along with others received subsequently from Dr. Hector. These skulls are undoubtedly of the same species as that to which, as mentioned above, Dr. Hector has given the name *Arctocephalus cinereus*, or "Fur Seal of Australia." Whether this Fur Seal be identical with the small Fur Seal which I have called *Otaria forsteri*, as mentioned above, is a question which cannot be settled until we obtain a larger series of specimens of different ages and sexes; but I feel certain that it is different from the *Otaria* now before us. The skulls are all broader in proportion to their length; and the molars have not the three prominent cusps which appear to be characteristic of this species.

### 3. On two new Genera of Spiders.

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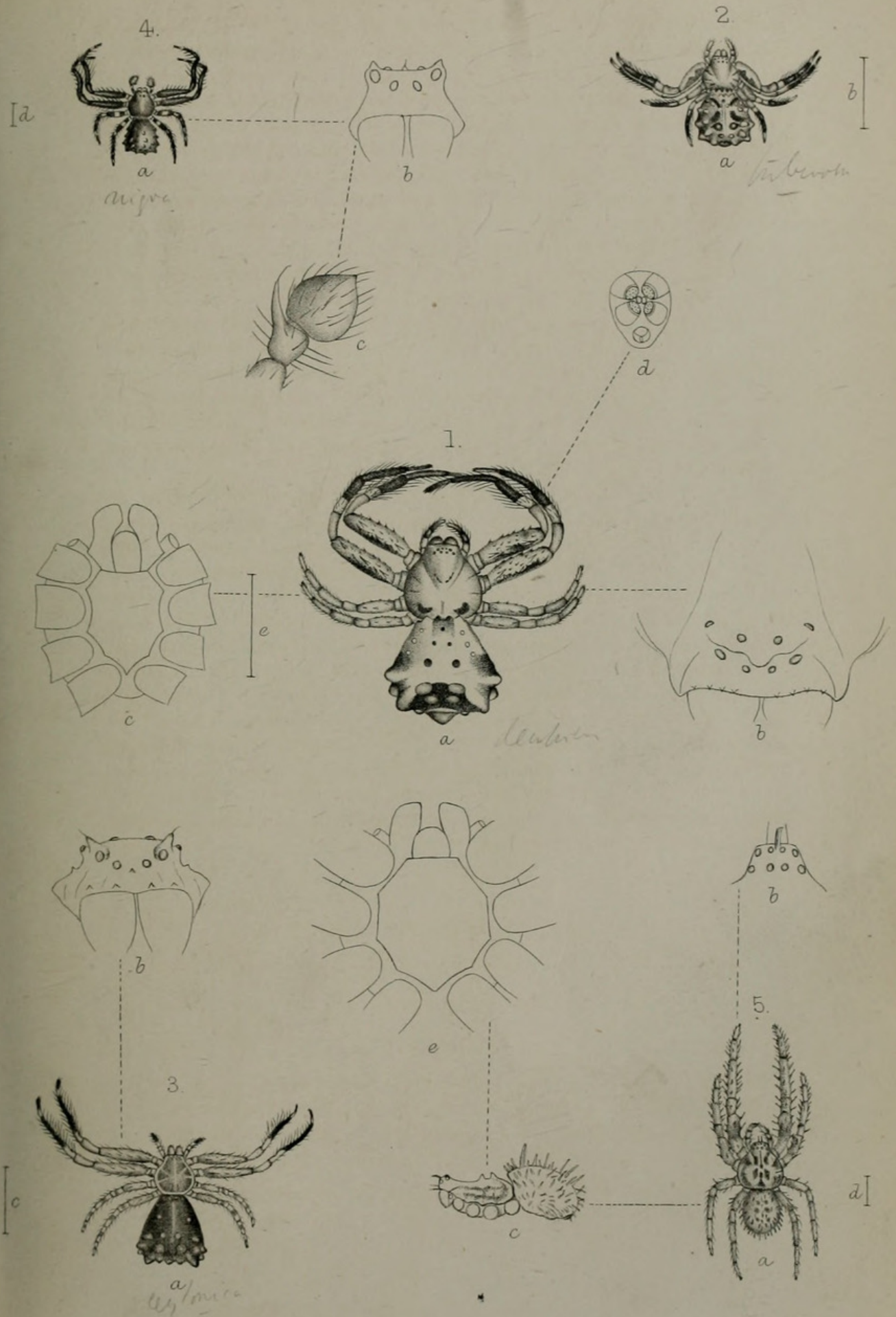
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(Plate XV.)

Mr. H. O. Forbes has lately described (Proceedings of this Society, 1883, p. 586), under the provisional name of *Thomisus decipiens*, the habits of a Spider which he met with in Sumatra and Java. The Spider itself is remarkable from its exact resemblance to

<sup>1</sup> 'Hand-List of Seals, Morses, Sea-Lions, and Sea-Bears in the British Museum' (8vo, London, 1874), p. 34.









the droppings of a bird ; and is still more remarkable from the increased resemblance effected by its spinning of a thin white web on the surface of a leaf, by means of which it secures itself, on its back, to the leaf, leaving its legs free to enclose and seize any insect unwittingly resting upon, or crossing, the apparently innocuous bird-dropping. Mr. Forbes kindly sent me the Spider for examination before writing an account of its habits. I immediately recognized its near affinity to an East-Indian Spider (*Thomisus tuberosus*, Bl.), of which I possess the type specimen ; but, unable at the moment to make a thorough examination and search through books and specimens, I conjectured that it was allied to some Spiders described by Dr. Karsch, and to one sent to me some years ago from South Africa. A more complete examination since made has convinced me that these latter species (referred to by Mr. Forbes) belong to entirely different groups. I find, however, in my collection two other Spiders, from Ceylon and Bombay, of the same genus and very closely allied in species, but quite distinct from that which Mr. Forbes notes. Upon these, together with the one last mentioned and *Thomisus tuberosus*, Bl., I have ventured to found a new genus ; and I beg to record my thanks to its discoverer for so kindly sending me an example of *Thomisus decipiens*, and for having also made known to us the very peculiar and interesting habits belonging, not only to that Spider, but also, I have little doubt, to the other three closely allied species here described<sup>1</sup>.

In his description of the habits of *T. decipiens*, Mr. Forbes expresses the difficulty he has in understanding the formation by the Spider of a web which, while serving to attach itself to the leaf, at the same time so exactly represents the fluid portion of a bird's-dropping spread out on the leaf around the more solid parts ; and his concluding sentences appear to imply the inference that the Spider consciously supplements the effects of Natural Selection on its form and resemblance to the solid excreta, by spinning a web to resemble the fluid portion. It seems to me, on the contrary, that the whole is easily explained by the operation of Natural Selection, without supposing consciousness in the Spider in any part of the process. The web on the surface of the leaf is evidently, so far as the Spider has any design or consciousness in the matter, spun simply to secure itself in the proper position to await and seize its prey. The silk, which by its fineness, whiteness, and close adhesion to the leaf causes it to resemble the more fluid parts of the excreta, would gradually attain those qualities by Natural Selection, just as the Spider itself would gradually, and probably *pari passu*, become, under the influence of the same law, more and more like the solid portion.

<sup>1</sup> Doleschall ('Tweede Bijdrage tot de Kennis der Arachniden van den Indischen Archipel,' p. 58, pl. xi. figs. 9 and 9 a) describes and figures, also from Java, a Spider (*Thomisus dissimilis*, Dol.) possibly of this genus, and perhaps nearly allied to *T. decipiens* ; but the description is too meagre and general to enable any certain conclusion to be drawn from it, and the figure given of the eyes is totally unlike.



The other new genus described in the present paper is founded on a very remarkable Spider from Ceylon, belonging to the family *Cryptothelidae*, of which the typical genus is *Cryptothele*, L. Koch (Die Arachn. Austral. p. 239, pl. 20. fig. 2). The new genus *Regillus* may be readily distinguished from *Cryptothele* by several structural differences.

Fam. THOMISIDÆ.

ORNITHOSCATOIDES, gen. nov.

*Cephalothorax* short, broad, as broad or as broader than long, moderately convex above and slightly tuberculose; caput short, truncate in front, and strongly compressed on its lateral margins.

*Eyes* in two curved rows, the anterior shortest (the convexity of the curves directed forwards, and forming a crescent); small, not greatly differing in size, but the fore laterals are largest, and the four centrals smallest; those of the lateral pairs are seated on or at the base of tuberculose eminences.

*Falces* strong, not very long, conical, and nearly vertical.

*Maxillæ* moderately long and strong, a little wider at the top than in the middle; rounded at the top on the outer side, and slightly leaning over the *labium*, which is about half the length of the maxillæ, and of a somewhat oblong form rounded at the apex.

*Sternum* oblong-oval.

*Legs* strong, moderately long, 1, 2, 4, 3; those of the first and second pairs much the strongest and longest but nearly equal in length; those also of the third and fourth pairs are nearly of equal length and strength. The tibiæ are rather strongly bent, and give the legs a peculiar character. All are somewhat roughened or tuberculose, especially those of the first two pairs, and furnished with spines of varied length and strength; those on the tibiæ and metatarsi of the two anterior pairs are strongest, the longest forming two parallel longitudinal rows beneath the joints. The legs terminate with two strong, curved, pectinated claws, beneath which is a small claw-tuft. Among the spines are one or two not very long, rather strong, of a pale colour or semidiaphanous appearance, on the upper sides of the femora; these spines have a peculiar function as observed in one of the species, and may very possibly be of generic value, though spines of various sizes are found similarly situated in many other Thomisid genera, while their special function (if any) has not been yet observed, so far as I am aware, in other instances.

The *palpi* terminate with a single pectinated claw.

*Abdomen* broader behind than in front and truncated at both extremities; the upper surface and hinder part more or less thickly covered with round or subconical, shining, or other tubercular elevations. The spinners are short, stout, and closely grouped within a somewhat circular sheath-like cincture much resembling the disposition of those of many Epeirids.



ORNITHOSCATOIDES DECIPIENS. (Plate XV. fig. 1.)

*Thomisus decipiens*, Forbes, P. Z. S. 1883, p. 586.

Adult female, length rather above  $6\frac{1}{2}$  lines.

The general colour of this Spider is a hoary or yellowish ashy grey marked with black. The abdomen has a large, somewhat quadrate black patch at the middle of its hinder extremity; on this patch are placed eight shining roundish dark-brown tubercles; the four largest form a transverse, unequally sided parallelogram at the fore part of the black patch; the other four, which are much the smallest, form a longer transverse parallelogram immediately behind the other. At the hinder part also, on either side of the shining tubercles, are several strong tuberculiform eminences or prominences, of a similar kind to which are also four small ones in a transverse line at the extreme fore margin; some other depressed spots or pits are also disposed on the upper surface, with a dark blackish suffused patch at the middle of the anterior extremity, and another on each side just in front of the foremost lateral eminence.

The *cephalothorax* has a black irregular patch on each side of the hinder part of the thoracic region. The ocular region is somewhat suffused with blackish, and an irregular black, somewhat V-shaped marking indicates the junction of the caput and thorax. The two anterior pairs of legs have some black suffused markings on the upper side of the femora, the fore half (or rather more) of the tibiæ, metatarsi, and tarsi of those two pairs being almost wholly black; while the two hinder pairs have only an irregular black marking here and there. The spines on the tibiæ and metatarsi of the first and second pairs of legs are numerous, long, strong, and conspicuous.

The pale spines (mentioned above) on the upper sides of the femora are used, according to Mr. Forbes's observations, to secure the Spider on its back to a patch of whitish silk spun upon the surface of a leaf. When so secured the Spider has the exact appearance of the droppings of some bird, and the white silk patch emerging irregularly outside the Spider has the appearance of the more liquid portion of the droppings flowing out and drying on the leaf<sup>1</sup>.

The *eyes* of each row respectively are equidistant from each other, but those of the fore-central pair form a shorter line than those of the hind-central pair. The four central eyes form a square whose anterior side is the shortest; and the height of the clypeus, which projects forwards, is nearly about equal to half that of the facial space.

<sup>1</sup> Mr. Forbes has, since the above was printed, remarked to me that in the two instances which came under his notice, the resemblance extended even to the running down of the fluid excreta towards the lower side of the sloping leaf, ending in a kind of knob. Mr. Forbes also expressly disclaims the idea of crediting the Spider with any conscious design, but he says "that the similitude is so exact that the Spider *might have* had consciousness—*i. e.* it could not have been more exact if the Spider did have it." Is not its exactness probably the result of the *unconsciousness* of the Spider? Conscious design would possibly have resulted in failure and abandoning the plan, or at best in a more clumsy imitation.



The *legs* are, as described in the generic diagnosis, strong and minutely tuberculose, the tibiæ being of a peculiar bent form.

Two examples were found by Mr. Forbes, one in Java, the other in Sumatra.

ORNITHOSCATOÏDES TUBEROSA. (Plate XV. fig. 2.)

*Thomisus tuberosus*, Bl. Ann. & Mag. Nat. Hist. ser. 3, vol. xiv. p. 38.

Adult female, length 5 lines.

This Spider, although very similar in general form and appearance to *O. decipiens*, is smaller, and differs in colours and also in the number and disposition of the abdominal tubercles.

The *abdomen* is of a pale olive-brown colour on the upper side; six elongated black markings, three on each side, of different sizes, are continued laterally to the underpart of the abdomen; the hinder pair of these markings meet at the middle of the upper side, where are two shining dark-brown conical tubercles. The rest of the tubercles, which are much more numerous than in *O. decipiens* and vary a little in size, are very similar to the surrounding surface in colour, perhaps a little more of a yellow-brown hue, and all of a conical form; they are somewhat symmetrically disposed towards the sides and at the hinder part of the abdomen. The underside is black, largely patched with cream-colour.

The *cephalothorax* is yellow-brown and slightly tuberculose, and the height of the clypeus rather exceeds half that of the facial space.

The *legs* are cream-colour, marked with yellow-brown, excepting the anterior half of the tibiæ, the metatarsi, and anterior portion of the tarsi, which are black-brown. Besides other spines, there are numerous long strong ones on the tibiæ and metatarsi of the first and second pairs. There are also the same spines on the upper side of the femora as those whose peculiar function Mr. Forbes has noted in the Sumatran and Javan species. The first two pairs of legs are much longer and stronger than the rest, but they appear to be proportionately shorter than those of *O. decipiens*, as in that species the tibiæ are bent, but not to so great an extent.

The *eyes* do not appear to differ much in relative size and position from those of *O. decipiens*.

The *palpi* are yellow-brown, all except the digital joints more or less suffused with cream-colour; they terminate with a single curved pectinated claw.

The *fulces* are short, strong, subconical, vertical, yellow-brown, with a whitish spot in front towards their base.

The *maxillæ* and *labium* are yellow-brown, and though shorter are of the same form as those of *O. decipiens*.

Mr. Blackwall in his description (evidently by some inadvertence) describes the labium as triangular.

The *sternum* is dark brown, and can scarcely be described as, according to Mr. Blackwall, *heart-shaped*, but of a rather elongate-oval form slightly pointed behind and hollow-truncate before.



The above description (as well as that of Mr. Blackwall) has been made from the type, still in my possession, received many years ago from the East Indies, though from what locality there I do not know.

ORNITHOSCATOÏDES CEYLONICA, sp. n. (Plate XV. fig. 3.)

Adult female, length 5 lines; in some examples the length is no more than 4 lines.

In general form and appearance this Spider nearly resembles the two preceding species, but it differs not only in colours and markings but also in several other important specific characters.

The *cephalothorax* is slightly tuberculose, of a dull yellowish-brown hue, distinctly and completely margined with cream-yellow, from which some converging lines of the same colour run towards the thoracic junction.

The two central *eyes* of the posterior row are further apart than each is from the lateral row on its side, and a similar observation applies to the two central eyes of the anterior row. The four central eyes form rather more nearly a square than the corresponding eyes in *O. decipiens*, the anterior side being proportionately rather longer. The height of the clypeus is less than half that of the facial space, and the laterals are not only seated on slight tubercles, but between each of those pairs is a distinct spinous tubercular prominence or short horn, terminating with a short bristle.

The *falces* are short, subconical, vertical, finely tuberculose in front, and of a whitish cream-colour.

The *palpi* are similar in colour to the falces, excepting the digital joint, which is black-brown, blackest at the base.

The *legs* are moderately long, longer but less strong than in the two foregoing species, though possessing the same essential characters and relative proportions. They are of a dull cream-colour, the two fore pairs suffused or mottled above on the femora with pale yellow-brown; the anterior portion of the tibiæ (which are strongly bent), the metatarsi, and anterior part of the tarsi black; at the base, however, of the upper side of the metatarsi is an irregular whitish cream-coloured marking, and the underside of that joint and of the metatarsi also is more or less marked irregularly with a similar colour. The spines on the tibiæ and metatarsi of the first two pairs are very long and strong; the peculiar ones noted as on the upper side of the femora of the two foregoing species are noticeable in the present one also. The two posterior pairs of legs are more of a yellow-brownish hue marked with a paler colour, and also with whitish cream-colour, giving them a somewhat annulose appearance; and there are some strongish spines on the tibiæ and metatarsi. The exinguinal (or basal) joints of the two hinder pairs, and a portion of those of the second pair, have their undersides of a deep rich brown colour.

The *sternum* is of a deep rich black-brown hue, with a large patch of cream-yellow at its fore extremity.



The *labium* is similar in colour to the sternum, with a pale apex, but the maxillæ are pale brownish cream-colour, with a brown marking towards their base on the inner side.

The *abdomen* is of a dull yellowish brown (deepening to sooty black in some examples) on the upper side, softening off into cream-yellow on the sides and underneath. Along the middle of the upper side, but not extending to either extremity, is a fine cream-yellow line, and the middle of the hinder part is of a blacker hue than the rest. The tubercles are numerous, symmetrically disposed towards the sides and hinder part, shining, subconical, of various sizes, with a short bristle at the apex of each. The spinners, and the surrounding area to a small and irregular extent, are of a whitish cream-yellow hue. The underside of the abdomen is marked with some considerable patches of black.

Examples of this Spider were received some years ago from Ceylon, from the late Mr. G. H. K. Thwaites.

ORNITHOSCATOÏDES NIGRA, sp. n. (Plate XV. fig. 4)

Adult male, length  $1\frac{1}{3}$  line.

The *cephalothorax* is of a deep rich black-brown hue, tuberculose, and between the eyes of each lateral pair there is (as in *O. ceylonica*) a short horn-like prominence; the tubercular prominences on which those eyes are placed are stronger than in that species; giving a much nearer appearance to the form of the ocular area in *Thomisus*.

The *eyes* are larger than in either of the foregoing species, but preserve the same proportion and relative position as in *O. ceylonica*, and have narrow yellowish rims. The height of the clypeus is less than half that of the facial space.

The *legs* are moderately long and strong, black, tuberculose, armed with long and strong, but not numerous spines on the tibiæ and metatarsi of the first and second pairs. Some of the tubercles in a longitudinal row on the underside of the femora of those pairs are white; a white annulus encircles the extremity of the metatarsus in all the legs; and near the middle of the femora of the third and fourth pairs is a broad annulus of a clear yellow-brown hue, and the tips of the tarsi in these legs are also white. The tibiæ are bent, as in *O. ceylonica*.

The *palpi* are short; humeral joints black-brown, with a white spot or two near their fore extremity; the cubital joint is somewhat nodiform, brown, with a white spot or two on the inner side; the radial is similar in colour and length to the cubital; its fore extremity is enlarged and has on the outer side an apophysis of a somewhat spine-like character, as long as the joint, tapering to an exceedingly fine, slightly curved, sharp point directed forwards and outwards; the digital joint is of moderate size, ordinary form, and of a deep brown colour. The palpal organs are of a simple form, encircled with a blackish spine. The *falces* are moderate in length and strength, of a deep black-brownish hue.

The *sternum*, *labium*, and *maxillæ* are black, the last slightly tipped with a pale colour.



In this Spider also are the peculiar pale spines above noted on the upper side of the femora.

The *abdomen* is of a uniform black colour; the upper surface and sides towards the hinder part covered with conical tubercles, most of them terminating with a short strong bristle or spine, but some on the sides near the hinder part terminate with a longer, distinct pale spine directed downwards; this deflection, however, may perhaps be only due to accident or some other cause, though I think it is normal.

It is possible that this Spider may only be the male of *O. ceylonica*, though, from the difference in the size of the eyes, as well as from the remarkable differences in colour and markings, I am inclined to think it a distinct species.

A single example was received from Ceylon from Mr. Thwaites, and another from Major (now General) Hobson from Bombay some years ago.

#### Fam. CRYPTOTHELIDÆ.

##### REGILLUS, gen. nov.

*Cephalothorax* large, a little longer than broad, somewhat flattened, deeply indented; thorax round; caput short, and constricted on the margins before.

*Eyes* 8, small, and not differing greatly in size; disposed in two very slightly curved transverse concentric rows, the convexity of the curve directed forwards; the anterior row is shortest; the figure therefore described by the two rows is the frustum of a cone.

*Legs* strong, moderate in length, 1, 2, 4, 3, those of the first pair considerably longest and much the strongest; they are tuberculose and furnished with strong spines, springing from the tubercular prominences; two parallel rows of strong ordinary spines are disposed longitudinally beneath the tibiæ and metatarsi of the first and second pairs; others (some semidiaphanous) more prominent, long, obtuse and occasionally clavate at their extremities, are irregularly disposed. The tarsi end with three claws—the two upper claws (each apparently furnished with a single tooth only), and beneath them is a very small one, difficult to be seen.

*Falces* straight, a little retreating, not very long nor strong.

*Maxillæ* short, straight, slightly leaning over the labium, pointed on the inner and rounded on the outer extremity.

*Labium* short, broad, rounded at the apex. These parts were difficult to observe.

*Sternum* short-oval.

*Abdomen* truncate before, broadest and obtuse behind. The whole of the upper surface and sides covered with strong prominent spines of various lengths, some pale and semidiaphanous, others brown and black, some obtuse at the end, others clavate. The whole Spider is thus of a very hirsute and bristling appearance. The spinners are short, closely grouped together, and almost entirely concealed by a marginal series of long coarse hairs which converge over them; I





Pickard-Cambridge, Octavius. 1884. "On two new genera of spiders."  
*Proceedings of the Zoological Society of London* 1884, 196–205.

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