

LVII.—*Descriptions of several Species of East-Indian Spiders apparently new or little known to arachnologists.* By JOHN BLACKWALL, F.L.S.

A COLLECTION of spiders made at Meerut, Agra, and Delhi, by Captain Francis Lyon, of the Royal Artillery, and obligingly presented to me by his sister, Mrs. Greenall, of Stretton Parsonage, at the suggestion of my kind friend Miss Ellen Clayton, comprised the following species:—

Tribe Octonoculina.

Family LYCOSIDÆ.

Genus LYCOSA, Latr.

*Lycosa Greenallia*, n. sp.

Length of an immature female  $\frac{5}{16}$  of an inch; length of the cephalothorax  $\frac{3}{20}$ , breadth  $\frac{1}{8}$ ; breadth of the abdomen  $\frac{1}{10}$ ; length of a posterior leg  $\frac{9}{16}$ ; length of a leg of the third pair  $\frac{5}{12}$ .

The eyes, which are unequal in size, are disposed in front and on the sides of the anterior part of the cephalothorax; four, much smaller than the rest, form a transverse row immediately above the frontal margin, the two intermediate ones being decidedly larger than the lateral ones of the same row; the other four describe a trapezoid, the two anterior eyes, which are the largest of the eight, forming its shortest side. The cephalothorax is long, convex, sparingly clothed with hairs, compressed before, rounded in front and on the sides, which are marked with furrows converging towards a narrow indentation in the medial line of the posterior region; it is of a brownish-yellow colour, with narrow, black lateral margins; the region of the eyes has a brownish-black hue, and there are oblique rays on the sides formed by rows of dark-coloured hairs. The falces are long, powerful, conical, vertical, armed with teeth on the inner surface, and have a red-brown hue. The maxillæ are straight, and increase in breadth from the base to the extremity, which is rounded; the lip is quadrate, and somewhat hollowed at its apex; and the sternum is oval. These parts are of a dull-yellow colour, the base of the lip is tinged with brown, and the sternum has a black band extending along the middle, which is somewhat constricted at a moderate distance from its pointed extremity. The legs are provided with hairs and sessile spines, and have a dull-yellow hue, with imperfect, faint, soot-coloured annuli on the femora and tibiæ; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the short inferior one is inflected near its



base; the palpi, which are long, resemble the legs in colour, but are without any soot-coloured marks; the digital joint is provided with hairs, and has a minute, curved, pectinated claw at its extremity. The abdomen is oviform, sparingly clothed with hairs, convex above, and projects over the base of the cephalothorax; it is of a dull-yellow colour, the under part being the palest, with a broad, dentated, dark-brown band extending along the middle of the upper part, which tapers from its anterior extremity to the spinners; the anterior part of this band comprises a fusiform dull-yellow band that extends about one-third of its length, and is followed by several transverse bars of the same colour; the sides are marked with spots and longitudinal streaks of a dark-brown colour, and a series of minute spots of the same hue passes along each side of the under part; the spinners are of a red-brown colour.

Two immature females of this new *Lycosa* were comprised in the collection; and I gladly avail myself of the circumstance to dedicate the species to Mrs. Greenall, to whose liberality I am indebted for this opportunity of extending our knowledge of the spiders of India.

#### Family SALTICIDÆ.

#### Genus SALTICUS, Latr.

#### *Salticus biguttatus*, n. sp.

Length of an immature female  $\frac{5}{24}$  of an inch; length of the cephalothorax  $\frac{1}{12}$ , breadth  $\frac{1}{16}$ ; breadth of the abdomen  $\frac{1}{12}$ ; length of a posterior leg  $\frac{1}{4}$ ; length of an anterior leg  $\frac{5}{24}$ .

The minute intermediate eye of each lateral row is nearly equidistant from the eyes constituting its extremities. The cephalothorax is large, glossy, somewhat quadrilateral, sloping abruptly at the base, and projecting a little beyond the falces in front; it is of a brown colour, the region of the eyes having a brownish-black and the narrow lateral margins a dark-brown hue. The falces are small, conical, vertical, and of a pale red-brown colour. The maxillæ are short, straight, and enlarged and rounded at the extremity; and the lip is oval. These organs have a brownish-yellow hue, the base of the lip being much the darkest. The sternum is oval, glossy, and of a brownish-black colour. The legs are moderately robust, glossy, provided with a few fine spines, and have a brownish-yellow hue; their relative length could not be ascertained, as all but the posterior pair and one anterior leg were missing; each tarsus is terminated by two slender, curved, pectinated claws, and below them there is a small scopula. The palpi are short, and the digital joint is supplied with pale hairs; they are of a yellowish-



white colour, with the exception of the axillary joint and the greater part of the humeral joint, which have a brown hue. The abdomen is oviform, convex above, and projects over the base of the cephalothorax; it is of a dark-brown colour, and has a large, dull, yellowish-white spot on each side of the medial line of the upper part, near its middle; some scale-like hairs, that reflect prismatic colours, are distributed on the under part; and the spinners have a brownish-yellow hue.

An immature female of this *Salticus* was the only specimen of the species included in the collection.

*Salticus candidus*, n. sp.

Length of an immature male  $\frac{1}{10}$  of an inch; length of the cephalothorax  $\frac{1}{16}$ , breadth  $\frac{1}{24}$ ; breadth of the abdomen  $\frac{1}{20}$ ; length of a posterior leg  $\frac{1}{8}$ ; length of a leg of the second pair  $\frac{1}{12}$ .

The cephalothorax is large, glossy, somewhat quadrilateral, abruptly sloped at the base, and advanced a little beyond the falces in front; it is of a pale-yellow colour; the entire region of the eyes and a large spot on each side of its base have a black hue, and the sides are sparingly supplied with scale-like hairs that reflect brilliant prismatic colours. The very minute intermediate eye of each lateral row is nearly equidistant from the eyes constituting its extremities. The falces are small, sub-conical, vertical, and of a pale-yellow hue, with an oblong, soot-coloured spot at their base, in front. The maxillæ are short, straight, and enlarged and rounded at the extremity; and the lip and sternum are oval. These parts have a pale-yellowish hue, the sternum being the palest, and the lip having a tinge of brown at its base. The legs are provided with hairs and a few fine spines, and are of a yellowish-white colour, with a small black spot at the extremity of the femur of each posterior leg, on the inner side; the fourth pair is the longest, then the third, and the second pair is the shortest; each tarsus is terminated by two curved, pectinated claws, and below them a small scopula is situated. The palpi resemble the legs in colour, and the development of the digital joint is such as merely to suffice for the determination of the sex. The abdomen is oviform, glossy, convex above, and projects over the base of the cephalothorax; it is of a yellowish-white hue, with a soot-coloured mark on each side of its anterior extremity, from which a short longitudinal streak of the same hue passes to the sides; the upper part is crossed by two somewhat irregular, curved, black bands, the anterior one is the broader, and their convexity is directed forwards; a circular black spot, situated immediately above the spinners, comprises two very minute white specks placed transversely; and the sides, like those of the cephalothorax, are



sparingly supplied with scale-like hairs that reflect brilliant prismatic colours.

The collection contained a single immature male of this pretty *Salticus*.

Family THOMISIDÆ.

Genus SPARASSUS, Walck.

*Sparassus striatus*, n. sp.

Length of an immature female  $\frac{1}{2}$  an inch; length of the cephalothorax  $\frac{5}{24}$ , breadth  $\frac{5}{24}$ ; breadth of the abdomen  $\frac{1}{4}$ ; length of a leg of the second pair 1; length of a leg of the third pair  $\frac{2}{3}$ .

The abdomen is oviform, somewhat depressed, and projects a little over the base of the cephalothorax; it is clothed with pale-yellow hairs, and is of a yellowish colour faintly tinged with brown, the under part being much the palest; two brown lines extend from the anterior extremity to the middle of the upper part, where they meet, and are followed by a series of angular lines of the same hue, which diminish in size as they approach the spinners, and have their vertices directed forwards; the sides are marked with numerous longitudinal brown streaks, and the under part is spotless. The eyes are disposed on the anterior part of the cephalothorax in two transverse, nearly parallel rows; the four constituting the anterior row, which is the shorter, are rather the largest, and are situated immediately above the frontal margin. The cephalothorax is large, slightly compressed before, truncated in front, rounded on the sides, convex, glossy, thinly clothed with pale hairs, and has a narrow indentation in the medial line of the posterior region; it is of a dull-yellow colour, with a faint brown line extending from the intermediate eyes of the posterior row to the medial indentation, and the frontal margin has a dark-brown hue. The falces are powerful, conical, vertical, armed with teeth on the inner surface, and are of a brownish-black colour faintly tinged with red at the base. The maxillæ are short, straight, powerful, and rounded at the extremity; the lip is broader than long, and somewhat quadrate; and the sternum is heart-shaped, and supplied with long, pale hairs: these parts are of a pale-yellowish hue, the lip being the darkest. The legs are robust, glossy, provided with sessile spines, and have brown hair-like papillæ on the inferior surface of the tarsi and also on the extremity of the metatarsi of the first and second pairs; the second pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by two curved, pectinated claws; the palpi have several long spines on their radial and digital joints, and the latter, which has numerous hairs at its extremity, on the under side, is



terminated by a slightly curved, pectinated claw. These limbs are of a yellow colour, the joints of the legs having a tinge of red-brown at their extremity.

The collection contained two immature females of this species.

### Family DRASSIDÆ.

#### Genus DRASSUS, Walck.

##### *Drassus delicatus*, n. sp.

Length of the male (not including the spinners)  $\frac{1}{5}$  of an inch; length of the cephalothorax  $\frac{1}{10}$ , breadth  $\frac{1}{16}$ ; breadth of the abdomen  $\frac{1}{16}$ ; length of a posterior leg  $\frac{3}{8}$ ; length of a leg of the third pair  $\frac{1}{4}$ .

The eyes are seated on black spots, and are disposed on the anterior part of the cephalothorax in two slightly curved transverse rows; the anterior row, which is the shorter and less curved, is situated immediately above the frontal margin, the two intermediate eyes being the largest and darkest-coloured of the eight; and the two intermediate ones of the posterior row are oval, almost contiguous, divergent, and diaphanous. The cephalothorax is nearly oval, rounded in front and on the sides, convex, glossy, with a slight, narrow, dark-brown indentation in the medial line of the posterior region; it is of a very pale yellow colour, with a faint tinge of red in the region of the eyes. The falces are long, conical, prominent, and armed with a few small teeth on the inner surface; the maxillæ are convex near the base, depressed obliquely near their rounded extremity, and are somewhat inclined towards the lip, which is longer than broad, and rounded at the apex. These organs are of a red-brown colour, the maxillæ being the palest. The sternum is oval, glossy, with minute eminences on the sides, opposite to the legs; it is of a yellowish-white colour, with a few short, longitudinal, red-brown streaks on the lateral margins. The legs are long, glossy, provided with black sessile spines, and have brown hair-like papillæ on the inferior surface of the tarsi; they are of a yellowish-white colour, the metatarsi and tarsi of the first and second pairs being tinged with pale reddish-brown; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by two curved, pectinated claws. The palpi resemble the legs in colour, with the exception of the digital joint, which has a red-brown hue; the radial is longer than the cubital joint, and has no apophysis at its extremity; the digital joint is of an oblong-oval form, convex and hairy externally, compact and somewhat pointed at its extremity, and has a shallow concavity at its base, on the underside, comprising the palpal organs, which are small,



little complicated in structure, with a fine, curved, black spine towards the extremity, on the inner side, and are of a pale red-brown colour. The abdomen is of an oblong-oviform figure, slightly convex above, and projects a little over the base of the cephalothorax; it is sparingly clothed with pale silky hairs, and of a yellowish-white colour, with an obscure soot-coloured fusiform band extending from the anterior extremity of the upper part rather more than one-third of its length, and a dark-brown spot situated immediately above the spinners, which are cylindrical and prominent, the inferior pair being the longest.

The only specimen of this species included in the collection was the adult male described above.

### Family THERIDIIDÆ.

#### Genus PHOLCUS, Walck.

#### *Pholcus Lyoni*, n. sp.

Length of the female  $\frac{5}{10}$  of an inch; length of the cephalothorax  $\frac{1}{10}$ , breadth  $\frac{1}{10}$ ; breadth of the abdomen  $\frac{1}{6}$ ; length of an anterior leg  $2\frac{6}{10}$ ; length of a leg of the third pair  $1\frac{2}{10}$ .

The legs are very long, slender, provided with short, fine hairs, and are of a pale brownish-yellow colour, minutely streaked and spotted with black; a brown annulus occurs near the whitish extremity of the femora and tibiæ, and the genual joint has a brown hue; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The eyes are seated on black spots, and are disposed on the anterior part of the cephalothorax, which is rather prominent; three are closely grouped on each side in the form of a triangle, and two, which are much the smallest of the eight, are placed transversely, a little in advance of the two lateral groups. The cephalothorax is nearly circular, glossy, somewhat convex, with a small conical process on each side of its base, and a large indentation in the middle; the lateral margins are depressed, and the space between the small anterior pair of eyes and the frontal margin is broad and nearly vertical; it has a very pale-yellow or yellowish-white hue, the anterior slope of the indentation is tinged with brown, and two obscure brown lines, on the space above the frontal margin, meet in an angle near the anterior pair of eyes. The falces are small, conical, vertical, united at the base, armed with a short, slightly curved fang, and have a single pointed tooth near their extremity, on the inner side; the maxillæ are long, and taper to the extremity; they are greatly enlarged at the base, where the palpi are inserted, and inclined towards the



lip. These organs have a brownish-yellow hue, the latter being much the darker-coloured. The lip is short, broad, slightly dilated in the middle, and somewhat pointed at the apex; and the sternum is heart-shaped, with a slight inward curve at the extremity, which has a small protuberance at its centre; and there are minute prominences on the sides, opposite to the legs. These parts are of a dark-brown colour, the apex of the former and the lateral margins of the latter having a yellowish-white hue. The palpi are short, and of a yellowish-white colour, the digital joint, which tapers to a point, and is well supplied with hairs, having a brown hue. The abdomen is short, somewhat convex above, sparingly clothed with pale hairs, projects slightly over the base of the cephalothorax, and has at its extremity a conical protuberance situated high above the spinners; it is of a yellowish-grey colour, with a red-brown spot on each side of its anterior extremity, a few oblique black streaks on each side of the medial line of the upper part, and a curved line and spot of the same hue on the conical protuberance; in the space between the protuberance and the spinners there is a vertical black line, on each side of which an obscure, curved, whitish line occurs; a broad, longitudinal brownish-black band, mingled with yellowish-grey, occupies the middle of the under part; the anterior part of the band is the broadest, and comprises two contiguous, oval, divergent, dull-yellow spots: the sexual organs are highly developed, rather prominent, and present a narrow, transverse orifice; they are of a red-brown hue, and the anterior margin, which is the darker-coloured, particularly at its extremities, has a small prominence in the middle.

The sexes are similar in colour; but the male is the smaller, and the femur of each anterior leg is provided with a longitudinal row of erect black spines on its inferior surface, which extends from its extremity nearly to its base. The falces are somewhat hollowed on the inner surface, and have a conical, pointed process on the outer side, towards their extremity, near the base of which, on the inner side, a tooth-like process originates, that is directed obliquely inwards and downwards. The palpi are short, very robust, and of a pale-yellow colour, with the exception of the digital joint, which has a dark reddish-brown hue on its sides and extremity; the humeral joint is slender at its base, but its extremity is enlarged and convex underneath; the radial joint is greatly dilated, very convex above, and much larger than the cubital joint; the digital joint is supplied with some long hairs, and tapers from the base to the extremity, which is terminated by a fine, curved, pointed process; the palpal organs are connected with the base of the digital joint, towards the inner side; they are subglobose, of a



yellowish-white colour, and are terminated by a strong, curved, dark red-brown process.

I have connected the name of Captain Francis Lyon with this highly interesting *Pholcus*; and I entertain a hope that his excellent example of collecting and transmitting specimens of natural objects to this country may be extensively followed by gentlemen who, by professional engagements or the love of enterprise, may be led to sojourn in our Indian possessions.

Numerous specimens of this curious species, in almost every stage of growth, were comprised in the collection; it chiefly inhabits the interior of buildings, and must be very abundant in those parts of India in which it was obtained. A careful inspection of these specimens led to the discovery of one in the adult state in which the two sexes were united, the left side (as indicated by the very remarkable structure of the palpus, palpal organs, and falx) being that of a male, and the right side (as shown by the structure of the palpus, falx, and the small and irregularly developed vulva) being that of a female: unfortunately the two anterior legs were missing; consequently it was not possible to determine whether they manifested the usual conformation characteristic of sex or not; but that such would have been the case, had they been present, scarcely a doubt can be entertained. Among the many thousands of spiders that I have examined, this is the only instance of the union of the sexes in the same individual that has come under my notice; and, as I have not met with any record of a similar case, in the course of my reading, it must be one of exceedingly rare occurrence.

#### Genus ARTEMA, Walck.

##### *Artema convexa*.

*Artema convexa*, Blackw., Annals & Mag. Nat. Hist. ser. 3. vol. ii. p. 332, and vol. xviii. p. 459.

Specimens of both sexes of *Artema convexa*, in the adult state and in various stages of development, were contained in the collection. The large brown-black spots on the upper part of the abdomen in every instance formed two distinct longitudinal rows, proving that their occasional junction merely constitutes a variety of the species.

I have received specimens of this *Artema* from Pernambuco and from Equatorial Africa; and the curious fact of its very extensive geographical distribution is rendered the more surprising by the circumstance of its being a spider that commonly inhabits the interior of buildings.





Blackwall, John. 1867. "Descriptions of several species of East Indian spiders, apparently to be new or little known to arachnologists." *The Annals and magazine of natural history; zoology, botany, and geology* 19, 387–394.

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