

XIV. *Report on the Spiders collected by the British Ornithologists' Union Expedition and the Wollaston Expedition in Dutch New Guinea.* By H. R. HOGG, M.A., F.Z.S.

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(Text-figures 20-37.)

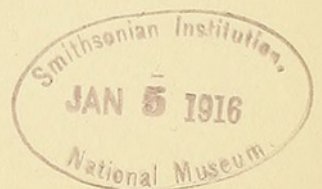
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I AM indebted to Dr. A. F. R. Wollaston and to Mr. W. R. Ogilvie-Grant for the opportunity of examining the spiders described in this paper.

Some were obtained during the B.O.U. Expedition to the Mimika River, 1909-11, but the majority were collected by the Wollaston Expedition about the camps on the route from sea-level to the foot-hills in the neighbourhood of the Setakwa and Utakwa Rivers between September 1912 and March 1913—that is, in the winter half of the year.

Important collections from New Guinea and the neighbouring islands have been previously worked out by Dr. C. L. Doleschall, Professors Thorell and



VI. Kulczynski, M. Eugène Simon, Mr. R. I. Pocock, Herren Emil Strand and Alb. Tullgren, but from amongst its rich fauna there seem plenty of new forms yet to be described.

In this collection, leaving out the Attidæ, there are representatives of 9 families, comprising 27 genera and 43 species or subspecies, of which some 18 appear to be new\*.

As might be expected from a district so well supplied with insect-life, the local representatives of the various genera are particularly powerful and well developed, producing in closely allied species such differences as a superabundance of mandibular teeth in groups like the Deleneæ, where the number has been generally considered a matter of more than specific importance.

A few of the more widely spread species extend to the northern part of Australia, but the general connection is decidedly Indo-Malayan, and only slightly associated with the fauna to the south.

I have to thank Mr. R. I. Pocock for his kindly advice on many debatable points, and Mr. A. S. Hirst, of the Natural History Museum, for the courtesy with which he has provided me with specimens for comparison from the collection under his charge.

#### Suborder ARANEÆ THERAPHOSÆ.

##### Family AVICULARIIDÆ.

##### Subfamily Miginæ.

##### Group Myrtalæ.

##### Genus CONOTHELE Thor.

##### CONOTHELE SPINOSA. (Text-fig. 20.)

*Conothele spinosa* Hogg, Abstract P.Z.S. 1914, p. 56 (Nov. 17).

One female, Setakwa River. (*Type of the species.*)

The cephalothorax, mandibles, and upperside of legs black-brown. Lip, maxillæ, sternum, and coxæ rich dark yellow-brown. The fangs red at the base; dark brown from halfway to the point. The fringes on the maxillæ bright orange; bristles, both ordinary and tooth-shaped, brown.

The surface of the abdomen is mostly destroyed, together with the spinnerets.

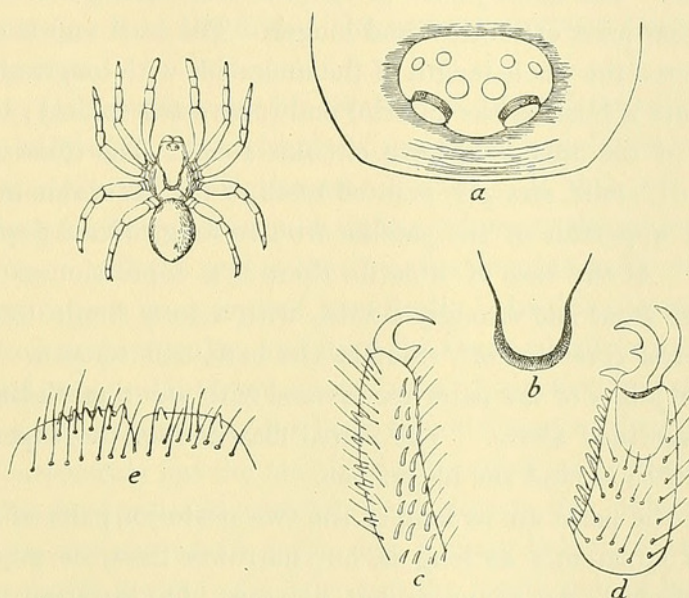
The cephalothorax is convex, rising along the median line from the eyes to the rear end of the cephalic part; from this it slopes evenly to the side margins and steeply to the rear. In contour it is ovate, straight in front and at the rear end, rounded at

\* [The complete account of the new genus and species described in this communication appears here, but since some names and preliminary diagnoses were published in the 'Abstract,' No. 137 (1914), these are distinguished by the names being underlined.—EDITOR.]

the sides, being broadest between the 2nd and 3rd pairs of legs. The cephalic part reaches two-thirds of the total length, ending in a narrow rounded point inside a large and deep procurved horseshoe-shaped fovea.

The clypeus slopes slightly forwards from the eyes, the latter being on a tubercle broader than long, with a shallow hollow behind it; though less marked at the sides the tubercle is quite distinct. The rear row is slightly procurved, the eyes about equal in size; the median pair—almost round, but straight at the back—are twice their diameter apart, one-third of their diameter from the laterals, and one-half from the front median. The front row is more strongly procurved, the upper edge of the laterals being on a line with the lower margin of the median. The latter, two-thirds

Text-figure 20.



*Conothele spinosa*, nat. size. a. Eyes. b. Thoracic fovea. c. Distal joint of palp, ♀.  
d. Tarsus of first pair of legs. e. Front of mandibles.

their diameter apart, are slightly larger than the rear median. The front laterals are twice the diameter of the rear eyes, and are distant from one another by the space between the outer edges of the median pair.

The mandibles project scarcely more than one-fourth of their length, which equals the breadth of the front margin of the cephalothorax. The fangs are stout, flattened and sharpened in front. The maxillæ, measured along the outer side, are twice as long as broad, shorter on the inner side, and straight in front, and only slightly hollowed at the base with a rounded point at the lower outer corner. The fringe extends the whole length of the inner side, with long curving hair. Large, pointed, tooth-shaped, converted bristles extend along the base and diagonally across from the lower inner to the upper outer corner.

The lip is as broad at the base as it is long—narrower, but truncate, in front. Extending along the front margin is a procurved line of ten stout teeth, with five others below about the middle of the lip and a few long bristly hairs over the rest of its area.

The sternum is as broad between the 2nd and 3rd coxæ as it is long. From thence it narrows to the width of the lip in front and to twice that width at the rear, where it is nearly straight, having only a slight point above the contiguous rear coxæ. The whole surface of the sternum, coxæ, and legs is finely granulated. The inferior sternal sigilla are large, and are situated halfway between the margin and the median line. There are upstanding bristles at the sides and a single row along the median line.

The legs are short and stout, the front pair the longest and the others almost equal in length and the same length as the palpi. All the femora are flattened and curved in on the inner side. The tarsal joints of the two front pairs are flattened and quite short, on the two rear pairs cylindrical and longer. The tarsi and metatarsi of the two front pairs are covered the whole length of the underside with longitudinal rows of short stout teeth, bent into a hook at the anterior end (converted spines); both these and the long bristly hairs of the upperside have circular roots. The tibiæ of the same pairs have a patch of short, stout, straight, pointed teeth at the outer side at the anterior end, and on the smooth upperside of the patellæ are two longitudinal depressions reaching the whole length. At the base of tibia iii. there is a depression as in the *Myrtaleæ*. The tarsal claws are stout and strongly curved, with a long single tooth near the base of each. The inferior claw is short, stout at the base, and smooth. The underside of the distal and tibial joints of the palpi are covered with stout, tooth-like, hooked spines, similar to those described above. The palpal claw is like the superior tarsal claws, but has a minute tooth behind the longer one.

As stated above, the palpi are as long as the two posterior pairs of legs.

The abdomen is apparently as long as, but narrower than, the cephalothorax; but, being partially destroyed, the shape cannot be seen. On the front part are scattered brown bristles on circular roots.

The measurements (in millimetres) are as follows:—

		Long.		Broad.		
Cephalothorax .....		7½		{ 4 in front. 7		
Abdomen .....		7		6		
Mandibles .....		3½, 1 horizontally.				
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.	
Legs .....	1.	2½	6	5	3	= 16½
	2.	2	5	4½	3	= 14½
	3.	2	5	4	3	= 14
	4.	2	5	4	3	= 14
Palpi .....		2½	5	4½	2	= 14

Dr. C. L. Doleschall, in 1857 ("Arach. van den Indischen Archipel," Act. Sci. Soc. Indo-Néerl. vol. v. 1858/9, p. 5), described a spider from Amboina under the name of *Cteniza malayana*.

In his drawing (*loc. cit.* pl. vi. fig. 8) the eyes are shown in the same relative positions as in the above, but all equal in size, instead of, as here, the front median eyes larger than those of the rear row and the front laterals larger again.

Thorell, in his 'Ragni di Amboina,' 1878, p. 303, mentioned having received from General Van Hasselt a young female specimen from the locality, which he identified as the above, but proposed for it the new genus *Conothele*. In a very careful description of the female, he makes no mention of any such remarkable hooked spines as are here present on tarsi i. and ii. and on the distal joint of the palp. He gives the front row of eyes as being larger than the rear, but all equal in size, and the fourth pair of legs longer than the first. The present specimen therefore clearly seems to be a different species.

At the time when Doleschall wrote his treatise no mygaliform spider was known (or, at any rate, described) with non-horizontally projecting mandibles, such as distinguish those for which the subfamily Miginæ was formed. If this was overlooked, both Doleschall's and the present species would rightly belong to the genus *Cteniza*, in which he placed his species. All the points that he does mention agree so closely with this that I am sure they cannot be separated generically. In this specimen the mandibles are without question perpendicular, and have the sharp-edged fore-part of the mandibular fang flattened, which M. Simon quotes as a distinctive feature of the Miginæ, suggesting that it is used for cutting the bark wherein most of their nests are built.

Mr. Pocock's *C. arboricola* has the mandible subvertical and makes its nest in trees. From his description his species is evidently very close to this, but has only 6 cusps on the front of the lip instead of 10 there and 5 more below, 6 teeth on the outer margin of the falx-sheath instead of 5 only, and the fourth pair of legs longer than the third instead of the same length.

Mr. Pocock's species has almost exactly the same small amount of rake on the front of the mandible as the present species, which is less than that on the lip, and this is probably the reason for *Conothele* not having been taken out of the Ctenizidæ before—the two families running almost into one another.

The shape of the mandible and fang must, however, be very much more important than the slight amount of rake existent on them. I have no hesitation in now placing the genus among the Miginæ, where, in view of the shape of tibia iii., it comes into the group Myrtaleæ.

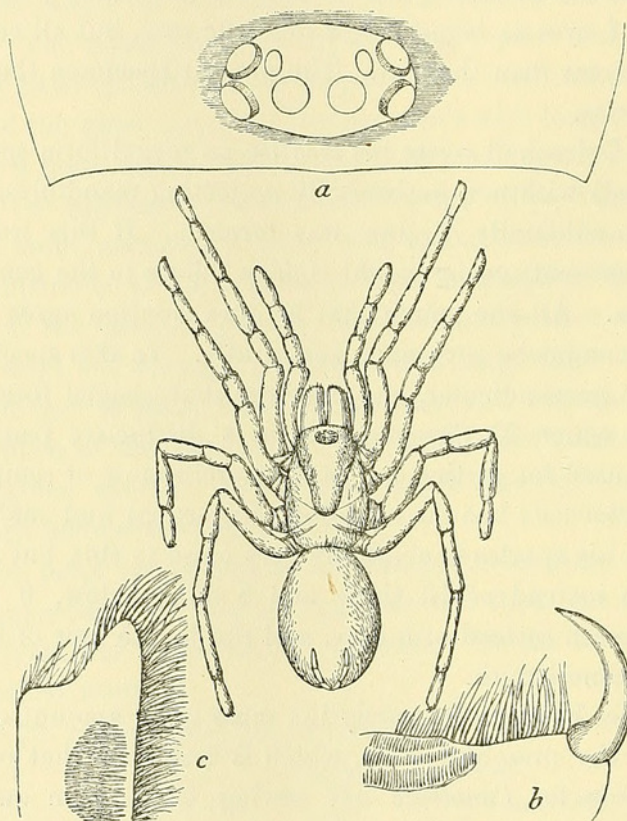
The size of the front row of eyes clearly distinguishes the species from *C. malayana* Dol.

## Genus SELENOCOSMIA Auss.

SELENOCOSMIA LANCEOLATA. (Text-fig. 21.)*Selenocosmia lanceolata* Hogg, Abstract P. Z. S. 1914, p. 56 (Nov. 17).One female, Mimika River. (*Type of the species.*)

The cephalothorax is yellow-brown with reddish-brown hair. Mandibles darker yellow-brown at the base with brown hair, black-brown, with grey hair, at the point. Fangs black-brown. Maxillæ orange with bright orange fringes. Lip and sternum red-brown with brown bristles and yellow-brown hair. Legs and palpi dark brown,

Text-figure 21.



*Selenocosmia lanceolata*, nat. size. *a.* Eyes. *b.* Stridulatory organ on outer side of mandible.  
*c.* Stridulatory organ on inner side of maxilla.

with dingy yellow-grey hair underneath and dark grey scopulæ. Abdomen pale yellow-brown with reddish-brown hair above, darker yellow-brown with straw-coloured hair below; the spinnerets the same.

The cephalothorax is only moderately convex, highest just behind the eyes, one-third longer than broad, straight in front, rounded at the sides, and hollowed at the rear.

The cephalic part is marked off clearly by broad depressions, and ends at a procurved fovea between the second and third pairs of legs. There are three other pairs of radial depressions running therefrom which reach the margin between each pair of legs.

The eyes are on a raised tubercle twice as broad as it is long. The rear row is straight along the lower edges, the front row slightly procurved. The front median pair are one-half of their diameter apart—the side eyes being, if anything, slightly longer than the median, but only a little more than half as wide, on tubercles, and half their width away from the median. The rear side eyes not quite as long as those of the front row, one-third of their length away. The medians ovate with the small end pointing backwards are about three-fourths as long as the former and two-thirds of their length away. The clypeus is once and a half as broad as the front median eyes.

The mandibles are long and powerful, stretching forward more than half of their total length. The fangs, stout at the base and slightly curved, are three-fourths the total length of the falx. On the inner margin of the falx-sheath are nine large teeth with one smaller between the seventh and eighth. The first is not quite so long as the others. The outer margin is covered with a thick bushy fringe, but has no teeth. The lip is once and a half times broader than long, cup-shaped, and hollowed in front. The maxillæ are convex, twice as long as broad, the base curving round the lip ends in a prolongation at the lower outer corner and a somewhat similar apophysis at the upper inner corner. The lip in front and the maxillæ on their lower area are thickly covered with the low club-shaped spines. There is a stridulating organ of long tapering setæ on circular roots near the inner edge of the maxillæ, and short upright fine bristles on the lower corner of the outer side of the mandibles. The sternum is one-fifth longer than broad, slightly convex, straight in front, with a hollow between it and the lip, in which is a pair of long, narrow, lunate sigilla. It is widest two-thirds of its length from the front and rounded at the rear, but ends in a slight angular point above the contiguous rear coxæ; the posterior end and sides are covered with short curved bristles, the median area with recumbent flat hairs. The inferior sigilla are large, lying midway between the margin and the median line.

The legs are moderately long and stout, about equal in thickness, the fourth pair longest. There are thick scopulæ on the tarsus and metatarsus of the first, second, and third pairs. On the fourth this only reaches two-thirds of the way along the metatarsus. The two tarsal claws are sunken in the claw-tufts, and I am unable to see any on tarsus 4. There is a pair of short stout spines at the anterior end of each metatarsus on the underside.

The palpi are scopulated on the distal segment only.

The abdomen is oval and nearly as thick as it is broad. The hair is smooth and recumbent, with scattered upstanding bristles on the basal area. The superior spinnerets are long and tapering. The second and third joints of equal length, shorter



## Family ULOBORIDÆ.

## Subfamily Miagrammopinæ.

## Genus MIAGRAMMOPES O. P. Cambr.

## MIAGRAMMOPES BIROI.

*Miagrammopes biroi* Kulc. Ann. Mus. Hung. vi. 1908, p. 478, Tab. ix. figs. 24, 27.

One female.

I have little doubt but that this is the same as the species with four eyes described by Professor Kulczynski under the above name.

In the frontal grooves, where the very minute eyes of *Miagrammopes* usually lie, there is no sign of any, nor in the middle as in *Hyptiotes*. The median large eyes (1/10 millimetre in diameter) are twice as far apart as they are from the side eyes, which, seen from above, are on the edge of the cephalothorax, but not quite at the edge when viewed from the side. The carapace is almost bare of hair.

## Subfamily Uloborinæ.

## Genus ULOBORUS Latr.

## ULOBORUS UNDULATUS, var. PALLIDIOR.

*Uloborus undulatus* Thor., var. *pallidior* Kulc. Ann. Mus. Hung. vi. 1908, p. 465, Tab. ix. figs. 5, 13.

Two females.

Apparently the same as Prof. Kulczynski's variety of above.

The cephalothorax is canary-yellow with almost white hair. At the base of the mandibles, which are similarly coloured, are two short, longitudinal, black lines. Fangs red-brown. Lip and maxillæ yellowish-grey. Sternum, coxæ, and femora yellow, other leg-joints darkening anteriorly to dark grey. The abdomen is yellow-grey with white hairs on the upperside and nearly brown on the underside. In another specimen the black lines on the mandibles are absent.

These specimens, in the shape of the abdomen, eyes, mouth-parts, etc., agree very closely with Thorell's *U. undulatus* from Amboina (1878, p. 133), but differ entirely in the colouring, and have no stripes on the cephalothorax and abdomen such as he describes, nor are the legs ringed; these are almost the same differences as Prof. Kulczynski records for a variety which he has called *pallidior*.

## Family PSECHRIDÆ.

## Genus PSECHRUS Thor.

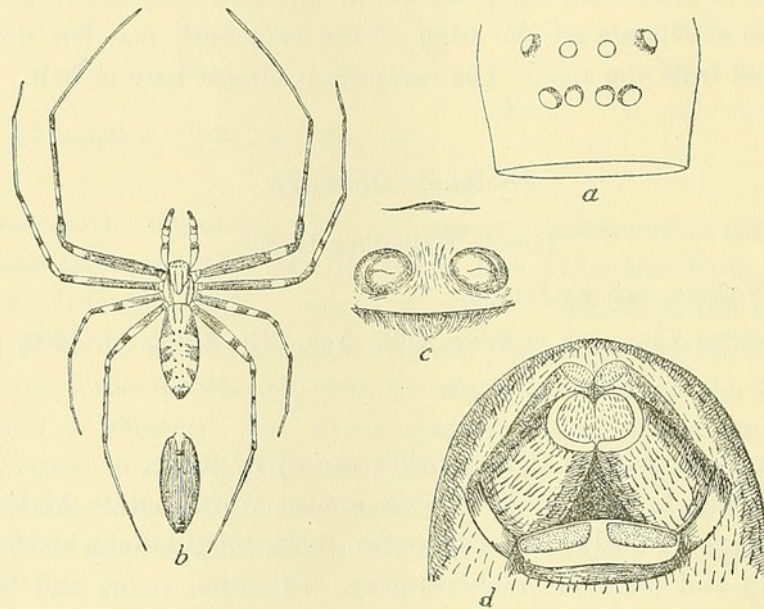
PSECHRUS CASTANEUS. (Text-fig. 22.)

*Psechrus castaneus* Hogg, Abstract P. Z. S. 1914, p. 56 (Nov. 17).

One female, Setakwa River. (*Type of the species.*)

The cephalothorax is rather dark yellow-brown, with recumbent white hair, mixed with a few finer orange, slightly paler in the median streak, and a streak of white round the margin. There is white hair mixed with orange in the middle, and at each side of the eye-space, and a broad white streak in the middle of the clypeus, but it is brown on each side.

Text-figure 22.



*Psechrus castaneus*,  $\times 2$ . a. Eyes. b. Underside of abdomen. c. Epigyne. d. Spinnerets and cribellum.

The mandibles are dark brown on the outer side, pale yellow-brown on the inner and at the anterior end. Brown bristly hair on the dark part and reddish-yellow on the lighter, fringes reddish-yellow, fangs dark brown.

The lip and maxillæ are dark brown, with dark brown hair, but paler yellow-brown fringes. The sternum is dark brown with a fillet of white hair along each side to the posterior end, and some white hair-spots on the median line.

The coxæ are dark brown with a light yellow-brown patch covered with white hair at the base of each. The trochanters are dark brown, with a patch of white hair on the front side.

The femora on the upperside have alternate rings of yellow-brown and dark

brown, the darkest of all at the anterior end. Underneath yellow-brown, with white hair in patches for two-thirds of the length from the base, then a brown ring, a silvery-white ring, and a brown ring at the anterior end. The patellæ dark brown; the tibiæ yellow-brown with faint darker rings, darkest at the anterior end. Metatarsi and tarsi pale yellow-brown with similar-coloured bristly hair, brown spines, grey claw-tufts and calamistrum (on metatarsus iv.). The palpi are pale yellow-brown with dark brown patches at the anterior end of the femur, patella, and tibia; spatulate white hair underneath the femoral joint, a white patch in the middle of the tibial and at the base of the tarsal joints; spines brown.

The abdomen on the upperside is pale yellow-brown in the median streak with brown longitudinal lines each side from the base for a fourth of the length, continued in patches to about midway, from whence to the spinnerets are alternate transverse bands of white and dark brown hair ending in dark brown. At each side are three wide sloping streaks of brown, reaching as far as a wavy longitudinal line of white hair which runs the whole length. On the underside there is a median, wedge-shaped, white hair-patch from the base to the genital line. Below this another similar, and thence to the spinnerets a narrower white hair-streak. Each side of this olive-brown.

The cephalothorax is one and a half times as long as broad, narrowing towards the front both from its greatest breadth and from the lower corners of the clypeus, slightly curved at the sides. The cephalic part is prominently raised up above the slightly convex thoracic, from which it is separated by side depressions, the eye-space lying on the highest point of the convexity. There is a deep, oval, longitudinal fovea just above the rear slope.

The rear row of eyes is slightly recurved, the median pair rather more than their diameter apart and rather more again from the laterals. All the eyes of both rear and front rows are equal in diameter. The front median pair are slightly less than their diameter apart, half that distance from their laterals, and twice the former distance from the rear median. The clypeus proper is three times as wide as the diameter of the eye, with an additional streak of grey muscular tissue, making the total width about the length of the median quadrilateral. The clypeus is recedent from the lower edge of the front eyes, but curves out again to the front margin.

The mandibles are only slightly geniculate at the base, as long as the front of the cephalothorax, and furnished with long bristles on the inner margins. The fangs are short, stout at the base, and well curved. There are three teeth on the inner margin of the falx-sheath, four on the outer.

The lip is straight with a slight hollow in front, nearly straight at the sides, longer than broad, and more than half the length of the maxillæ. These are convex, rounded anteriorly and on the upper half of the outer side, thence they curve inwards to the insertion of the palpi at the base. Their truncature is long and sloping, and projects at the lower end over the lip, whence the maxillæ curve round it.

The sternum is broad shield-shape, slightly convex, straight in front, hollowed opposite the insertion of each coxa and ending in a point between the rear coxæ. It is thickly covered with short stiff hair.

The abdomen is ovate, straight in front, twice and a half as long as it is broad in the middle.

The cribellum in both cases consists of two separate oval plates mounted on a broad, oval, chitinous plate.

The inferior spinnerets are conical, separated by half their diameter, with short hemispherical second joints. The superior pair is similar, but only half as long or broad, the median cylindrical, quite short, and close together. They all project beyond the end of the abdomen.

The epigyne consists of two oval spirally marked prominences, one on each side of a median ridge that widens out into a straight basal line. Both below this and some little way above is a sudden deep transverse depression.

The legs are long, cylindrical, and fine, the first pair being ten and a half times the length of the cephalothorax. The tarsi are nearly half the length of the metatarsus, very fine, and sinuous. There is only one weak spine above on metatarsus i., none above on the tibia, but several long ones on the sides and underneath. There are claw-tufts on the end of the tarsi. The femoral joint of the female palp is incurved and broadened anteriorly, the tibial twice as long as the patellar, the tarsal is furnished with a thick bunch of bristles and sundry spines. The claw has about ten pectinations.

The measurements (in millimetres) are as follows:—

		Long.		Broad.	
Cephalothorax.....		5		{ $2\frac{1}{2}$ in front. $3\frac{1}{2}$	
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.
Legs.....	1.	2	$14\frac{1}{2}$	{ (2 & 15) 17	{ ( $13\frac{1}{2}$ & 6) $19\frac{1}{2}$ } = 53
	2.	2	13	12	$14\frac{1}{2}$ = $41\frac{1}{2}$
	3.	2	10	$7\frac{1}{2}$	10 = $29\frac{1}{2}$
	4.	2	11	11	(11 & $5\frac{1}{2}$ ) = $40\frac{1}{2}$
Palpi .....	1		$2\frac{1}{2}$	2	$2\frac{1}{2}$ = 8

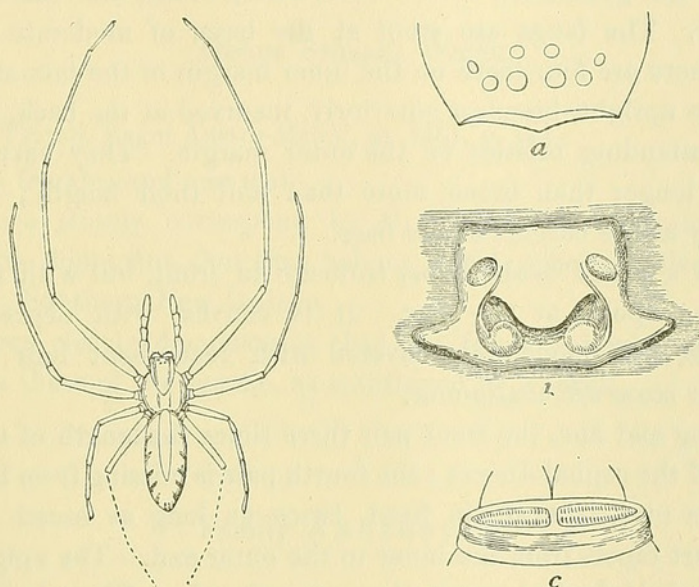
In coloration this species is very similar to *P. argentatus* Thor., *P. libeltii*, and *P. annulatus* Kulc., but in these species the front median eyes are smaller than (instead of equal to) the side eyes and the rear median less (instead of more) than their diameter apart. The legs are longer compared with the cephalothorax than in any of the recorded species. The epigyne is only roughly the same type, and they differ in size. From the Indian species the differences are still more marked, and I have no hesitation, therefore, in describing *P. castaneus* as new.

## Genus FECENIA Sim.

FECENIA CINEREA. (Text-fig. 23.)*Fecenia cinerea* Hogg, Abstract P. Z. S. 1914, p. 56 (Nov. 17).One female. (*Type of the species.*)

The cephalothorax is orange-yellow with pale yellowish-grey hair, thickest round the side margin and rear slope, and two longitudinal darker lines on each side of the median line. The mandibles are similarly coloured, but the hair and bristles are yellower, not quite so dark as the surface. The fangs yellow-brown. The lip and maxillæ are dingy yellow-grey with similarly coloured bristles and bright golden fringes. The sternum dark grey with yellowish-grey hair. The coxæ are more grey

Text-figure 23.

*Fecenia cinerea*, × 2. a. Eyes. b. Epigyne. c. Cribellum.

than yellow, but the legs get brighter yellow from thence to the anterior end, with light yellow hair and brown spines. The abdomen above is dark grey with light grey hair; there is a longitudinal pale streak bounded by two darker lines reaching from the base to two-thirds of its length, where the latter join. At the sides are about five faint transverse streaks—on the underside dark grey with a transverse light streak across it about the middle. Spinnerets and epigyne yellow.

The cephalothorax is slightly longer than broad, truncate in front and at the rear end, rounded at the sides. The cephalic part is convex and separated by well-marked depressions from the thoracic. These reach to a nearly circular fovea two-thirds of the length of the cephalothorax from the front. It is thickly covered with recumbent but rather coarse hair mingled with short upstanding bristles, those on the clypeus much longer.

The front row of eyes viewed from above is straight along the upper edge, but from the front looks procurved. The median eyes are one-fourth of their diameter larger than the side; they are their diameter apart, and about half that distance from the laterals. The rear row is so far procurved that the upper edge of the side eyes reaches to a line through the centre of the median pair. These are the same distance apart as from the front median, whose diameter is the distance separating them, their own diameter being three-fourths only of the latter. They are twice their diameter distant from their laterals, which are slightly smaller than the front eyes, from which they are their diameter away. The clypeus proper is the width of the front median eyes, but a bare chitinous piece extends almost the same distance to the upper part of the mandibles.

The mandibles are geniculate at the base, fairly stout, and thickly covered with coarse bristly hair. The fangs are stout at the base, of moderate length, and not much curved. There are four teeth on the inner margin of the falc-sheath.

The maxillæ are upright, broadest anteriorly, incurved at the back, narrowed to the base, and have upstanding bristles on the outer margin. They curve round the lip, which is convex, longer than broad, more than half their length; it is truncate in front and cut away at the corners of the base.

The sternum is a broad heart-shape, truncate in front, but with rounded corners, and narrowing to a point at the rear. It is convex, with depressions at points between the coxæ, and moderately covered with recumbent hair and upstanding bristles. The rear coxæ are contiguous.

The legs are long and fine, the front pair three times the length of the third pair and eight times that of the cephalothorax; the fourth pair is missing from below the patella.

The abdomen is oval, truncate in front, twice as long as broad. The cribellum divided. Each part tapers from the inner to the outer end. The epigyne consists of a median projecting shelf, flanked by a hollow on each side. These hollows are bounded on the outer and lower margins by a curved ridge, broad on the lower margin, but narrow at the sides; at each upper corner also there is another small oval depression.

The measurements (in millimetres) are as follows:—

		Long.		Broad.			
Cephalothorax .....		3½		{ 2 in front. 3			
Abdomen .....		6½		3			
Mandibles .....		2		—			
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.		
Legs .....	1.	1	8	9	7½	3½	= 29
	2.	¾	4½	6	6½		= 17¾
	3.	½	3	3	3½		= 10
	4.	¾	4½	—	—		
Palpi .....		¼	2	1½	1½		= 5¼

This differs from all other species described in the shape of the epigyne (which is nearest to the drawing given by Mr. W. J. Rainbow for his *F. oblonga* from the Solomon Islands\*), in having the median eye area broader than long, the rear row of eyes procurved, and the front pair of legs eight times the length of the cephalothorax instead of six times, with the others in proportion.

Family ZODARIIDÆ.

Subfamily Zodariinæ.

Group Storenæ.

Genus STORENA Walck.

STORENA ZEBRA.

*Storena zebra* Thorell, Ragni Austro-Malesi, iii. 1881, p. 184.

Two non-adult females and one male.

These specimens closely correspond to Dr. Thorell's description of the above. There can be little doubt but that they belong to this species, collected by d'Albertis on the Fly River, Southern New Guinea.

These specimens clearly demonstrate that the front-median eyes of the male are much larger than those of the female, as mentioned by Thorell.

Family ARGIOPIDÆ.

Subfamily Nephilinæ.

Group Nephilæ.

Genus NEPHILA Leach.

NEPHILA MACULATA.

*Aranea maculata* Fabr. Ent. Syst. ii. 1793, p. 425.

*Nephila maculata* forma *principalis* Thorell, Ragni Austro-Malesi, iii. 1881, p. 145, et auctores.

Four adult females. Also sundry mutilated and non-adult examples.

Of the original species, the so-called forma *principalis*, there are a number of specimens which unfortunately, from want of a better accommodation for their long limbs, are in a sadly dilapidated condition.

\* W. J. Rainbow, Rec. Austr. Mus. Sydney, vol. x. pt. 1, p. 8, fig. 5 (1913).

These are without the two small black tubercles at the rear end of the pars cephalica, having in their place two triangular bare spots.

The abdomen, which is of a rich chocolate ground-colour, speckled with silvery-white hair-spots, has a broad transverse band of white hair near the base on the upperside and another on the underside below the genital fold.

The abdomen is broadest and straight in front, whence the sides are parallel for not quite one-third of its length, thence narrowing to near the posterior end, where it slightly widens out and is bluntly rounded off.

The first pair of legs are eight and a half times, and the fourth pair six and a third times, the length of the cephalothorax, the breadth of the cephalothorax being three-quarters of its length.

Other specimens, which seem to conform to Thorell's variety *walckenaeri*, have the two black tubercles on the cephalothorax; the latter only two-thirds as wide as long. The abdomen is oval, with four pairs of muscle-spots on a yellowish-grey uniform ground-colour above and at the sides. Underneath is a long shield-pattern marked by a pale yellow border round a brown inside, with yellow spots thereon at the anterior end only; this reaches from the genital fold to the spinnerets. The palpi are yellow-brown. The first pair of legs are only seven times the length of the cephalothorax and the fourth pair five and two-thirds times. The coloration of the cephalothorax and legs is very similar to the first-named, but the above-quoted differences seem sufficient to indicate at least a new variety.

Herr Embrik Strand has given the name of *novæ guineæ* to a partly similar variety, but with a pattern on the back of the abdomen. The variations which occur are considerable, but seem to run one into the other, and it is difficult to say how far they can bear any definite subdivision.

NEPHILA MACULATA, nr. var. HASSELTII.

*Epeira hasseltii* Doleschall, Act. Soc. Sci. Indo-Néerl. v. 1859, p. 27, pl. xiii. fig. 5.

Two females.

The abdomen of these specimens is chocolate-brown all over, with moderate-sized silvery hair-spots in four longitudinal rows on the back, but more irregularly distributed on the underside. The spots are much smaller and more silvery than in specimens of *N. maculata*, forma *principalis*, in the Natural History Museum, from Java, and there is no pronounced longitudinal stripe on the back or underside as in the latter, but they have the broad, transverse, silvery streak near the front end on the upperside and a similar, but less conspicuous, stripe behind the genital fold on the underside.

The sternal protuberances are all about equal in height, and there are no cephalic tubercles, but two large bare depressions in their places.

The measurements (in millimetres) are as follows:—

(By these it will be seen that the first pair of legs is eight and a half times the length of the cephalothorax.)

		Long.	Broad.		
	Cephalothorax.....	14	$\left\{ \begin{array}{l} 8 \text{ in front.} \\ 10\frac{1}{2} \end{array} \right.$		
	Abdomen .....	27		9	
	Mandibles .....	$7\frac{1}{2}$	—		

Dr. T. Thorell states (*loc. cit. supra*) that, after examination of a very large number of specimens of this species, he is quite convinced that his forma *principalis* and four varieties—*annulipes*, *hasseltii* Dol., *walckenaerii* Dol., and *penicillum* Dol.—include the whole of the following species as synonyms:—*Nephila fuscipes* C. L. Koch (not *fuscipes* L. Koch), *N. chrysogaster* Walck., *N. hasseltii* Dol., *N. kuhlii* Dol., *N. walckenaerii* Dol., *N. penicillum* Dol., *N. procera* L. Koch, *N. sulphurosa* L. K., *N. tenuipes* L. K. In the face of this, although the above-described specimens do not conform exactly to any of the varieties of Thorell, but lie somewhere near var. *hasseltii*, there is no occasion to consider them as a new variety—much less a species.

#### NEPHILA MACULATA, nr. var. WALCKENAERII.

*Nephila maculata*, var. *walckenaerii* Doleschall, Nat. Tijdschr.-Nederl. Indie, xiii. 1857, p. 412.

Four females (one non-adult).

These specimens are rather shorter in the legs in comparison with the cephalothorax than those above described, the first pair about seven times the length thereof and others in proportion; they have small cephalic tubercles. The sternum in an apparently old example is black all over, but in the others the sternal protuberances are all bright orange. The posterior end of the sternum is broad, but rounded, with two small knobs at the corners.

The abdomen is pale olive-brown above, without any pattern or darkened base, but four pairs of small muscle-spots; the sides are darker, with pale wavy diagonal stripes; on the underside the gill-covers are dark brown. Below the epigyne is a narrow, transverse, dark stripe followed by a broader pale one, then a broad longitudinal

streak of brown reaching to the spinnerets. This is bordered along each side by a yellow stripe, with yellow spots on the anterior half. On the largest specimen this pattern is reduced to a pale median stripe only. Except in the non-adult, the abdomen is barely twice as long as broad.

The coxæ are black at the points and then bright yellow-brown, but the rest of the legs are jet-black. In the epigyne and other respects they resemble the form *principalis*.

The measurements (in millimetres) are as follows :—

		Long.	Broad				
Cephalothorax.....		13½	{ 7 in front. 11				
Abdomen.....		29	14				
Mandibles .....		6½	—				
		Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.			
Legs .....	1.	4½	28	25	38	=	95½
	2.	4	24	21	29	=	78
	3.	4	15	10	17	=	46
	4.	4	27	20	30	=	81
Palpi .....	2	7	5	6	=	20	

These are near to *N. walckenaerii* Dol. (*N. maculata*, var. *walckenaerii*), which, however, is without the clear pattern most of these have, and the dark area on the base of the abdomen is not present on any of these.

NEPHILA ? sp.

Eight females, Setakwa River.

These are almost certainly the same as L. Koch's *N. tenuipes*, but larger, with no humps and two deep depressions on the cephalic part of the cephalothorax. There is no protuberance at the lower end of the sternum, but instead a straight end with two small knobs, one at each corner. Dr. Thorell states that *N. tenuipes* L. K. is probably the non-adult of *N. penicillum* Dol. = *N. maculata*, var. *penicillum* Dol. (*loc. cit. supra*, p. 147).

#### Genus NEPHILENGYS L. Koch.

*Nephilengys* L. Koch, Die Arachn. Aust. p. 143 (1872).

#### NEPHILENGYS MALABARENSIS, var. PAPUANA.

*Epeira malabarensis* Walckenaer, Ins. Apt. ii. 1841, p. 103.

*Nephila rivulata* Cambridge, Proc. Zool. Soc. 1871, p. 618, pl. xlix. fig. 1.

*Nephilengys malabarensis*, var. *papua* Thorell, Ragni Austro-Malesi, iii. 1881, p. 156, et auctores.

One female.

The coloration of the back and sides of the abdomen is exactly the same as depicted

by the Rev. O. P. Cambridge for his *Nephila rivulata*, but the underside of the abdomen has the large cream-coloured spot, or shield, and the constricted coloration of the sternum mentioned by Dr. Thorell for his variety *papuana*. The front median eyes are rather more than their diameter apart. The legs are pale yellow-brown, with annulations at the base and front of the femur and tibia only.

The measurements (in millimetres) are as follows:—

		Long.	Broad.
Cephalothorax.....	7	{ $3\frac{1}{2}$ in front. 5	
Abdomen .....	12	$7\frac{1}{2}$	
Mandibles .....	$3\frac{1}{2}$	—	

		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.		
Legs.....	1.	2	9	9	12	=	32
	2.	2	$8\frac{1}{2}$	$8\frac{1}{2}$	$10\frac{3}{4}$	=	$29\frac{3}{4}$
	3.	$1\frac{1}{2}$	6	4	7	=	$18\frac{1}{2}$
	4.	2	$8\frac{1}{2}$	7	$10\frac{1}{2}$	=	28
Palpi .....	1	1	3	$2\frac{1}{2}$	$2\frac{1}{2}$	=	9

Widely distributed from Natal (sec. Cambr.) eastwards to Brazil.

#### Subfamily Argiopinae.

#### Group Argiopeæ.

#### Genus ARGIOPE Aud. in Sav.

##### ARGIOPE ÆTHEREA.

*Argiope ætherea* Walck. Ins. Apt. ii. 1841, p. 112.

A number of females.

Normal specimens of this widely spread and well-known species.

##### ARGIOPE BROWNII.

*Argiope brownii* Cambridge, Proc. Zool. Soc. 1877, p. 284.

Recorded from Duke of York Island (*Cambridge*); N. Britain (*Thorell*); Cape Horn, New Guinea (*Pocock*); N. Territory of Australia (*H. R. H.*).

Five females.

These specimens differ from the New Guinea specimens in the British Museum in having three white spots on each side of the longitudinal markings on the underside of the abdomen, legs light yellow-brown instead of chocolate-brown, and white spots on the brown area at the rear of the abdomen on the upperside, but are the same as my specimens from Northern Australia. Cambridge's description was obtained from parts of broken specimens and is not, therefore, minutely distinctive.

## ARGIOPE TRIFASCIATA.

*Epeira trifasciata* Doleschall, Nat. Tijd. Ned. Ind. xiii. 1857, p. 416; id. Tweede Bijd. Arachn. Ind. Archip. pl. i. fig. 3.

Two much mutilated female specimens are apparently referable to this well-known species.

Genus *GEA* C. Koch.

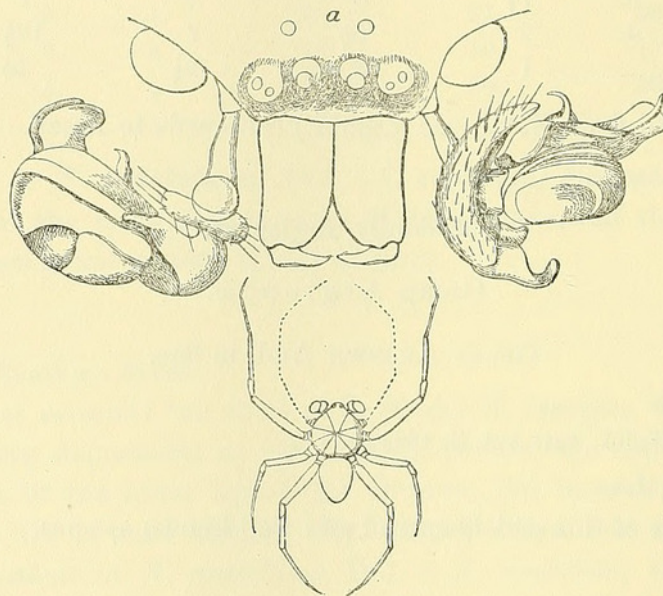
*Gea* C. Koch, Ar. x. 1843, p. 101.

*GEA ROTUNDA*, sp. n. (Text-fig. 24.)

One male. (*Type of the species.*)

The cephalothorax is bright yellow-brown with rather paler streaks in the radiations. The clypeus and mandibles are dingy yellow-grey, fangs yellow-brown. Lip, maxillæ, and sternum dingy yellow with pale yellow-grey hair. The coxæ of the

Text-figure 24.



*Gea rotunda*, ♂, ×2. a. Front of cephalothorax, showing eyes, mandibles, and male palps from upper and underside.

front two pairs of legs are yellow, of the two rear pairs dark yellow-grey. The femora and patellæ are dark brown. The basal half of the tibia yellow, the anterior half dark brown. The metatarsi and tarsi yellow, hair pale yellow on the former, browner on the tarsi. The palpi yellow-brown with pale yellow hair. The abdomen is pale greenish or silvery-grey above, dark grey mottled with yellow underneath.

The cephalothorax is almost circular with a shallow oval fovea in the centre, whence shallow depressions radiate to the circumference. It is moderately convex, curving

evenly all round from the flat central area to the margin. A short truncate piece in front carries the eyes and supports the mandibles, which are straight and perpendicular with short stout fangs.

The rear row of eyes is so procurved that the laterals are in a straight line with the front median, the laterals of which are so slightly lower that they form altogether a front row of six eyes in a nearly straight line.

The rear median eyes are four of their diameters apart between their yellow pupils, and their somewhat wide black rims bring them nearer. The front median, one-third wider than the rear, are one and a half diameters from them and the same distance from one another. The laterals of each row are on a common protuberance, the eye belonging to the rear row slightly the larger of the two, being on the outside they are one-half of its diameter apart. A deep depression separates them from the prominence on which the front median eyes lie, and there is a shallower depression between the latter also. The clypeus is as broad as the distance between them.

The lip, at least twice as wide as it is long, is truncate in front, where it is one-half the width of its base and about one-third the height of the maxillæ, which are triangular, widest anteriorly. The sternum, as broad as long, is as wide as the lip and slightly hollowed in front, widest between the second pair of coxæ, pointed above the contiguous pair of rear coxæ.

The tarsal and metatarsal joints of the legs (of which the front pairs are absent) are much finer than the tibial; the superior claws short, fine, and without pectinations. The inferior claw longer than the others.

The abdomen is ovate, slightly truncate in front; spinnerets normal, on raised chitinous bases.

The measurements (in millimetres) are as follows:—

		Long.	Broad.			
Cephalothorax .....		3	$\left\{ \begin{array}{l} 1 \text{ in front.} \\ 3 \end{array} \right.$			
Abdomen .....		3		2		
Mandibles .....		1	—			
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.	
Legs .....	1.	$\frac{1}{2}$	—	—	—	
	2.	$\frac{3}{4}$	$4\frac{3}{4}$	4	4	= $13\frac{1}{2}$
	3.	$\frac{1}{2}$	3	2	3	= $8\frac{1}{2}$
	4.	$\frac{1}{2}$	4	3	4	= $11\frac{1}{2}$
Palpi .....		$\frac{1}{8}$	$\frac{1}{2}$	$\frac{1}{4}$	$1\frac{1}{2}$	= $2\frac{3}{8}$

Doleschall described his species, *Argiope reinwardtii* from Amboina, from a female, which is as usual much larger. The sexes being different in size and general appearance, it is not easy, unless specimens are taken together, to associate them. M. Simon

gives a drawing of the eyes and male palp of *A. reinwardtii* Dol.\* very nearly like this, and I think it may possibly be the same, but there is no proof of it being so. I am unable to find that any description of the male has been published. As the eyes of the front row are equidistant, it belongs to the genus *Gea* C. Koch and not *Argiope*.

Group *Araneæ*.

Genus *ARANEUS* Clerck. Series I. of E. Simon.

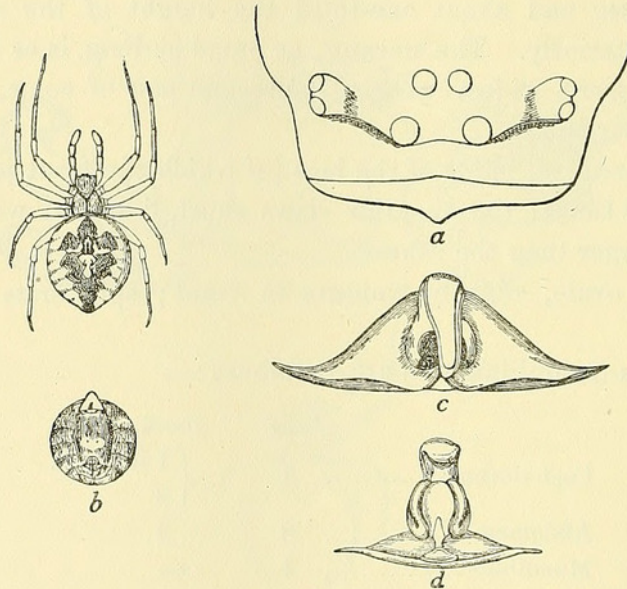
*ARANEUS FLORIATUS*. (Text-fig. 25.)

*Araneus floriatus* Hogg, Abstract P. Z. S. 1914, p. 57 (Nov. 17).

Two females (one non-adult). (*Type of the species.*)

The cephalothorax is dark yellow-brown with pale yellowish-white hair, the side-eye tubercles black-brown. The mandibles yellow-brown, fangs rather paler. Lip and

Text-figure 25.



*Araneus floriatus*, nat. size. a. Eyes. b. Underside of abdomen. c. Epigyne from above.  
d. Epigyne from below.

maxillæ yellow-brown, with the usual paler broad edges. Sternum and coxæ yellow-brown all over, with yellowish-white hair. Legs yellow, darkest on the femoral joints, with yellow-brown hair. Metatarsus and tarsus quite bright yellow. There are white patches at the anterior end of the femora and dark patches on the upperside at the anterior end of the tibiæ; the spines on the sides are black and white, but those on the upperside brown. The palpi bright yellow-brown all over.

\* Hist. Nat. des Ar. i. 1892, p. 765, figs. 841-3.

At the base the abdomen is dark greyish-brown mottled with yellow, followed on each side by a broad area of bright yellow with a few brown spots thereon, running into a yellow area the whole length of each side of the abdomen; the central area of the back is covered with a brown pattern beginning with a median broad triangle that separates the above-mentioned yellow areas, thence it broadens out into a shield deeply scalloped at the sides, which gradually narrows into a long streak reaching to the posterior end. In the interior of this shield are paler patches, two near the broad anterior end, one each side of the median line, and others successively smaller on the median line. On the yellow sides are about five faint brown perpendicular lines merging into the dull greyish-brown of the underside. On this, in front of the epigyne, is a pale yellowish area. Between the genital groove and the spinnerets is a narrow darker shield pointed at each end; on this, one below the other, are four pairs of small round dark spots and two rather large paler yellow spots a little in front of the spinnerets. The latter and the epigyne are yellow-brown.

The cephalothorax is longer than broad, truncate in front, rounded at the sides. The somewhat raised cephalic part is separated from the thoracic by well-marked depressions, its rear end extending to a fovea almost on the rear slope. The former is nearly bare in the middle, but the sides and the thoracic part are thickly covered with rather coarse hair. The front median eyes are one-third wider than the rear median, one and a half times their diameter apart and two and a half times from their laterals. The rear median are only two-thirds of their diameter apart and their diameter from the front median. The side eyes, the diameters of which are one-third smaller than those of the rear median, lie half a diameter apart on a rather large tubercle, the front eye being directly below the rear one. The clypeus is about as broad as a front median eye.

The mandibles are strongly geniculate at the base, as long as the front of the cephalothorax is broad; the fangs long and powerful, but slightly curved. On the inner side of the falx-sheath are three teeth, the middle one larger than the others. On the outer margin are four, of which the third is the largest and the fourth smallest.

The lip is broader than long, pointed anteriorly, half the length of the maxillæ; the latter are straight in front, where they are broadest.

The sternum is long and shield-shaped, hollow in front and at the insertion of the coxæ, the rear pair being contiguous; it is thickly covered with rather coarse hair.

The legs are moderately long and tapering, not very stout, but furnished with short powerful spines.

The abdomen is ovate, nearly as broad as long, broadest one-third of its length from the base; thick at the sides and sparsely covered with short, fine, recumbent hair and long upstanding bristles on circular roots.

The epigyne is formed of a scape springing from the upper part of a bulbous base, at first bent back and then turned over towards the rear, the anterior two-thirds pointing

posteriorly. This portion is twice as long as the bulbous base, hollowed on the upper-side with a narrow raised margin, slightly narrowing anteriorly, where it ends in a rounded point. On each side of the bulbous base is an outwardly curving columnar support with a dark line along it, the median portion being also convex. The whole of this portion, as broad as it is long, springs from a strongly convex transverse protuberance, broadest in the middle and tapering to the pulmonary apertures.

The superior tarsal claws have about seven pectinations, none on the inferior.

The tibial joint of the palpi is twice as long as the patellar, with five or six pectinations on the claw. On the anterior end of the femur are some short curved spines.

The measurements (in millimetres) are as follows:—

			Long.	Broad.				
Cephalothorax	.....	5½	$\left\{ \begin{array}{l} 2\frac{1}{2} \text{ in front.} \\ 4 \end{array} \right.$					
Abdomen	.....	12		11				
Mandibles	.....	2½		—				
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.			
Legs	.....	1.	2	7	7	=	23	
		2.	2	7	6½	6½	=	22
		3.	1½	5	3½	4	=	14
		4.	2	7	5½	6	=	20½
Palpi	.....	1	2	2½	2	=	7½	

This species is somewhat near *A. ferruginea* Thor. and *A. pfeifferi* Thor.; it differs from both in the pronounced pattern on the back and in having the side eyes nearer to the median than in either. The epigyne agrees closely with Thorell's description of that of the latter, but the scape is longer in proportion to its breadth than in the former. I am unable to discover any species recorded from anywhere near New Guinea in which the epigyne, eyes, and shape of abdomen accord with this, and I therefore consider it to represent a new species.

ARANEUS GRANTI. (Text-fig. 26.)

*Araneus granti* Hogg, Abstract P. Z. S. 1914, p. 57 (Nov. 17).

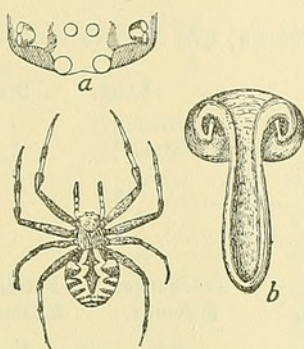
One female. (*Type of the species.*)

The cephalothorax is black-brown all over, covered with long silvery-white hairs and white upstanding bristles. The mandibles black-brown, fangs red-brown at the anterior half. Lip and maxillæ black-brown, pale yellow-brown at the margins, with fringes of the same colour. The sternum is yellow over the whole central area, but black-brown round the side margins, with yellowish-white hair. The coxæ are dark

yellow-brown. The femora of the third pair of legs are yellow with black patches at each end, but those of the first, second, and fourth pairs black-brown all over. The patellæ black-brown, the tibiæ yellow on the basal half, black-brown on the anterior. Metatarsus and tarsus i. and ii. yellow. Metatarsus iii. and iv. yellow, but tarsus black-brown. Dark brown bristly hair on the dark portions of the legs, greyish-white on the lighter. The palpi are similarly coloured, with light femoral and dark distal joint.

The upperside of the abdomen is chocolate-brown with white hairs and bristles; embedded in this is a black longitudinal spear-head pattern, pointing anteriorly, about the middle it broadens out and ends in a short shaft; a yellow border envelopes the pattern as far as the rear end; the broadening out tends to form an indistinct cross. Near the juncture of the cross-bar with the middle streak are two large round depressions on the lower side and two smaller nearer together on the upper. The

Text-figure 26.

*Araneus granti*, nat. size. a. Eyes. b. Epigyne.

underside is in corrugated ridges of black and yellow, with white hair; on the sideslopes, which are brown, are perpendicular yellow streaks.

The cephalothorax is one-fourth longer than broad, truncate in front, rounded at the sides, with well-marked depressions separating the cephalic from the thoracic part. Long, coarse, forward-pointing hair and bristles. The front median eyes are rather more than their diameter apart and the same distance from the rear median, which are one-fifth diameter smaller and only half of their diameter apart; they are two and a half times their diameter from the laterals, the row being slightly recurved viewed from above. The lateral eyes are on a joint protuberance, about equal in size, smaller than the rear median and half their diameter apart. The clypeus is about as wide as the front median eyes.

The mandibles are as long as the front of the cephalothorax (*i. e.* half its greatest width), geniculate, slightly divergent anteriorly. The fangs are long, powerful, and slightly curved: on the inner side of the falx-sheath are three teeth, the lower being the largest; and four on the outer, the last but one larger than the others.

The lip is broader than long, rounded to an obtuse point anteriorly—half the length

of the maxillæ. The sternum is a broad shield-shape, pointed at the rear, slightly hollowed in front and at the insertion of the coxæ, of which the rear pair is contiguous.

The abdomen is ovate, rounded in front, obtusely pointed at the rear, nearly as broad as long. It is smooth on the back and sides, but corrugated transversely underneath.

The epigyne is furnished with a broad scape projecting downwards, three times as long as the bulbous base from which it springs. The scape is broad at the base, narrowed and broadened again. It is four and a half times as long as broad, and rounded at the anterior end. Along each side of the upper face is a slightly raised margin, within which it is hollowed.

The legs are of medium length and fairly stout. On the patella of the front two pairs there is a spine at each side and one in front, and on tibia i. and ii. four pairs at the sides and one above.

The measurements (in millimetres) are as follows:—

		Long.	Broad.	
Cephalothorax .....	5	{ 2 in front. 4		
Abdomen .....	7½		7	
Mandibles .....	2	—		

		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.		
Legs .....	1.	1	6½	6	6	=	19½
	2.	1	6½	5	5	=	17½
	3.	¾	3½	3¼	3¼	=	10¾
	4.	1	6	5	5	=	17
Palpi .....		½	2	1¾	2	=	6¼

This is one of the smaller of the numerous variations from the widely spread *A. productus* type, but it does not seem to have been recorded before; I have named it after Mr. W. R. Ogilvie-Grant. It is near *A. vatus* Thor. from Amboina ('Ragni di Selebes,' p. 44), which Dr. Thorell thinks may be the same as *A. hispidus* Dol.; but the scapus of the epigyne is apparently longer and more wavy, and the patella wholly black instead of black at the point only, the pattern of the back doubtfully similar.

#### ARANEUS CAPUT-LUPI.

*Epeira caput-lupi* Doleschall, Act. Soc. Sci. Indo-Néerl. v. 1859, p. 35, pl. viii. fig. 6;  
Thorell, Ann. Mus. Genova, xvii. 1881, p. 85.

*Araneus caput-lupi* Pocock, Soud. aus dem Abh. der Senck. naturf. Ges., Bd. xxiii. Heft 4,  
1897, p. 599, pl. xxv. fig. 6.

Six females.

Although varying in colour considerably, as mentioned both by Dr. Thorell and Mr. Pocock, these specimens are without doubt the same as those identified by the

above-named gentlemen as Doleschall's *Araneus (Epeira) caput-lupi*, although the illustration given by the latter does not agree so well with them, as is usually the case with his beautifully finished drawings.

In some specimens the shield on the back is of a deep chocolate-colour bordered by a thin yellow line, and pale red on the shoulder-humps, the portion in front of the shield being quite dark. In others about the same colour the thin bordering line is absent. In others, again, the whole of the back is pale yellow-brown, but in all the form of the epigyne is similar and very distinctive—the spinous bristles on the back and legs on round tubercle-roots, the white spines on the legs, the pair of large dark bare muscle-spots on the shield, and other points are exactly similar. I make the measurements of the largest (in millimetres) as follows:—

		Long.	Broad.
Cephalothorax.....	9	{	4½ in front.
			7
Abdomen .....	14		12
Mandibles .....	4		—

		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.		
Legs.....	1.	2½	8	9	8½	=	28
	2.	2½	7	9	7½	=	26
	3.	2	6	6	5	=	19
	4.	2½	8	9	8½	=	28
Palpi .....	1		4	3½	3	=	11½

Dr. Thorell makes the cephalothorax shorter than patella + tibia iv., but I find it the same length (in some of the specimens, however, this does not seem to be the case), and the fourth pair are as long as the first, while he makes them in some cases even longer.

#### ARANEUS THEIS, var. TRIANGULIFERA.

*Epeira theis* Walckenaer, Ins., Apt. ii. 1841, p. 53.

*Epeira mangareva* Walckenaer, ibid. iv. 1847, p. 469.

*Epeira theisii* Thorell, Ragni di Selebes, 1877, p. 50.

*Epeira triangulifera* Thorell, Ragni di Amboina, 1878, p. 65.

*Epeira theisii*, var. *triangulifera* Thorell, Rag. Aust.-Mal. 1881, p. 115.

Nineteen females and one male.

It has generally been held that *Epeira theis* Walck. and *Epeira mangareva* Walck. are at most varieties of the same species. Dr. Thorell attempts a differentiation on slight variations in both the male and female sexual organs. These, however, do not seem to hold good even in his own description, and seeing that the species have been recorded (originally from Guam) from Singapore, New Guinea and adjacent islands, the eastern parts of Australia, and most of the Pacific islands, it is hardly to be wondered

at that there should be local variations. The colouring varies considerably, but the markings on the cephalothorax and upperside of the abdomen remain roughly the same, and they are all distinguished by the yellow longitudinal stripes each side of a dark median area on the underside of the abdomen, and the slightly differing scapus of the epigyne in the female sometimes springing from a more or less rounded base and sometimes more or less narrowed at the anterior end.

After examining specimens from Guam, Thorell came to the conclusion that there was a specific difference between those from the locality whence Walckenaer described his original *E. theis* and specimens from Amboina, and he therefore (*loc. cit.*) described the latter as a new species, *A. triangulifera*. Among the numerous specimens now before me, certainly all the same, and all from more or less the same locality, the thickness of the base and breadth of the point certainly vary; normally they have a fairly rounded thickened base. Tapering to about half its width at the point, the scape is hollowed underneath in the basal half and on the upperside in the anterior half, in each case with a raised marginal rim; in some specimens it is straight, in others curved upwards or downwards.

Mr. R. I. Pocock (Sond. aus dem Abh. der Senck. naturf. Ges., Bd. xxiii. Heft 4, 1897, p. 601) describes both species from the Island of Halmahera.

In my specimens the legs are longer in proportion to the cephalothorax than the measurements given by Dr. L. Koch (Arach. Aust. vol. i. 1871, p. 85, *E. mangareva*), but they agree with Dr. Thorell's *E. triangulifera* (*loc. cit.*), and I consider them as certainly the same as this and a variety of *A. theis* Walck.

In all Dr. Thorell's descriptions he makes the rear median eyes larger than the front median, while Dr. Koch says that they are the same size. In these the front eyes are quite clearly larger than the rear, but not much.

The measurements (in millimetres) of a female and a male are as follows:—

<i>Female.</i>			<i>Male.</i>		
	Long.	Broad.		Long.	Broad.
Cephalothorax.....	4	$\left\{ \begin{array}{l} 2 \text{ in front.} \\ 3 \end{array} \right.$	Cephalothorax.....	4	$\left\{ \begin{array}{l} 2 \text{ in front.} \\ 4 \end{array} \right.$
Abdomen.....	8	$5\frac{1}{2}$	Abdomen.....	$4\frac{1}{2}$	$2\frac{1}{2}$
Mandibles .....	$1\frac{1}{2}$	—	Mandibles .....	$1\frac{1}{2}$	—

<i>Female.</i>						
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.	
Legs.....	1.	1	6	6	$6\frac{1}{2}$	= 19 $\frac{1}{2}$
	2.	1	5	5	$5\frac{1}{2}$	= 16 $\frac{1}{2}$
	3.	$\frac{3}{4}$	3	3	3	= 9 $\frac{3}{4}$
	4.	1	6	6	6	= 19
Palpi .....		$\frac{1}{2}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{1}{2}$	= 5 $\frac{1}{2}$

		<i>Male.</i>						
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.			
Legs.....	1.	1	6	6	6	=	19	
	2.	1	5	4½	5	=	15½	
	3.	$\frac{3}{4}$	3	3	3	=	9¾	
	4.	1	5	5	5	=	16	

Group *Cyrtophoræ*.Genus *CYRTOPHORA* Simon.*CYRTOPHORA MOLUCCENSIS*.

*Epeira moluccensis* Doleschall, Nat. Tijd. v. Nederl. Ind. vol. xiii. 1857, p. 418; id. Act. Soc. Sci. Ind. Néerl. vol. v. 1858-9, pl. i. fig. 7; Thorell, Ragni di Amboina, Studi Rag. Mal. e Pap. vol. ii. 1878, pp. 41, 296; Ragni di Austro-Malesi, Studi Rag. Mal. e Pap. vol. iii. 1881, p. 80.

*Araneus moluccensis* Pocock in Sond. aus dem Abh. der Senck. naturf. Ges., Bd. xxiii. Heft 4, 1897, p. 599.

*Cyrtophora moluccensis* Simon, Hist. Nat. des Araignées, vol. i. 1895, p. 775 (note); Kulczynski in Bot.-Zool. Ergebn. Samoa- u. Solomons-inseln, 1910, p. 6, pl. xvii. fig. 5.

Two females.

This widely spread species has so many variations in size and coloration that it is difficult to say for certain, in the absence of the type-specimens, that all attributed thereto belong to the same species as that described by Doleschall, but from his description I have little doubt as to these specimens being the same.

Thorell (*loc. cit.*) gives the following as synonyms:—

- Epeira maritima* Keys.
- „ *cupidinea* Thor.
- „ *hieroglyphica* L. Koch.
- „ *margaritacea* Dol.

The drawings accompanying the original descriptions of these vary considerably. The present specimens have light and dark rings on the tibia, but the epigyne agrees exactly with Prof. Kulczynski's drawing (*loc. cit.*).

The pattern given by Mr. W. J. Rainbow (Proc. Linn. Soc. N.S.W. 1898, pt. 3, pl. vii. fig. 4) of his *C. simoni* from British New Guinea is the same as this, but in some points his description seems to differ.

## Group Tetragnathæ.

## Genus TETRAGNATHA Latr.

## TETRAGNATHA RUBRIVENTRIS.

*Tetragnatha rubriventris* Doleschall, Nat. Tijds. v. Nederl. Ind. vol. xiii. 1857, p. 40.

One male.

M. Simon, Hist. Nat. des Ar. vol. i. 1892, p. 718, gives drawings of the mandibles, lip and maxillæ, and male palp of *T. rubriventris* Dol., which agree exactly with the same parts of this specimen.

Doleschall's description (*loc. cit.*) agrees well enough with this, except that he calls the underside of the abdomen "purple-coloured" and gives the length as 4 mm. only, while in this one it is 9 mm. and the abdomen is dark grey underneath. Thorell (*loc. cit.*) makes the length of his specimen  $14\frac{1}{2}$  mm. and says the abdomen is golden-red, which this male is on the upperside.

Prof. Kulczynski records *T. rubriventris* Dol., and then describes *T. phæodactyla* with a drawing of the mandible which seems the same, and his coloration is the same as this, with the exception of yellow spots on the abdomen and a dark ring on the tarsi and metatarsi i. and ii., the length being 7.47 mm. If not the same, the two species would seem to be merely varieties.

## TETRAGNATHA ? LEPTOGNATHA.

*Tetragnatha leptognatha* Thorell, Ragni di Selebes, 1877, p. 101.

One female.

Both in coloration and proportions this example seems to agree with Thorell's description of the above-named species, but his specimens are slightly larger. The mandibular teeth and shape of fang are the same, and I have not much doubt but that it must be ascribed to Thorell's species.

I make the measurements (in millimetres) as follows: —

		Long.		Broad.	
Cephalothorax.....		3		{ 1 in front. 2	
Abdomen.....		$9\frac{1}{2}$		$2\frac{1}{4}$	
Mandibles .....		3		—	
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.
Legs .....	1.	$\frac{1}{2}$	8	9	11 = $28\frac{1}{2}$
	2.	$\frac{1}{2}$	6	6	7 = $19\frac{1}{2}$
	3.	$\frac{1}{4}$	$3\frac{1}{2}$	2	3 = $8\frac{3}{4}$
	4.	$\frac{1}{2}$	6	6	$6\frac{1}{2}$ = 19
Palpi .....		$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{4}$	1 = $4\frac{1}{4}$

## Group Meteæ.

## Genus LEUCAUGE White.

*Leucauge* White, Ann. Mag. Nat. Hist. viii. 1841, p. 473.

*Argyropeira* Emmerton, Trans. Conn. Acad. vi. 1884, p. 328.

## LEUCAUGE COCCINEA.

*Epeira coccinea* Doleschall, Nat. Tijd. v. Nederl. Ind. vol. xiii. 1857, p. 421; id. Tweede Bijd. Act. Soc. Sci. Ind. Néerl. 1859, pl. i. fig. 2.

*Meta coccinea* Dol.; Thorell, Rag. Mal. e Pap. ii. (Ragni di Amboina), 1878, p. 89; v. Keyserling, Die Arach. Aust., Suppl. 1887, p. 208, tab. xviii. fig. 8.

A large number of females, evidently of this handsome species.

Previously recorded from Amboina, New Ireland, the Solomon Islands, and Fiji Islands.

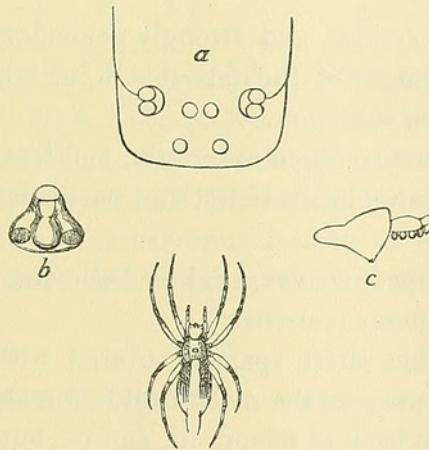
LEUCAUGE CAUDATA. (Text-fig. 27.)

*Leucauge caudata* Hogg, Abstract P. Z. S. 1914, p. 57 (Nov. 17).

Two females. (*Type of the species.*)

The cephalothorax is pale yellowish mottled with darker grey, slightly darker in the cephalic fovea; the few scattered upright hairs are nearly white. The

Text-figure 27.



*Leucauge caudata*,  $\times 2$ . a. Eyes. b. Epigyne from below. c. Profile,  $\times 2$ .

mandibles are dark yellow and darker grey; the fangs red-brown at the base, pale red at the anterior half. The lip, maxillæ, sternum, and coxæ are the same yellow as the cephalothorax mottled with darker grey. On the former the fringes are dingy yellow, and on the latter are a few hairs similar to those on the cephalothorax. The

trochanters of the legs are dark yellow-brown, the basal half of the femora bright yellowish-white, the anterior half with the patellæ rich brown. The tibiæ yellowish-white, with a brown ring at the anterior end and a spot of the same on the upperside about the middle. The metatarsi and tarsi are nearly all white, with a faint brown ring at the anterior end. The hairs are quite pale yellowish-white throughout. The abdomen is silvery-grey on the upperside, with three pairs of small yellowish spots. It is somewhat yellower on the sides and underneath. The hairs are short, upright, and nearly white, but along the sides pale brown on yellow roots over an area reaching from the base of the abdomen to about halfway. The epigyne and spinnerets are rather dark yellow.

The cephalothorax is smooth, about one-half longer than broad; the cephalic part small, with straight sides and deep depressions separating it from the thoracic, convex, rounded at the sides of the thoracic part, and truncate at the front and rear. The thoracic fovea is a broad transverse oval in the middle without any side depressions therefrom.

The front and rear median eyes are equal in size; the former once and a half times their diameter apart and the same distance from the rear pair, which are not more than half their diameter from one another. The lateral eyes are about three-fourths the diameter of the median, situated on a small protuberance, touching one another. Viewed from above, the laterals of the front-row are in a line with the rear median, and those of the rear-row directly behind them, so that the front-row is considerably, and the rear-row slightly, recurved. The laterals are three times their diameter distant from the rear median.

The mandibles are short, conical, and strongly geniculate at the base. There are four teeth on the outer margin of the falx-sheath, of which the second is smaller than the others, and three on the inner.

The lip is broader than long, pointed anteriorly, and less than half the height of the maxillæ. The latter are triangular, broadest and particularly thick along the anterior margin.

The sternum is shield-shaped, convex, slightly hollowed in front, ending in a point posteriorly, above the contiguous rear-coxæ.

The legs are fine and rather short, sparsely covered with moderately long upright hairs, which increase in quantity on the metatarsal and tarsal joints. There is a single row of longer hair down the back of femora iii. and iv., but there are no spines on any of the joints. The tibial joints broaden out at the anterior end. The fourth pair of legs is as long as the first.

The palpi are likewise short and fine, with the femoral joint bent in and thickened at the anterior end.

The abdomen viewed from above is at first oval; at the posterior end of this portion it suddenly narrows into a straight blunt tail, about one-half the length of the anterior

part above mentioned. Viewed from the side, it is nearly triangular as far as the caudal portion, which projects from the narrow junction of the back with the underside. The front forms one side of the triangle and is as deep as the triangle is long, the cephalothorax being set on to it rather above the middle. As it slopes rather backwards the spinnerets, which are at the lower angle, lie below the middle of the side forming the back. The third side slopes upwards from the spinnerets to the base of the tail.

The epigyne consists of a base formed of two convex pear-shaped bodies, the larger rounded end below, situated one each side of an ovate hollow, the median area of which is again convex. From the middle of the upperside of this base springs a short, broad, straight-sided scape, which bends forward over the base.

The measurements (in millimetres) are as follows:—

		Long.	Broad.
Cephalothorax .....		$2\frac{1}{2}$	$\left\{ \begin{array}{l} 1 \text{ in front.} \\ 1\frac{3}{4} \end{array} \right.$
Abdomen .....		$5\frac{1}{2} (3\frac{1}{2} + 2)$	$2\frac{1}{2} (3\frac{1}{2} \text{ deep at spinnerets).}$
Mandibles .....		1	—

		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.		
Legs .....	1.	$\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{4}$	2	=	$7\frac{1}{4}$
	2.	$\frac{1}{2}$	$2\frac{1}{4}$	2	$1\frac{3}{4}$	=	$6\frac{1}{2}$
	3.	$\frac{1}{2}$	$1\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	=	$5\frac{1}{4}$
	4.	$\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{4}$	2	=	$7\frac{1}{4}$
Palpi .....		$\frac{1}{8}$	1	$\frac{3}{4}$	$\frac{3}{4}$	=	$2\frac{5}{8}$

In shape this is rather like Prof. Kulczynski's *Araneus caudifer* (Res. de l'exp. Néerl. à la N. Guinea, 1903, vol. v. pt. 4, Zool. p. 482, pl. xx. figs. 52–54), but smaller, the legs being only about half as long; the colouring of the abdomen silvery instead of reddish-brown, the rear median eyes half their diameter apart instead of more than the diameter, and the median area narrower instead of wider posteriorly, also the epigyne has a shorter scape and a bulbous base which is absent from the other.

### Group Gasteracanthæ.

#### Genus GASTERACANTHA Sund.

##### GASTERACANTHA CREPIDOPHORA.

*Gasteracantha crepidophora* Cambridge, Proc. Zool. Soc. 1879, p. 267; Thorell, Ragni Malesie Papuasi, vol. iii. 1881, p. 30.

Nine females.

This species seems fairly common in New Guinea and the neighbouring islands.

It is readily recognisable by the brilliant red spot at the base of its side-spines, or horns, the remarkable thorn at the end of same, and the scape of the epigyne, and is no doubt easily seen.

GASTERACANTHA ? LEPELLETIERI.

*Gasteracantha lepelletieri* Guérin, Encycl. Méthod. vol. x. 1825, p. 763; id. Voyage de la 'Coquille,' Zool. ii. 2, 1830, p. 52; Thorell, loc. cit. pp. 31 & 39, vol. ii. 1878, p. 14.

Five females.

In these the epigyne and side-horns resemble *G. crepidophora*; but the absence of the red spots of the former and its own characteristic black markings, with a slightly broader cephalothorax (which point, however, is not very evident), are held by Thorell to be sufficient to justify Guérin's separate species. The only apparent structural difference between the species seems to be that in the latter the spines are stouter and the whole appearance more robust. Described from Amboina, Buru, and Gilolo. This is clearly the same as that which Thorell considered to be *G. lepelletieri*, but in spirits the red spots are faintly visible, and I doubt if there is any difference from *G. crepidophora* Camb.\*.

GASTERACANTHA HEPATICA, ? var. n.

*Gasteracantha hepatica* Koch, Die Arach. Aust. 1871, p. 8, pl. i.

Five females.

These specimens agree structurally, including the epigyne and proportion of the legs, with L. Koch's description; but the pattern on the back of the abdomen of most of them includes a transverse black fillet between the spines of the upperside, from the middle of which depends a straight streak ending in two arrow-shaped points. They are also rather larger; one specimen without the black markings is like the original drawings.

GASTERACANTHA TÆNIATA.

*Gasteracantha tæniata* Walck. Ins., Apt. ii. 1841.

Eight females.

These show considerable variation in the length and stoutness of the spines, the deeper or brighter orange and pale yellow of the light stripes, and the continued or broken dark lines, but they are all undoubtedly the same. Described from New Guinea and adjacent islands.

\* In the L. Koch Collection now in the British Museum (Nat. Hist.) there is a specimen marked *Gasteracantha lepelletieri*, which is quite different. The back is red, without special markings; the horns are non-existent, and the side spines (much finer) stand up almost at right angles to the carapace.

## Family THOMISIDÆ.

## Subfamily Misumeninæ.

## Group Diæeæ.

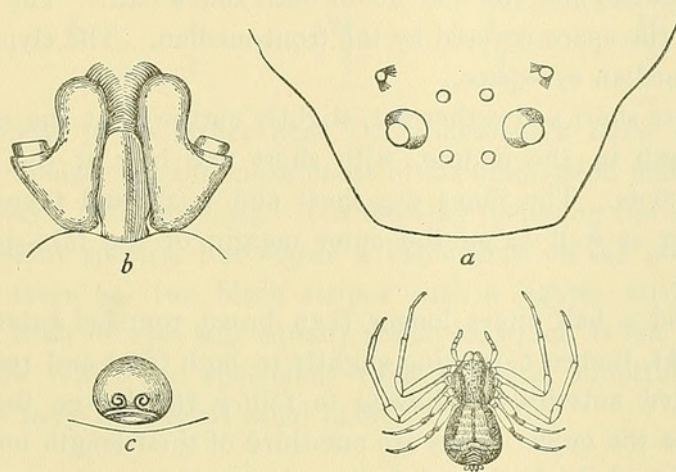
## Genus DIÆA Thor.

DIÆA DOLESCHALLI, sp. n. (Text-fig. 28.)

One female. (*Type of the species.*)

The cephalothorax is pale yellow-brown, mottled with darker spots along a broad median line reaching from the eye-space to the rear end, darker but similarly mottled each side of this to the margin and on the clypeus. The short recumbent hairs are white, with a few upstanding brown bristles on yellow roots.

Text-figure 28.



*Diæa doleschalli*,  $\times 2$ . a. Eyes. b. Lip and maxillæ. c. Epigyne.

The mandibles are pale yellow, mottled with dark brown patches and fine, short, erect, yellow hair on the side edges; fangs golden-yellow. The lip and maxillæ are dingy yellow, darkest at the posterior ends. The sternum paler yellow. The femora and patellæ of the front two pairs of legs are dark brown mottled with yellow spots, yellow-grey short recumbent hair, and short yellow spines. The tibiæ of the same are yellow underneath, brown at the base and anterior part of the upperside, yellow in the middle; spines brown.

The metatarsus and tarsus yellow, with a few brown spots, brown spines and claws. The two rear pairs of legs are yellow all over, with fewer brown spots on the femur and patella and scarcely any on the other joints; palpi dingy yellow-brown without spots.

The abdomen on the upperside is milky-white at the base with a few yellow

spots, dingy dark yellow on the back, shading into paler colour here and there, with stout yellow spines on roots. A slightly darker median line runs from a depression near the front. The sides are darker brown, and there are two short, dark brown lines with a pale space between them at the rear end. The underneath is quite pale yellowish-grey with yellow spots. Epigyne and spinnerets yellow.

The cephalothorax is as broad as long, convex, truncate in front, where the cephalic part and especially the eye-space is moderately raised up above the thoracic; the sides of the latter are well rounded. Along the median line the cephalothorax is straight, but slopes steeply to the sides and at the rear end.

Both rows of eyes are recurved, the rear one the more strongly. The four median eyes are equal in size in a trapezium, longer than broad, slightly narrower in front than at the rear, the front ones being between two and a half and three times their diameter apart, the rear rather over three diameters apart, and four diameters between front and rear. The side-eyes are all on separate tubercles, the front-laterals twice the diameter of the median, and the rear about once and a half. The front-laterals are separated by twice the space covered by the front-median. The clypeus is as broad as the length of the median eye-space.

The mandibles are short and rather flat, slightly narrower at the anterior end than at the base; smooth in the middle, with short fine hair at the sides and a few weak bristles on roots. The fangs are short and weak, and there is a fairly thick fringe on the inner as well as on the outer margin of the falx-sheath hiding any teeth there may be.

The lip is one and a half times longer than broad, rounded anteriorly, broadest at about half its height, thence narrowing slightly to both front and rear. The maxillæ are upright, rounded anteriorly, hollowed to follow the lip on the inner side, and slightly hollowed on the outer. They are one-third of their length longer than the lip.

The sternum is broad shield-shaped, hollowed anteriorly, pointed at the rear, where the coxæ are contiguous. It is moderately convex, and thickly covered with fine upstanding hairs.

The front two pairs of legs are respectively twice as long and thick as the third and fourth pairs. The two claws have about five pectinations. On the undersides of metatarsus i. and ii. are six pairs of spines, and under the tibiæ of i. and ii. eight pairs, all rather short and stout. On the femur and patella there is smooth short hair. On the third and fourth pairs there are only about five short spines on the femur and one underneath.

The abdomen is pyriform, broadest posteriorly; it is straight, but rounded at the corners in front and obtusely rounded at the rear end, where the spinnerets are terminal. At the sides it is as thick as it is broad in front. Near the base in the median line on the upperside is a large oval depression, and from thence to the rear the abdomen is more or less divided until across the rear end, where the back curves to each side.

The inferior spinnerets are conical with a short hemispherical second joint, the superior about the same length, but more cylindrical. The epigyne is a transverse depression in an oval frame lying on a low circular prominence. There are two small hollows, one at each end of the oval above it, with a protuberance in their centres.

The measurements (in millimetres) are as follows:—

			Long.		Broad.
	Cephalothorax.....	3		{	1½ in front.
					3
	Abdomen.....	4		4	
	Mandibles .....	1		—	

				Trochanter & femur.		Patella & tibia.		Metatarsus & tarsus.	
Legs .....	1.	1	4	4½	3	=	12½		
	2.	1	4¼	4¾	3½	=	13½		
	3.	½	2	2	1½	=	6		
	4.	½	2½	2	1½	=	6½		
Palpi .....		¼	¾	⅔	⅓	=	2		

This would appear to be rather near Dr. Doleschall's *Diœa dilatata* (*Thomisus dilatatus*) from Amboina, but the meagreness of his description makes it impossible to distinguish his species with certainty. His drawing including the tarsal claws closely resembles the present species, but shows a black area on the posterior end of the abdomen. Here there are two black stripes with a lighter stripe between them. He says the two rows of eyes are equally recurved, which is not far from being the case. Thorell, who refers two specimens from Amboina doubtfully to this species, did not redescribe them as was his usual habit.

#### Subfamily Stephanopsinæ.

#### Group Stephanopseæ.

#### Genus REGILLUS Cambr.

Proc. Zool. Soc. London, 1884, p. 203.

#### REGILLUS DIVERGENS. (Text-fig. 29.)

*Regillus divergens* Hogg, Abstract P. Z. S. 1914, p. 57 (Nov. 17).

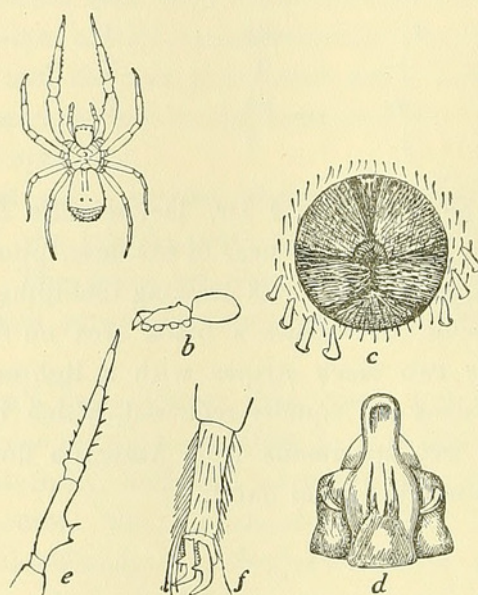
One female, Setakwa River. (*Type of the species.*)

The cephalothorax is dark brown covered with yellowish-grey bristles, the mandibles black-brown with rather lighter bristles; fangs yellow-brown. The lip, maxillæ, and sternum paler yellow, the lower part of the lip and the sternum thickly

covered with yellow-grey bristly hair. The legs are dark brown with similarly coloured hair; spines and claws nearly black-brown. The abdomen, both upper- and undersides, dark brown, with dingy grey bristles and rows of bare brown spots. The epigyne shiny yellow-brown.

The cephalothorax is one-sixth longer than broad, truncate in front, where it is one-half its greatest breadth, rounded at the sides and hollowed at the rear. The cephalic part is slightly raised up in front, depressed behind the eyes, thence rising again towards the thoracic part. It slopes steeply to the side margins, and is bounded by broad shallow depressions. The thoracic part rises gradually to the rear, whence it slopes steeply, as also at the sides, to a short distance from the margin; it then flattens, but

Text-figure 29.



*Regillus divergens*, nat. size. b. Profile. c. Spinnerets. d. Epigyne.  
e. Leg of front pair. f. Tarsus ii. showing claws.

falls again steeply from a narrow ledge. In the median line are two protuberances, one behind the other, the rear one being the largest. There is no fovea. The whole surface is thickly covered with recumbent, short, thick, tapering scales, but there are long upstanding bristles on the clypeus and two especially long ones between the front-median eyes.

The eyes are about equal in size, both front- and rear-rows being recurved, the rear-row slightly more so than the front, the laterals standing just clear above a line touching the upper edges of the median. The laterals of each row are on separate prominences, the anterior more pronounced. In the front-row the eyes are equi-

distant about one and a third times their diameter apart, the median being the same distance away from the rear-median. These are separated from one another by the same distance, and are two and a half times their diameter from the laterals. The width of the clypeus is rather less than the breadth of the median eye square.

The mandibles are conical, geniculate at the base, and thickly covered with long, coarse, upstanding bristles, with a fringe on both inner and outer margins of the falx-sheath. There are four long pointed teeth on the inner margin, and the same number, rather smaller, on the outer, with two rows of quite small teeth between the two. The fangs are long and moderately curved.

The lip is about one and a half times as long as broad, square in front and thickly covered with stout upstanding bristles on the lower one-third. It is more than one-half the length of the maxillæ, which are upright, rounded anteriorly, convex on the outer side, straight on the inner; the coxal portion of the palpi is particularly broad and stout.

The sternum is nearly as broad as long, and widest between the second and third coxæ. In front it narrows to the breadth of the lip and is hollowed to receive the first and second pairs of coxæ; at the posterior end it is about twice that width, and truncate, having a margin between itself and the third and fourth pairs of coxæ, the latter pair contiguous. It is thickly covered with short, coarse, recumbent bristles, which are longer and more upstanding at the margins of the rear half.

The front-pair of legs are longer and stouter than the others. On the inner side of the femur about the middle are two short stout spines, one at each corner of a square dilatation. There are also three single and two pairs of very short spines, almost points only, on the underside. The metatarsus of the front two pairs is flattened and their tarsal joints are much thinner and quite short. On the underside of tibia i. are five pairs of stout spines, and under tibia ii. one pair of short, three pairs of long, and again one pair of short spines. The two rear pairs are without spines.

All the legs are thickly covered with coarse recumbent bristles and a few upstanding, also here and there a few club-shaped.

The tarsal claws have one long pectination about the middle and three or four short between it and the base. The femoral joint of the palpi is thin, curved on the inner side and dilated anteriorly. The patellar joint as long as the tibial, the distal joint short and flattened, and the claw with one long pectination only.

The abdomen is ovate, truncate in front, widest posteriorly, where it is obtusely rounded. On the upperside at the posterior end are two bare prominences, and in two long lines five pairs of bare spots. There are four lines of spots, smaller but more in number on the underside, which is thickly covered with short, stout, bristly, recumbent hairs, with some longer upstanding, and at the posterior end a few club-shaped bristles.

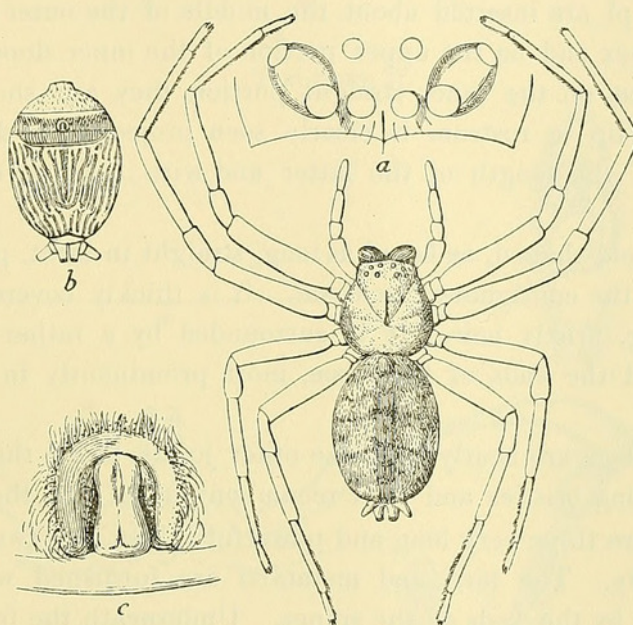
The spinnerets are short and conical, lying in a circular nest and thickly covered with hair.



tufts and scopulæ. Palpi same as legs. The abdomen above and at the sides is yellow-grey and dark brown in patches, with pale yellow-brown hair; underneath there is a dark grey transverse stripe below the genital fold, above same dark yellow-brown, with reddish-brown hair. Below the fold are regular longitudinal streaks of pale straw-colour covered with a thick mat of pale hair, and dark brown where the hairs are scantier and the skin shows through. In the median area these form a lyriiform figure consisting of three brown and four pale stripes. The stripes on each side are nearly parallel to this.

The cephalothorax is convex, highest one-third of the distance from the rear end, and sloping to the front. It is as broad as long, straight in front, rounded at the sides,

Text-figure 30.



*Olios princeps*, nat. size. a. Eyes. b. Underside of abdomen. c. Epigyne.

and hollowed at the rear. The cephalic part is marked off by shallow side depressions leading to a short longitudinal median fovea. This comes to an end, but there is a second rather deep one on the rear slope.

The rear-row of eyes is straight, of equal diameter, the laterals on rounded tubercles reaching down to include the front-laterals. The median pair are twice their diameter apart and two and a half times from the side-eyes. The front-row is also straight, the lateral one and a half times the diameter of the rear-eyes. They are almost close up to the slightly smaller median pair, which are half their diameter apart, the breadth of their diameter from the rear-median, and the same distance from the anterior margin of the clypeus.

The mandibles are as long as the front of the cephalothorax is wide, only slightly convex, and covered with long, stout, bristly hair. On the inner side of the falx-sheath are two very long, powerful, upright teeth followed by one median, one smaller, and one quite small. On the outer are one large tooth and one smaller. There is a thick fringe of long bristles on this, as also on the upper front-edge of the inner margin.

The lip is broader than long, convex, straight in front, widening to near the base, where it contracts into a straight-sided piece one-fifth of its total length. It has a few long upstanding bristles over its surface and the usual fringe in front. It is one-half the length of the maxillæ, which are upright, convex, sloping from the highest point to the outside as well as to the inside. They are broadest one-third of their length from the anterior end, whence they curve on the outside to a base two-thirds the width of the widest part; the palpi are inserted about the middle of the outer side. The fringes are longest at the apex and on the upper portion of the inner slope where they grow over the front surface, on the inner straight portion they are shorter and even in length. The under lip or rostrum is clearly seen projecting a distance above the front lip nearly half the length of the latter and with a fringe still more strongly pronounced.

The sternum is shield-shaped, as broad as long, straight in front, pointed at the rear, where it ends above the contiguous rear coxæ. It is thickly covered with a growth of coarse, upstanding, bristly hair. It is surrounded by a rather wide flat margin between its edge and the ends of the coxæ, most prominently in front of the third and fourth pairs.

The coxæ of the legs are nearly bare, the other joints being thickly covered with long, coarse, upstanding bristles and finer recumbent hair. On the underside of the tibiæ and metatarsi are three very long and powerful spines, and two long followed by one short respectively. The tarsi and metatarsi are furnished with thick matted scopulæ, only broken by the beds of the spines. Underneath the femora are one long spine and one shorter at the anterior end.

The femoral joint of the palpi is curved on the inner side and broadest anteriorly. There are long spines at the side of the tibial joint, but no silvery-white patch as on the legs, and scopulæ on the anterior joint. The tibia is longer than the patella.

The abdomen is ovate, narrowest at the rear end, thick at the sides, and covered with soft recumbent hair on the underside, less thick (or rubbed off) on the upper, interspersed with long upstanding bristles.

The inferior spinnerets are close together, conical, with a short hemispherical second joint, and they spring from a bare chitinous base. The superior are longer and oval in section, with a short cylindrical second joint. The epigyne is of the horse-shoe type with the chitinous rim opened widest at the base.

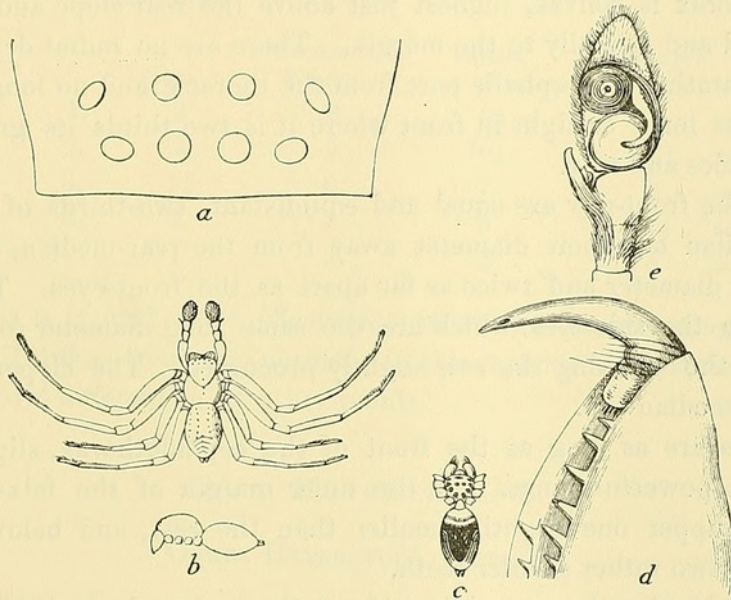
The measurements (in millimetres) are as follows :—

		Long.	Broad.
Cephalothorax .....		13	{ 7 in front. 13
Abdomen .....		20	14
Mandibles .....		7	—

		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.		
Legs .....	1.	4½	16	19	17	=	56½
	2.	5	17	20	18	=	60
	3.	4	14	15	13	=	46
	4.	4	14	15	15½	=	48½
Palpi .....		2	6	6	5	=	19

Text-figure 31.



*Olios artemis*, nat. size. a. Eyes. b. Profile. c. Underside of abdomen. d. Mandible, showing teeth.  
e. Male palp.

OLIOS ARTEMIS \*. (Text-fig. 31.)

*Olios actæon* Hogg, Abstract P. Z. S. 1914, p. 57 (Nov. 17).

One male, Setakwa River. (*Type of the species.*)

Cephalothorax bright red-brown, scantily furnished with pale yellow-brown hair. Mandibles black-brown with greyish-yellow bristles; fangs black-brown at base, reddish anteriorly. Lip and maxillæ black-brown, with yellow-brown hair and bright orange

\* [I find that the name *actæon* has been used previously for a species of this genus by Mr. R. I. Pocock; therefore I re-name my species *Olios artemis*.—H. R. H.]

fringes. Sternum pale yellow-brown, with four large black spots along the front-margin, two at the posterior end, and two intermediate at the sides, with yellow-grey bristles. Legs orange, with yellowish-grey hair, dark grey spines, scopulæ, and claw-tufts. Palpi similarly coloured, with the anterior joint dark brown.

The abdomen is pale yellow-brown above, with nearly white hair and short brown bristles intermixed. From the anterior end to about halfway are two lines curving outwards and consisting of faint brown spots, and below these a similar median line extending to the posterior end. On the underside at the base are four black spots on a yellow ground and a dark brown transverse line above the genital fold, with a silvery-grey hair-spot on each side between this line and the spots. Below the genital fold, reaching two-thirds of the distance to the spinnerets, is a black shield with two white longitudinal streaks inside; this is flanked by longitudinal black lines at the side separated by silver-grey hair-lines. Yellowish-grey hair between the end of the shield-pattern and the spinnerets.

The cephalothorax is convex, highest just above the rear slope and curving to the eye-space forward and laterally to the margin. There are no radial depressions therefrom nor any separating the cephalic part from the thoracic, and no longitudinal fovea. It is as broad as long, straight in front where it is two-thirds its greatest breadth, rounded at the sides and rear.

The eyes of the front-row are equal and equidistant, two-thirds of their diameter apart. The median are their diameter away from the rear-median, which are one-fourth smaller in diameter and twice as far apart as the front-eyes. They are rather farther still from the side-eyes, which are the same long diameter (oval) and rather farther forward, thus making the row slightly procurved. The clypeus is about the width of a front-median eye.

The mandibles are as long as the front of the cephalothorax, slightly geniculate at the base, with powerful fangs. On the inner margin of the falx-sheath are five large teeth, the upper one slightly smaller than the rest, and below these on the outer margin are two rather smaller teeth.

The lip is broader than long, straight in front, thence broadening to the slightly constricted base. The median area from the base to the front-edge is convex, rising above the somewhat flat sides; it is half the length of the maxillæ, which are boldly convex, upright, curved on the outer side; the slightly sloping truncature with long curling fringes lies almost wholly on the upper edge, the shorter even fringe beginning quite high up.

The sternum is shield-shaped, straight in front, as broad as long, rounded at the sides, and ending in a broad rounded point between the rear coxæ, which are not contiguous. It is thickly covered with long upstanding bristles.

The legs are moderately long, thin, and tapering from coxæ to tarsi. There is a thick scopula parted in the middle on all the tarsi and extending half the length only

of the metatarsi; on the upperside of each femur is a single short spine followed by two pairs of similar length, much longer ones underneath and at the sides. There are no spines on the upperside of the tibiae. On the tibial joint of the palpi is an apophysis at the anterior end, hollowed on the inner side and curved inwards at the point. The flagellum is of the spiral or grooved support type, with about twelve turns.

The abdomen is ovate, straight in front, curved at the sides, and narrowed to the posterior end; the spinnerets terminal; the inferior conical, close together, with short second joint.

The measurements (in millimetres) are as follows:—

		Long.	Broad.			
Cephalothorax.....		6	$\left\{ \begin{array}{l} 4 \text{ in front.} \\ 6 \end{array} \right.$			
Abdomen.....		$7\frac{1}{2}$				
Mandibles .....		4	—			
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.	
Legs .....	1.	2	8	$9\frac{1}{2}$	9	= $28\frac{1}{2}$
	2.	2	9	$10\frac{1}{2}$	$9\frac{1}{2}$	= 31
	3.	$1\frac{3}{4}$	6	7	6	= $20\frac{3}{4}$
	4.	2	7	8	$7\frac{1}{2}$	= $24\frac{1}{2}$
Palpi .....	1		3	2	4	= 10

This species is a typical *Olios* (*Sparassus*) in every way, excepting the mandibular teeth, by which it differs from the normal; in this it more nearly resembles the genus *Clastes*, but is quite different in its other points.

### Group Heteropodeæ.

#### Genus HETEROPODA Latreille.

##### HETEROPODA REGIA.

? *Aranea ocellata* Linn. Syst. Nat. ed. 12, p. 1035, no. 34 (♂).

*Aranea regia* Fabr. Ent. Syst. ii. p. 408 (1793) (♀).

*Heteropoda regia* Fabr. L. Koch, Simon, Pocock, et auctores.

Eight females. Two males.

##### HETEROPODA REGIA, var. PLURIDENTATA. (Text-fig. 32.)

*Heteropoda venatoria*, var. *pluridentata* Hogg, Abstract P. Z. S. 1914, p. 57 (Nov. 17).

Two females, Setakwa River. (*Types of the variety.*)

These differ from the normal form in having four large teeth and one smaller on the

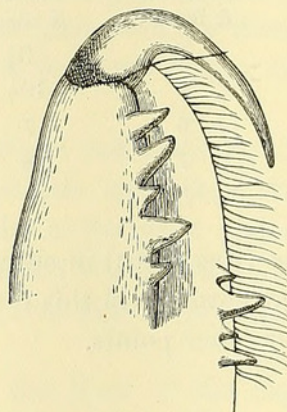
inner margin of the falx-sheath and two large alternating with two small on the outer.

Cephalothorax bright yellow-brown, with pale yellow-grey hairs at the sides; on the clypeus is a brilliant bandeau of silvery-white hairs. The mandibles are yellow-brown with orange fringes; fangs dark yellow-brown at the base, darker brown anteriorly.

Lip and maxillæ bright yellow with yellow-brown bristles and fringes. Sternum yellow, with brown upstanding bristles and recumbent white hair. Legs yellow, with whitish-grey hair and brown bristles, grey spines, claw-tufts, and scopulæ.

The abdomen is dingy orange with brown hair-spots, one rather large and circular near the base, followed by a brown transverse line, a pair of spots in the middle, and another fainter brown transverse line near the posterior end. At this end also are long, white, upstanding bristles. On the underside yellow-grey hair, with four longitudinal brown lines below the genital fold and two median conjoined two-thirds of the distance down. The epigyne and spinnerets yellow-grey.

Text-figure 32.



*Heteropoda regia*, var. *pluridentata*. Mandible, showing teeth.

The measurements (in millimetres) are as follows:—

		Long.		Broad.	
Cephalothorax.....		8		{ 4 in front. 8	
Abdomen.....		11		7	
Mandibles .....		3½		—	
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.
Legs .....	1.	3	12	13	11½ = 39½
	2.	3½	13	14	12 = 42½
	3.	3½	11	11	10 = 35½
	4.	3½	11	12	13 = 39½
Palpi .....		1½	4½	3½	4 = 13½

In the rear row the eyes are rather closer together than in the normal form, and straight along the anterior edges instead of slightly recurved.

HETEROPODA SUMATRANA.

*Heteropoda sumatrana* Thorell, Ragni Indo-Malesi, part iv. vol. 2, 1891-2, p. 26.

One male, five females (one non-adult), Setakwa River.

One female has more pronounced spots on the back and the maxillæ more truncate at the upper edge, but they all agree closely with Thorell's description of the above from Sumatra and Celebes.

Genus PANDERCETES L. Koch.

PANDERCETES ISOPUS.

*Pandercetes isopus* Thorell, Ragni Indo-Malesi, part iii. 1881, p. 309.

Three females, Setakwa River.

These agree closely with examples collected by d'Albertis on the Fly River.

Group Palystes.

Genus PALYSTES L. Koch.

PALYSTES DASYURINUS. (Text-fig. 33.)

*Palystes dasyurinus* Hogg, Abstract P. Z. S. 1914, p. 57 (Nov. 17).

One female, Setakwa River. (*Type of the species.*)

The cephalothorax is bright yellow with recumbent white hair and brown upstanding bristles. The mandibles are black-brown, with yellowish-white hair quite at the base and upper part of outer side, long brown bristly hair on the lower and inner parts. Lip and maxillæ black-brown, with a dark brown area on the lower (raised) part of the latter, fringes pale orange. The sternum is dingy yellow-brown, thickly covered with long yellow-brown hair. The legs and palpi pale yellow-brown, with dark grey scopulæ and a pair of dark spots at the base of each tibia. The abdomen above is yellow-brown with a mixture of yellowish-white and brown hairs, and two pairs of black-brown spots. On the underside is a broad black shield reaching from the genital fold to the spinnerets; on this black area are twelve white hair-spots in four transverse rows—4, 4, 2, and 2. The spinnerets are pale yellow-brown, with dark grey hair on the outer sides. The epigyne dark yellow-brown, dark brown in the median area.

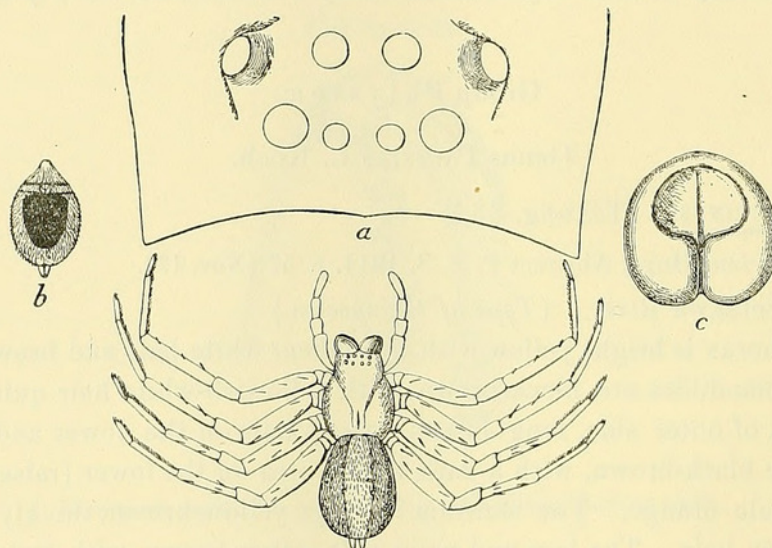
The cephalothorax is convex, straight along the median line to the top of the rear slope, which is steep. It is 1 mm. longer than broad, straight in front, rounded at and sloping evenly to the sides, slightly hollowed at the rear. The cephalic part, marked off by depressions from the thoracic, is very long, reaching nearly to the rear slope. There are no radial striations and only a rather indistinct fovea at the upper part of the rear slope.

The rear-row of eyes is straight along the line touching their posterior edges, the median their diameter apart. The oval side-eyes, on tubercles, are one-fifth longer in their long diameter and one-fifth shorter in their horizontal diameter, their distance from the median being twice their breadth.

The front-row is likewise straight along their lower edges. The side-eyes are round, their diameter being the same as the length of the rear side-eyes. The median eyes are two-thirds of the diameter of the laterals, their own diameter apart, and half that distance from the laterals. They are not quite twice their diameter from the rear median. The clypeus proper, together with an equal breadth of grey muscle, is about the same in depth.

The mandibles are geniculate at the base and stout, with long powerful fangs. On the inner margin of the falx-sheath are four teeth, the fourth rather smaller than the other three; on the outer edge is one large tooth between two smaller.

Text-figure 33.



*Palystes dasyurinus*, nat. size. a. Eyes. b. Underside of abdomen. c. Epigyne.

The lip is as broad as long, convex, straight in front, widening thence to a little above the base, where it contracts. It is half the length of the maxillæ, which are upright, rounded anteriorly, straight from below the fringe-slope downwards on the inner side, and only slightly incurved on the outer margin; while convex generally, they are particularly so on the lower half, where they are higher than in the anterior half. Their fringes are extremely thick and bushy, and spring from well over the front face.

The sternum is as broad as long, straight in front, rounded at the sides, and ending in a blunt point above the not quite contiguous rear-coxæ. It is thickly covered with upstanding bristly hair.

The legs are stout and long, with scopulae on all the tarsi and metatarsi. The spines are only moderately long and stout, two single ones above on each femur. They are covered with fine smooth hair and long upstanding bristles.

The femoral joint of the palpi is broadest anteriorly, curved inwards on the inner side; the patella is half as long as the tibial joint, and the distal joint is furnished with a thick bushy scopula.

The abdomen is straight in front, rounded at the sides, broadest at two-thirds of the length from the base and pointed obtusely at the rear. The spinnerets are terminal; the inferior, conical and close together, have a short second joint. The superior are one-third longer, flatter, and with a somewhat longer oval second joint. The epigyne is nearly circular, with the lower ends of the frame thickened out and meeting at the lower end.

The measurements (in millimetres) are as follows:—

		Long.		Broad.	
Cephalothorax.....		12		{ 6 in front. 11	
Abdomen .....		13		11	
Mandibles .....		5		—	
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.
Legs .....	1.	4	11	15	11 = 41
	2.	4	11½	15½	12 = 43
	3.	3½	11	11	10 = 35½
	4.	4	11	12	11 = 38
Palpi .....	2		5	4½	4½ = 16

#### Genus EXOPALYSTES Hogg.

*Exopalystes* Hogg, Abstract P. Z. S. 1914, p. 58 (Nov. 17).

Intermediate between the groups *Deleneæ* and *Heteropodeæ*, but near *Palystes* L. K. Differs therefrom in having the front median eyes as large as the side-eyes, the eyes of the front row larger than those of the rear row, the eyes all sessile. The cephalothorax highest in the posterior one-third, sloping to the front, and a thick fringe of long bristles on the upper inner margin of the falx instead of one single bristle.

Type *E. pulchella*.

#### EXOPALYSTES PULCHELLA. (Text-fig 34.)

*Exopalystes pulchella* Hogg, Abstract P. Z. S. 1914, p. 58 (Nov. 17).

One female, Setakwa River. (*Type of the species.*)

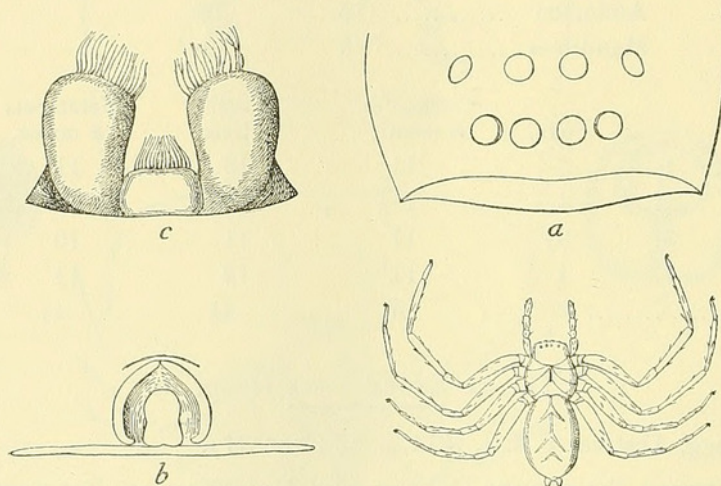
Cephalothorax pale yellow-grey with fine yellowish-white hair, silvery-grey on the eye-space and clypeus. Mandibles pale yellow-brown, with long yellowish-grey bristles and orange fringe on the falx-sheath. Fangs dark brown.

The lip and maxillæ are dull yellow, the anterior fringes pale orange-red, lower dull, the hair is pale yellow. The sternum darker yellow with long yellow-grey bristles. The legs and palpi are pale yellow on the femur, patella, and tibia, darker on the metatarsus and tarsus, with yellowish-grey hair and yellow-brown spines. The scopulæ are pale yellow-brown and the claw-tufts dark grey. Underneath femora i. and ii. are thick mats of dark grey and bright yellow bristly hair intermixed in patches.

The abdomen above is pale greenish-yellow, with similarly coloured recumbent hair and browner upstanding short bristles; on the underside it is yellow in front of the genital fold, where there is a narrow brown transverse streak, thence to the spinnerets pale greenish-yellow, with a faintly marked median area slightly yellower bounded by lines of depressed dots. The spinnerets are darker yellow, and the epigyne similar with white inside the oval frame.

The cephalothorax is convex, highest above the rear-slope, sloping forward to the eye-

Text-figure 34.



*Exopalystes pulchella*, nat. size. a. Eyes. b. Epigyne. c. Lip and maxillæ.

space as well as laterally, and down its steep rear-slope. It is well rounded at the sides, straight in front. The cephalic part is marked off by shallow side-depressions, and there is a long, deep, longitudinal fovea reaching thence to partly down the rear-slope. The whole cephalothorax is sparsely covered with fine recumbent hair, thicker and more upstanding round the margin.

The first row of eyes is straight, the eyes of equal size, the median pair half their diameter apart and almost touching the laterals. The clypeus is one and a half times their diameter. The rear-row is also straight, the eyes equal in size, and about three-fourths the diameter of the front eyes. The median pair are the length of the diameter of a front-eye apart, and rather more from their laterals.

The mandibles are slightly geniculate at the base, shorter than the front of the cephalothorax, and covered with long bristles at the edges and lower part, fine smooth hair in the middle and basal area, but smooth quite at the base. On the inner margin of the falx-sheath are five teeth, the fourth and fifth smaller than the others, on the outer margin two larger still, and a third the same as the three largest of the inner side. The lip is convex, straight in front, broader than long, and less than half the length of the maxillæ. The latter are evenly convex, rounded on the upper outer margin, slightly hollowed in the middle, and narrowest at the base. Thick curling fringes on the front upper margin.

The sternum is as broad as long, straight or slightly hollowed in front, rounded at the sides, and terminating in a point between the rear-coxæ.

The legs moderately long and fine. The metatarsal scopula extends the whole length of the joint on all legs. On the underside of the femur and tibia of the first and second pairs is a remarkably thick mat of cylindrical straw-like bristles extending from the base to not quite the front end. On the upperside of the femora the hair is thick, but fine and recumbent.

The abdomen is ovate, rounded on the front and sides, but narrowing at the rear, where the spinnerets are terminal. The hair on both upper- and undersides is very smooth and fine, but there are short upstanding bristles at the posterior end. The superior and inferior spinnerets are about the same length, with short second joints. The inferior pair conical and close together. The superior two diameters apart. The epigyne is of the horse-shoe type, open at the base.

The measurements (in millimetres) are as follows:—

		Broad.	Long.
Cephalothorax .....		7	$\left\{ \begin{array}{l} 4 \text{ in front.} \\ 6\frac{1}{2} \end{array} \right.$
Abdomen .....		11	$7\frac{1}{2}$
Mandibles .....		$3\frac{1}{2}$	—

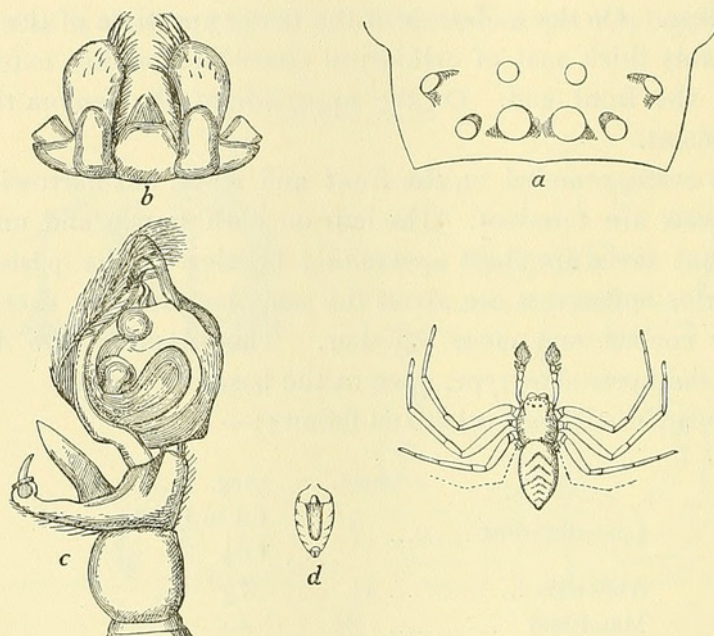
  

		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.		
Legs .....	1.	$2\frac{1}{2}$	9	10	$9\frac{1}{2}$	=	31
	2.	$2\frac{1}{2}$	$9\frac{1}{2}$	10	$9\frac{1}{2}$	=	$31\frac{1}{2}$
	3.	$2\frac{1}{2}$	$7\frac{1}{2}$	7	$6\frac{1}{2}$	=	$23\frac{1}{2}$
	4.	$2\frac{1}{2}$	$8\frac{1}{2}$	$7\frac{1}{2}$	$7\frac{1}{2}$	=	26
Palpi .....		$1\frac{1}{4}$	$2\frac{1}{2}$	3	$2\frac{1}{2}$	=	$9\frac{1}{4}$

Group *Spiranthideæ*.Genus *SERAMBA* Thor.*SERAMBA SAGITTATA*, sp. n. (Text-fig. 35.)One male, Setakwa River. (*Type of the species.*)

The cephalothorax is red-brown, with pale grey hairs on the side-slopes, much thicker in a fillet round the margin. Mandibles the same, with greyish-yellow bristles, fangs dark brown, redder and paler at the anterior end. Lip, maxillæ, sternum, and coxæ pale red with pale grey hair; rather browner on the latter.

Text-figure 35.



*Seramba sagittata*, nat. size. a. Eyes. b. Lip and maxillæ. c. Male palp. d. Underside of abdomen.

The abdomen is yellow-brown above, thickly covered with coarse, long, pale yellow-brown hair, a pale median longitudinal stripe has within it a darker longitudinal line of fine arrow-heads, from opposite each of which a pale line extends down the sides. Underneath it is a darker dingy yellow-grey; the median area consists of a still darker wedge-shaped quadrilateral, broadest at the genital fold, and half the width at the posterior end, a little in front of the spinnerets. It is bordered all round with a yellowish edging.

The legs are yellow-brown, with fine recumbent nearly white hairs, a grey scopula on the tarsi and front-half of the metatarsi of all legs, also grey claw-tufts and long brown spines.

The cephalothorax 1 mm. longer than broad, straight in front, rounded at the sides, and hollowed at the rear, is strongly convex, flat on the top, highest above the very steep rear-slope, whence it slopes forward to the eye-space. The cephalic part is faintly marked off from the thoracic, and there is a short, deep, longitudinal fovea on the rear-slope.

The rear-row of eyes is slightly procurved, the median rather less than three of their diameters apart and rather more than three of the same from their laterals, which are of the same size as the others and as the front-laterals. The front-row is straight along the lower edges, the median eyes being nearly twice the diameter of the others. They are two-thirds of their diameter apart, the same distance from their laterals, and rather more from the rear median, but less than their diameter. The clypeus is half their diameter.

The mandibles are strongly geniculate at the base, conical, diverging anteriorly; fangs long and powerful. The falces are thickly covered with long coarse bristles. On the inner margin of the falx-sheath are three medium-sized teeth nearly hidden among thick fringes, and a long thick fringe with two larger teeth lower down on the outer.

The lip is broader than long, straight in front, thence widening to near the base, which is constricted. It is less than half the length of the maxillæ. These are very convex, most so at the top of the lower half opposite the insertion of the palpi and thence to the base. Between the swollen portion and the inner margin is a strip of a lower level passing behind the lip, from above this a short even fringe extends upwards. On the upper front-slope is a thick curling fringe, and separate from this again on the face is another bristly hair-growth quite away from the margin.

The sternum is slightly convex, a broad shield-shape, straight and widest in front, pointed at the rear, above the nearly contiguous rear-coxæ. It is hollowed opposite each coxa, the flat intermediate space consisting of white tissue. It is covered with scattered, upstanding, bristly hairs, each on a circular root.

The abdomen is a long oval; the hair covering on the upperside is close and thick, and consists of long, upstanding, coarse bristles on circular roots. The median area of the underside is rugose and sparsely furnished with shorter, but still bristly, hair.

The spinnerets are terminal, rising from a ring of smooth skin, and a second broader ring behind this covered with hair, behind which again is the groove containing the posterior pulmonary apertures. The inferior spinnerets are close together, conical, with a short conical second joint. The superior are similar, about the same height, but the second joint is more cylindrical.

The legs are only moderately stout, each joint finer than the preceding, with claw-tufts, scopulæ on the tarsi and three-fourths of the length of the metatarsi. They are also furnished with long powerful spines. The claws are well curved, with about six pectinations. The anterior curved part of the claw is striated longitudinally.

The male palp has the distal joint broad for its length (one to one and a half), the tibial joint has two long apophyses on the outer side, the upper one terminating in a blunt hollow shell. The lower also ends in a broad horizontal cup, from the centre of which rises a short secondary projection terminated by a curved, pointed, tooth-like spine.

The measurements (in millimetres) are as follows:—

		Long.	Broad.			
Cephalothorax .....		$6\frac{1}{2}$	$\left\{ \begin{array}{l} 3\frac{1}{2} \text{ in front.} \\ 5\frac{1}{2} \end{array} \right.$			
Abdomen.....		$8\frac{1}{2}$	5			
Mandibles .....		$2\frac{1}{2}$	—			
		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.	
Legs .....	1.	$2\frac{1}{2}$	8	$8\frac{1}{2}$	7	= 26
	2.	$2\frac{1}{2}$	8	9	7	= $26\frac{1}{2}$
	3.	2	$6\frac{1}{2}$	6	$5\frac{1}{2}$	= 20
	4.	2	—	—	—	
Palpi .....		$1\frac{1}{4}$	3	2	$2\frac{1}{2}$	= $8\frac{3}{4}$

#### Family CLUBIONIDÆ.

##### Subfamily Clubioninæ.

##### Group Clubioneæ.

##### Genus CLUBIONA Walck.

##### CLUBIONA PSEUDOMAXILLATA, sp. n. (Text-fig. 36.)

One female. (*Type of the species.*)

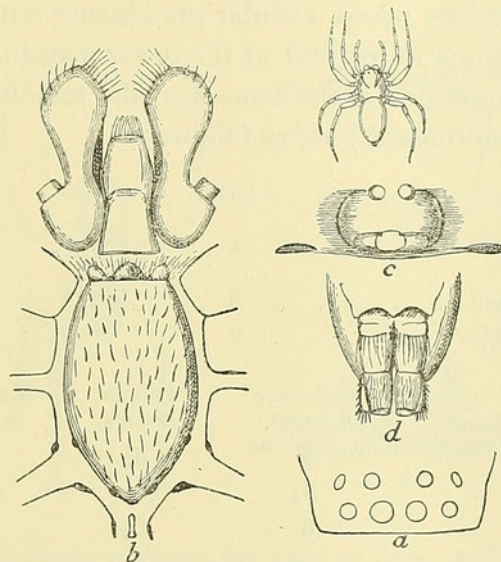
The cephalothorax is bright yellow-brown all over, with a few smooth recumbent hairs and upright bristles pale yellowish-white. The mandibles are somewhat darker, with much longer bristles and thicker hairs, of the same colour as on the cephalothorax, the fringes are the same, but rather yellower. Fangs yellow-brown, dark at the base, paler on the anterior half. The lip and maxillæ are dark dingy yellow-brown, with yellow fringes and pale yellow-grey hair. The sternum, coxæ, and underside of the other joints of the legs and palpi are bright golden-yellow with nearly white hair, the upperside of the femora is darker orange, the spines brown, and the scopulæ on the metatarsi and tarsi dark grey. The abdomen is quite pale yellowish-white on the upperside without any markings, hair nearly white, similar, but with rather darker hair on the underside; spinnerets and epigyne pale yellow.

The cephalothorax, which is as long as the patella and tibia of the fourth pair of legs, is convex, longer than broad, truncate in front, and only slightly rounded at the sides. There are no cephalic depressions and only a short, narrow, longitudinal fovea near the posterior end.

Both rows of eyes are straight, those of the rear-row and laterals of the front-row equal in size, the front-median somewhat larger. The rear-median eyes are two and a half times their diameter apart and one and a half times from their laterals, a rear-eye's breadth distant from the front-median, which are the same distance from one another and three-quarters that distance from their laterals. The clypeus is one-half the breadth of a front-median eye.

The mandibles are conical, geniculate at the base, as long as the breadth of the front of the cephalothorax, with long slightly curved fangs. The falces are thickly covered

Text-figure 36.



*Clubiona pseudomaxillata*, nat. size. a. Eyes. b. Sternum, lip, and maxillæ. c. Epigyne. d. Spinnerets.

with hair and long upstanding bristles. On the inner margin of the falx-sheath are three evenly sized teeth, and on the outer margin one, broader than any of these, between two quite small.

The maxillæ are upright, rounded anteriorly, broadest near the front end, incurved on the outer margin as well as round the lip on the inner, where there is a hollow in the margin itself. The insertion of the palpal trochanter is near the base, which is rounded.

The lip is at least twice as long as broad, truncate in front. The upper half is hollowed in the middle, with a slightly raised edge at the sides. The lower half is distinctly convex from the base up. Instead of being cut away at the outer edges of

the base, it rather widens out. The sternum is ovate, twice as long as broad, truncate in front, pointed at the rear, widest between the 2nd and 3rd pairs of coxæ. On the front-margin, which is a little distance from the lip, is a short prominence like a rudimentary second lip flanked by two apparently rudimentary maxillæ, triangular, pointed anteriorly. The bases of the front two pairs of coxæ are close up to the sternum, but there is a rather wide margin between it and the rear two pairs of coxæ. This is filled up with a white flaky skin almost covering the brown oval chitinous points at the bases of the coxæ and, on the margin of the sternum itself, opposite each of these is another similar oval chitinous spot. The sternum is thickly covered with upstanding hair.

The legs are moderately long and thin. The fourth pair longest, and the second pair rather longer than the first.

The abdomen is ovate, truncate in front, sparsely covered with fine hair. The spinnerets terminal on chitinous bases.

The epigyne is on a slightly raised circular prominence with two small chitinous spots on the anterior margin, a raised fold at the lower margin, with two still smaller, but similar, spots on the upperside of the same near the middle.

The measurements (in millimetres) are as follows:—

			Long.	Broad.
Cephalothorax	.....	4	$\left\{ \begin{array}{l} 2 \text{ in front.} \\ 3 \end{array} \right.$	
Abdomen	.....	6		$3\frac{1}{2}$
Mandibles	.....	2	—	

		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.		
Legs .....	1.	1	3	$3\frac{1}{2}$	3	=	$10\frac{1}{2}$
	2.	1	$3\frac{1}{2}$	4	3	=	$11\frac{1}{2}$
	3	1	3	$2\frac{1}{2}$	3	=	$9\frac{1}{2}$
	4.	$1\frac{1}{4}$	$3\frac{1}{2}$	4	$4\frac{1}{2}$	=	$13\frac{1}{4}$
Palpi .....		$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{4}$	1	=	$4\frac{1}{4}$

Very few specimens of this genus seem to have been collected in New Guinea.

This specimen rather closely resembles L. Koch's *C. modesta*, *C. vacuna*, and *C. alveolata*, from all of which it differs in the rear row of eyes being straight instead of procurved, the legs longer in proportion, and the rather different though generally similar form of the epigyne, but particularly by the unusual growths on the front margin of the sternum.

## Family PISAURIDÆ.

## Group Dolomedææ.

## Genus DOLOMEDES Latr.

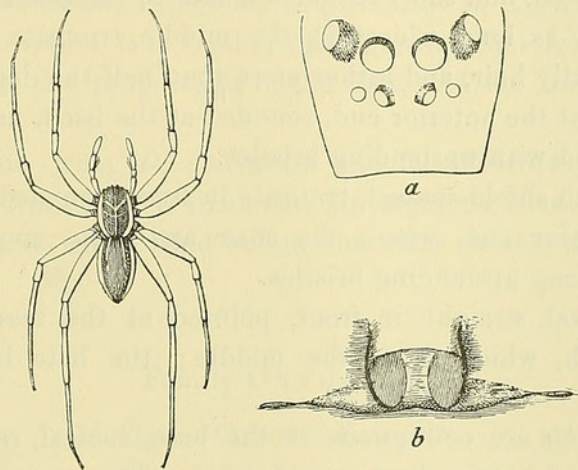
DOLOMEDES WOLLASTONI, sp. n. (Text-fig. 37.)

One female. (*Type of the species.*)

Cephalothorax olive-brown. A wide marginal fillet of silvery-white hair extends the whole way from the sides of the clypeus to the rear end, and a narrow median line of the same from the front-row of eyes to the rear end. On each side of this is a short parallel line of similar hair extending to the base of the cephalic part, and the side depressions are also similarly marked.

The mandibles are yellow-brown, with long yellow-brown bristly hair on the basal

Text-figure 37.

*Dolomedes wollastoni*, nat. size. a. Eyes. b. Epigyne.

half and white hair at the anterior end. The maxillæ, lip, and sternum are pale yellow-brown with long pale yellowish hair.

The legs are similarly coloured, with darker yellow-brown hair and silvery-white hair in patches on the outer sides.

The abdomen is dark yellow-brown on the upperside, with four short, longitudinal, silvery-white hair-streaks at the basal end. Round the sides is a broad white-haired fillet extending from the base to the spinnerets. The underside is paler, with nearly white hair. The spinnerets are yellow-brown, and the epigyne the same, with two nearly black streaks across it.

The cephalothorax is one-fifth longer than broad, convex, narrowed in front, rounded

at the sides and rear, slightly marked depressions separating the cephalic from the thoracic part. There is a deep longitudinal fovea at the upper part of the rear-slope. The nearly perpendicular clypeus narrows from the insertion of the mandibles to the rear of the eye-space.

The rear-row of eyes is recurved, the lower edge of the laterals being slightly below the level of the upper edge of the median, their long diameter is the same as that of the median, and they stand on black protuberances. The median pair have black rims, are less than one-third their diameter apart, and twice that distance from the laterals. The median eyes of the front-row are protrudent and, including the black rims, three-fifths the diameter of the rear eyes and two-thirds their diameter away from same. They are larger than the side-eyes and half as far away from them as from one another.

The clypeus is about as wide as the median eye-area is long.

The mandibles are geniculate at the base, have long powerful fangs, and four large teeth on the inner falx-margin. They are furnished with long bristly upstanding hair at the base and front end, and short recumbent hair in the middle.

The lip is as broad as long, widest in the middle, truncate in front, convex, and covered with long bristly hair, and rather more than half the length of the maxillæ. The latter are widest at the anterior end, rounded at the back, narrowing to the base, and are thickly covered with upstanding bristles.

The sternum is broad shield-shaped, truncate in front, rounded at the sides, obtusely pointed at the posterior end, where the coxæ are quite contiguous, and thickly covered all over with long upstanding bristles.

The abdomen is oval, straight in front, pointed at the rear end, twice as long as its greatest breadth, which is at the middle; the hair is close, smooth, and short.

The inferior spinnerets are contiguous at the base, conical, rather longer than the breadth at the base, and have a short second joint. The superior, rather longer but smaller in diameter, have a longer second joint. The epigyne is a convex transverse protuberance, broadest in the middle, with two black depressions, one across each side; these are carried into a broad depression above marked at its sides with a thin chitinous edging.

The legs are long and strong, tapering to fine cylindrical tarsal and metatarsal joints. The hair on the femoral and tibial joints is smooth and recumbent, longer and more bristly on the metatarsal and tarsal. On the underside of the latter it thickens into rather loose scopulæ. The spines are long and powerful, one each side near the base and one at the anterior end of the patellar joints. The superior claws have about six pectinations, the inferior being smooth; the latter are buried in a thick brush of bristles. The second pair of legs is rather longer than the first as in *Trechalea* Thor.,

but the tarsi are not filiform or flexible. The tibial joint of the palpi is longer than the patellar, and the metatarsal as long as these two.

The measurements (in millimetres) are as follows:—

		Long.	Broad.
Cephalothorax	.....	6	{ 2 & 3 in front. 5
Abdomen	.....	8	4
Mandibles	.....	2	—

		Coxa.	Trochanter & femur.	Patella & tibia.	Metatarsus & tarsus.		
Legs	.....	1.	2	8½	9	9	= 28½
		2.	2	9	10	10	= 31
		3.	2	8	8½	8½	= 27
		4.	2	9½	11	11½	= 34
Palpi	.....	1	2½	2½	2½	2½	= 8½

This specimen rather closely resembles *D. albicomus* L. Koch from Queensland, but according to his description it is readily distinguished therefrom by the spacing and curvature of the eyes, the proportions of the legs, and the longitudinal line on the cephalothorax.

It differs still more from *D. dolomedes* and *D. albocinctum* of Doleschall and *D. albolimbata* Thor. from New Guinea and the adjacent islands, all of which have the same very distinctive white band round the sides of the abdomen found in the present species.

#### Family OXYOPIDÆ.

#### Genus OXYOPES Latreille.

#### OXYOPES PAPUANUS.

? *Oxyopes (Sphasus) striatus* Doleschall, Nat. Tijds. v. Neerl. Ind. vol. xiii. 1857, p. 430; id.

Act. Soc. Sci. Indo-Néerl. vol. v. pl. 5. fig. 9.

*Oxyopes striatus* Dol.; Thorell, Ragni di Amboina, 1878, p. 211.

*Oxyopes papuanus* Thorell, Ragni Austro-Malesi, 1881, p. 395.

One female.

The description given by Thorell (*loc. cit.*) of the species he considers to be *Oxyopes striatus* Dol. and his own *P. papuanus* are so remarkably alike that, as he says himself, they may be the same. Doleschall's original description does not help very far, but his drawing is very good and like both of them. He, however, describes four longitudinal stripes on the cephalothorax of the female instead of two, and Thorell says that the epigyne is black and shiny, which is the case here. I have little doubt

but that this specimen is the same as Thorell's *O. papuanus*, and, unless some difference in the sexual organs should be found to exist, both species are the same, and the original name *O. striatus* would stand for both. It may be noted that the stripes are not persistent in all cases.

In this specimen the laterals of the front-row (or eyes of the second row) are rather larger than those of the rear-row, as in Thorell's species, but not in Doleschall's.

#### Family SALTICIDÆ.

[NOTE.—The Spiders of this family had not been completely worked out when the foregoing memoir was read, but a paper containing the account of the species collected by the two Expeditions, together with the descriptions of one new genus and eleven new species, will be published in Part 3 of the Society's 'Proceedings' for the current year, to be issued in September, 1915.—EDITOR.]



Hogg, H R. 1915. "Report on the spiders collected by the British Ornithologists' Union Expedition and the Wollaston Expedition in Dutch New Guinea." *Transactions of the Zoological Society of London* 20, 425–484.

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