

13,126.

OCCASIONAL PAPERS

*[Faint handwritten scribbles]*

OF THE

MAY 4 1892

# NATURAL HISTORY SOCIETY

*[Faint circular stamp, possibly a library or collection mark]*

OF WISCONSIN.

-----

VOL. II.

-----

MILWAUKEE:  
PRINTED FOR THE SOCIETY.  
1892.

2202  
1000  
1000  
1000  
1000

ANT-LIKE

SPIDERS OF THE FAMILY ATTIDÆ.

BY

GEORGE W. AND ELIZABETH G. PECKHAM.

MILWAUKEE :  
NATURAL HISTORY SOCIETY OF WISCONSIN.  
1892.



---

FRESS OF  
CRAMER, AIKENS & CRAMER,  
MILWAUKEE, WIS.

---



## ANT-LIKE SPIDERS OF THE FAMILY ATTIDÆ.

GEORGE W. AND ELIZABETH G. PECKHAM.

### *Introduction.*

In the family Attidæ, as in several other families of Arachnida, there is a group of spiders whose members are remarkable for their resemblance to ants. Some of the species of this group are found in the sub-family Attinæ (Attidæ having the eyes arranged in three rows), and some in the sub-family Lyssomanæ (Attidæ having the eyes arranged in four rows).

In many cases the likeness to ants is rendered striking by a constriction of the cephalothorax or of the abdomen, by which the body seems to be made up of three segments instead of two. Sometimes both cephalothorax and abdomen are constricted. Of all the American Attidæ *Synemosyna formica* is the most ant-like;\* and it would seem that in this genus the differentiation toward an ant-like form has reached its highest point.

The leg formula in the ant-like Attidæ varies but slightly. The fourth pair is almost always the longest, but in a few cases the first is longer than the fourth. The legs are usually slender, without much difference in size; occasionally the first pair is thickened, and less often, the second.

There is much less diversity in color in this group than in other Attidæ, and there is also less difference between the sexes, although in the males of some species the integument is more iridescent and the first legs are larger than in the females; and in some genera, as *Salticus* and *Paradamœtas*, it is common for the males to have long, horizontal falces, while those of the females are short and vertical. The colors are

---

\*Of this species Hentz (*Spiders of the United States*, p. 73) says: "I had seen individuals of this species running on the blades of grass and stems of weeds long before I distinguished them from ants. They move with agility and can leap, but their habitus is totally different from *Attus*. They move by a regular progression or regular walk, very different from the halting gait of the sub-genus." In a former paper we stated that *Synemosyna formica*, like *Synageles picta*, holds up its second pair of legs to look like antennæ. This is an error. It is with the first, not the second, pair of legs that *formica* mimics the antennæ of ants.

usually browns and blacks with white bands, and sometimes with orange or red, like that seen in ants; and there is a close similarity in general appearance, so that the determination of genera and species is rendered very difficult.

The palpi of the males are not especially variable. In some species, notably in those of *Salticus*, the tarsus of the palpus is palette-shaped in both sexes. In certain species of *Synemosyna* the front end of the venter has a hard plate, extending from pedicle to epigynum; and sometimes the integument is also more or less hardened on the upper surface of the abdomen.

The ant-like *Attidæ* are usually small, averaging about  $\frac{1}{4}$  mm. in length, although we have one species which reaches 11 mm. They are commonly found running on plants and bushes, or on the ground in hot, stony places. They are like other *Attidæ* in spinning no snares. *Synageles picata*, which we kept in confinement, made a little, tubular nest, into which it retired during the colder parts of the day.

The few species that we know in life mimic the movements as well as the form and color of ants.\* Of one of these species we have said in a former paper: "While *picata* is ant-like in form and color, by far the most deceptive thing about it is the way in which it moves. It does not jump like the other *Attidæ*, nor does it walk in a straight line, but zig-zags continually from side to side, exactly like an ant which is out in search of booty. This is another illustration of what Wallace has shown in relation to butterflies—that that which is an important functional structure in the mimicked group may be imitated by the mimetic species, even when the habits of the latter render it perfectly useless. The ant only moves in this way when it is hunting; at other times it goes in a straight line; but its little imitator zig-zags always.

"In addition to its ant-like walk, *picata* holds up its second pair of legs in such a way that they look like antennæ.

---

\*According to other observers this is true also of Central American and African species. See Bett's *Naturalist in Nicaragua*, p. 314, and J. P. M. Weale in *Nature*, 1871, Vol. III., p. 508.

The first legs are short, and support the anterior part of the body. The second pair, although it is sometimes used, seems not to be needed for locomotion. All the threatening and similar movements made by other spiders with the first pair, are with *picata* made with the second.

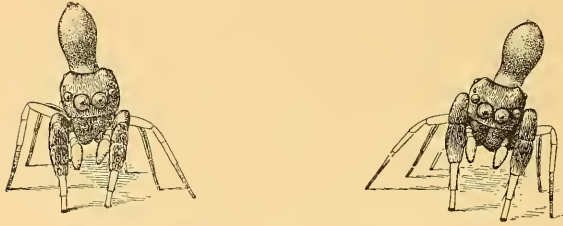
"Spiders commonly remain nearly motionless while they are eating; *picata*, on the other hand, acts like an ant which is engaged in pulling some treasure-trove into pieces convenient for carrying. I have noticed a female *picata* which, after getting possession of a gnat, kept beating it with her front legs as she ate, pulling it about in different directions, and all the time twitching her ant-like abdomen. Pavesi says that the ant-like *Drassidæ* and *Attidæ* continually move their abdomens exactly as ants do."\*

The pairing of these spiders, so far as we have found, takes place outside the nest. In our study of the mating habits of *Synageles picata*, we say: "The most important sexual difference is the greater thickness of the first legs of the male. These are flattened on the anterior surface and are of a brightly iridescent steel-blue color. Unlike most of the *Attid* males, *picata* keeps all his feet on the ground during his courtship; raising himself on the tips of the posterior six he slightly inclines his head downward by bending his front legs, their convex surface being always turned forward. His abdomen is lifted vertically so that it is at a right angle to the plane of the cephalothorax. In this position he sways from side to side. After a moment he drops the abdomen, runs a few steps nearer the female, and then tips his body and begins to sway again. Now he runs in one direction, now in another, pausing every few moments to rock from side to side and to bend his brilliant legs so that she may look full at them. \* \* \* We had six females in the box and saw him mate with all of them; and each, after a time, made a cocoon containing three large eggs."†

\*Protective Resemblance in Spiders, Occ. Papers of Natural Hist. Soc. of Wisconsin, Vol. 1, No. 2., p. 110.

†Sexual Selection in Spiders, Occ. Papers of Nat. Hist. Soc. of Wisconsin, Vol. 1, No. 1., p. 43.

We afterward found that a female *picata* commonly made three cocoons in a season, some of them containing three and some four eggs. *Synemosyna formica* has probably about the same rate of reproduction, since we once found a cocoon of that



Figs. 1 and 2.—*Synageles picata*. Positions of male approaching female.

species containing four eggs. We have elsewhere called attention to the low fertility of the ant-like spiders (some species of *Attidæ* lay 180 eggs), and, have suggested that if there is an inverse variation in every species between its birth-rate and its powers of maintenance, we must accept the conclusion that

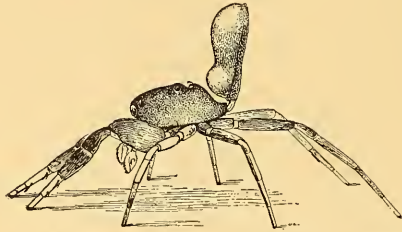


Fig. 3.—*Synageles picata*. Side view of male approaching female.

these small, weak and defenseless spiders derive an immense advantage from their imitation of ants, their mimetic form enabling them to escape from their enemies.

About one hundred species of ant-like *Attidæ* have been described. Their distribution is somewhat peculiar. They are found in almost all parts of the world, and seem as well able to live in one climate as in another, but it is in two widely sepa-



rated regions that they reach their greatest development of genera and species; they are very much more numerous in South America and in the Malay Archipelago than in any other countries. The only suggestion that we can offer in explanation of this uneven distribution is that the tropics abound in small spider-eating birds, and that the mimetic form is here of the greatest value in enabling the little spiders to escape from the birds under the guise of ants.

In the following paper we have used twenty genera, of which fourteen are new. As the clypeus, falces and legs vary considerably in the species of one genus, and even in the sexes of one species, we have thought it best to base our classification mainly on the general form of the cephalothorax, and on the size and disposition of the eyes.

We wish to acknowledge our indebtedness to the well-known traveler, Mr. Herbert H. Smith, for the use of his valuable collection of South American Attidæ; to Mr. Eugen Simon, for many interesting specimens from Ceylon, Luzon and other places; and to Mr. J. H. Emerton, for several figures of ant-like Attidæ which he has placed at our disposal. Our illustrations are all from nature, by the skillful hand of Mr. Emerton.

We append a list of the ant-like Attidæ so far as published, not including those described in this paper:

*Agorius gracilipes* female. Th., 1877. Celebes.

Ragni Mal. e, Pap. I., p. 217.

*Damœtas nitidus* male. L. K., 1879.

Arachniden Australiens, p. 1070.

*Janus atratus* male. Tacz., 1874.

Aran. de la Guyane Francaise, p. 92.

*cayennensis* male. Tacz., 1874.

Ib. p. 90.

*longulus* male. Tacz., 1874.

Ib. p. 87.

*lucasia* female. Tacz., 1874.

Ib. p. 96.

*melanocephalus* male. C. K., 1846.

Die Arachn, XIII., p. 23.

*mutillæformis* male. Tacz., 1879.

Aran. du Perou, p. 372.

*obscurus* male. Tacz., 1874.

Aran. de la Guyane Francaise, p. 93.

*subtilis* female. Tacz., 1874.

Ib. p. 91.

*Wankowiczii* male. Tacz., 1874.

Ib. p. 88.

*Leptorchestes cognatus* male. L. K., 1879.

Arachniden Australiens, p. 1063.

*erythrocephalus* male. L. K., 1879.

Ib. p. 1057.

*luctuosus* male. L. K., 1879.

Ib. p. 1065.

*simon* male. L. K., 1879.

Ib. p. 1061.

*striatipes* male. L. K., 1879.

Ib. p. 1059.

Rhombonotus gracilis male, female. L. K., 1879.

Ib. p. 1067.

Salticus alticeps male. Th., 1890. Java.

Diagnoses Arancorum aliquot novarum in Indo-Malesia inventarum, p. 27.

augustus male. Th., 1877. Celebes.

Ragni Mal. e Pap. I., p. 213.

bi-color male. L. K., 1879.

Arachniden Australiens, p. 1055.

bi-curvatus male. Camb., 1869. Ceylon.

Ann. and Mag. Nat. Hist., p. 67.

constrictus male. Blk., 1877.

Proc. Royal Irish Acad., Vol. III., p. 5.

discicollis male, female. Tacz., 1879.

Aran. du Perou, p. 371.

formica male. Doles., 1859.

Arachn. Ind. Archipel., p. 23, equals Synemosyna decipiens Th., 1877. Amboina.

formosus male, Th., 1890.

Diagnoses Araneorum aliquot novarum in Indo-Malesia inventarum, p. 26.

hesperius male. E. S., 1887.

Arachn. recueillis a Assinie (West Africa).

Ent. Soc. de France, p. 261.

Salticus leptognathus male. Th., 1890. Java.

Diagnoses Araneorum aliquot novarum in Indo-Malesia inventarum.

luridus male. E. S., 1885. Singapore.

Arachn. de l'Asie Merid., III., p. 18.

melanops male. Tacz., 1874.

Aran. de la Guyane Francaise, p. 86. Taczanowski has it also from Peru.

modestus male, jun. Th., 1892.

Spiders from Andaman Islands, Ann. and Mag. Nat. Hist., p. 235.

paviei male. E. S., 1886. Tepong.

Arachn. de Siam, p. 3.

- Salticus pectorosus* male, female. Th., 1890. Sumatra.  
 Diagnoses *Aranearum aliquot novarum in Indo-Mal-*  
*esia inventarum*, p. 26.  
*repudiatus* male. Camb., 1876.  
 Spiders of Egypt, Proc. Zool. Soc., p. 625.  
*tyrolensis*, male, female. C. K., 1846. Europe.  
 Die Arachn., XIII., p. 29.  
*zantho frontalis* male, female. Urquhart, 1884 (male)  
 and 1885 (female). Trans. New Zealand Ins., pp.  
 45 and 203.
- Synageles ludibundus*, male. E. S., 1876. Arachn. de France,  
 III., p. 15.  
*todillus* male. E. S., 1869. France, Syria, Corsica,  
 Greece, 1876. Ib. p. 17.
- Synemosyna capito* male. Th., 1890.  
 Diagnoses *Aranearum aliquot novarum in Indo-Mal-*  
*esia inventarum*, p. 24.  
*clavigera* male. Th., 1877. Celebes.  
 Ragni Mal. e Pap. I., p. 208.  
*debilis* male. Th., 1890. Java.  
 Diagnoses *Aranearum aliquot novarum in Indo-Mal-*  
*esia inventarum*, p. 25.  
*leta* male. Th., 1877.  
 Ragni Birmani, p. 339.  
*lugens* male. Th., 1881.  
 Ragni Mal. e Pap. III., p. 406.  
*lupata* male. L. K., 1879.  
 Arachniden Australiens, p. 1052.  
*moesta* male. Th., 1877. Celebes.  
 Ragni Mal. e Pap. I., p. 201.  
*nigra* male. Th., 1877. Celebes.  
 Ib. p. 204.  
*nitidissima* male. Th., 1877.  
 Ib. p. 206.  
*noxiosa* Hentz., 1867.  
 Supplement to Hentz's Arachn. Writ., Proc. Bos.  
 Nat. Hist. Soc.

- Synemosyna opaca male. Karsch, 1879. Samor.  
Arachnologische Blatter, p. 395.
- Synemosyna prolonga male. Th., 1890. Celebes.  
Aracnidi di Nias, p. 64.
- procerus male. Th., 1877. Celebes.  
Ragni Mal. e Pap. I., p. 198. Equals Toxeus procerus Th.
- prognatha male. Th., 1877.  
Ragni Birmani, p. 343.
- refescens male. Th., 1877. Celebes.  
Ragni Mal. e Pap. I., p. 212.
- Toxeus mandibularis male. Th., 1890.  
Diagnoses Araneorum aliquot novarum in Indo-Malesia inventarum, p. 25.

## SYNOPSIS OF GENERA.

### SALPICUS.

Cephalothorax long; cephalic part on a higher plane than thoracic. Quadrangle of eyes wider behind than in front. First row of eyes slightly curved, middle about twice as large as lateral. Falces ( $\sigma$ ) long, horizontal; ( $\varphi$ ) short, vertical. Legs 4132. This is a cosmopolitan genus and contains a large number of species.

### BOCUS.

Cephalothorax very long and narrow, the cephalic part occupying barely one-third of the cephalothorax. Thoracic part wider in the middle than at either end. Quadrangle of eyes barely wider than long, and a little wider behind than in front. First row of eyes curved, middle about twice as large as lateral. Falces ( $\sigma$ ) long, horizontal. Legs 4132.

One species from Luzon.

### SARINDA.

Rather large spiders with cephalic part on a slightly higher plane than thoracic. Quadrangle of eyes wider than long and a little wider in front than behind. Falces short, vertical. Legs ( $\sigma$ ) 1432; ( $\varphi$ ) 4132.

This genus is found in South America. We have two species.

### ZUNIGA.

Large spiders. Cephalic part on a higher plane than thoracic. Quadrangle of eyes wider than long and wider in front than behind. Middle eyes of first row more than twice as large as lateral, differing in this respect from both Salticus and Sarinda. Falces vertical. Legs 4132.

Found in South America. One species.

### MARTELLA.

Medium sized spiders. Quadrangle of eyes wider than long, wider in front than behind, or equally wide in front and behind, occupying about one-half of the cephalothorax, differing

in this respect from preceding genera. Falces ( $\delta$ ) inclined forward; ( $\varphi$ ) vertical. Legs ( $\delta$ ) 1432; ( $\varphi$ ) 4132.

This genus is found in Central and South America. We have two species.

LEPTORCHESTES.

Rather large spiders. Cephalothorax rather long and narrow. Quadrangle of eyes almost equally wide and long, wider behind than in front, occupying about one-half of the cephalothorax. Falces vertical. Legs 4132. This genus has not been found in the Western Hemisphere. We have one new species, from Madagascar.

HERMOSA.

Spiders large. Cephalothorax rather long, rounded above. Quadrangle of eyes wider than long, wider behind than in front, occupying two-fifths of the cephalothorax. Falces short, oblique, robust. Legs 4132. One species, from Madagascar.

EMERTONIUS.

Thoracic part of cephalothorax raised into a ridge, with the posterior slope concave (see drawing). Quadrangle of eyes wider than long, wider behind than in front, occupying nearly one-half of the cephalothorax. First row of eyes curved downward. Falces inclined forward, diverging, robust. Legs 4132. One male, from Java.

ERICA.

Cephalothorax about twice as long as wide, sides nearly parallel, thoracic part with a constriction, behind which it is rounded. Quadrangle of eyes wider than long, wider in front than behind, occupying two-fifths of the cephalothorax. Falces short, vertical. Legs 4312. One species, from South America.

FLUDA.

Cephalothorax plainly narrower behind than in front. Thoracic part with a depression, behind which it rises into a ridge and then falls abruptly. Quadrangle of eyes wider than long, wider in front than behind, occupying one-half of the cephalothorax. Falces vertical. Legs 4312 or 4132. Two species from South America.

## SYNAGELES.

Small spiders. Cephalothorax almost flat, widest at dorsal eyes. Quadrangle of eyes longer than wide (differing in this respect from all the other genera of this group), equally wide in front and behind or wider behind, occupying more than one-half of the cephalothorax. Falces vertical. Legs ( $\sigma$ ) 4132 or 4123; ( $\varphi$ ) 4231, 4321, 4123 or 4132.

One new species, from North America.

## KEYSERLINGELLA.

Spiders small. Cephalothorax almost flat above, without constriction or depression. Quadrangle of eyes wider than long, equally wide in front and behind, or wider behind, occupying at least one-half of the cephalothorax. Falces vertical or slightly inclined. Legs ( $\sigma$ ) 4132; ( $\varphi$ ) 4312.

Two new species, from South America.

## DESCANSO.

Spiders rather small. Cephalothorax rather low, almost flat above, thoracic part grooved on the sides, posterior slope more or less concave. Quadrangle of eyes wider than long, wider behind than in front, occupying from two-fifths to three-fifths of the cephalothorax. Falces vertical. Legs 4132, first and second pairs enlarged.

Females of two new species from Brazil.

## MARENGO.

Small spiders. Cephalothorax rather low and flat. Clypeus and sides of cephalic part slanting inward. Quadrangle one-fourth wider than long, a little wider behind than in front, occupying less than two-fifths of the cephalothorax. Legs ( $\varphi$ ) 4132, first much the stoutest. This genus resembles Synageles.

One species, from Ceylon.

## BELLOTA.

Small spiders. Cephalothorax low and flat; cephalic and thoracic parts in the same plane; sides of cephalic part vertical. Quadrangle of eyes one-fourth wider than long, plainly



wider behind than in front, occupying less than two-fifths of the cephalothorax. Legs (♀) 1432, first much the stoutest. Falces (♀) short and vertical.

One species, from Venezuela and Peru.

SIMORA.

Cephalothorax not high, widest at dorsal eyes, narrowing plainly in front and behind. Quadrangle of eyes one-fifth wider than long, plainly wider behind than in front, occupying a little less than one-half of the cephalothorax. Legs (♀)—432.

One species, from Rio Janeiro.

PARADAMETAS.

Spiders of medium size, not especially ant-like in appearance. Cephalothorax slightly dilated at dorsal eyes. Quadrangle of eyes slightly wider than long, wider behind than in front, occupying one-half of the cephalothorax. Falces (♂) stout, long, horizontal; (♀) weak, short, vertical. Legs 4132. This genus is found in Guatemala. We have no new species.

SYNEMOSYNA.

Small, slender spiders, looking very much like ants. Cephalothorax low and long, with one or two constrictions. Quadrangle of eyes but little wider than long, a little wider behind, occupying one-third of the cephalothorax. Middle eyes of the first row from two-and-a-half to three times as large as lateral eyes. Falces vertical. Legs 4312. Found in North and South America. We have two new species from Brazil.

IOLA.

Much like *Synemosyna*, but having the cephalothorax a little higher and the middle eyes of the first row only a little more than twice as large as the lateral. Falces vertical. Legs 4132. One species from Madagascar.

SIMONELLA.

Long, slender spiders, with several constrictions. Eyes arranged in four rows—differing in this respect from all other ant-like genera. Found in Central and South America.

One new species.

SALTICUS (LATR.) 1804.

Cephalothorax elongated, nearly twice as long as wide; cephalic part high, convex, with the sides parallel; thoracic part on a lower plane, narrower, rounded or obtusely truncated behind. Quadrangle of eyes from one-fourth to one-third wider than long, wider behind than in front, occupying from one-third to two-fifths of the cephalothorax. First row of eyes straight or slightly curved, subtouching; middle about twice as large as lateral. Second row half-way between first and third rows or a little nearer the first. Third row about as wide as the cephalothorax at that place. Lip usually longer than wide. Sternum long and narrow.

Falces ( $\delta$ ) long, robust, horizontal or strongly inclined; ( $\varphi$ ) much shorter and weaker, and vertical or only slightly inclined. The legs are 4132 in both sexes. This is the only cosmopolitan genus among the ant-like Attidæ.

SALTICUS FORMICARIUS DE GEER, 1778.

Pl. I., Fig 1, female; 1a, face and falces; 1b, cephalothorax of female in profile.

$\delta$ . Total length,\* 5.1 mm. Falces, 1.3 mm.

Cephalothorax: Length, 2.1 mm., width 1.3.

Legs, 4132.

$\varphi$ . Total length, 6.5 mm.

Cephalothorax: length, 2.7 mm., width, 1.1 mm.

Legs, 4132.

Cephalothorax moderately high, with constriction behind dorsal eyes. Cephalic part on a higher plane than thoracic. Quadrangle of eyes one-fourth wider than long, plainly wider behind than in front, occupying two-fifths of cephalothorax. Anterior eyes in a straight row, subtouching; middle twice as large as lateral. Second row a little nearer first than third row. Falces of male, long, horizontal, parallel, robust, flat above.

---

\*The total length refers to cephalothorax and abdomen only, the falces not being included.

Fang sinuous, with a tooth standing out at a right angle near the insertion. Falces of female short, vertical, parallel, moderately robust. Lip longer than wide. Coxæ I separated by less than width of lip. Space between coxæ II and coxæ III wider than usual. Sternum long, narrow. Pedicle moderately long. Abdomen cylindrical, without constriction.

*Color.* Cephalothorax black in front of dorsal eyes, reddish-brown behind them, with white hairs around the eyes of the first row. Abdomen with the anterior portion light brown and the posterior black; there is a white band at the base, and a fine, white line separates the two colors. Under alcohol the appearance of the abdomen is different. The anterior half and a small region at the extremity are light brown, and between the two parts is a wide, black band, with projections before and behind, which form quite an elaborate pattern. Legs and sternum, light yellowish-brown. Palpi and mouth parts, dark brown. Falces dark, iridescent green. Venter testaceous with a medium longitudinal brown line.

*Habitat.* Common throughout Europe.

SALTICUS ICHNEUMON E. S. 1866.

Pl. I, Figs. 7, 7a and 7b, male palpus.

♂. Total length, 8 mm. Falces, 2 mm.

Cephalothorax: Length, 3.2 mm; width, 1.7 mm.

Legs, 4132.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax moderately high with a constriction behind the dorsal eyes. Cephalic part a little higher than thoracic. Quadrangle of eyes one-fourth wider than long, much wider behind, occupying a little more than one-third of cephalothorax. First row of eyes curved downward, all subtouching; middle more than twice as large as lateral. Clypeus, only a line. Second row of eyes plainly nearer first than third row. Falces long, horizontal, parallel, robust; flattened above and on inner faces; outer edges a little rounded; there is a single row of small teeth on the inner lower edge; fang as long as falx.

Lip much longer than wide. Coxæ 1 touching. Pedicle long. Abdomen, cylindrical, with constriction at anterior third. Sternum very narrow, contracted at both ends.

*Color.* Cephalothorax, falces and abdomen light, clear, reddish-yellow, frosted over with fine, silvery down; only the eye-region of the cephalothorax is bare, and is of a brighter yellow, almost gold-color. Eyes on black spots. Legs and palpi light yellow, with tarsi of both the palpus and the first legs darker. Under surface of body all light yellow.

*Habitat.* Zanzibar.

SALPICUS EPHIPPIATUS BENTZ, 1845.

Pl. I., Fig. 2, female; 2a, side of cephalothorax; 2b, epigynum.

♂. Total length, 5.2 mm.

Cephalothorax: Length, 2.4 mm; width, 1.4 mm.

Legs, 4132, equally stout.

♀. Total length, 5 mm.

Cephalothorax: Length, 2.2 mm; width, 1.2 mm.

Legs, 4132, equally stout.

Cephalothorax rather high; thoracic part on a lower plane than cephalic, with a slight constriction in front of the middle. Sides nearly parallel, contracting a little behind. Quadrangle of eyes very slightly wider than long, a little wider behind than in front, occupying two-fifths of the cephalothorax. Anterior eyes in a straight row, all somewhat separated from each other, the lateral about one-half as large as the middle. Second row about half-way between first and third rows. Third row not quite so wide as cephalothorax at that place. Falces (♂) wider than first row of eyes, more than three times as long as face, nearly horizontal, diverging; fang as long as falx; (♀) much weaker and shorter, slightly inclined forward, fang short. Lip about as wide as long. Coxæ 1 separated by more than the width of the lip. Sternum long and narrow. Abdomen constricted in front of middle.

*Color.* Cephalothorax yellowish-brown; abdomen encircled by a white band at the constriction, the anterior portion

being brown and the hinder part black. Mouth parts, coxæ, sternum and venter brown. Legs with a tinge of yellow.

Of this species we have only seen specimens in alcohol. Mr. Emerton, who is familiar with it when alive, says that in color and general appearance it resembles orange-brown ants.

*Habitat.* Eastern United States.

SALTICUS CENTRALIS N. SP.

Pl. I, Fig. 6, epigynum; 6a and 6b, male palpus.

♂ ♀. Total length, 4.5 mm. Length of falces in ♂ 1.7 mm.

Cephalothorax: Length, 2.3 mm., width, 1.2 mm.

Legs, 4132.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and three-fourths of metatarsus.

Quadrangle of eyes one-fourth wider than long, occupying two-fifths of cephalothorax. First row of eyes straight, with middle eyes touching and lateral subtouching; middle twice as large as lateral eyes. Clypeus only one-sixth as high as middle eyes. Eyes of second row half-way between first and third rows. Dorsal eyes a little larger than lateral eyes, and placed further from each other than from the lateral borders of the cephalothorax. Falces in male, long, horizontal, parallel, robust and flattened above, nearly straight on the edges, and narrow at the proximal end; there is a single row of teeth on the under edge, with a long fang; in female, short and vertical. Lip much longer than wide. Coxæ of first leg separated by width of lip. Sternum long and slender. Pedicle plainly visible from above. There is a slight constriction behind the dorsal eyes, and another in front of the middle of the abdomen.

*Color.* ♂. Cephalothorax dark brown, with a lighter median region; abdomen light brown, glistening, with two dark spots, a small one at the base and a large, circular one on the posterior part, which extends on to the sides. A few white hairs are found in both cephalothorax and abdomen. Legs light brown or pale, with two rows of spines on the tibia and metatarsus of the first, and a few small spines on the others.

Falces of the male brown and slightly iridescent, with the skin roughened and wrinkled and having fine black lines around the outer edges. Under surface of the body light brown. ♀. Abdomen light brown with a white band at the constriction. Falces smooth brown.

*Habitat.* Central America.

SALPICUS ARMATUS N. SP.

Pl. VII., Figs. 6 and 6a, male palpus.

♂. Total length, 7 mm.

Cephalothorax: Length, 3 mm.; width, 1.5 mm.

Legs, 4132; equally stout. Two and three nearly equal.

1st leg longer than second by tarsus and one-half metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Tibia of palpus at least twice as long as patella, and much longer than tarsus.

Cephalothorax rather high, with a depression behind dorsal eyes. Cephalic part a little higher than thoracic. Quadrangle of eyes barely wider than long, and very little wider behind than in front, occupying more than one-third of cephalothorax. Anterior eyes in a straight row, subtouching; middle twice as large as lateral. Second row half-way between first and third. Falces long, rounded, obliquely inclined, strongly divergent, robust, with a cluster of teeth near the insertion of the fang. Fang long, with a double curve, and a tooth in the middle. Lip longer than wide. Coxæ 1 separated by width of lip. Pedicel very short. Abdomen cylindrical, with a strong constriction in the anterior third. Sternum narrow, contracted behind and truncated in front, wedge-shaped.

*Color.* Cephalothorax black in front of the dorsal eyes, light brown behind them, with a white band at the post-ocular depression, white hairs around the eyes of the first row, and thinly covering the thoracic part. Abdomen black, with a yellowish spot on the back, in front of the constriction, and two encircling white rings, one around the anterior portion, and one at the constriction. The posterior part is thinly clothed

with white hairs, which also take, more or less distinctly, the form of rings. Falces dark brown. Palpi dark brown, with heavy fringes of white hair underneath. Legs light yellowish-brown, excepting the femoral joints of the second, third and fourth, that of the second being dark underneath, and those of the third and fourth being entirely dark. Under surface dark brown, excepting the coxæ of the first, second and fourth pairs of legs, which are pale.

*Habitat.* Lima.

SALTICUS DESERTUS N. SP..

Pl. II., Fig. 6, male; 6a and 6b, male palpus.

♂. Total length 4.9 mm.

Cephalothorax: Length, 2 mm.; width, 1 mm.

Legs, 4123; almost equally stout.

Falces, 1.8 mm.

The cephalic part is high with vertical sides; there is a deep constriction a little way behind the dorsal eyes, back of which the thoracic part is level for a short distance, and then slopes off, not very steeply, growing slightly narrower behind. The quadrangle of the eyes is scarcely one-fourth wider than long, is a little wider behind than in front and occupies two-fifths of the cephalothorax. The anterior eyes form a row slightly bent downward; they are close together, the middle eyes being about twice as large as the lateral. The second row is nearer the first than the third row. The dorsal eye is slightly larger than the lateral, and is placed on the side of the cephalothorax. The pedicle is short. The abdomen is short, oval, with a faint constriction in front of the middle. The falces are long, with a very slight downward inclination; they are flattened above and on the inner faces, and the outer edges are slightly, but evenly, curved outward from the insertion and then inward to the extremity. The teeth are very small. The fang is long and only slightly bent at the extremity. The sternum is narrow. The lip is a little longer than wide.

*Color.* The whole body is dark brown. The cephalothorax is thinly covered with short, white hairs, and the abdo-



men has a transverse band of white hairs across the middle. The falces are medium brown, iridescent, with short, white hairs on the upper surface. The legs are brown, the first, third and fourth having the femoral joints much darker than the others, while in the second leg the femur is lighter than the other joints, and has a black, longitudinal line on the anterior face. The palpi are darker than the legs. Sternum, mouth parts and coxæ of the third pair dark; other coxæ yellowish.

*Habitat.* Algiers. From the collection of M. Simon.

SALTICUS TRISTIS E. S. 1889.

Arachn. de l'Yemen, Ann. Ent. Soc. de France, Nov. 1889, p. 115.

Pl. III., Fig. 2, male, 2a and 2b, male palpus; 2c and 2d, var. *rufula*, male palpus.

♂. Total length, 7 mm.

Cephalothorax: Length, 3.3 mm; width, 1.8 mm.

Legs, 4132; 4th much the longest; almost equally stout.

Falces, 2 mm.

♀. Total length, 6 mm.

Cephalothorax: Length, 2.5 mm.; width 1.3 mm.

Legs, 4312.

The cephalic part is high and rounded on the sides. There is a constriction behind the dorsal eyes which cuts much more deeply into the sides of the cephalothorax than into the upper surface. The thoracic part is nearly as high as the cephalic and is curiously shaped, rounding off in all directions from a central hump. It narrows but little behind. The quadrangle of the eyes is about a third wider than long, is very much wider behind than in front and occupies about one-third of the cephalothorax. The first row of eyes is a little bent downward, with the eyes close together, the middle being nearly twice as large as the lateral. The second row is plainly nearer the first than the third row. The dorsal is slightly larger than the lateral eye. The pedicle is moderately long. The abdo-



men is truncated in front; its shape is oval, and there is a constriction in the anterior third which seems to be deeper in the female than in the male. The falces in the male are horizontal and are semi-circular in shape, the line from the insertion to the extremity forming a curve. They are flattened above and on the inner faces. The fang is long. The falces of the female are short, stout and vertical. The lip is much longer than wide and the sternum is narrow.

*Color.* The cephalothorax is dark brown, thinly covered with minute yellowish-white hairs, and having a white band around the constriction. There are some white hairs around the eyes of the first row and on the clypeus, and a white line around the lower margin. The falces are medium brown, rugose, somewhat iridescent, with short, white hairs on the upper surface. The legs of the first and second pairs are medium brown, the femoral much darker than the other joints. The third and fourth pairs are much darker than the first and second, and the trochanter of the fourth is white. The abdomen is dark brown, covered with yellow hairs, excepting at the constriction, around which is a band of snowy white hairs.

Variety *rufula* has the cephalothorax light yellowish-red, with the eyes on black spots, and the legs yellow, excepting the tarsus of the first, which is blackish. The first row of eyes seems to be not quite so much curved downward as in *tristis*.

SALTICUS SIMPLEX N. SP.

Pl. I., Fig. 4, male; 4a, 4b and 4c, male palpus.

♂. Total length, 7 mm. Falces, 2.1 mm.

Cephalothorax: Length, 4 mm; width, 2 mm.

Legs, 4132, about equally stout.

1st leg longer than 2d by tarsus, metatarsus and one-third of tibia.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax rather high, the thoracic part sloping off in all directions from the dorsal eyes. Quadrangle of eyes one-fourth wider than long, much wider behind than in front,

occupying two-fifths of cephalothorax. Anterior eyes in a straight row, subtouching; middle twice as large as lateral. Clypeus only a line. Second row a little nearer the first than the third row. Falces moderately long, horizontal, parallel, very robust, flattened above and on inner faces, much thickened on the outer sides, thickest in the middle; looked at from the side they appear semi-circular. Fang as long as falx. Lip much longer than wide; maxillæ very long, excavated within. Coxæ 1 separated by nearly the width of the lip. Sternum narrow, contracted behind. Pedicle not visible from above. Abdomen cylindrical, with a scarcely perceptible constriction near the anterior end. Integument of abdomen hardened. Tibia of palpus barely one-third as long as tarsus.

*Color.* Cephalothorax black, with some whitish hairs around the eyes of the first row, and a band of orange-colored hairs behind the dorsal eyes. Abdomen black, covered with long, orange hairs. Legs with femoral joints blackish, except those of the second, which are paler underneath, and the other joints black, mingled with pale testaceous. Palpi and falces dark brown. Under surface dark brown, except the coxæ of the first, second and fourth pairs of legs, which are pale.

*Habitat.* Madagascar.

The greater size of simplex distinguishes it from both *augustus* and *electricus*. It is also separated from *electricus* by its dark color, and from *augustus* by the relative length of the tibia and tarsus of the palpus.

SALTICUS AUGUSTUS N. SP.

Pl. I., Fig. 5, male; 5a, variety of male having long falces; 5b and 5c, male palpus.

♂. Total length, 6 mm.; falces, max., 3 mm.; min., 2.4 mm.

Cephalothorax: Length, 2.5 mm.; width, 1.2 mm.

Legs, 4132; femur 1 enlarged.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Palpus not palette-shaped, as is usual in *Salticus*.

Cephalothorax moderately high, with a marked constriction behind dorsal eyes. Cephalic part a little higher than thoracic. Quadrangle of eyes one-quarter wider than long, a little wider behind than in front, occupying a little more than one-third of cephalothorax. Anterior eyes in a row which is somewhat curved downward, subtouching; middle a little more than twice as large as lateral eyes. Clypeus one-fifth as high as middle eyes. Second row plainly nearer first than third row. Falces in one variety long, slender and rounded, in the other shorter and wider and more triangular in transverse section; in both varieties they are horizontal and parallel. Lip longer than wide. Coxæ 1 separated by less than width of lip. Sternum long, very narrow, contracted at both ends. Pedicle long. Abdomen cylindrical, with constriction in anterior third. Tibia of palpus nearly as long as tarsus.

We have a long and a short variety of this species; in the short, the fang of the falx is nearly straight; in the long it has a bend at the insertion and a curve in the middle; the teeth, also, are different. The difference shown in the drawing between the abdomens of the two varieties is probably caused by a contraction of the smaller one in alcohol.

*Color.* Cephalothorax black, with a white band at the constriction and some white hairs around the eyes. Abdomen glossy black, especially the posterior portion, with a white band at the constriction. Legs light brown, excepting the femoral joints, which are dark. Falces, palpi and under surface, dark brown.

*Habitat.* Madagascar.

We have three males of this genus from Madagascar—simplex, augustus and electricus. Of these, simplex is much the largest and heaviest. Augustus has the tibia of the palpus nearly as long as the tarsus, while the other two species have it only about one-third as long.

SALTICUS ELECTRICUS N. SP.

Pl. I., Fig. 3, male; 3a and 3b, male palpus.

♂. Total length, 5.3 mm. Falces, 1.6 mm.

Cephalothorax: Length, 2.6 mm.; width, 1.4 mm.  
Legs, 4132; femur of first enlarged, 4 and 1 nearly equal.

Tibia 1 with five pairs, and metatarsus 1 with two pairs of long slender spines.

Cephalothorax moderately high, with a very slight constriction. Cephalic part a little higher than thoracic. Quadrangle of eyes very little wider than long, a little wider behind than in front, occupying about two-fifths of cephalothorax. Anterior eyes in a straight row, subtouching; middle barely twice as large as lateral. Second row nearer first than third row. Clypeus only a line. Falces horizontal, robust and flattened above; the outer edges have, about in the middle, a notch and a slight projection; looked at from the side they are slightly thickened near the proximal end. Lip a little longer than wide. Coxæ 1 separated by width of lip. Sternum long, oval. Pedicle not visible from above. Abdomen cylindrical, with a constriction in front of middle. Tibia of palpus but little more than one-third as long as tarsus.

*Color.* Cephalothorax dark reddish-brown, excepting the interocular area, which is yellow. Abdomen, in front of the constriction, dark brown; behind it, pale yellowish, with a brown spot above. There are two dark rings around the abdomen, one in front of, and one behind, the constriction. Legs, falces, palpi and under surface medium brown.

*Habitat.* Madagascar.

The yellowish color of this species distinguishes it from *simplex* and *augustus*, which are very dark brown or black. It is, moreover, a much smaller, more delicate spider than *simplex*. The tibia of the palpus in *electricus* is but little more than one-third as long as tarsus, while in *augustus* it is two-thirds as long.

SALPICUS GRACILIS N. SP.

Pl. II., Fig. 1, female; 1a, face and falces; 1b, side of cephalothorax.

♀. Total length, 5.5 mm.

Cephalothorax: Length, 2.2 mm.; width, 1.1 mm.

Legs, 4132; almost equally stout.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and two-thirds of metatarsus.

Cephalothorax long, flat, moderately high, widest in the cephalic part, with a slight constriction behind the dorsal eyes. Quadrangle of eyes four-fifths as long as wide, very slightly wider behind than in front, occupying two-fifths of cephalothorax. Cephalic part on a slightly higher plane than thoracic. Anterior eyes in a straight row, subtouching; the middle twice as large as the lateral. Second row half-way between first and third rows. Third row as wide as the cephalothorax at that place, prominent. Falces short, vertical, parallel, moderately robust. Lip longer than wide. Coxae 1 separated by nearly the width of the lip. Sternum oval. Pedicle short. Abdomen long and tapering. Tibia 1 with five, and metatarsus 1 with two, pairs of slender spines.

*Color.* Cephalothorax dark brown, reddish in the eye-region, with yellowish hairs around the eyes of the first row. Abdomen brown with some indistinct, darker, transverse bands. Legs and palpi dull yellowish-brown; sternum and mouth parts darker brown. Venter blackish. Falces reddish, brown.

*Habitat.* Madagascar.

*SALTICUS ROBUSTUS* N. SP.

Pl. II., Figs. 2 and 2a, male palpus.

♂ Total length, 9 mm. Falces, 3.2 mm.

Cephalothorax: Length, 4 mm.; width, 2 mm.

Legs, 4132; equally stout.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax moderately high, with a very deep constriction behind the dorsal eyes. Cephalic part much higher than thoracic. Quadrangle of eyes one-third wider than long, wider behind than in front, occupying one-third of cephalo-

thorax. Anterior eyes in a straight row, all slightly separated from each other; middle twice as large as lateral eyes. Clypeus, only a line. Second row of eyes nearer the first than the third row. Dorsal as large as lateral eyes. Falces, long, horizontal, robust, flat on the inner faces, slightly rounded above, thicker on the inner than on the outer side; outer edges rounded; inner lower edge with a row of teeth. Lip much longer than wide. Coxæ of first legs separated by less than width of lip. Sternum long. One constriction behind dorsal eyes and another in middle of abdomen. Abdomen cylindrical. Pedicel exceedingly long.

*Color.* Cephalic part of cephalothorax dark brown, almost black, with a band of thin, whitish hairs running all around it; thoracic part, light brown, with a few white hairs. Falces light brown. Legs and palpi pale, mingled with dark brown. Anterior half of sternum black; posterior half light brown. Abdomen of our specimen too much damaged for description.

*Habitat.* Burmah.

SALTICUS NEMORENSIS N. SP.

Pl. II., Figs. 3 and 3a, male palpus.

♂. Total length, 8.5. Falces, 2 mm.

Cephalothorax: Length, 3.5 mm.; width, 1.8 mm.

Legs, 4132.

1st leg longer than 2d by tarsus, metatarsus and one-half tibia.

4th leg longer than 3d by tarsus, metatarsus and one-fourth tibia.

Cephalothorax high, with a constriction behind the dorsal eyes. Thoracic part humped up. Quadrangle of eyes one-fourth wider than long, wider behind than in front, occupying two-fifths of cephalothorax. First row of eyes straight, all of them slightly separated; middle twice as large as lateral eyes. Clypeus one-fifth as high as anterior middle eyes. Second row of eyes nearer the first than the third row. Dorsal as large as lateral eyes. Falces only moderately long, horizontal and very robust; outer edges curved, upper surface slightly

rounded, inner faces flattened, with a large tooth above on each, just at the insertion of the fang, and a smaller one just behind it. Looked at from the side the falx is much thicker in the middle than at the ends. On the lower edge of each falx are two rows of teeth between which the fang fits. Lip much longer than wide. Coxæ of first legs touching. Sternum long, narrow, pointed behind. Pedicle visible from above.

*Color.* Cephalothorax, falces and abdomen dark brown, rather thinly covered with greenish-yellow hairs. Cephalothorax with a white band at the constriction. Legs dark brown, except the coxæ of the first pair, which are pale. Palpi, sternum and mouth parts dark brown.

*Habitat.* Burmah.

SALTICUS DUBIUS N. SP.

Pl. II., Fig. 4, male; 4a and 4b, male palpus.

♂. Total length, 6 mm. Falces, 3 mm.

Cephalothorax: Length, 3 mm.; width, 1.8 mm.

Legs, 4132; equally stout.

1st leg longer than 2d by tarsus, metatarsus and half of tibia.

4th leg longer than 3d by tarsus and metatarsus.

Quadrangle of the eyes one-fourth wider than long and plainly wider behind than in front, occupying a little less than one-half the cephalothorax. First row of eyes straight, all sub-touching; middle fully twice as large as lateral. Clypeus, only a line. Second row of eyes plainly nearer the first than the third row. Dorsal larger than lateral eyes. Falces very long, horizontal, parallel and robust, club-shaped, and flattened above, with a row of teeth along the inner side of each; these teeth grow larger as they approach the insertion of the fang; the fang is nearly as long as the falx. Lip longer than wide. Coxæ of first legs separated by less than the width of the lip. Sternum very long and narrow. Pedicle long. A deep constriction behind dorsal eyes. Looked at from the underside, the tibia of the palpus is about as long as the tarsus.



*Color.* Cephalothorax and abdomen light brown, thinly covered with white hairs. Legs and palpi pale yellowish-brown. Falces pale brown at the insertion, with the color deepening at the enlargement, until it is like that of the cephalothorax. Under surface of body light brown.

*Habitat.* Manilla.

We have, from Luzon, three males of the genus *Salticus*, *bellicosus*, *dubius* and *niger*; of these *niger* is slender, delicate and exceedingly ant-like in its appearance, and has an abdominal constriction, while the other two are much larger and heavier, and the abdomens are not constricted and are relatively shorter and more rounded. *Dubius* and *bellicosus* are almost identical in size and shape, the only difference being in the shape of the falces, those of *bellicosus* being straighter and narrower in the proximal third (see drawing). The color of *bellicosus* is very dark, while that of *dubius* is light yellowish-brown.

SALTICUS NIGER N. SP.

Pl. II., Figs. 7, 7a and 7b, male palpus.

♂. Total length, 5.8 mm. Falces, 3 mm.

Cephalothorax: Length, 2.2 mm.; width, 1.2 mm.

Legs, 4123, equally stout.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

General appearance small, dark colored, very slender and ant-like. Quadrangle of eyes one-quarter wider than long, wider behind than in front, occupying two-fifths of cephalothorax. First row of eyes curved downward, all subtouching; with the middle more than twice as large as the lateral eyes. Second row of eyes a little nearer the first than the third row. Dorsal a little larger than lateral eyes. Falces long, horizontal, slender, widening slightly from insertion to extremity, with a row of teeth on the inner side of each. Fang about as long as falx. Lip longer than wide. Coxæ of first legs almost touching. Sternum long and narrow. Pedicle short. One constriction behind dorsal eyes and another in the anterior third



of abdomen. Looked at from the under side, the tibia of the palpus is about half as long as the tarsus.

*Color.* Cephalothorax black, with violet reflections; there are white hairs on the face, and in a snowy band around the constriction. Abdomen black, except on the sides at the point of constriction, where it is brown. On its dorsal surface are several spots and bands of snowy white hairs arranged rather irregularly, as follows: One pair of spots in front of the constriction, a band around the constriction; another pair of spots close together, just behind the constriction; a third, widely separated, on the posterior part of the abdomen, and, finally, a single spot at the spinnerets. Legs light yellowish-brown, forming a contrast with the dark body. Palpi and falces dark brown. Under surface dark, excepting where the band at the constriction comes down on each side of the venter.

*Habitat.* Manilla.

SALTICUS EDENTULUS N. SP.

Pl. II., Fig. 5, epigynum.

♀. Total length, 5.5 mm.

Cephalothorax: Length, 2.8 mm.; width, 1.3 mm.

Legs, 4132; equally stout.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus, metatarsus and one-fourth of tibia.

Cephalothorax rather high for this genus. Quadrangle of eyes one-fourth wider than long and wider behind than in front, occupying a little less than one-half cephalothorax. First row of eyes straight, all subtouching; middle twice as large as lateral eyes. Clypeus, only a line. Second row of eyes a little nearer the first than the third row. Dorsal larger than lateral eyes. Falces short, vertical, parallel, moderately robust. Lip longer than wide. Coxæ of first legs separated by less than the width of the lip. Sternum very narrow. Pedicle moderately long. A moderately strong constriction behind the dorsal eyes, and a very slight one in the anterior half of the abdomen.

*Color.* Cephalothorax clear reddish-brown, with yellowish-white hairs around the eyes and a band of white hairs at the constriction; eyes on black spots. Abdomen, grayish-drab, darkening toward spinnerets, thickly clothed with white hairs, and having a white band at the constriction. Legs and palpi, pale, mingled with light brown. The first, second and third pairs with two fine, black hairs on the upper surface.

*Habitat.* Manilla.

SALTICUS BELLICOSUS N. SP.

Pl. II., Fig. 11, male; 11a and 11b, male palpus.

♂. Total length, 6 mm.

Cephalothorax: Length, 3 mm.; width, 1.5 mm.

Legs, 4132; 1st a little the stoutest.

Falces, 3 mm.

The cephalic part is very high and is rounded behind and on the sides; there is a deep constriction a little behind the dorsal eyes, behind which the thoracic part rises a little and then slants off quite steeply, growing narrower toward the posterior end. The quadrangle of the eyes is one-fourth wider than long, is a very little wider behind than in front, and occupies about two-fifths of the cephalothorax. The anterior eyes are all close together, forming a row slightly curved downward, the middle being twice as large as the lateral. The second row is nearer the first than the third row. The dorsal eyes are plainly larger than the lateral. The pedicle is short. The abdomen is very high and rounded and has no constriction above, but across the anterior part of the venter is a deep crease which runs up on to the sides. The falces are long and horizontal; they are narrow in the proximal third and then widen out; the inner falces are perfectly flat; the upper surface is nearly flat, but rounds a little on the sides, the junction of the upper and under surfaces forming a sharp ridge; two rows of teeth are visible from below; the fang is as long as the falx and is curved only at the extremity. The lip is a little longer than wide.

*Color.* The whole body is of a rich, deep brown color and is covered with short, yellowish hairs; on the cephalic part these

hairs are directed forward; on the thoracic they are arranged in lines, which converge at a central spot just behind the dorsal eyes; on the abdomen they are directed backward. The falces are dark, rugose and iridescent, especially near the proximal end, and have some white hairs on the upper surface. The palpi are dark brown. The first leg has the femur, the proximal two-thirds of the tibia, the metatarsus and the tarsus dark and iridescent. The second leg has the femur white, with a dark line on the anterior face, and the other joints light brown. The third and fourth legs are brown, the femoral being darker than the other joints.

*Habitat* Luzon.

SALTICUS PLATALEOIDES CAMB. 1869.

Ann. and Mag. Nat. Hist., Ser. 4. vol. iii., p. 68.

Pl. III., Fig. 1, male; 1a and 1b, male palpus; 1c, epigynum.

♂. Total length, 8.5 mm.

Cephalothorax: Length, 4 mm.; width, 1.8 mm.

Legs, 4132; equally stout.

Falces, 5 mm.

♀. Total length, 7 mm.

Cephalothorax: Length, 3 mm.; width, 1.4 mm.

Legs, 4132; equally stout.

The cephalothorax is very high in the cephalic part, and rounds off quite abruptly behind the dorsal eyes, the thoracic part being much lower. There is a constriction in the thorax just in front of the insertion of the third pair of legs, behind which the sides widen out and then narrow again, toward the posterior end. The quadrangle of the eyes is one-fourth wider than long, wider behind than in front, occupying about one-third of the cephalothorax. The anterior eyes are all close together, in a straight row, the middle being twice as large as the lateral. The second row is nearer the first than the third row. The dorsal eyes are larger than the lateral and are placed on the side of the cephalothorax. There are five bristles in the eye-region, three over the first row, and one on each side, just in

front of the second row. The falces of the male are very long, horizontal, and have the distal third much enlarged; in the female they are vertical and only moderately long and stout. The fang, in the male, is as long as the falx. The pedicle is very long and has two joints. The abdomen is oval and has a constriction in the anterior third. The sternum is long and narrow. The lip is longer than wide. The legs are very long.

*Color.* Cephalothorax and pedicle light yellow with a tinge of red; upper surface of eye-region bright and glistening; eyes black. Falces colored like the cephalothorax, excepting a blackish spot at the insertion of the fang, and blackish lines along the inner edges on the under surface. Legs yellow, excepting the trochanter of the fourth, which is pale. Abdomen dull brown with a yellowish patch on either side of the constriction; the constriction itself is pale. Venter drab; sternum, coxæ and mouth parts, yellow.

The abdomen of the female sometimes shows light chevrons on the posterior part, and all her colors are duller than those of the male.

*Habitat.* Ceylon.

Cambridge says of this species: "The spiders themselves, although adult, differ greatly in size, some being larger than that above described, and others at least one-third smaller. The falces also vary considerably in the relative length in different specimens, in one rather exceeding the length of cephalothorax and pedicle connecting it with the abdomen, in another only just equalling the length of the cephalothorax."

SALTICUS PROVIDENS N. SP.

Pl. III., Fig. 3, male; 3a and 3b, male palpus; 3c, epigynum.

- ♂. Total length, 7.6 mm.  
 Cephalothorax: Length, 3 mm.; width, 1.5 mm.  
 Legs, 4132; equally stout.  
 Falces, 2 mm.  
 Pedicle, 1.2 mm.
- ♀. Total length, 8.5 mm.  
 Cephalothorax: Length, 3 mm.; width, 1.5 mm.

Legs, 4312; equally stout.

The cephalic part is high and is separated from the thoracic by a constriction; the thoracic part is lower, but not nearly so much lower as in *plataleoides*, and narrows a little behind. The quadrangle of the eyes is one-fourth wider than long, a little wider behind than in front, and occupies a little more than one-third of the cephalothorax. The first row of eyes is a little bent downward; the eyes are all close together; the middle being about twice as large as the lateral. The second row is plainly nearer the first than the third row. The dorsal eyes are larger than the lateral and are placed on the side of the cephalothorax. The pedicle is very long, and is bi-articulate. The falces, in the male, are long, horizontal, and flattened above, and are slightly wider in the middle than at either end; from below, four or five teeth are visible on the inner edge of each falx; the fang is nearly as long as the falx. In the female the falces are short and stout and a little oblique. The sternum is very narrow, and the lip is much longer than wide. The abdomen is long and oval, with a deep constriction in the anterior third.

*Color.* This is a large, dark species. The male has the cephalic part very dark and slightly iridescent, with some short, white hairs in the anterior part, which are directed forward on the sides, and obliquely upward and forward on the upper part; between the cephalic and thoracic parts, in the constriction, is a band of white hairs; the thoracic part and the pedicle are medium brown in color. The abdomen is divided into two parts by a constriction; the anterior part is dark brown, shading into blackish; the posterior is black and is thinly covered with white hairs, which vary in length, some being long and some short. The upper, flattened surface of the falces is rugose and is medium brown in color, excepting in the central inner region, where it is dark and somewhat iridescent. The legs of the second pair are light brown; the others are dark brown at the proximal ends and shade to medium brown at the tips. The palpi are medium brown. On the venter, in front of the constriction, is a transverse band of yellowish-white hairs.

The female is much like the male; the abdomen, however, is brown rather than black, and the legs are lighter in color, the second pair being much paler than the others.

*Habitat.* Ceylon.

Of the Ceylon species of *Salticus*, *plataleoides* is large and light colored and is easily identified by its peculiar falces; *providens* is large and dark colored, and presents a very ant-like appearance, while *spissus* and *imbellis* are much smaller and are easily distinguished by their coloration.

SALTICUS IMBELLIS N. SP.

Pl. II., Fig. 10, male; 10a and 10b, male palpus.

♂. Total length, 6 mm.

Cephalothorax: Length, 2.1 mm.; width, 1.2 mm.

Legs,  $4\overline{132}$ ; equally stout.

Falces, 1.5 mm.

♀. Total length, 5.5 mm.

Cephalothorax: Length, 2.1 mm.; width, 1.1 mm.

Legs,  $4\overline{132}$ .

The cephalothorax is moderately high; the cephalic part is limited by a transverse depression, behind which the thoracic part slants rather steeply to the posterior border. There is no such difference in the planes of the cephalic and thoracic parts as is usual in *Salticus*; in the female the thoracic slope is more gradual than in the male, so that the upper surface is almost level. The thoracic part does not narrow behind as it does in most of the species. The quadrangle of the eyes is one-third wider than long, wider behind than in front, and occupies two-fifths of the cephalothorax. The anterior eyes are close together, in a straight row, the middle being twice as large as the lateral. The second row is about equally distant from the first and third rows. The dorsal eyes are larger than the lateral and are placed on the side of the cephalothorax. The falces of the male are long and horizontal; they are not flattened on the upper surface, but the inner face of each falx slants downward and inward from the upper edge so that the two only meet along the line of their lower edges, not along the whole surface

of the inner faces, as is usually the case. In the female the falces are oblique, short and stout. The lip is longer than wide. The abdomen has rather a long, slender appearance in the male, while in the female it is shorter, thicker and more rounded.

*Color.* This is a dark species. In the male the cephalic part is dark and iridescent; the thoracic part is medium brown, darkening below, thinly covered with white hairs, and having a white band around the lower margin. The clypeus is covered with white hairs. The abdomen is beautifully iridescent, with violet reflections, and is thinly covered with white hairs. The falces are dark and iridescent. The legs of the first pair are dark brown, excepting the tarsi, which are pale. The other legs and the palpi are very light brown. The sternum and mouth parts are dark, forming a contrast to the light-colored coxæ. The female is not iridescent. The whole body is dark brown, thinly covered with white hairs, the cephalothorax having a white band around the lower margin. The falces are medium brown; the legs and the palpi, excepting the tarsal joints, are pale brown, the tarsal joints of the palpi being blackish. The mouth parts and sternum are not so dark as in the male, but still contrast with the coxæ.

*Habitat.* Ceylon.

SALTICUS SPISSUS N. SP.

Pl. II., Fig. 8, male; 8a and 8b, male palpus. Fig. 9, var. solivagus, male; 9a and 9b, male palpus.

♂. Total length, 5 mm.

Cephalothorax: Length, 2 mm.; width, 1.2 mm.

Legs,  $\overline{4132}$ ; almost equally stout.

Falces, 2 mm.

The cephalic part is high, and is limited by a deep constriction; just behind this the thoracic part rises until it is nearly as high as the cephalic, and then slopes off quite steeply, growing narrower behind. The quadrangle of the eyes is one-third wider than long, wider behind than in front, and occupies two-fifths of the cephalothorax. The anterior eyes are



close together, forming a row slightly curved downward, the middle being nearly twice as large as the lateral. The second row is nearer the first than the third row. The dorsal eyes are placed on the edge of the cephalothorax. Falces long, horizontal, narrow in the distal third, then widening out, rounded above and on the outer sides, flat on the inner faces. From below four teeth are visible on the inner side of each falx at the distal end. The fang is long and has a double curve. The pedicle is bi-articulate, but not extremely long. The abdomen is short and oval, with a slight constriction near the anterior end, the portion in front of the constriction being higher than that behind it. The lip is longer than wide.

*Color.* The cephalothorax is rich, dark brown, with a tinge of red; there are some short, yellow hairs on the upper cephalic part and there is a band of white hairs in the constriction. The falces are dark and iridescent; the palpi are dark brown; the legs of the first pair are dark and iridescent, excepting the last joint, which is pale; the second leg is all pale, excepting a dark, longitudinal band on the anterior face of the femur; the third leg has the femur and patella dark and the other joints pale; the fourth has the femur, the distal end of the patella, the tibia and the metatarsus dark, and the rest pale.

Variety *solivagus*. The femur of the first leg is thickened and the tibia of the palpus is longer than in *spissus*. The cephalothorax is medium brown, excepting the upper surface of the cephalic part, which is like *spissus*, and the falces are rather light brown, and are slightly iridescent, with light violet tints. That part of the abdomen just in front of the constriction rises abruptly into a sharp ridge.

*Habitat.* Ceylon.

#### BOCUS X.

Cephalothorax very long and narrow. Cephalic part high, with rounded sides, limited behind by a wide, deep, constriction; thoracic part much lower, rising to a slight elevation behind the constriction and then sloping, very gradually, outward to the sides and backward to the posterior border. The



widest point of the cephalothorax is at the middle of the cephalic part, but the thoracic part is much wider in the middle than at either end. Quadrangle of eyes barely wider than long, a little wider behind than in front, occupying less than one-third of the length of the cephalothorax. Anterior eyes large, in a curved row, close together, the middle being nearly twice as large as the lateral. Second row much nearer the first than the third row. Dorsal eyes on the sides of the cephalothorax. Falces (♂) long, horizontal. Lip about as long as wide. Sternum narrow. Coxæ close together. Pedicle moderately long. Abdomen long, oval.

This genus differs from *Salticus*, *Sarinda*, *Zuniga* and *Martella* in the great length of the thoracic part.

*BOCUS EXCELSUS* N. SP.

Pl. III., Fig. 4, male; 4a, face and falces; 4b, side of cephalothorax; 4c and 4d, male palpus.

♂. Total length, 8 mm.

Cephalothorax: Length, 4 mm.; width, 1.5 mm.

Legs, 4132; all slender.

Falces, 2.1 mm.

The falces of this species have the upper surface rugose, flattened, and slightly inclined, from the outer edges, inward. The fang is long and has two notches on the inner side, near the extremity; the hook is not very strongly curved.

*Color.* The cephalothorax, and the abdomen above and below are black with a sprinkling of long and short, yellowish hairs. There are white hairs on the sides of the cephalic part, around the anterior eyes and in a triangular patch on each side of the thoracic part, running downward and backward from the constriction to the lower border. The falces, palpi, sternum, mouth parts and the coxæ of the second, third and fourth pairs of legs are reddish brown; the coxæ of the first pair, yellow. The first leg has the femur and patella light yellowish-brown, with two longitudinal black lines, one on the inner and one on the outer side, the tibia reddish-brown, and the metatarsus and tarsus blackish; the second and third legs are

reddish-brown, with the tarsi light yellow; the fourth leg is reddish-brown with the patella and tarsus light yellow.

*Habitat.* Luzon. From the collection of M. Eugen Simon.

#### SARINDA N.

Cephalothorax rather long; cephalic part on a slightly higher plane than thoracic; sides nearly parallel, rounded behind. Quadrangle of eyes nearly as long as wide; wider in front, occupying two-fifths, or a little more than two-fifths, of the cephalothorax. Anterior eyes large, lateral more than one-half as large as middle, subtouching, in a slightly curved row. Second row half-way between first and third rows, or a little nearer the first. Dorsal eyes larger than lateral eyes of first row, the third row being as wide as the cephalothorax at that place. Lip longer than wide. Sternum elongated.

Sarinda is close to *Salticus*, but has the eyes of the anterior row larger, and the quadrangle a little wider in front than behind, while in *Salticus* it is always wider behind.

#### SARINDA NIGRA N. SP.

Pl. III., Fig. 5, female; 5a, face; 5b, side of cephalothorax; 5c, epigynum; 5d and 5e, male palpus.

♂. Total length, 6.5 mm. (9 mm. in the large variety).

Cephalothorax: Length, 3 mm.; width, 1.5 mm.

Legs, 1432; equally stout.

1st leg longer than 2d by tarsus, metatarsus and one-third of tibia.

4th leg longer than 3d by tarsus and almost all of metatarsus.

♀. Total length, 6.8 mm. (10.5 mm. in the large variety).

Cephalothorax: Length, 3 mm.; width, 1.5 mm.

Legs, 4132; equally stout.

1st leg longer than 2d by tarsus, metatarsus and a very little of tibia.

4th leg longer than third by tarsus and nearly all metatarsus.

Palpus much enlarged.

Cephalothorax moderately high, rounded. Cephalic part a little higher than thoracic, and separated from it by a depression. Cephalic part slightly inclined; thoracic part much contracted behind, with the posterior slope concave. Quadrangle of eyes one-sixth wider than long, a little wider in front than behind, occupying nearly one-half cephalothorax. Anterior eyes in a slightly curved row, subtouching; middle nearly twice as large as lateral. Clypeus nearly one-half as high as middle eyes. Second row half-way between first and third rows. Falces vertical, parallel, moderately robust. Lip longer than wide. Coxæ 1 separated by fully the width of the lip. Sternum long, wedge-shaped, truncated in front. Pedicel short. Abdomen with a constriction in front of the middle.

*Color.* Cephalothorax black in cephalic region, dark brown in thoracic, with some white hairs, which are mostly found in the anterior part, and around the eyes of the first row. Abdomen brown in front and blackish behind, thinly covered with rather long, yellowish-white hairs. Under alcohol the abdomen is brown, with a wide, white band just in front of the middle, and four narrower ones near the spinnerets. Legs light brown. Palpi dark brown with a heavy fringe of brown hairs. Mouth parts and falces light brown. Sternum very dark brown or black. Coxæ pale, excepting those of the third pair, which are black.

*Habitat.* Chapoda, Brazil. Smith collection.

This species has a large and a small variety.

SARINDA LÆTA N. SP.

Pl. III., Fig. 6, male: 6a and 6b, palpus.

♂. Total length, 7 mm.

Cephalothorax: Length, 3.5 mm.; width, 1.5 mm.

Legs, 1432; all slender.

The cephalothorax is highest in front and slopes gradually backward from the anterior eyes to the posterior border; it narrows a little behind, but otherwise the sides are parallel. The cephalic part is moderately high, with nearly vertical sides. The eyes of the first row are placed upon a projecting ridge,

and stand out prominently. They are large and close together, and form an almost straight line, the middle being nearly twice as large as the lateral. The quadrangle of the eyes is but little wider than long, is wider in front than behind, and occupies two-fifths of the cephalothorax. The second row of eyes is nearer the first than the third row. The dorsal eyes are somewhat larger than the lateral and are placed on the side of the cephalothorax. Behind the dorsal eyes is a wide, shallow constriction. The pedicle is barely visible from above. The long and rather slender abdomen has a faint constriction in front of the middle. The falces are vertical, robust and rather long, and have their anterior faces slanting inward from the outer to the inner edges.

*Color.* The integument is deep reddish-brown, and is slightly iridescent, especially in the abdomen. Around the anterior eyes, on the clypeus, and on the outer side of the falces are some long, white hairs; the rest of the cephalothorax and the abdomen are thinly covered with rather long, yellowish hairs; the abdomen has two transverse bands of white hairs, one near the anterior end and a second at the constriction. The legs are of rather a light reddish-brown color with darker longitudinal bands on the inner and outer sides of the femoral joints. The palpus has the femur light reddish-brown and the other joints much darker, almost black. The under-surface is all reddish-brown, the coxæ being a little lighter colored than the sternum.

*Habitat.* Rio Janeiro.

#### ZUNIGA N.

Cephalothorax long, moderately high; cephalic part on a much higher plane than thoracic. Cephalic part inclined forward. Thoracic part convex. Quadrangle of eyes very slightly wider than long, a little wider in front than behind, occupying not quite two-fifths of the cephalothorax. Anterior eyes, with their upper edges in a straight row, subtouching; middle more than twice as large as the lateral and standing out much beyond them. Second row plainly nearer the first

than the third row. Third row not quite as wide as cephalothorax at that place, the eyes of this row being larger than the anterior lateral eyes. Lip a little longer than wide.

Zuniga may be distinguished from *Salticus* by the quadrangle of the eyes, which is about as long as wide, and is wider in front than behind; from *Sarinda* by the first row of eyes, the middle eyes being relatively much larger than in that genus.

ZUNIGA MAGNA N. SP.

Pl. IV., Fig. 1, female; 1a, face and falces; 1b, side of cephalothorax; 1c, epigynum.

♂. Total length, 11 mm.

Cephalothorax: Length, 5 mm.; width, 2 mm.

Legs, 4132; 4th much longer than the others, all about equally stout. Coxæ and trochanters visible from above.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus, metatarsus and one-third of tibia.

Cephalothorax much elongated, moderately high, with a sudden drop behind dorsal eyes, which makes the thoracic part lower than the cephalic. Cephalic part inclined. Quadrangle of eyes about as long as wide, a little wider in front than behind, occupying not quite two-fifths of cephalothorax. Anterior eyes in a straight row, subtouching; middle projecting and more than twice as large as lateral. Clypeus one-quarter as high as middle eyes, strongly retreating. Second row plainly nearer first than third row. Falces vertical, parallel, moderately robust. Lip a little longer than wide. Coxæ 1 separated by width of lip. Pedicle moderately long. Sternum very long, wedge-shaped, pointed behind. Abdomen cylindrical, with a constriction in the middle.

*Color.* Cephalothorax black in cephalic region, and dark brown in thoracic. At the depression which separates the two is a wide band of yellowish hairs. Abdomen rather thickly covered with yellow hairs, the surface color being broken by a transverse white band on the anterior half, by a black band at

the constriction, and by four black transverse curved lines near the spinnerets. Falces, palpi and sternum dark reddish-brown. Legs reddish-brown, excepting the trochanters, which are pale, and make a contrast with the coxæ and the femoral joints, all being visible from above. Venter lighter brown, streaked with pale.

*Habitat.* Santarem, Brazil. Smith collection.

ZUNIGA SEVERA N. SP.

Pl. III., Fig. 7, female; 7a, epigynum.

♀. Total length, 7.5 mm.

Cephalothorax: Length, 2.8 mm.; width, 1.5 mm.

Legs, 4132; all slender, 2d and 3d not very unequal.

The cephalothorax is long and only moderately high, narrowing a little behind. The cephalic part, which is on a somewhat higher plane than the thoracic, is very slightly inclined forward (almost flat), with vertical sides. Behind the dorsal eyes is a wide, shallow constriction, back of which the thoracic part is slightly humped up and then slants gradually outward and backward to the lower margin. The quadrangle of the eyes is just a little wider than long, is wider in front than behind and occupies almost two-fifths of the cephalothorax. The anterior eyes, especially the middle ones, project forward, the clypeus retreating from their lower edges; they form a straight row and are placed close together, the middle being twice as large as the lateral. The second row of eyes is nearer the first than the third. The dorsal eyes are as large as the lateral and are placed on the sides of the cephalothorax. The falces are short, weak and vertical. The lip is almost as wide as long. The sternum is wider in front than behind. The pedicle is visible from above. The abdomen is long and large compared to the cephalothorax; it has no constriction.

*Color.* The cephalothorax is dark reddish-brown, with a few white hairs. The abdomen of the only specimen we have is somewhat injured, but it seems to have been of a rather dark brown color, with five or six transverse bands of white hairs; the venter being light brown; the legs are light yellowish-

brown; the femur of the palpus is yellow; the other joints dark brown. The sternum is dark brown, the falces and mouth parts lighter. The coxæ are like the rest of the legs.

*Habitat.* Caracas. From the collection of M. Eugen Simon.

MARTELLA N.

Cephalothorax not long, moderately high, sides parallel, highest at dorsal eyes, cephalic part on a slightly higher plane than thoracic. Quadrangle of eyes one-fifth or one-fourth wider than long, equally wide in front and behind or wider in front, occupying one-half of the cephalothorax. Anterior eyes in a straight or slightly curved row, touching; middle twice as large as lateral. Second row of eyes half-way between first and third rows. Dorsal as large as lateral eyes, in a row as wide or nearly as wide as the cephalothorax at that place. Lip nearly as wide as long, or a little wider.

Martella is near Salticus, Sarinda and Zuniga, but is shorter and more compact, with the quadrangle never wider behind, as in Salticus, and occupying half of the cephalothorax, which is not the case with any of these closely related genera.

MARTELLA POTTSII N. SP.

Pl. IV., Fig. 2, female; 2a, face; 2b, side of cephalothorax; 2c, epigynum; 2d, 2e and 2f, male palpus.

♂. Total length, 4.4 mm.

Cephalothorax: Length, 2 mm.; width, 1.2 mm.

Legs, 1432; equally stout.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and two-thirds of metatarsus.

♀. Total length, 4.8 mm.

Cephalothorax: Length, 2.1 mm.; width, 1.2 mm.

Legs, 4132; equally stout.

1st leg longer than 2d by tarsus and two-thirds metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax moderately high, with a depression behind the dorsal eyes. Cephalic part inclined forward, on a slightly



higher plane than thoracic. Thoracic part rounded up anteriorly, and sloping quite gradually to posterior border. Quadrangle of eyes one-fourth wider than long, wider in front than behind, occupying one-half of the cephalothorax. Anterior eyes in a straight row, touching; middle twice as large as lateral. Clypeus one-third as high as middle eyes. Second row half-way between first and third rows. Dorsal eyes as large as the lateral, on the margin of the cephalothorax. Falces of male, inclined forward, diverging, robust; of female, vertical, parallel, and only moderately stout. Lip wider than long. Coxæ 1 separated by width of lip. Sternum heart-shaped, truncated in front. Pedicle not visible from above. Abdomen without any constriction.

*Color.* ♂ ♀. Cephalothorax dark brown, or blackish, pretty well covered with short, white hairs, and having a wide, white band behind dorsal eyes. Abdomen covered with brown hairs, with a wide, transverse band of white hairs across the middle. Legs, palpi and falces, medium brown. Sternum black. Mouth parts and coxæ light brown.

*Habitat.* Guatemala.

MARTELLA MARIA N. SP.

Pl. IV., Fig. 3, epigynum.

♀. Total length, 5.2 mm.

Cephalothorax: Length, 2.2 mm.; width, 1.2 mm.

Legs, 4132; equally stout.

1st leg longer than 2d leg by tarsus and three-fourths of metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Palpus enlarged like that of *Salticus*.

Cephalothorax moderately high. Cephalic part not inclined. Thoracic part considerably lower than cephalic. Quadrangle of eyes one-fourth wider than long, equally wide in front and behind, occupying one-half of the cephalothorax. Anterior eyes in a straight row, subtouching; middle twice as large as lateral. Clypeus only a line. Second row half-way between first and third rows. Falces short, vertical, parallel, moder-



ately robust. Lip as wide as long. Coxæ 1 separated by width of lip. Sternum rounded behind, truncated in front. Pedicle short. Abdomen rounded, highest in front.

*Color.* Cephalothorax black, sparsely covered with white hairs. Abdomen covered with long, light brown hairs, with a white band around the middle. Legs light brown, excepting the femoral joints, which, in the first and second, have dark lines, and in the third and fourth are wholly dark. Palpi and falces dark brown. Mouth parts light brown. Sternum dark brown or black. Coxæ of first, second and fourth pairs pale; of third, dark brown. Venter blackish.

*Habitat.* Chapoda, Brazil. Smith collection.

MARTELLA OPICA N. SP.

Pl. IV., Fig. 4, male; 4a and 4b, palpus.

♂. Total length, 4.3 mm.

Cephalothorax: Length, 2 mm.; width, 1.1 mm.

Legs, 4312; slender, excepting the femur of the first, which is greatly thickened, being as wide as long.

Cephalothorax moderately high, short and compact; cephalic part inclined forward, on a slightly higher plane than thoracic. There is a slight drop behind the dorsal eyes, back of which the thoracic part is level for a short distance and then falls steeply. The clypeus slants backward from the anterior eyes. The quadrangle of the eyes is but little wider than long, is wider in front than behind, and occupies about half of the cephalothorax. The anterior eyes are close together, the middle being about twice as large as the lateral; they form a slightly curved row. The second row of eyes is half-way between the first and third rows. The dorsal eyes are as large as the lateral, and form a row which is nearly as wide as the cephalothorax at that place. The falces are weak and short, but strongly inclined—almost horizontal; they are not visible from above. The lip is a little longer than wide; the maxillæ are long; the sternum is wide and somewhat heart-shaped. The femur of the first leg is enlarged all out of proportion to

the other joints, and has a fringe of hair on the upper and a stiff brush on the lower edge. The abdomen seems small when compared with the cephalothorax; there is a constriction in front of the middle, the anterior end being quite slender, while the posterior part widens out and is rounded. The pedicle is very short.

*Color.* The cephalothorax is bright reddish-brown, with the eyes on black spots; there is a little fine, white down over the surface, and some white hairs are found about the eyes. The abdomen is of a soft golden-brown color, the anterior portion being lighter than the posterior; the surface is thinly covered with white hairs, and there is a band of white around the constriction; two dark, fine lines cross the constriction in the upper central part, from the anterior to the posterior portion. The legs are light brown, except the femur of the first, which is darkened; the palpi are of a darker brown than the legs. The under surface is light brown.

*Habitat.* Bahia. From the collection of M. Eugen Simon.

#### LEPTORCHESTES (THOR.) 1870.

Cephalothorax low to moderately high; long, narrow, sides usually almost parallel. Quadrangle of eyes equally wide and long, or very slightly wider than long, wider behind than in front, occupying from a little less than one-half to three-fifths of the cephalothorax. Anterior eyes in a straight row, touching, or subtouching; middle usually twice as large as lateral. Second row much nearer first than third row. Lip at least as wide as long.

#### LEPTORCHESTES CHRYSOPOGON E. S. 1876.

Pl. IV., Fig. 5, female; 5a, face and falces; 5b, side of cephalothorax.

♀. Total length, 6 mm.

Cephalothorax: Length, 2.3 mm.; width, 1 mm.

Legs, 4132; femur 1 stoutest; otherwise equally stout. 1st leg longer than 2d by tarsus and nearly all metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax moderately high, elongated, a little widest at dorsal eyes. Thoracic part sloping from dorsal eyes, curving upward a little from the lowest point to the posterior margin; cephalic part occupying three-fifths of the whole length, somewhat convex, limited by a depression. Quadrangle of eyes very slightly wider than long, and much wider behind than in front. Anterior eyes in a straight row, touching; middle twice as large as lateral. Clypeus one-third as high as middle eyes. Second row much nearer the first than the third row. Third row as wide as cephalothorax at that place. Falces robust, rather long, vertical. Lip twice as long as wide. Coxæ 1 separated by width of lip. Sternum long, projecting between anterior coxæ, truncated in front, rounded behind. Pedicle rather long. Abdomen with a deep constriction in front of middle.

*Color.* Cephalothorax glabrous, yellowish-red behind, blackish in eye-region, with black spots at the dorsal eyes, and a few white hairs. The constriction, which divides the abdomen into an anterior and a posterior region, is marked by a pure white line; in front of this the color is brownish; behind it, glistening black. Sternum and venter, black. Coxæ of the first, second and fourth pairs, pale; of third pair, black. First and second pairs of legs pale, with metatarsal and tarsal joints black, and having a longitudinal black line running along the anterior face of the patella and tibia, and the upper face of the femur; third pair, brownish; fourth pair, black, with a testaceous ring at the base of the patella. Palpus brownish.

*Habitat.* Europe.

LEPTORCHESTES MUTILLOIDES LUC. 1842.

*Salticus mutilloides* E. S. 1869.

*Leptorchestes mutilloides* E. S. 1871.

*Leptorchestes mutilloides* E. S. 1876.

♀. Total length, 6 mm.

Cephalothorax: Length, 2.5 mm.; width, 1.5 mm.

Legs, 4132; femur 1 enlarged, otherwise equally stout.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax moderately high; thoracic part convex, a little widest at dorsal eyes; cephalic part not quite flat, limited by a depression, rounding off from dorsal eyes. Quadrangle of eyes about as long as wide, much wider behind than in front, occupying one-half the cephalothorax. Anterior eyes in a straight row, touching; middle twice as large as lateral. Second row much nearer the first than the third row. Third row not quite as wide as the cephalothorax at that place. Falces parallel, vertical, not robust. Lip longer than wide. Coxæ 1 separated by width of lip. Sternum narrow, truncated in front. Pedicel rather long.

*Color.* ♂. Cephalothorax black, thinly covered with white hairs. Abdomen black, with a white band around the constriction. First, second and third pairs of legs pale, with black lines. Fourth pair black, with patella and tarsus pale. Palpi, falces and mouth parts brown. Sternum black. Coxæ of first, second and fourth pairs pale; of third pair black. Venter black.

♀. First and second pairs of legs light brown, with black lines. Third and fourth dark brown. Otherwise like the male.

The abdominal constriction in the female of this species is less marked than in the male. It is also less marked than in the female of *chrysopogon*, and it may further be distinguished from that species by its having the anterior as well as the posterior part of the abdomen black, while in *chrysopogon* the region in front of the transverse white band is brown.

*Habitat.* Algiers. Europe.

LEPTORCHESTES BEROLINENSIS C. K.

*Salticus berolinensis* C. K. 1846.

♂. Total length, 6.5 mm.

Cephalothorax: Length, 2.8 mm.; width, 1.5 mm.

Legs, 4132; femur 1 stoutest.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus, metatarsus, and a little of tibia.

♀. Total length, 7.2 mm.

Cephalothorax: Length, 3 mm.; width, 1.5 mm.

Legs, 4132; femur 1 a little the stoutest.

1st leg longer than 2d by tarsus and nearly all of metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax moderately high, a little widest behind the dorsal eyes, the sides being almost parallel. Upper surface flat to a point considerably behind the dorsal eyes; then sloping gradually; posterior margin a little curved upward, as in *chrysopogon*. Cephalic part limited by a depression. The abdomen has no constriction. Quadrangle of eyes very slightly wider than long, much wider behind than in front, occupying one-half of the cephalothorax. Anterior eyes in a straight row, subtouching; the middle less than twice as large as the lateral. Third row not quite so wide as the cephalothorax at that place. Falces vertical, parallel, moderately robust. Lip longer than wide. Coxæ 1 separated by nearly the width of the lip. Sternum oval, projecting between anterior coxæ. Pedicle moderately long.

*Color.* Cephalothorax black. Abdomen with the anterior region brown; this part is limited behind by a curved white band, the posterior part being jet black. Femur of first leg dark reddish-brown; legs otherwise yellowish-brown, with black lines along their anterior faces. Palpus of male jet black, of female reddish-brown. Falces black, with metallic reflections. Mouth parts and sternum light brown. Coxæ of third pair black; of the others pale. Venter black, with a triangular, testaceous white spot at the anterior end.

*Habitat.* Europe.

The abdomen is like that of *L. chrysopogon* in having an anterior brown and a posterior black region, separated by a pure, white line. This species, however, has no constriction.

## LEPTORCHESTES GEORGIUS N. SP.

Pl. IV., Fig. 6, epigynum.

♀. Total length, 6.5 mm.

Cephalothorax: Length, 2.5 mm.; width, 1.7 mm.

Legs, 4123; first and second pairs plainly stoutest.

4th leg longer than third by tarsus and metatarsus.

Cephalothorax low and flat, very narrow in front, rounding out behind the dorsal eyes. Cephalic and thoracic parts on the same plane, not separated by a depression; thoracic part not falling until near posterior margin. Quadrangle of eyes very slightly wider than long, wider behind than in front, occupying nearly one-half cephalothorax. Anterior eyes in a straight row, subtouching; middle twice as large as lateral. Clypeus one-fourth as high as middle eyes. Second row much nearer first than third row. Third row not quite so wide as cephalothorax at that place. Falces short, vertical, parallel and weak. Lip as wide as long. Coxæ 1 separated by a little more than the width of the lip. Sternum oval, truncated in front. Pedicel not visible from above.

*Color.* Cephalothorax black, with some dark hairs around the anterior eyes. Abdomen blackish, showing, in our somewhat damaged specimen, a spot of white hairs on each side of the dorsum, behind the middle, and traces of white hairs on other parts. Legs, palpi, falces and entire under surface, dark brown.

*L. georgius* is less ant-like, both in form and in color, than *chrysopogon*, *mutilloides* and *berolinensis*. The cephalothorax is much wider behind the dorsal eyes than at the anterior row, and the abdomen has neither the constriction that is found in *chrysopogon* and *mutilloides*, nor the pure white, transverse band which, in all three of the other species, marks off the abdomen into two parts. Moreover, the under surfaces of *chrysopogon*, *mutilloides* and *berolinensis* are strikingly alike, having the sternum and the coxæ of the third pair of legs black, and the coxæ of the first, second and fourth pairs pale; while in this species the sternum and all the coxæ are uniform brown.

*Habitat.* Madagascar.

## HERMOSA N.

Cephalothorax moderately high, rather long, convex above, having a rounded, beetle-like appearance, with a depression behind the dorsal eyes. Cephalic part a little higher than thoracic. Sides widening a little from the anterior lateral to the dorsal eyes, and then plainly narrowing. Quadrangle of eyes one-quarter wider than long, wider behind than in front, occupying two-fifths of the cephalothorax. Anterior eyes in a straight row, the middle twice as large as the lateral. Second row of eyes nearer the first than the third row. Third row as wide as cephalothorax at that place. Lip longer than wide.

## HERMOSA VOLATILIS N. SP.

Pl. IV., Fig. 7, female; 7a, face and falcæ; 7b, side of cephalothorax; 7c, epigynum.

♀. Total length, 7.5 mm.

Cephalothorax: Length, 4.5 mm.; width, 2 mm.

Legs, 4132; the 4th being much the longest.

Femur 1 enlarged, otherwise equally stout.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus, metatarsus and a little of tibia.

Cephalothorax rather high in cephalic part, which is inclined forward, with a constriction behind the dorsal eyes, beyond which the thoracic part rounds gradually to the margin. Quadrangle of eyes one-quarter wider than long, wider behind than in front, occupying two-fifths of the cephalothorax. Anterior eyes in a straight row, subtouching; middle twice as large as the lateral. Second row plainly nearer the first than the third row. Third row as wide as cephalothorax at that place. Falcæ rather short, obliquely inclined, divergent at the tips, robust, looking like those of the genus *Phidippus*. Palpus with tibia much wider and longer than patella; both tibia and tarsus enlarged and compressed, palette-like, without long hairs. Lip much longer than wide. Coxæ separated by less than the width of the lip. Sternum long, pointed behind, much narrower in front of the coxæ of the second pair, truncated at anterior end.



*Color.* Cephalothorax very dark brown, almost black, with white hairs around the anterior eyes and yellow hairs in the constriction and on the thoracic part. Abdomen dark brown in one specimen, light brown in the other (both being somewhat injured); the dark one having some long, white hairs on the upper surface, while the light one shows a transverse white band in front of the middle. Palpi, falces, mouth parts and sternum dark brown. First legs, with coxæ, pale; trochanter and femur dark brown, patella and tibia light brown, with a black longitudinal line on each side, and metatarsus and tarsus dark brown. Second leg, with coxa, trochanter and femur, dark brown, and the remaining joints light brown, with the two longitudinal black lines as in the first leg. Third leg with all the joints dark brown. Fourth leg all dark brown excepting the trochanter and the proximal end of the patella, which are pale.

*Habitat.* Madagascar.

#### EMERTONIUS N.

Cephalothorax moderately high and curiously shaped, the anterior two-thirds of the thoracic part being raised into a ridge or protuberance from which the slope to the posterior margin is concave. The cephalic part is not inclined forward. The quadrangle of the eyes is one-fourth wider than long, wider behind than in front, and occupies nearly one-half of the cephalothorax. First row of eyes slightly curved downward, eyes all touching; middle almost twice as large as lateral eyes. Second row of eyes a very little nearer the first than the third row. Dorsal eyes large, bulging out beyond the margin of the cephalothorax. Lip much longer than wide.

#### EMERTONIUS EXASPERANS.

Pl. IV., Fig. 8, male; Sa, face and falces; Sb, side of cephalothorax.

♂. Total length, 6.5 mm.

Cephalothorax: Length, 3 mm.; width, 1.5 mm.

Legs, 4132; equally stout.



Clypeus only a line. Falces inclined forward, diverging, robust. Coxæ separated by less than the width of the lip. Sternum rather long and narrow. Pedicle short.

*Color.* Cephalothorax very dark brown, with a median longitudinal band of white hairs on the cephalic part and with a patch of white hairs on each side of the thoracic part; projecting upward from just behind the protuberance are two small bunches of dark hairs. Abdomen, with the posterior part, and an oblique band on each side of the anterior part, white. Dorsum brown, with a large white spot at the anterior end, on each side of which, and extending backward beyond it, is a short band of white hairs. Palpi, falces and mouth parts dark brown. Legs very light brown, the fourth pair being a little darker than the others. Sternum and coxæ light brown. Venter white.

*Habitat.* Java.

#### ERICA N.

Cephalothorax moderately high, sides parallel in cephalic part, thoracic part a little narrower. In the anterior thoracic region is a marked constriction. The cephalic part is inclined forward, the thoracic part, convex. Quadrangle of eyes one-quarter wider than long, slightly wider in front than behind, occupying two-fifths of the cephalothorax. Anterior eyes in a straight row, middle fully twice as large as lateral. Second row half-way between first and third rows. Third row as wide as cephalothorax at that place. Lip as wide as long.

Erica is nearest Fluda and Keyserlingella, but the shape of the cephalothorax is different. In both Keyserlingella and Fluda the cephalic part occupies one-half the cephalothorax, in Erica only two-fifths, and in Keyserlingella the quadrangle of the eyes is equally wide in front and behind or wider behind, while in Erica it is wider in front.

#### ERICA EUGENIA N. SP.

Pl. IV., Fig. 9, female; 9a, face and falces; 9b, side of cephalothorax; 9c, epigynum; 9d and 9e, male palpus.

♂. Total length, 4 mm.

Cephalothorax: Length, 2 mm.; width, 1.1 mm.

Legs, 4312; almost equally stout.

1st and 2d legs nearly equal in length.

4th leg longer than 2d by tarsus and nearly all metatarsus.

♀. Total length, 4.3 mm.

Cephalothorax: Length, 2 mm.; width, 1 mm.

Legs, 4312; almost equally stout.

1st leg longer than 2d only by tarsus.

4th leg longer than 3d by tarsus and metatarsus.

The female of this species has the cephalothorax long in proportion to its width, while the abdomen is rather wide in proportion to its length. The male has the cephalothorax wider and the abdomen narrower. The cephalothorax, in both sexes, is moderately high, with a marked constriction in the anterior thoracic region. The cephalic part is inclined forward; the thoracic part is convex. Quadrangle of eyes three-quarters as long as wide, slightly wider in front than behind, occupying two-fifths of the cephalothorax. Anterior eyes in a straight row, middle touching, lateral subtouching; middle fully twice as large as lateral. Second row half-way between first and third rows. Third row as wide as cephalothorax at that place. Falces short, vertical, parallel, weak. Lip as wide as long. Coxæ I separated by more than width of lip. Sternum oval, truncated in front. Pedicle short. Abdomen wider behind than in front.

*Color.* Cephalothorax black or reddish-brown, darker in the female than in the male, with some white hairs around the anterior eyes and a snowy, transverse band across the constriction. Abdomen black, with a transverse band of white hairs considerably in front of the middle and some whitish hairs at the spinnerets. The coxæ of the third pair are blackish, those of the other legs pale, and the femoral joints are all dark reddish-brown; the first leg has the remaining joints pale, with a longitudinal black line running along the patella and tibia. The second leg has the patella, tibia and tarsus pale, while the matatarsus is dark brown and has also the black line on the inner face of patella and tibia. The third and fourth legs

have the patella pale, the proximal end of the tibia dark brown, and the remaining parts light brown. The mouth parts are pale, and the palpi, falces, sternum and venter dark brown or black.

*Habitat.* Chapoda, Brazil, Smith Collection, and Amable Maria, Taczanowski Collection.

#### FLUDA N.

Cephalothorax moderately high, about twice as long as wide, sides parallel in cephalic part, narrowing a little behind. Cephalic part inclined forward. Beyond the dorsal eyes is a depression, and back of this the thoracic part rises into a ridge and then falls quite abruptly. Quadrangle of eyes one-fourth wider than long, wider in front than behind, occupying one-half of the cephalothorax. Anterior eyes in a straight row. Second row about half-way between first and third rows. Third row as wide as cephalothorax at that place. Lip wider than long.

Fluda differs from Erica and Keyserlingella, genera which are nearly related, and are found in the same locality, in the shape of the cephalothorax. Keyserlingella is much flatter and has no depression, while Erica has the thoracic part rounded behind the depression, without any abrupt slope. Keyserlingella also differs from Fluda in having the quadrangle of the eyes equally wide in front and behind, or wider behind, while in Fluda it is wider in front.

#### FLUDA NARCISSA N. SP.

Pl. IV., Fig. 10, female; 10a, face and falces; 10b, side of cephalothorax; 10c, epigynum.

♀. Total length, 4 mm.

Cephalothorax: Length, 2 mm.; width, 1 mm.

The legs are mutilated. Their relative length seems to have been 4132.

Cephalothorax moderately high, contracted behind, with the cephalic part flat; beyond the dorsal eyes is a slight constriction, and from the little ridge behind this the thoracic

part slopes quite steeply to the posterior margin. Quadrangle of eyes one-fourth wider than long, plainly wider in front than behind, occupying one-half of the cephalothorax. Anterior eyes in a straight row, all touching; the middle eyes bulging out, and more than twice as large as the lateral. Second row about half-way between first and third rows. Third row as wide as cephalothorax at that place. Falces moderately long, vertical, parallel, rather weak. Lip wider than long. Coxæ 1 separated by more than width of lip. Sternum rather large, oval, a little wider in front than behind. Pedicle rather long. Abdomen rounded, widening out behind the middle.

*Color.* The general tint is very much lighter than in ruficeps. The cephalothorax is reddish-brown, with which color the black, which surrounds all the eyes, makes a contrast. There are some traces of silvery down on the sides. The abdomen is light brown, and, like that of ruficeps, is encircled in the middle by a white ring, interrupted in the middle of the back. In this species, however, it does not extend across the venter. The legs are light brown, with a longitudinal black line running along the anterior surface of the patella, tibia and metatarsus of the first. The palpi are darker than the legs. The falces, sternum and mouth parts are light brown, or reddish.

The greater size of the middle eyes of the first row, in proportion to the lateral eyes, distinguishes this species from ruficeps.

*Habitat.* Chapoda, Brazil. Smith collection.

FLUDA RUFICEPS TACZ.

*Salticus ruficeps* Tacz. 1879.

Pl. V., Fig. 3, epigynum.

♀. Total length, 4 mm.

Cephalothorax: Length, 2 mm.; width, 1 mm.

Legs, 4312; 1st a little the stoutest.

1st leg longer than 2d by tarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax moderately high, flat in the cephalic part, with a constriction behind the dorsal eyes, contracted and rounded behind. Quadrangle of eyes one-fourth wider than long, a little wider in front than behind, occupying one-half the cephalothorax. Anterior eyes in a straight row, subtouching; middle less than twice as large as the lateral. Second row about half-way between the first and third rows. Third row as wide as the cephalothorax at that place. Falces short, vertical, moderately robust. Lip wider than long. Coxæ 1 separated by the width of the lip. Sternum rounded behind, truncated in front. Pedicle short. Abdomen wider behind than in front.

*Color.* Cephalothorax brownish-red, brighter in the eye-region, with a central white spot behind the dorsal eyes. Abdomen dark brown, with a white ring around the middle, which is continued below on the venter, but is interrupted in the central line of the back above. Spinnerets pale. Legs yellowish-brown, with the femoral joints darker than the rest, and a longitudinal black line running along the anterior surface in the first and second pairs. Falces, palpi, sternum and venter dark brown; coxæ and mouth parts yellowish.

*Habitat.* Amable Maria, Peru. Taczanowski collection.

#### SYNAGELES SIMON, 1876.

Cephalothorax low to moderately high, flat, or slightly convex; widest at dorsal eyes, or a little behind them; slightly contracted in front and behind. Cephalic part not inclined. Thoracic part more or less prolonged beyond the bottom of the posterior slope. Cephalic and thoracic parts separated by a depression. Quadrangle of eyes longer than wide, equally wide in front and behind, or wider behind, occupying more than half the cephalothorax. Anterior eyes in a straight, or slightly curved row, touching or subtouching; middle about twice as large as lateral. Second row plainly nearer the first than the third row. Third row about as wide as cephalothorax at that place. Lip at least as wide as long.

## SYNAGELES DALMATENSIS KEYS., 1863.

- ♂. Total length, 3.3 mm.  
 Cephalothorax: Length, 1.5 mm.; width, .9 mm.  
 Legs, 41 $\overline{32}$ ; 1st pair stoutest; femur, patella and tibia, enlarged.  
 1st and 4th legs nearly equal in length.  
 4th leg longer than 3d by tarsus and one-half metatarsus.
- ♀. Total length, 4 mm.  
 Cephalothorax: Length, 1.7 mm.; width, .8 mm.  
 Legs, 41 $\overline{23}$ ; 1st pair plainly stoutest.

Cephalothorax flat, moderately high. Quadrangle of eyes plainly longer than wide, wider behind than in front, occupying nearly two-thirds of the cephalothorax. Anterior eyes in a slightly curved row, subtouching; the middle twice as large as the lateral. Second row twice as far from third as from first row. Third row as wide as cephalothorax at that place. Falces short, vertical, parallel, weak. Lip wider than long. Coxæ 1 separated by scarcely the width of the lip. Sternum truncated in front, contracted behind. Pedicle not visible from above. Male with a slight abdominal constriction in front of the middle.

*Color.* ♂. The cephalothorax of the male is prettily decorated. The general color is bright reddish-brown; a black line runs around the lower margin; the eye-region has a curved black band running across the anterior end, while the central part is light yellow, with two longitudinal streaks of the reddish color running through it, and the dorsal eyes are very black. The abdomen is brown in front of the constriction and black behind it, a transverse line of white hairs defining the two tints; a little in front of this line, on each side, is a ring of dark hairs surrounding a white spot. The legs and palpi are light reddish-brown, the third leg having a longitudinal black line on the anterior face of the patella and tibia. The venter is blackish and the other parts reddish-brown.

♀. The cephalothorax of the female is darker than that of the male, and has no yellow. The abdomen has no constriction nor white line; the posterior half is black, the anterior light brown, with a short central longitudinal mark, and a ring, on each side, of dark brown hairs, surrounding a white spot. Otherwise it resembles the male.

The abdominal markings of this species separate it from other members of the genus.

*Habitat.* Europe.

SYNAGELES VENATOR LUC., 1833.

Pl. V., Fig. 1, female; 1a, face and falces; 1b side of cephalothorax.

♂. Total length, 3.5 mm.

Cephalothorax: Length, 2 mm.; width, 1 mm.

Legs, 4132; first pair stoutest, second next; patella and tibia of the first enlarged.

♀. Total length, 3.7 mm.

Cephalothorax: Length, 2 mm.; width, 1 mm.

Legs, 4123; first pair stoutest.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax rather low, almost flat above, with a depression limiting the cephalic part. Behind this depression the thoracic part rises again to the level of the cephalic and then slopes gradually to the lower margin. Quadrangle slightly longer than wide, equally wide in front and behind, occupying about one-half of the cephalothorax. Anterior eyes in a straight row, subtouching; middle twice as large as lateral. Second row twice as far from third as from first row. Dorsal eyes about as large as the lateral. Lip as wide as long. Falces weak, parallel, retreating. Coxæ 1 separated by more than the width of the lip. Sternum narrow and rounded behind, truncated in front. Pedicle short. Abdomen with a slight constriction in front of the middle.

*Color.* Cephalothorax black on the eye-region, dark brown behind, with a band of white hairs behind the dorsal eyes, which marks the transverse depression mentioned above. Ab-



domen light drab in front, blackish behind, with two transverse bands of white hairs. First and second pairs of legs bright reddish-brown, darkened on the anterior surface; third and fourth pairs with a black longitudinal line on the front face of femur, patella and tibia. Coxæ pale. Sternum black. Venter brown, with a large, triangular, white spot behind the epigynum. Palpi pale. Falces and mouth parts reddish-brown.

*Habitat.* Europe.

SYNAGELES ALBOTRIMACULATUS LUC., 1846.

♀. Total length, 4 mm.

Cephalothorax: Length, 1.5; width, .8 mm.

Legs broken in our specimen. In the figure of Lucas they seem to be, as is common in *Synageles*, 4123.

Cephalothorax flat, moderately high. Quadrangle of eyes very little longer than wide, equally wide in front and behind, occupying three-fifths of the cephalothorax. Anterior eyes in a very slightly curved row, subtouching; the middle less than twice as large as the lateral. Second row nearer the first than the third row. Third row as wide as the cephalothorax at that place. Falces short, vertical, parallel, weak. Lip wider than long. Coxæ 1 separated by the width of the lip. Sternum oval. Pedicle short.

*Color.* Cephalothorax black or very dark brown, with a small, median, white spot behind the dorsal eyes. Abdomen black, glistening, with a transverse row of three white spots across the anterior part, the central spot being the largest. Legs (only the second, third and fourth pairs being left in our specimen), with the femoral joints reddish, while the other joints are yellowish, testaceous, with longitudinal black lines running along both anterior and posterior faces. Palpi yellowish. Falces brown. Venter and sternum black. Coxæ and mouth parts light testaceous.

*Habitat.* Algiers.

Lucas, in describing and figuring this spider, gives only the two lateral white spots on the abdomen. He describes the first pair of legs as stouter than the others, and darker in color,



only the metatarsi and tarsi being testaceous, while the other joints are dark red.

SYNAGELES SCORPIONA HENTZ, 1845.

Pl. V., Fig. 1d, epigynum.

♂. Total length, 2.4 mm.

Cephalothorax: Length, 1 mm.; width, .8 mm.

Legs, 4123; first pair a little the stoutest.

4th leg longer than 3d by tarsus and metatarsus.

♀. Total length, 3.5 mm.

Cephalothorax: Length, 1.4 mm.; width, .8 mm.

Legs, 4123; first pair a little the stoutest.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax low and slightly convex above, rounding over into the sides. Cephalic part limited by a depression. Thoracic part falling gradually from dorsal eyes, prolonged below to meet the pedicle. Quadrangle of eyes plainly longer than wide, wider behind than in front, occupying nearly two-thirds of the cephalothorax. Anterior eyes in a very slightly curved row, middle eyes sub-touching; lateral a little separated, middle twice as large as the lateral. Second row plainly nearer the first than the third row. Dorsal eyes larger than the lateral, forming a row which is not quite so wide as the cephalothorax at that place. Falces short, vertical, parallel, weak. Lip plainly wider than long. Coxæ 1 separated by more than the width of the lip. Sternum somewhat heart-shaped. Pedicle short. Abdomen with a faint constriction in front of the middle.

*Color.* ♂. Cephalothorax brown; abdomen brown anteriorly, encircled by a white line in front of the middle, behind which it is blackish; other parts brown, excepting a pale spot on anterior part of venter. ♀. Cephalothorax brownish-white, with the eyes on black spots; abdomen pale, with two short, curved dark bands near the spinnerets; falces brownish; venter pale, with a dark region near the spinnerets; legs brown above, pale beneath; other parts all pale.

*Habitat.* New York.

This species is distinguished from *S. picata* by its smaller size, the greater length of its cephalic part, and the relative length of the legs.

SYNAGELES PICATA HENTZ, 1845.

Pl. V., Fig. 2, female; 2a, side of cephalothorax of adult female; 2b, side of cephalothorax of young after first moult; 2c, face of same; 2d, side of cephalothorax of young after several moults; 2e, face of same; 2f, side view of female when nearly mature; 2g, first and second legs of male; 2h, first and second legs of female; 2i, epigynum; 2j, male palpus.

♂. Total length, 3.4 mm.

Cephalothorax: Length, 2 mm.; width 1.1 mm.

Legs, 4123; first pair enlarged, with patella and tibia flattened in front.

1st leg longer than 2d by tarsus.

4th leg longer than 3d by tarsus and metatarsus.

♀. Total length, 4.8 mm.

Cephalothorax: Length, 2 mm.; width, .9 mm.

Legs, 4231; first pair stoutest.

2d leg longer than 1st by tarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax moderately high, convex, cephalic part limited by a depression. Beyond this depression the thoracic part is raised into a ridge, and then falls steeply; it is prolonged below, to meet the pedicle. Quadrangle of eyes slightly longer than wide, wider behind than in front, occupying one-half of the cephalothorax. Anterior eyes in a very slightly curved row, middle eyes subtouching, lateral a little separated; middle twice as large as lateral. Eyes of second row twice as far from dorsal as from lateral eyes. Dorsal eyes larger than the lateral. Falces short, vertical, parallel, weak. Lip as wide as long. Coxæ 1 separated by scarcely the width of the lip. Sternum contracted in front and behind. Pedicle short. Abdomen constricted near the anterior end, more strongly in the male than in the female.

*Color.* Eye-region black with violet reflections; thoracic part reddish-brown, with two white spots in the depression be-

hind the dorsal eyes. Anterior segment of abdomen reddish-brown; posterior segment glistening black, with two white bands which begin at the constriction and curve downward over the sides. Venter black. Coxæ and mouth parts brown. Legs ( $\delta$ ), 1st pair, femur brown, patella and tibia blackish and iridescent, metatarsus and tarsus light brown; 2d and 3d pairs, femur brown, patella and tibia brown with a black longitudinal line on the anterior face, metatarsus and tarsus blackish; 4th pair dark brown. Legs ( $\varphi$ ), brown, with a black longitudinal line along the anterior face of the patella and tibia in the second and third pairs. Palpi ( $\delta$ ) dark brown, ( $\varphi$ ) light brown.

*Habitat.* United States.

In *Synageles picata* the male palpus has the tibia less than half as long as the patella and about a third as long as the tarsus.

SYNAGELES AMERICANA N. SP.

Pl. V., Fig. 1c, epigynum.

$\varphi$ . Total length, 5 mm.

Cephalothorax: Length, 2.4 mm.; width, 1.2 mm.

Legs, 4321. Femur, patella and tibia 1 enlarged.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax moderately high; both cephalic and thoracic parts slightly convex, thoracic part prolonged behind considerably beyond the end of the slope. Quadrangle of eyes plainly longer than wide, wider behind than in front, occupying nearly two-thirds of the cephalothorax. Anterior eyes in a slightly curved row, subtouching; middle twice as large as lateral. Second row twice as far from dorsal as from lateral eyes. Dorsal eyes larger than lateral, in a row as wide as cephalothorax at that place. Falces vertical, parallel, weak. Lip as wide as long. Coxæ 1 separated by nearly the width of the lip. Sternum truncated in front, contracted behind. Pedicle short. Constriction in front of the middle of the abdomen.

*Color.* Cephalothorax light brown, slightly tinged with red, with some white down on the eye-region, and white hairs

around the anterior eyes. Abdomen light brown in front, darker behind, with some white hairs on the sides and in a transverse band across the constriction. Legs light brown, with pale bands. Palpi and entire under surface light brown, with some white hairs on the venter.

*Habitat.* Eastern part of United States.

This species is much lighter in color than *picata*, and has the sternum and coxæ of a uniform light reddish-brown; while in *picata* the dark brown or black sternum make a contrast with the light, testaceous coxæ. With the other American species, *scorpionia*, it can scarcely be confused, as it is much larger and heavier.

*Habitat.* Eastern part of United States.

#### MARENGO N.

Cephalothorax rather low and perfectly flat above, the thoracic part being on the same plane as the cephalic for two-thirds of its length, and then sloping gradually backward. The clypeus retreats and the sides of the cephalic part slant inward, while those of the thoracic are rounded outward. The quadrangle of the eyes is one-quarter wider than long, is a very little wider behind than in front and occupies less than two-fifths of the cephalothorax. The anterior eyes are in a straight row and are placed close together, the middle being a little more than twice as large as the lateral. The second row of eyes is nearer the first than the third row. The dorsal eyes form a row which is not quite so wide as the cephalothorax at that place, the widest point of the cephalothorax being a little behind them. The lip is about as wide as long. The first leg is heavily thickened.

#### MARENGO CRASSIPES N. SP.

Pl. V., Fig. 4, female; 4a, face and falces; 4b, side of cephalothorax; 4c, epigynum.

♀. Total length, 4 mm.

Cephalothorax: Length, 1.8 mm.; width 1.1 mm.

Legs, 4132; 1st much the stoutest.

The falces are small, short and vertical, and are placed very far back, owing to the inward slope of the clypeus. The femur, the patella and the tibia of the first leg, especially the tibia, are much enlarged; the tibia bears a row of stiff bristles on the inner surface; the metatarsus and tarsus are slender, but each has a strong, black spine. The sternum is oval, narrowing at each end.

*Color.* The cephalothorax is bright rufus covered with golden hairs, with some longer hairs about the eyes. There are four white spots on the posterior thoracic slope. The abdomen, excepting a black region at the posterior end, is of a yellowish-olive color, covered with yellow hairs; on each side of the anterior part, and again on each side of the central region are snowy white spots bordered with black; and a similar spot is seen in the center of the anterior part of the dorsum; a fine black line connects this central spot with the black region at the posterior end. The spinnerets are light colored. The first leg is of a light rufus color, excepting the tibia, which is much darker, and has a brush of black bristles; the other legs are pale brown, with black longitudinal lines along their anterior faces.

*Habitat.* Ceylon.

#### BELLOTA N.

Cephalothorax low and flat, with the cephalic and thoracic parts on the same plane. The thoracic part does not fall until near the posterior border, and the slope is slightly concave; the sides are a little rounded out, so that from above they meet in an obtuse angle. The sides of the cephalothorax, as a whole, are nearly vertical and nearly parallel, widening only a little behind the dorsal eyes. Anterior eyes in a straight row, the middle subtouching and twice as large as the lateral; the lateral slightly separated. Second row nearer the first than the third row. Third row as wide as the cephalothorax at that place. Quadrangle of the eyes one-fourth wider than long, plainly wider behind than in front, occupying less than two-fifths of the cephalothorax. Lip about as long as wide; max-

illæ long and diverging. Coxæ 1 almost touching. Abdomen with a constriction in front of the middle. First leg much enlarged.

Bellota is near Paradamoetas and Descanso.

BELLOTA FORMICINA TACZ., 1879.

Araneides du Perou, p. 367.

Pl. V., Fig. 5, male; 5a, face and falces; 5b, side of cephalothorax; 5c and 5d, male palpus.

♂. Total length, 3 mm.

Cephalothorax: Length, 1.5 mm.; width, 1 mm.

Legs, 1432; 1st much the stoutest; the femur, patella and tibia all being enlarged.

The falces are small, short and vertical. The sternum is deep-set, pointed in front and behind. The abdomen has a deep constriction, behind which it is widened and rounded.

*Color.* The cephalothorax is reddish-brown, covered on the upper surface with greenish-yellow down. The abdomen is olive-brown, covered with iridescent scales, and having a white band around the constriction. The first leg has the femur, patella and tibia black, the other joints white; in the second all the joints are white, excepting a black line on the anterior face of the tibia; the third is like the second, excepting that the line extends on to the patella and the femur; the fourth is black, excepting the patella and the tarsus, which are white.

*Habitat.* Venezuela. Peru.

SEMORA N.

Cephalothorax not high, flat above, widest at dorsal eyes, narrowing plainly in front and behind. Thoracic part falling rather steeply after the first half, the posterior slope being very slightly concave. Quadrangle of eyes one-fifth wider than long, plainly wider behind than in front, occupying a little less than half of cephalothorax. Anterior eyes in a straight row, all touching; middle twice as large as lateral. Second row a little nearer the first than the third row. Dorsal eyes scarcely so large as the lateral, but prominent,

standing out from the sides of the cephalothorax. Pedicle short. Lip longer than wide. Sternum large, pointed in front, wider, rounded and somewhat convex behind. Coxæ I separated by more than the width of the lip.

Semora is near Synageles and Keyserlingella, but the cephalic part occupies less than half of the cephalothorax; moreover, it is lower and flatter than Keyserlingella, and not so long and narrow as Synageles, from which latter genus it also differs in having the quadrangle of the eyes wider than long.

SEMORA NAPEA N. SP.

Pl. V., Fig. 6, female; 6a, face and falces; 6b, side of cephalothorax; 6c, epigynum.

♀. Total length, 4.5 mm.

Cephalothorax: Length, 1.8 mm.; width, 1 mm.

First leg missing; relative length of the others, 432; the 2nd being slightly stouter than the others; none of the legs are especially slender.

This species has no constrictions. The falces are vertical, and moderately long and stout. The other points have been given in the generic description.

*Color.* The cephalothorax is dark brown, shading into black in the cephalic part. The abdomen is somewhat injured; its general color is gray; there is a blackish region at the anterior end, across which passes a transverse white band; the posterior half has a wide, transverse blackish band, which is interrupted in the middle, and which is bordered in front and behind with white. When the specimen is immersed in alcohol two large white spots appear in the central region. The second, third and fourth legs are light yellowish, with broken black longitudinal lines running along their anterior and posterior faces. The palpi are brown, much darker than the legs.

*Habitat.* Rio Janiero. From the collection of Mr. Eugen Simon.

KEYSERLINGELLA N.

Cephalothorax moderately high, almost flat in cephalic part; widest opposite dorsal eyes; contracted a very little in



front and plainly behind. The thoracic part is either on a level with the cephalic or falls slightly for a little distance behind the dorsal eyes, and then slopes abruptly. Quadrangle of eyes one-fifth to one-fourth wider than long, equally wide in front and behind, or a little wider behind, occupying one-half or more than one-half of the cephalothorax. Anterior eyes in a straight or slightly curved row, all touching; the middle twice as large as the lateral. Second row half-way between first and third rows, or a little nearer first row. Third row as wide as the cephalothorax at that place. Lip equally wide and long, or longer than wide.

KEYSERLINGELLA PERDITA N. SP.

Pl. V., Fig. 7, female; 7a, face and falces; 7b, side of cephalothorax; 7c, epigynum; 7e and 7d, male palpus.

♂. Total length, 3.2 mm.

Cephalothorax: Length, 1.6 mm.; width, .9 mm.

Legs, 4132; first pair stoutest.

1st leg longer than 2d by tarsus and one-third of metatarsus.

4th leg longer than 3d by tarsus and one-half metatarsus.

♀. Total length, 3.9 mm.

Cephalothorax: Length, 1.8 mm.; width, 1 mm.

Legs, 4312; first pair stoutest.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and one-half metatarsus.

Cephalothorax moderately high; cephalic part flat; thoracic part falling slightly just behind the dorsal eyes, and then steeply. Quadrangle of eyes one-fourth wider than long, very slightly wider behind than in front, occupying a little more than one-half the cephalothorax. Anterior eyes in a very slightly curved row, touching; middle twice as large as lateral. Second row about half-way between first and third rows. Third row as wide as cephalothorax at that place. Dorsal eyes larger



than lateral. Falces short, vertical, parallel, weak. Coxæ 1 separated by fully the width of the lip. Sternum rounded at both ends, wider in front than behind. Lip as wide as long. Pedicle short. Abdomen with a constriction in the middle.

*Color.* The cephalothorax is bright reddish-brown, with the eyes on black spots, and there is a pair of oblique, white lines on each side of the thoracic part. The abdomen, damaged in our specimens, seems to have been light yellowish-brown. The legs and coxæ are light brown, and the falces, sternum and mouth parts medium brown.

*Habitat.* New Granada.

KEYSERLINGELLA CARA N. SP.

Pl. V., Fig. 8 and 8a, male palpus.

♂. Total length, 3.3 mm.

Cephalothorax: Length, 1.6 mm.; width, 1.1 mm.

Legs, 4132; femur of first stoutest.

1st leg longer than 2d by tarsus and a very little of metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax rather high; cephalic part very slightly convex. Quadrangle of eyes one-fifth wider than long, a little wider behind than in front, occupying fully one-half of the cephalothorax. Anterior eyes in a straight row, touching; middle twice as large as lateral. Second row of eyes nearer the first than the third row. Third row as wide as the cephalothorax at that place. Falces moderately long, flattened, robust, a little inclined and diverging. Coxæ separated by the width of the lip. Sternum large, convex, oval. Lip longer than wide. Pedicle short. Abdomen constricted in the middle.

*Color.* Cephalothorax and abdomen black, with some long, yellow hairs around the anterior eyes, and a transverse, yellow band across the abdominal constriction. Palpi, falces, sternum, mouth parts and anterior coxæ medium brown. Coxæ of second, third and fourth pairs pale. Legs of first,

second and third pairs yellow-brown, with a longitudinal black line along the upper surface of patella and tibia. Fourth pair dark brown.

*Habitat.* Guatemala.

#### DESCANSO N.

Cephalothorax rather low, almost flat through the cephalic and nearly all of the thoracic part. Thoracic part grooved on the sides behind the dorsal eyes. Posterior slope more or less concave. Quadrangle from one-fourth to one-third wider than long; wider behind than in front, occupying from two-fifths to three-fifths of the cephalothorax. First row of eyes straight; middle less than twice as large as the lateral. Second row of eyes nearer the first than the third row. Third row as wide as the cephalothorax at that place.

#### DESCANSO VAGUS N. SP.

Pl. V., Fig. 9, female; 9a, face and falces; 9b, side of cephalothorax; 9c, epigynum.

♀. Total length, 4 mm.

Cephalothorax: Length, 2 mm.; width, 1 mm.

Legs, 4132; first stoutest, second next; femur, patella and tibia 1 enlarged.

1st leg longer than 2d by tarsus and part of metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

The cephalothorax of this species is peculiar in shape. It is low in front and slopes gradually upward to the third row of eyes; beyond this point is a depression, which is deepest at the sides, behind the eyes, so that, in profile, a deep notch appears at this point. The thoracic part rises gradually from the depression to a ridge, and then falls in a short, concave slope to the posterior margin. Falces vertical, very short and small. Coxæ 1 separated by less than the width of the lip. Lip less than one-half as long as maxillæ, and wider than long. Sternum deep-set, oval. Abdomen with a constriction in front of the middle. First row of eyes with the lateral slightly sep-

arated from the middle eyes, while the middle eyes touch. Second row of eyes much nearer the first than the third row.

*Color.* Cephalothorax black, covered with yellow hairs, which grow thickest on the clypeus and in rings around the anterior eyes. Abdomen brown, also thinly covered with yellow hairs. Legs of the first pair, bright reddish-brown; of the second pair, reddish-brown, with a black, longitudinal band on the upper surface of patella and tibia; third and fourth pairs with femur dark brown, almost black; proximal half of patella light reddish-brown; distal end of patella and proximal end of tibia, blackish; distal end of tibia and proximal end of metatarsus, bright reddish-brown; distal end of metatarsus and all of tarsus, pale. Palpus reddish-brown, with tarsus pale. Sternum black, with yellow hairs. Coxæ II and IV, light brown; mouth parts, and coxæ I and III, dark brown.

*Habitat.* Santarem, Brazil. Smith collection.

DESCANSO CHAPODA N. SP.

Pl. VI., Fig. 1, female; 1a, face; 1b, side of cephalothorax; 1c, epigynum.

♀. Total length, 5 mm.

Cephalothorax: Length, 2 mm.; width 1.2 mm.

Legs, 4132; first pair stoutest.

The quadrangle of the eyes occupies two-fifths of the cephalothorax. The posterior slope of the thorax is concave, but not so much as in *vagus*. The eyes of the first row are all touching. The second row of eyes is a little nearer the first than the third row. There is a slight groove around the hinder thoracic part which extends forward on the sides, but this peculiarity is by no means so striking as it is in *vagus*. The lip is longer than wide. The falces are vertical and parallel. The anterior coxæ are separated by less than the width of the lip.

*Color.* Cephalothorax dark brown, with a semi-circular white band running around the hinder thoracic part and extending forward to the dorsal eyes. Abdomen dark brown, with a curved, transverse white band across the anterior end. Spinnerets, light brown. Venter, dark brown, with

a large, white spot on each side in front of the epigynum. Legs with trochanter, patella and tarsus pale, and the other joints dark brown. Falces, palpi, mouth parts and venter brown. Coxæ pale.

*Habitat.* Brazil. Smith collection.

PARADAMCETAS P., 1885.

Cephalothorax moderately high, convex, a little dilated at dorsal eyes; cephalic part a little inclined. Quadrangle of eyes about one-fifth wider than long, a little wider behind than in front, occupying one-half of the cephalothorax. Anterior eyes in a straight row, middle twice as large as lateral, middle touching, lateral subtouching. Eyes of second row very small, nearer the lateral than the dorsal eyes. Dorsal eyes as large as the lateral, in a row as wide as the cephalothorax at that place. Lip a little longer than wide.

PARADAMCETAS FORMICINA P., 1885.

Pl. VI., Fig. 2, female; 2a, face and falces; 2b, side of cephalothorax; 2c, epigynum; 2d, male palpus.

♂. Total length, 4.6 mm.

Cephalothorax: Length, 2 mm.; width, 1.1 mm.

Legs, 413̄2; first pair stoutest.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

♀. Total length, 4.8 mm.

Cephalothorax: Length, 1.8 mm.; width, 1 mm.

Legs, 413̄2; first pair stoutest.

1st leg longer than 2d by tarsus and metatarsus.

4th leg longer than 3d by tarsus and metatarsus.

In the female the cephalothorax has a small, semi-circular region behind the dorsal eyes which falls but little below the plane of the cephalic part, and from this there is quite an abrupt slope to the lower border. In the male the distinction between the two inclinations is not so clearly defined, the effect being rather a gradual slope from the dorsal eyes. Falces (♂) as wide as first row of eyes, three times as long as face, hori-

zontal, parallel; (♀) little wider than the two middle eyes, but little longer than face, vertical, parallel. Maxillæ (♂) narrow at base, truncated at tip; (♀) wider, blunt at tip; in both sexes excavated within, for lip. Sternum oval, projecting between anterior coxæ, which are separated by the width of the lip, and are twice as long as the other coxæ.

*Color.* The cephalothorax and abdomen are black, the cephalothorax being covered with white, and the abdomen with greenish golden scales. The legs and palpi are light, testaceous brown; the falces and mouth parts are reddish-brown; the coxæ pale, and the sternum and venter black.

*Habitat.* Guatemala.

The appearance of this species is not especially ant-like.

#### IOLA N.

Cephalothorax moderately high and convex, the cephalic part being considerably higher than the thoracic. Thoracic part with a constriction in front of the middle, and narrower than the cephalic. Quadrangle of eyes one-fifth wider than long, almost equally wide in front and behind, occupying a little more than one-third of the cephalothorax. Anterior eyes a little curved downward; middle more than twice as large as lateral, all subtouching. Eyes of second row very small, plainly nearer the first than the third row. Dorsal as large as lateral eyes, placed on the sides of the cephalothorax, and standing out prominently. Lip longer than wide. Pedicel long. Abdomen rounded, with a constriction in front of the middle.

#### IOLA COWANII N. SP.

Pl. VI., Fig. 3, female; 3a, face; 3b, side of cephalothorax; 3c, epigynum.

♀. Total length, 5.5 mm.

Cephalothorax: Length, 2 mm.; width, 1 mm.

Legs, 4312.

Falces rather long and stout, vertical, parallel. Coxæ 1 separated by less than the width of the lip. Sternum long and very narrow.

*Color.* Cephalothorax and abdomen black, with a white spot low down on each side in the thoracic constriction and a white band around the constriction of the abdomen. Legs and coxæ of the first and second pairs light brown; of the third and fourth, dark brown. Falces, mouth parts and sternum dark brown.

*Habitat.* Madagascar.

#### SYNEMOSYNA HENTZ, 1832.

Cephalothorax low, twice as long as wide, rounded and narrower behind. There is a deep constriction near the middle of the thoracic part. Quadrangle of eyes but little wider than long, a little wider behind than in front, occupying one-third of the cephalothorax. Anterior eyes in a curved row, middle eyes touching and very large, two and a half to three times as large the lateral, which are a little separated from them. Second row a little nearer the first than the third row. Dorsal eyes a little larger than the lateral. Third row as wide as the cephalothorax at that place. Lip about as wide as long.

This genus is found only in North and South America. We have not seen the species placed here by Drs. L. Koch and Thorell, but judging from their descriptions they should not be included in this genus. Hentz used *Synemosyna* in a much wider sense than we do; in fact, he made it broad enough to include all ant-like *Attinæ*.

The spiders of this genus are perhaps the most ant-like of the whole group, and are not easily distinguished from ants, even by a naturalist. The most striking characteristics of the genus are the very large middle eyes of the first row and the deep constriction in the cephalothorax. The relative length of the legs in all the species and in both sexes is 4312, and there is a hardened plate on either the upper or the under surface of the abdomen. It is readily distinguished from other genera of *Attinæ* by the relative size of the middle and lateral eyes of the first row. *Iola* (Madagascar) is very near *Synemosyna*, but the middle eyes are less than two and a half times the lateral, and there is no hard part on the abdomen. Had *Iola* *cowanii*

been found in America these slight differences would scarcely have justified the formation of a new genus.

SYNEMOSYNA FORMICA HENTZ, 1845.

Pl. VI., Fig. 4, female; 4a, side of cephalothorax, early moult; 4b, face and eyes, same moult; 4c and 4d, side of cephalothorax, and face and eyes of later moult; 4e, side view of adult female; 4f, face and falces of adult; 4g, mouth parts of male; 4h, epigynum; 4i and 4j, male palpus; 4k, under side of front of abdomen of male.

♂. Total length, 3.9 mm.

Cephalothorax: Length, 2 mm.; width, .7 mm.

Legs, 4312; equally stout.

1st leg longer than 2d by tarsus.

4th leg longer than 3d by tarsus and metatarsus.

♀. Total length, 5.4 mm.

Cephalothorax: Length, 2.2 mm.; width, .8 mm.

Legs like those of male.

Cephalothorax low; cephalic part strongly inclined forward; thoracic with one constriction a little way behind the dorsal eyes, and another just in front of the posterior border. Abdomen much longer than cephalothorax, with a deep constriction in front of the middle, posterior to which it is enlarged and rounded. The anterior end of the abdomen has the integument hardened in the middle, and has also a hard piece on the under surface, which extends upward on each side so that the edges are visible from above. The posterior end of the abdomen is widened and rounded. The anterior row of eyes is a little curved. The middle are three times as large at the lateral, and touch each other, while the lateral are a little separated from them. Falces short, vertical, parallel and weak. Coxæ 1 separated by width of lip. Lip as wide as long.

*Color.* Cephalothorax brown, lighter on the upper surface, somewhat blackish on the sides, with a few short, white hairs in the eye region, a large, central white spot just in front of the anterior constriction, and a white band in the constriction on each side, which is narrower above than below. Abdo-



men in front of constriction, pale rufus; behind constriction black, with a pale band which occupies the anterior sides and curves downward under the venter. Falces black, with pale edges. Legs of first pair pale, with an internal and an external black line on the femur, patella and tibia; second pair all pale; third pair pale, excepting femur, which is light rufus; fourth pair with femur rufus, patella pale at proximal, blackish at distal end, tibia proximal end blackish, shading into pale towards metatarsus; metatarsus and tarsus pale.

*Habitat.* United States.

SYNEMOSYNA HENTZII N. SP.

Pl. VII., Fig. 2, female.

♀. Total length, 5 mm.

Cephalothorax: Length, 2 mm.; width 1 mm.

Legs, 4312; equally stout.

1st leg longer than 2d by tarsus.

4th leg longer than 3d by tarsus and metatarsus.

In shape this species is longer and slenderer than formica. The cephalothorax is low, with two constrictions in the thoracic part, one before the middle, and the other nearer the posterior end; between the constrictions it is rounded, but not so widely as in formica. The cephalic part slants forward. The anterior row of eyes is a little curved; the middle are two and a half times as large as the lateral and the four eyes touch each other. The falces are vertical, parallel and rather weak. The coxæ of the first pair are separated by the width of the lip. The lip is a little wider than long. The abdomen is long and slender, with a constriction just in front of the middle, and has the integument hardened at the anterior end both above and below. It is not enlarged behind like the abdomen of formica.

*Color.* The general color is light, the cephalothorax being reddish, with a black band running around the eyes, and the abdomen yellow, having on the posterior segment a heavy, curved, black band on each side, and a dark, longitudinal line down the middle. The legs, palpi and under parts are all yellow.



*Habitat.* Chapoda, Brazil. Smith collection.

This species is a questionable Synemosyna. The general shape of the cephalothorax is different, the constriction being less striking.

SYNEMOSYNA LAURETTA N. SP.

Pl. VII., Fig. 1, female; 1a, epigynum; 1b and 1c, male palpus.

♂. Total length, 4 mm.

Cephalothorax: Length, 2 mm.; width, .8 mm.

Legs, 4312; all slender.

1st leg longer than 2d by one-half tarsus.

4th leg longer than 3d by tarsus and one-half metatarsus.

♀. Total length, 4.2 mm.

Cephalothorax: Length, 2 mm.; width, .8 mm.

Legs, 4312; all slender.

1st leg longer than 2d by one-half tarsus.

4th leg longer than 3d by tarsus and metatarsus.

Cephalothorax low, with cephalic part strongly inclined, and deeply constricted in the anterior part of the thorax. Thoracic part swelling out behind the constriction and then tapering to the long, narrow pedicle. Abdomen shorter than cephalothorax, rounded, with the hardened plate well developed on the upper surface in both sexes. Anterior row of eyes plainly curved, with the middle eyes two and a half times as large as the lateral. Falces short, weak, vertical, parallel. Coxæ I separated by the width of the lip. Lip wider than long.

*Color.* Cephalothorax and abdomen black, with a white band on each side in the thoracic constriction. Legs of first pair having femur and patella white, with black lines along the inner and outer surfaces, and the terminal three joints black; of second pair white, with a black line on the upper surface of coxa, trochanter and femur; of third pair black, excepting the metatarsus and tarsus, which are white; of fourth pair, with coxa black, trochanter white, femur black at the

ends and yellowish in the middle, patella white, tibia brown, metatarsus and tarsus white.

We have received from M. Simon a light colored variety of this species, the whole spider being yellowish in color instead of black.

*Habitat.* Chapoda, Brazil. Smith collection.

SIMONELLA P., 1885.

Body long, slender, nodose. Cephalothorax more than twice as long as wide, convex above, constricted near the middle; thoracic part twice as long as cephalic. Eyes very unequal in size, placed in four transverse rows of two each, those of the anterior row very large, nearly three times as large as those of the second row, and touching, or almost touching. The quadrangle formed by the second and fourth rows is wider behind than in front, and wider behind than long. Eyes of the third row very small, placed half-way between the second and fourth rows, or nearer to the second than the fourth. Eyes of the fourth row about equal in size to those of the second. Sternum long and truncated in front. Lip as wide as long. Legs 4312, slender. Abdomen long, slender, much narrower in the middle.

This genus has so far been found only in Central and South America. It is probably a differentiation from *Synemosyna*, brought about by the pushing backward and upward of the lateral eyes of the first row, and an adaptive modification of the shape of the cephalothorax and abdomen for mimetic purposes.

SIMONELLA AMERICANA P., 1885.

Pl. VII., Fig. 3, male; 3a, face; 3b, side of cephalothorax; 3c and 3d, male palpus.

♂. Total length, 8.5 mm.

Cephalothorax: Length, 3.5 mm.; width, 1.4 mm.; height, 1.2 mm.

Legs, 4312; all slender.

The cephalic and anterior thoracic parts are higher and more convex than the remaining portion of the thoracic, from

which they are separated by a well marked constriction; the part of the thorax posterior to this constriction is highest in the middle and slants off to form the narrow pedicle by which it is united to the abdomen. The clypeus is almost as high as the the anterior eyes. The palpus is long and slender; the falces are stout, long, vertical, and slightly divergent; the maxillæ are more than twice as long as the labium, and the sternum is long, truncated in front, and narrows to a point behind. The abdomen consists of an anterior and posterior part, joined by a long, narrow neck.

*Color.* Cephalic and anterior thoracic parts jet black and glabrous; posterior thoracic part pale yellow. Palpus black. The patella, tibia and metatarsus of the first pair of legs are black on the inner side; otherwise all the legs are yellowish, with a darker coloring toward the distal end of the fourth pair. Sternum and mouth parts yellowish. Abdomen light yellow, with indistinct, darker, transverse bands throughout its length.

*Habitat.* Guatemala.

SIMONELLA MYRMECEIFORMIS TACZ., 1874.

Pl. VII., Figs. 4, 4a, 4b and 4c, male palpus.

♂. Total length, 7.5 mm.

Cephalothorax: Length, 3.2 mm.; width, 1 mm.

Legs, 4312; equally stout.

1st leg longer than 2d by one-half of tarsus.

4th leg longer than 3d by tarsus and three-fourths of metatarsus.

♀. Total length, 6.8 mm.

Cephalothorax: Length, 2.5 mm.; width, .9 mm.

Legs, 4312.

Cephalic part high, with almost vertical sides; thoracic part lower, rounded, separated from cephalic by a deep constriction. Eyes of the first row three times as large as those of second, touching. Eyes of third row, in the male, half-way between second and fourth rows; in the female, nearer the second row. Fourth row as wide as cephalothorax at that

place. Falces weak, parallel, vertical. Abdomen in the male, with the anterior and posterior segments joined by a long, narrow neck; in the female, with a less marked constriction. The coxæ and trochanters of the legs are elongated, especially in the male, so as to be visible from above. The integument of the upper surface of the abdomen is hardened into a sort of a carapace, the edges of which are visible when the spider is dried and looked at from the side. Lip as wide as long. Sternum very narrow.

*Color.* ♂. The first segment of the cephalothorax is blackish; there is a white band around the constriction; the second segment of the cephalothorax, the first of the abdomen and the connecting neck are brownish-yellow; and the posterior segment of the abdomen is dark brown. The palpi and the third and fourth pairs of legs, excepting the trochanters of the fourth, are brownish-yellow, like the body. The first and second pairs and the trochanters of the fourth are light yellow.

♀. The anterior segment of the cephalothorax is blackish, the posterior reddish-brown—mahogany color; the anterior part of the abdomen is brownish-yellow, with two or three indistinct, darker bands on each side, coming up from below; the posterior part is blackish. The first leg is light yellow, excepting the metatarsus and tarsus, which are blackish; the second is yellow; the third has the coxa and trochanter very dark mahogany color, the femur a little lighter and the other joints yellow; the fourth has the coxa, the femur, the distal end of the patella and the tibia mahogany color, and the trochanter, the proximal part of the patella, the metatarsus and the tarsus yellow. The palpi are yellow.

*Habitat.* Chapoda, Brazil, Smith collection, and French Guiana, Taczanowski collection.

This species has a general resemblance to an ichneumon in the shape of the body and the hang of the legs. It is very much like *americana*, from which it is best distinguished by the difference in the palpus.

*SIMONELLA BI-COLOR* N. SP.

Pl. VII., Fig. 5, female; 5a, epigynum.

♀. Total length, 6.8 mm.

Cephalothorax: Length, 2.8 mm.; width, 1.2 mm.

Legs, 4312; all slender.

The general appearance is long, slender, nodose. The cephalic part is rather high, much higher than the thoracic, and is slightly inclined forward. Behind the dorsal eyes is a deep constriction, which runs on to the sides. The thorax is arched upward in the median dorsal part and falls very gradually behind. The quadrangle of the eyes is one-fourth wider than long, wider behind than in front, and occupies a little less than one-third of the cephalothorax. The eyes of the first row are close together, and are nearly three times as large as those of the second row; those of the third row are half-way between the second and fourth. The dorsal eyes are very prominent, standing out from the sides of the head. The pedicle is rather long. The abdomen has a deep constriction in front of the middle, behind which it rises into a rounded hump and then slopes off.

*Color.* The caput is bright golden-brown, with the eyes on black spots; there are white hairs around the eyes and in a band around the constriction; behind the constriction the color is darker and more reddish than in front, shading into black at the pedicle; the pedicle is black. The anterior end of the abdomen is black, with a transverse band of white hairs near the pedicle; the constriction and the posterior part are pale yellow, almost white. The falces, mouth parts and sternum are pale yellow. The first leg is all white except the tibia, which has a fine, black, longitudinal line on the inner side; the second is all white; the third has the coxa, trochanter and proximal half of the femur black; the distal half of the femur shades into yellow-brown, and all the other joints are white; the fourth leg has the coxa black, the trochanter white, the femur shaded, as in the third leg; the patella white; the tibia yellow-brown, and the other joints white. The palpi are white.

*Habitat.* Venezuela. From the collection of M. Eugen Simon.

## EXPLANATION OF PLATES.

### PLATE I.

Fig. 1, *Salticus formicarius*, female x 6; 1a, face and falces of female; 1b, cephalothorax of female in profile.

Fig. 2, *Salticus ephippiatus*, female x 6 (after Emerton); 2a, side of cephalothorax of female (after Emerton); 2b, epigynum (after Emerton).

Fig. 3, *Salticus electricus*, male x 6; 3a and 3b, male palpus.

Fig. 4, *Salticus simplex*, male; 4a, 4b and 4c, male palpus.

Fig. 5, *Salticus augustus*, male; 5a, variety of male, having long falces; 5b and 5c, male palpus.

Fig. 6, *Salticus centralis*, epigynum; 6a and 6b, male palpus.

Figs. 7, 7a and 7b, *Salticus ichneumon*, male palpus.

Fig. 8, *Salticus gracilis*, epigynum.

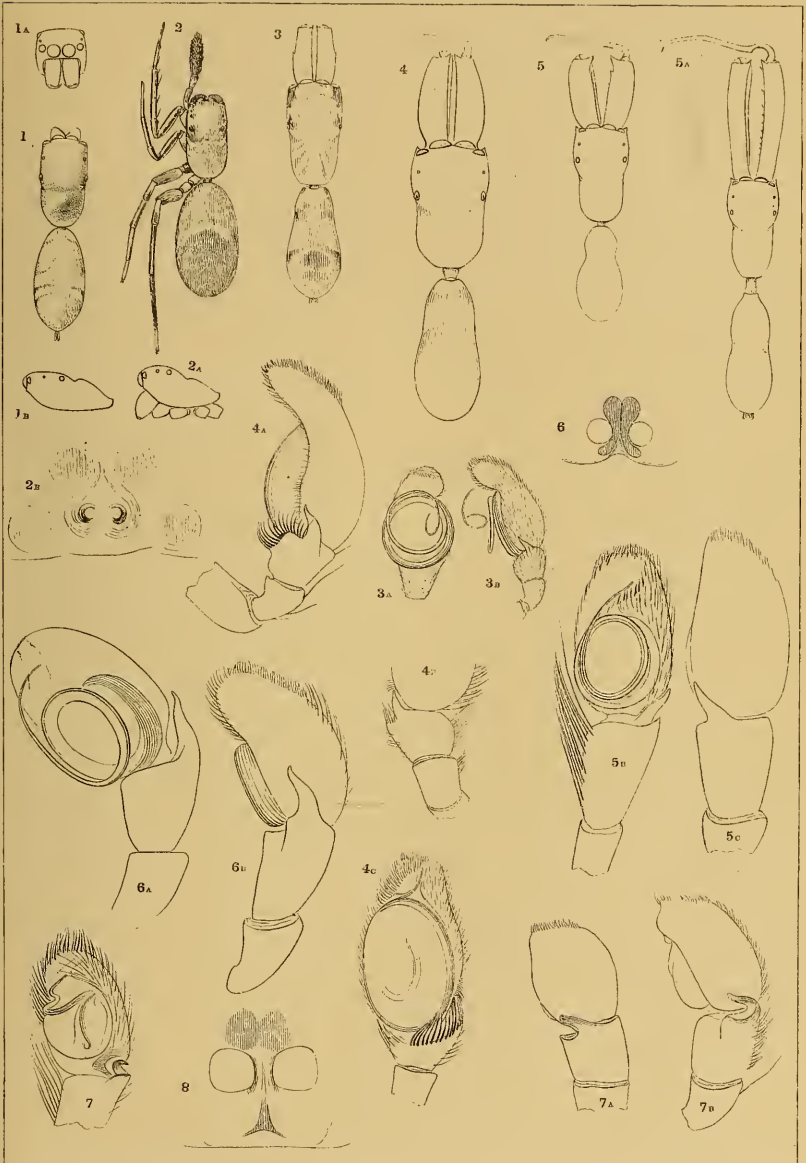








PLATE II.

Fig. 1, *Salticus gracilis*, female; 1a, face and falcies; 1b, side of cephalothorax.

Figs. 2 and 2a, *Salticus robustus*, male palpus.

Figs. 3 and 3a, *Salticus nemorensis*, male palpus.

Fig. 4, *Salticus dubius*, male; 4a and 4b, male palpus.

Fig. 5, *Salticus edentulus*, epigynum.

Fig. 6, *Salticus desertus*; male, 6a and 6b, male palpus.

Figs. 7, 7a and 7b, *Salticus niger*, male palpus.

Fig. 8, *Salticus spissus*, male; 8a and 8b, male palpus.

Fig. 9, *Salticus spissus*, variety *solivagus*, male; 9a and 9b, male palpus.

Fig. 10, *Salticus imbellis*, male; 10a and 10b, male palpus.

Fig. 11, *Salticus bellicosus*, male; 11a and 11b, male palpus.







PLATE III.

Fig. 1, *Salticus plataleoides*, male; 1a and 1b, male palpus; 1c, epigynum.

Fig. 2, *Salticus tristis*, male; 2a and 2b, male palpus; 2c and 2d, variety *rufula*, male palpus.

Fig. 3, *Salticus providens*, male; 3a and 3b, male palpus; 3c, epigynum.

Fig. 4, *Bocus excelsus*, male; 4a, face and falcies; 4b, side of cephalothorax; 4c and 4d, male palpus.

Fig. 5, *Sarinda nigra*, female; 5a, face; 5b, side of cephalothorax; 5c, epigynum; 5d and 5e, male palpus.

Fig. 6, *Sarinda læta*, male; 6a and 6b, male palpus.

Fig. 7, *Zuniga severa*, female; 7a, epigynum.



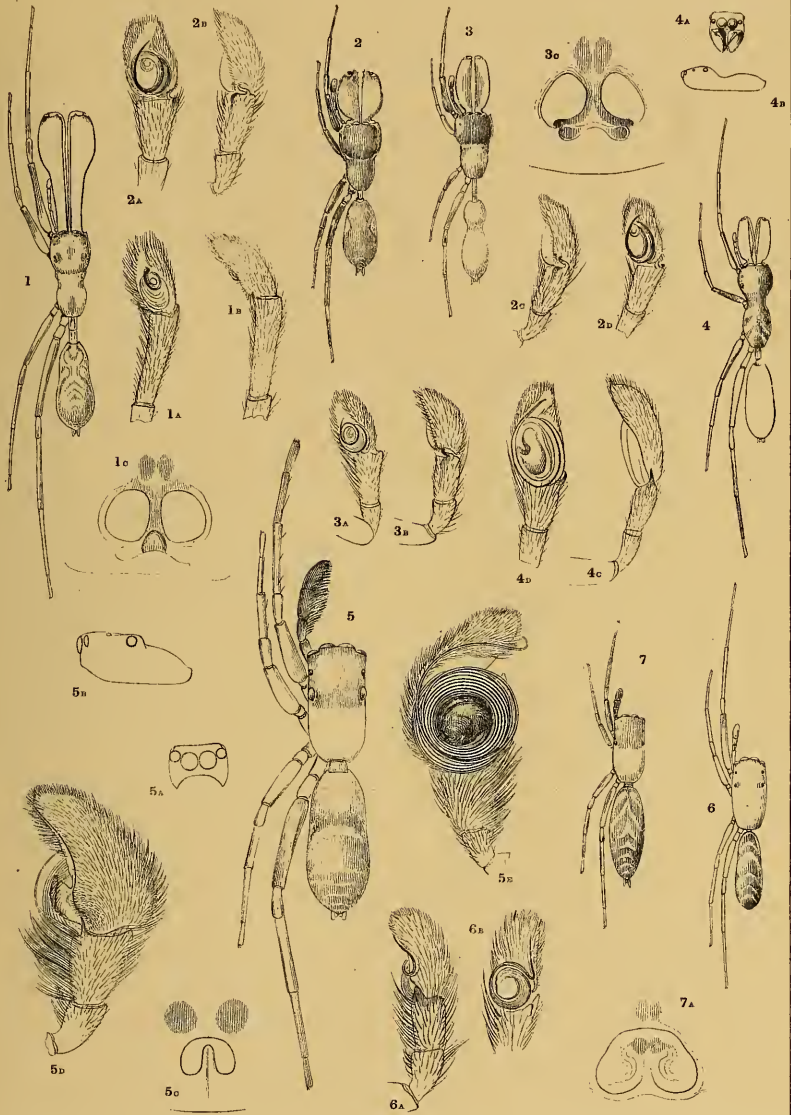






PLATE IV.

Fig. 1, *Zuniga magna*, female; 1a, face and falces; 1b, side of cephalothorax; 1c, epigynum.

Fig. 2, *Martella pottsii*, female; 2a, face; 2b, side of cephalothorax; 2c, epigynum; 2d, 2e and 2f, male palpus.

Fig. 3, *Martella maria*, epigynum.

Fig. 4, *Martella opica*, male; 4a and 4b, palpus.

Fig. 5, *Leptorchestes chrysopogon*, female; 5a, face and falces; 5b, side of cephalothorax.

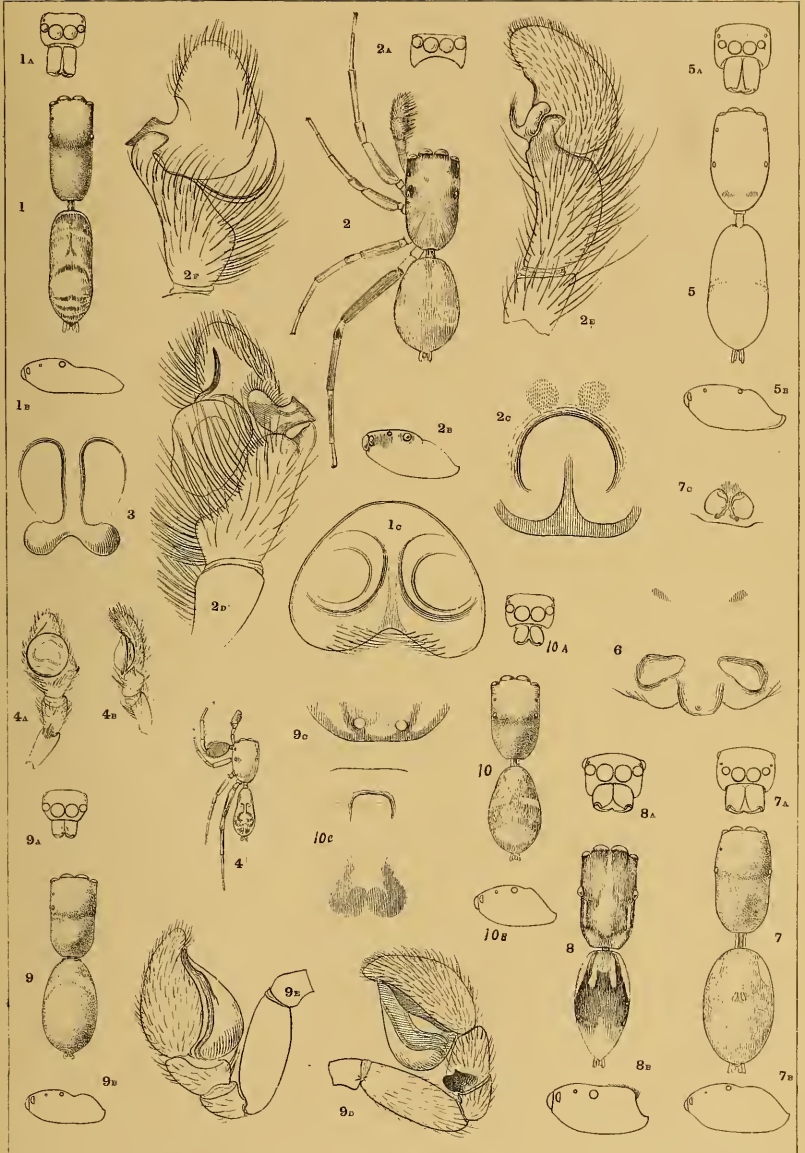
Fig. 6, *Leptorchestes georgius*, epigynum.

Fig. 7, *Hermosa volatilis*, female; 7a, face and falces; 7b, side of cephalothorax; 7c, epigynum.

Fig. 8, *Emertonius exasperans*, male; 8a, face and falces; 8b, side of cephalothorax.

Fig. 9, *Erica eugenia*, female; 9a, face and falces; 9b, side of cephalothorax; 9c, epigynum; 9d and 9e, male palpus.

Fig. 10, *Fluda narcissa*, female; 10a, face and falces; 10b, side of cephalothorax; 10c, epigynum.



† H. Emerson, from nature.

E. Crisand, lith., New Haven, Ct.







PLATE V.

Fig. 1, *Synageles venator*, female; 1a, face and falces; 1b, side of cephalothorax; 1c, *Synageles americana*, epigynum; 1d, *Synageles scorpiona*, epigynum.

Fig. 2, *Synageles picata*, female; 2a, side of cephalothorax of adult female (after Emerton); 2b, side of cephalothorax of young, after the first moult; 2c, face of same; 2d, side of cephalothorax of young after several moults; 2e, face of same; 2f, side view of female when nearly mature (after Emerton); 2g, first and second legs of male (after Emerton); 2h, first and second legs of female (after Emerton); 2i, epigynum; 2j, male palpus.

Fig. 3, *Fluda ruficeps*, epigynum.

Fig. 4, *Marengo crassipes*, female; 4a, face and falces; 4b, side of cephalothorax; 4c, epigynum.

Fig. 5, *Bellota formicina*, male; 5a, face and falces; 5b, side of cephalothorax; 5c and 5d, male palpus.

Fig. 6, *Semora napæa*, female; 6a, face and falces; 6b, side of cephalothorax; 6c, epigynum.

Fig. 7, *Keyserlingella perditia*, female; 7a, face and falces; 7b, side of cephalothorax; 7c, epigynum; 7d and 7e, male palpus.

Figs. 8 and 8a, *Keyserlingella cara*, male palpus.

Fig. 9, *Descanso vagus*, female; 9a, face and falces; 9b, side of cephalothorax; 9c, epigynum.

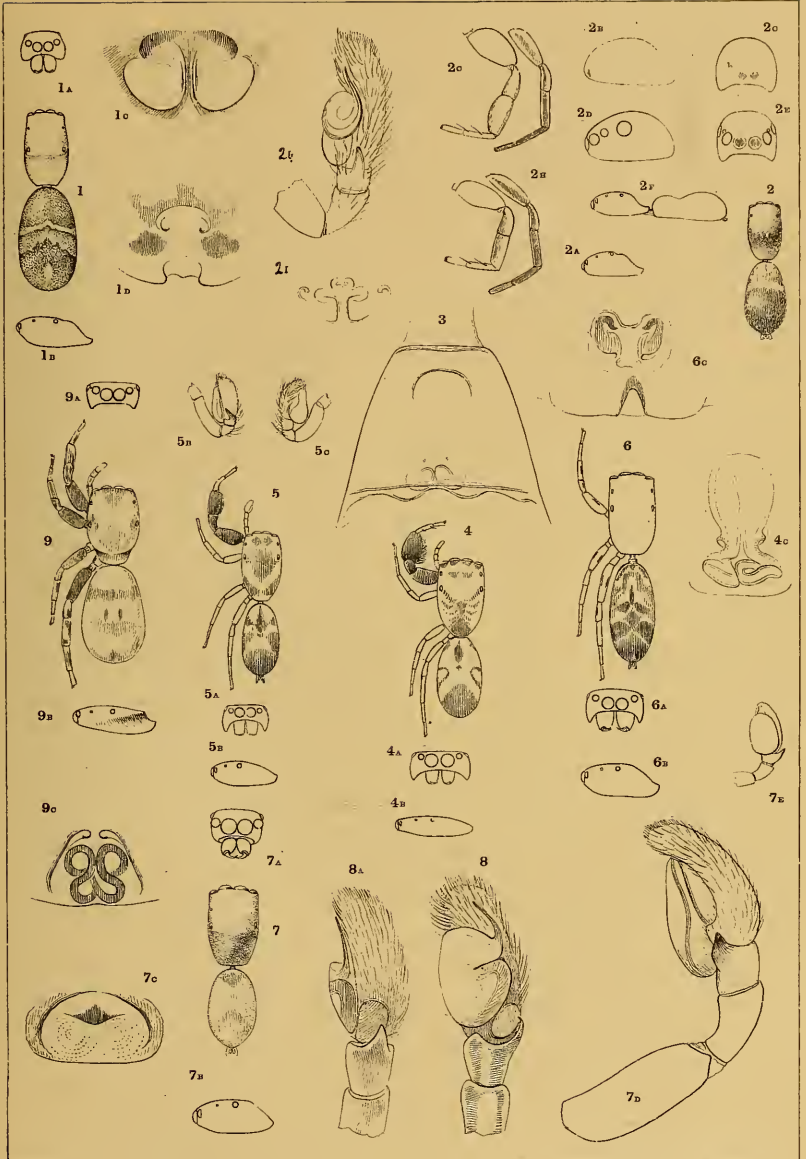






PLATE VI.

Fig. 1, *Descanso chapoda*; 1a, face; 1b, side of cephalothorax; 1c, epigynum.

Fig. 2, *Paradamœtas formicina*, female; 2a, face and falces; 2b, side of cephalothorax; 2c, epigynum; 2d, male palpus.

Fig. 3, *Iola cowanii*, female; 3a, face; 3b, side of cephalothorax; 3c, epigynum.

Fig. 4, *Synemosyna formica*, female (after Emerton); 4a, side of cephalothorax, early moult; 4b, face and eyes, same moult; 4c and 4d, side of cephalothorax and face and eyes of later moult; 4e, side view of adult female (after Emerton); 4f, face and falces of adult (after Emerton); 4g, mouth parts of male (after Emerton); 4h, epigynum; 4i and 4j, male palpus (after Emerton); 4k, under side of front of abdomen of male (after Emerton).

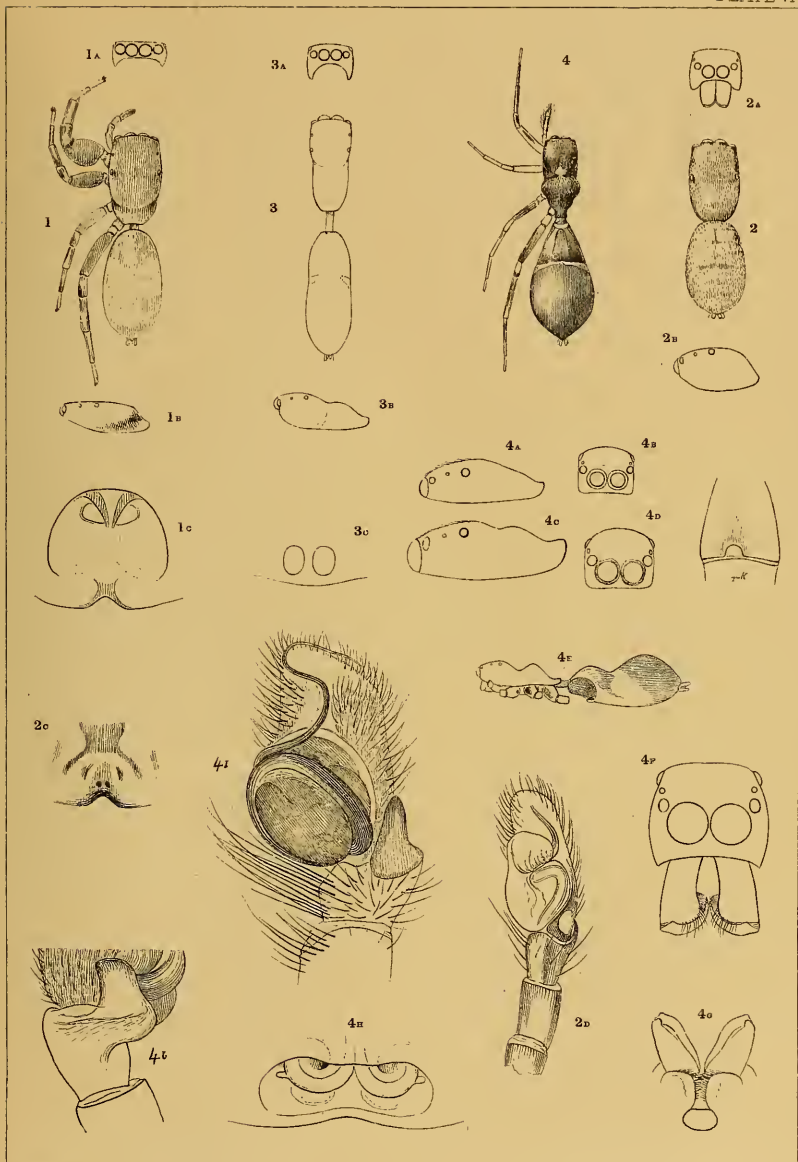








PLATE VII.

Fig. 1, *Synemosyna lauratta*, female; 1a, epigynum; 1b and 1c, male palpus.

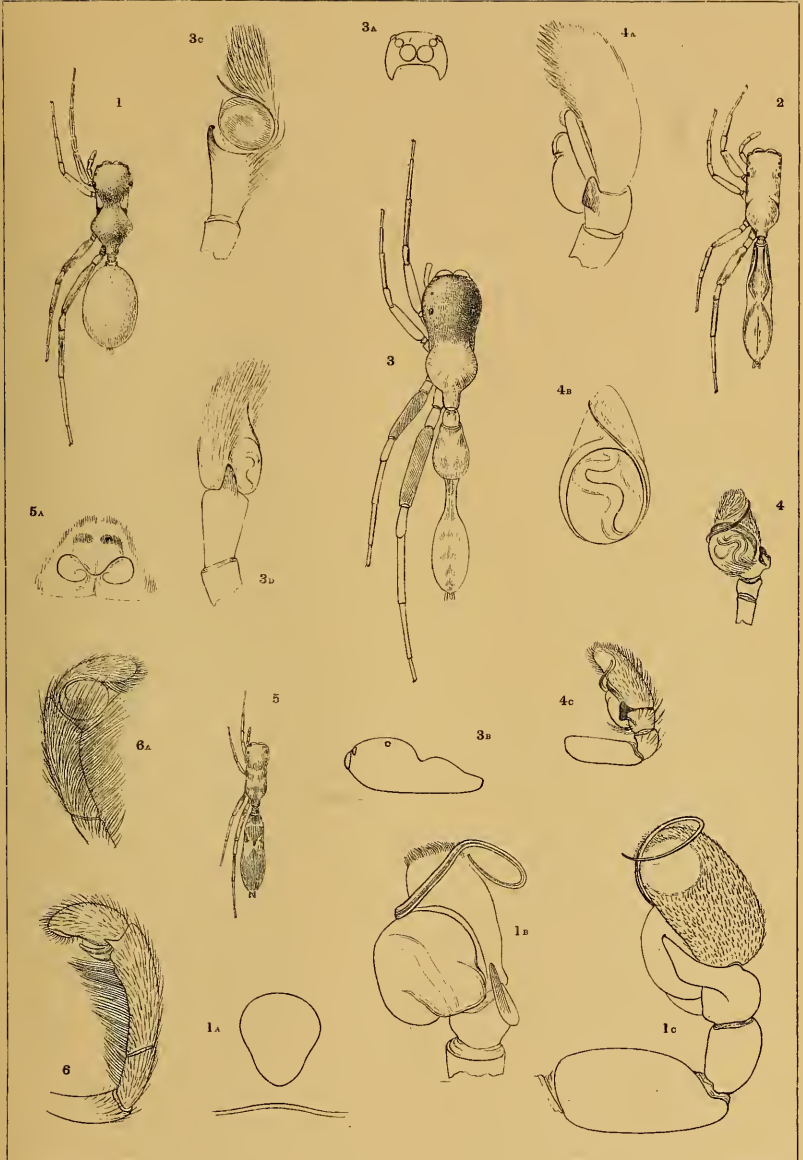
Fig. 2, *Synemosyna hentzii*, female.

Fig. 3, *Simonella americana*, male; 3a, face; 3b, side of cephalothorax; 3c and 3d, male palpus.

Figs. 4, 4a, 4b and 4c, *Simonella myrmeciaeformis*, male palpus.

Fig. 5, *Simonella bi-color*, female; 5a, epigynum.

Figs. 6 and 6a, *Salticus armatus*, male palpus.



3 2044 106 243 611



