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**RESULTS OF THE YALE PERUVIAN EXPEDITION OF 1911.**  
**THE ARACHNIDA.**

**By RALPH V. CHAMBERLIN.**

**WITH TWENTY-FIVE PLATES.**

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S.H.





No. 6.—*Results of the Yale Peruvian Expedition of 1911.—The Arachnida.*

BY RALPH V. CHAMBERLIN.

THE arachnids, upon a study of which this paper is based, were collected for the most part by Prof. H. W. Foote while a member of the Yale Peruvian Expedition of 1911. The collection has proved to be extraordinarily interesting, presenting a very large proportion of previously undescribed forms among which are eighty-two new species and twelve new genera. A few specimens were secured at Panama; but aside from these, the material all comes from localities in a little known section of southeastern Peru at elevations ranging from 3,000 to 11,500 feet above sea level. Comparatively few of the species seem to be identical with forms recorded from more northerly localities of Peru by Taczanowski in his *Les Araneides du Peru* (Bull. Soc. nat. Mosc. 1878, **53**, p. 278–374; Horae Soc. entom. Ross., 1878, **14**, p. 140–175; 1879, **15**, p. 102–136). Some of the localities mentioned are not on published maps.

This collection of arachnids was turned over to the author for study through the kindness of Professor Foote, who has also consented that the entire lot remain the property of the Museum of Comparative Zoölogy. Prof. A. Petrunkevitch of Yale had planned to report upon the collection but the press of other duties prevented. He had made notes and drawings of several species which were kindly sent to me.

The principal Peruvian localities from which the arachnids of the collection come with elevations and months during which specimens were secured are as follows: —

Arequipa,	7,600 feet	June
Cuzco,	11,500 feet	July
Huadquina,	5,000 feet	July
Ollantaytambo,	9,000 feet	July
Torontoy,	8,000 feet	July
San Miguel,	6,000 feet	July
Urubamba,	9,500 feet	July
Lucma,	7,000 feet	August
Paltaybamba,	5,000 feet	August



Santa Ana,	3,000 feet	August
Tincochaca,	7,000 feet	August
Vilcabamba,	10,000 feet	August
Conservidayo River,	—	August
Sorontoy,	7,000 feet	September

The specimens from Panama were collected in June.

## SCORPIONIDA.

### BUTHIDAE.

#### TITYUS FOOTEI, sp. nov.

Plate 1, fig. 1-4.

Carapace and dorsum of preabdomen from testaceous to dark reddish with blackish markings near eyes and along the anterior border of the carapace, and especially across the caudal borders of the abdomen, the dark bands widest at middle. Legs and pedipalps yellowish. Cauda proximally from yellow to testaceous of reddish cast becoming decidedly darker distad, the last one or two segments usually black or nearly so; sting, in individuals in full color, more or less chestnut.

Carapace and all tergites of preabdomen strongly granular. Preabdominal sternites each roughened with minute granules. All segments of cauda granular, the fifth most strongly so. All tergites of preabdomen with median dorsal keel well developed, that of the fifth incomplete behind, and with two well-developed dorsal keels each side of it; sternite of fourth and fifth segments with five keels of which the median is very weak. First segment of cauda with ten keels, a complete median lateral ridge being present between the usual upper and lower lateral ridges; second segment with keels the same excepting that the median lateral is developed only caudad; third and fourth segments with the eight ridges, two median dorsal and median ventral and the two upper and two lower laterals; fifth segment with but five distinct keels, the odd one being a complete median ventral; all keels granular.

Basal portion of sting finely granular. A well-developed acute spine beneath, (Plate 1, fig. 1).



Legs and pedipalps with strongly developed longitudinal granular ridges.

Hand of pedipalp broader than tibia, its ridges strongly developed, these continuing upon the immovable finger where they become smooth. Finger with fifteen or sixteen oblique lines of granules, (Plate 1, fig. 2); not fully twice as long as proximal hand (cir. 7:4).

Comb with 20–22 teeth. Basal middle lamella enlarged, Plate 1, fig. 4.

Length of types 38 to 52 mm.

Cauda of male proportionately longer and more slender than in the female. (Fourth segment of cauda in female 2.5 mm. wide  $\times$  5.0 mm. long, in male 2.5 mm. wide  $\times$  5.8 mm. long).

*Localities*.—Huadquina, 5,000 feet, July 26. (Type, M. C. Z., 121; paratypes, M. C. Z. 122, five specimens.) Ollantaytambo 9,000 feet, July 20. (M. C. Z. 123, one young specimen).

Named for Prof. H. W. Foote of Yale University.

This species is apparently nearest to *T. bahiensis* (Perty). In coloration it differs in having the tibia of the pedipalp light and uniform, not conspicuously darkened in the way characteristic of *bahiensis*, and in having the fifth segment of the cauda conspicuously dark. The hand of the pedipalp is conspicuously more slender and its ridges are much more strongly developed and those along the immovable finger continue without break to the proximal end of the hand. The basal middle lamella of the comb is relatively much larger, being more inflated, and with its inner edge semicircular instead of straight. The spine on under side of sting is more slender and acute with at most only a single and relatively small granule on its upper edge.

## BOTHRIURIDAE.

### BRACHISTOSTERNUS ANDINUS, sp. nov.

Plate 1, fig. 5–8.

General color yellow, the carapace and tergites of the preabdomen darkened with brown and blackish markings; carapace free from the darker color in a triangular area in front of eyes and in a narrower area behind them; tergites of preabdomen lighter along caudal border and in a narrow median longitudinal line; postabdomen above pale



yellow, below darker, being mottled with brown which is most abundant on the fifth segment and is partially absent from the first.

Carapace and first six segments of the abdomen smooth and shining; seventh abdominal segment finely granular, (Plate 1, fig. 5).

First segment of postabdomen equal in length and breadth, the second a little longer than wide. Dorsal and upper lateral keels of first segment of cauda finely granular, the granules on those of other segments fewer and weaker or essentially absent. Ventral median keel of cauda absent from first four segments, weakly developed on the fifth; lower lateral keels of fifth segment conspicuous, strongly granular, the lower lateral keels of the other segments obsolete. Ventral surface of the fifth segment conspicuously granular excepting at anterior end, that of the fourth segment with scattered granules, the venter elsewhere smooth.

Marginal keels of femur of pedipalp smooth; tibia along posterior ventral edge with trichobothria eight in number, these arranged in two rows of four each; hand of chela thicker than the tibia, smooth, with a row of 8-10 trichobothria under the outer ridge. The lateral granules on the mesal surface of the movable finger remaining apart and distinct from the main row over entire length, eight in number in each row, (Plate 1, fig. 6).

The distal lamella of comb abruptly much narrower than the proximal ones so that the anterior edge appears indented at its beginning as in *B. ehrenbergi*. Teeth of each comb 28 in number, (Plate 1, fig. 8).

Length 34 mm.

*Locality*.—Ollantaytambo 9,000 feet, July 20. (Type, M. C. Z. 124, one gravid female).

## SOLPUGIDA

### SOLPUGIDAE.

#### MUMMUCIA VARIEGATA (Gervais).

*Galeodes variegata* Gervais, Gay Hist. Chile. Zool., 1849, 4, p. 15, t. 1, f. 2.

*Mummucia variegata* Simon, Ann. Ent. soc. France, 1879, ser. 5, 9, p. 151, t. 3, f. 29, 30.

*Locality*.—Ollantaytambo, 9,000 feet, July 20. (M. C. Z. 125, one female).



**PHALANGIDA.****GONOLEPTIDAE.**

*GONOLEPTES ENOPLUS*,<sup>1</sup> sp. nov.

Plate 2, fig. 7-8; Plate 3, fig. 1-5.

Main portion of carapace very dilute ferruginous, its caudal and caudolateral borders dusky but integument along edge of these parts white; area in front of cervical furrow deeply mottled with black; tergite of abdomen blackish with caudal border lighter. Legs black, but the distal articles of tarsus III conspicuously light, whitish, and the metatarsus and especially the tarsus of leg IV also somewhat lighter. Coxa IV dilute ferruginous black across distal end both below and above excepting the white line along the edge, its process also black excepting the paler tips. Coxae of legs I to III densely mottled with black excepting mesal ends which are paler. Sternites of abdomen blackish excepting the paler caudal borders and the white integument adjoining the caudal edges.

Body very wide toward caudal end of cephalothorax from where very strongly and abruptly narrowed cephalad to opposite bases of third legs, then more gently narrowing to anterior end; also conspicuously narrowing caudad to end of abdomen; the greatest width of carapace equal to body length, (Plate 2, fig. 7).

Carapace with only four complete transverse sulci, but the first of these with two branches on each side; first sulcus lying in a deeper cervical furrow, as usual angularly bent caudad at middle; second sulcus moderately angularly bent forward at middle; third sulcus with ends bent abruptly caudad and then running subparallel with body axis; fourth sulcus angularly bent forward at middle; all sulci connected by a median longitudinal sulcus which is deepest between the first two. Eye-tubercle sharply set off and elevated, wider than long, the two cones near its caudal border not especially high. Anterior border of carapace conspicuously elevated as usual, the elevated rim much widest at middle. Lower frontal margin extended between the notches for mandibles and laterad of each in an acute spine-like process. Upper frontal margin at each lateral corner bearing several low teeth. Lateral border of carapace behind conspicuously elevated

<sup>1</sup> ἔνοπλος, armed.



as usual, the ridge largely composed of a continuous row of tubercles which, large behind, decrease cephalad and disappear caudad of level of first sulcus, the row of tubercles continued also across caudal border. A row of two or three tubercles in a second low ridge occurs just mesad of the outer rim a little caudad of widest part of carapace. The cones, immediately in front of last sulcus and near middle line, are rather low, distally rounded. Area between last two sulci with numerous larger and smaller tubercles or granules, the area between the second and third with fewer and mostly very small granules and the area between the first and second with still fewer scattered and inconspicuous granules, (Plate 2, fig. 7).

First three tergites of abdomen with a continuous transverse row of conspicuous tubercles. Anal scutum without processes; rather obscurely granular.

First three pairs of coxae proximally parallel, the first two bending moderately cephalad from near middle of length, the third transverse for whole length; second coxae scarcely one fifth longer than the third; first coxae along midventral surface with a row of distinct granules, the second with a few almost obsolete granules and the third smooth. Fourth coxae very strongly enlarged and directed ectocaudad as usual; terminating on dorsoectal side in a stout process which has a shorter prong on the ventral side beyond middle of length; on mesal side of distal end with a shorter stout process which is toothed on its ectal side.

Spiracles moderate, distinct.

First article of mandibles strongly narrowed toward base; distal half with a strongly and abruptly elevated hump on dorsal surface. Distal article with fewer hairs in front and distad, (Plate 2, fig. 8).

Pedipalps when extended shorter than carapace; not crossed. Trochanter roundly elevated and smooth above; ventrally with a single conical tubercle bearing distally a bristle. Femur a little complanate beneath and bearing few low granules from which hairs arise; dorsally also with scattered low granule-like elevations at bases of some of hairs. Patella smooth. Tibia not compressed; along mesoventral edge with two similar but stouter spines with proximal portions thicker as usual. Tarsus along mesoventral edge with two subequal spines of usual type and along ectoventral edge with two similar large spines and between these a much smaller spine and a similar one between the distal large spine and the base of the claw. Claw much shorter than tarsus, conspicuously curved, (Plate 3, fig. 1, 2).



Femora of first two pairs of legs finely and conspicuously granular; femora of third legs more coarsely granular, the granules on ventral surface toward distal end largest; patella with a few granules; tibia with finer granules above but ventrally with larger distinct tubercles or teeth. Fourth leg with metatarsi abruptly more slender than tibia; trochanter IV on dorsoectal surface toward base with a stout, distally truncate process and on opposite side with two larger, distally acuminate processes; femur conspicuously curving dorsomesad, with numerous stout processes of differing lengths of which one from the dorsal surface, one opposite on ventral surface and one toward distal end from mesoventral surface are much the largest (Plate 3, fig. 4, 5); patella with numerous small seriate tubercles of uniform size; tibia above and laterally with setigerous tubercles like those of patella but ventrally with a median-longitudinal series of 7-9 long processes which decrease in length distad; metatarsus with a series of low setigerous tubercles.

Tarsus I with five joints of which three are in the distal division; II with eight joints of which three are in the distal division; III with five joints of which the most distal is greatly enlarged and bears a setigerous process on its anterior end projecting between the claws, the ventral surface of articles densely clothed with short fine hairs, (Plate 3, fig. 3); IV with six joints.

Length 8 mm.; greatest width of carapace also 8 mm.

Length of leg I 11 mm.; of leg II 20 mm.; of leg III 16 mm.; of leg IV cir. 21+ mm.

*Locality*.—San Miguel, 6,000 feet, July 24. (Type, M. C. Z. 126, one male).

#### GONOLEPTES HUADQUINAE, sp. nov.

##### Plate 4, fig. 3-8.

General color above brownish grey, the head region darker and the anal scutum blackish; a series of lighter circular spots across dorsum of carapace and abdomen, one over and about each tubercle. Coxae of first three pairs of legs beneath black, the coxae of the fourth pair subtestaceous. Sternite of abdomen blackish with lighter transverse borders and spots. Trochanters of legs above and below brownish yellow; other joints of legs blackish but femora IV testaceous with fewer dusky mottlings; femora I to III paler at distal end with an obscure narrow light annulus near middle; tibiae all with an obscure



median pale annulus; metatarsi also with faint median annulus and metatarsi III and IV with a more distinct light ring at distal end; tarsi III and IV with distal article pale and also with a submedian pale annulus.

Carapace broadest at level of third sulcus from where the body narrows conspicuously caudad, the comparatively long abdomen being more abruptly narrowed or constricted at third segment with the anal scutum narrowly rounded; cephalad the cephalothorax is abruptly narrowed near level of third legs as usual and a little indented on each side caudad of anterior end.

Carapace with the usual four sulci of which the first is bent back angularly at middle and the second is more moderately angulate in the opposite direction; the third sulcus is also weakly angulate and the fourth more strongly and acutely so between bases of the cones; a distinct median longitudinal sulcus between the first and the second sulci. Eye-tubercle distinctly limited, moderate in height, much wider than long; paired interocular processes close together, distinct, conically acuminate, pale in color. Tubercles along lateral submarginal elevated rims smaller and more obscure, these, as usual, becoming larger but of only moderate size caudad, the tubercles widely separated, those across caudal border similar. A pair of widely separated tubercles between eye-tubercle and first sulcus. Area between sulci I and II with a few low tubercles; the second area with an irregular transverse row of more distinct setigerous tubercles and the tubercles of the last area more numerous as usual. Conical processes of carapace moderate in size, acutely acuminate with an acute curved branch on subdorsal side, (Plate 4, fig. 6, 7). Anterior border of head elevated as usual, being limited caudad by a transverse furrow as in other species. Frontal margin not dentate.

First three tergites of abdomen each with a transverse row of tubercles which decrease in size laterad and which are well separated. Anal tergite with a transverse row of four tubercles. Sternites of abdomen with corresponding rows of smaller tubercles.

Coxae I distally bent rather strongly forwards, the second more moderately so, the third straight and a little shorter than the second; coxae I to III inclusive each with a row of distinct tubercles along the midventral line. Coxae IV of the usual general form; tuberculate; the tubercles moderate, numerous but not dense; at distal end on mesal side with a proximally stout but not long process which distad is abruptly narrowed and terminates in an acicular point; on ectal side of distal end a shorter conical process.



Spiracles conspicuously exposed.

First article of mandible strongly constricted as usual with the article abruptly expanded distad of the constriction and with the dorsal hump conspicuous. Second article long, moderately curved ventrad at middle, the dorsal (anterior) face being somewhat depressed or excavated and bearing a moderate number of short stiff hairs. Fingers of chela crossing at tips, the outer one stouter, longer and more strongly bent at tip, (Plate 4, fig. 3).

Pedipalps in type about as long as body, but in a second specimen in which the abdomen is strongly retracted they are considerably longer. Coxa strongly elevated above, the ventral process long and subcylindrical, white in color. Trochanter constricted proximally; at distal end on ventral surface a large conical tubercle. Femur subcylindrical, a few inconspicuous tubercles along ventral surface. Patella unarmed. Tibia along mesoventral line with two long curved spinous processes and two very small ones between the two large and in front of the distal one respectively; along ectoventral line with two long less curved processes of which the anterior is the larger and near the base of the latter and distad of it a very much reduced spine. Tarsus in mesoventral line with two long processes and along ectoventral line with two large processes and a third smaller process on ectal side between the others and in a second specimen with a small spine in front of others on ectal as well as mesal side. Claw much longer than the tarsus, (Plate 4, fig. 4, 5).

Legs I to III with femora, patellae, tibiae, and metatarsi tuberculate, more strongly developed on femora than on more distal joints and more conspicuously ventrally than dorsally. Fourth legs with tubercles of femora largely replaced by more conspicuous conical processes; tubercles of other joints also stronger than on other legs. Tarsus I of five segments, of which three are in the second division; II with eight, also with three in the second division; III with four (the most proximal with two false sutures thus giving appearance of seven articles), these densely clothed ventrally with fine short hairs as usual, none of the articles modified specially. Leg IV, (Plate 4, fig. 8).

Length 5.6 mm.; greatest width of carapace 4 mm.

Length of leg I cir. 8 mm.; of leg II, 14 mm.; of leg III, 11 mm.; of leg IV, 14 mm.

*Locality*.—Huadquina, 5,000 feet, July 24. (Type, M. C. Z. 127, one female). San Miguel, 6,000 feet, July. (Paratype, M. C. Z. 128, one female).



GONOLEPTES SCOTIUS,<sup>1</sup> sp. nov.

Plate 3, fig. 6-8; Plate 4, fig. 1-2.

Body throughout black of brownish cast, lines of white along carapace caudally and laterally and bordering tergites and sternites of abdomen. Caudal edges of coxae IV also bordered with white. Carapace under lens seen to be not densely mottled with small lighter spots in head region and over border behind. The legs similarly mottled but light spots more numerous, the trochanters of all legs and the tarsi of third and fourth legs and in some also of first and second lighter in color. Palpi paler than legs, the spots being larger and in part confluent.

Body relatively narrower than in *enoplus*, the greatest width of carapace being much less than the total length of body and about equal to length of carapace. The general form of body shown in Plate 3, fig. 6.

Carapace with four transverse sulci of which the first is deeper and is angulate at middle in the usual way, bifurcate on each side toward end; second sulcus angularly bent forwards at middle, the third toward each end bending back caudoectad; a strongly impressed longitudinal median sulcus between first and second transverse sulci which is more weakly continued between second and third and third and fourth. A transverse sulcus also indicated in line with caudal edge of eye-tubercle. Eye-tubercle sharply defined, moderate in height, wider than long, bearing a few small but distinct tubercles with paired ones present in place of the cones of *enoplus* rounded or boss-like, these two smaller than eyes but larger than other tubercles. Median portion of head just in front of eye-tubercle elevated and the anterior border each side of this part elevated as usual. Lower frontal margin excavated for mandibles as usual; upper frontal margin without distinct teeth at each rounded lateral corner but with rounded boss at end of ridge there. From cervical region caudad on each lateral border of carapace the usual series of tubercles; a tubercle-free area opposite the third sulcus and behind this about three noncontiguous larger tubercles and then along caudal margin a series of smaller tubercles which are widely separated and irregularly spaced. The conical processes at posterior end of carapace long, acuminate, close

<sup>1</sup> σκότιος, dusky.



together. Dorsal area of carapace between first and fourth transverse sulci with scattered small granules.

The three anterior tergites of abdomen each with a transverse row of well-separated conical tubercles which decrease in size from the middle ones laterad. Anal tergite caudally rounded, with two rounded elevations near base.

First two pairs of coxae curving a little forwards, the third straight throughout its length; second coxae a little longer than the third; first coxae with the usual row of setigerous tubercles which are very small; the second and third coxae smooth or nearly so. Fourth coxae greatly enlarged in the usual way; ending distally on the ectodorsal side in a large curved process which is unbranched, and on opposite side in a shorter one which presents a low rounded process on ectal side below tip. Coxae all with numerous small granules each bearing a hair. Spiracles distinctly exposed.

First joint of mandibles immediately distad of its constriction with an abruptly elevated rounded hump. Second joint with a few hairs in front toward distal end.

Trochanter of pedipalp with a rounded hump above and a single setigerous conical tubercle below. Femur subcylindrical; along ventral median line between base and middle three large conical tubercles. Patella unarmed. Tibia along mesoventral line with two spinous processes of which the anterior is much more slender and along the ectoventral line with two spinous processes of which the anterior is the larger, and in front of the latter a third much smaller spine. Tarsus along ectoventral line with five spines of which the first from caudal end and the third and fourth are larger; three spines in mesoventral line; claw large, as long or somewhat longer than the article (Plate 4, fig. 2).

Femora of first three pairs of legs granulatotubercular ventrally, the tubercles of the third pair largest; tibiae of these legs also tubercular, the tubercles small, those of the ventral surface and especially those of the third pair largest; metatarsi more obscurely granular. Trochanter of leg IV granular; on inner side with a rounded process and on outer side with a much longer acuminate process which curves back caudad above base; femur tubercular and distad with a number of larger processes of which two much exceeding the others in size arise from the ventral surface toward the distal end and distally curve mesad; patella uniformly seriatly tubercular; tibia with numerous tubercles which are larger, subconical, on ventral surface; metatarsus over proximal half with numerous tubercles, the distal,



clavately enlarging half nearly smooth, (Plate 4, fig. 1). Tarsus I with five segments; II with six articles of which three are in the second division; III with six which are clothed ventrally with numerous fine hairs and none of which is specially enlarged, but the metatarsus is greatly enlarged toward its distal end which is abruptly narrowed and resembles a tarsal article in form and pubescence, while from the ventral surface toward proximal end arises a very large, abruptly curved branch or process, (Plate 3, fig. 8).

Length of type 7.8 mm.; greatest width of carapace 6.1 mm.

Length of leg I cir. 9 mm.; of leg II, 16 mm.; of leg III, 12+ mm.; of leg IV cir. 17 mm.

*Locality*.—Lucma, 7,000 feet, August 7. (Type, M. C. Z. 129, one male; paratypes, 130, two males).

PACHYLUS ORINUS,<sup>1</sup> sp. nov.

Plate 5, fig. 1-3.

Body strongly narrowed cephalad; conspicuously constricted both laterally and dorsally along first furrow just back of eye-region and nearly in line with coxae of third legs; widest a little back of constriction where the sides are convexly rounded and from where the body narrows caudad to end of abdomen with no constriction between cephalothorax and abdomen; abdomen caudally semicircularly rounded.

Carapace with five transverse sulci of which the most anterior lies in the previously mentioned constriction and at its middle is bent caudad at a distinct angle; the second one forms a slight angle at middle with apex cephalad, while the other sulci are straight; no connecting longitudinal median sulcus excepting a very weak one between the first and second. Eye-tubercle sharply set off, about equal in length and breadth; the cone between eyes high and acute; eye-tubercle separated by a transverse furrow or depression from the conspicuously elevated frontal border. Lower frontal margin deeply notched or excavated for insertion of mandibles and between the two notches extending ventrad in a spiniform process, otherwise unarmed; unarmed above. Carapace with lateral borders strongly elevated, the marginal ridge over its middle, ectally curving portion conspicu-

<sup>1</sup> ὄρεινός, a mountaineer.



ously granular, the end portions smooth; caudal border with a transverse row of tubercles; the area between fifth and fourth sulci with a transverse row of fewer and less developed tubercles, the two areas next cephalad with still fewer and more obscure tubercles similarly in a transverse line, (Plate 5, fig. 1).

The first two abdominal segments each bearing above a transverse row of numerous, well-developed granules. Dorsal anal scutum bearing five conspicuous spinous processes of which the median is much longest, and in front of the most anterior of these on each side a series of much smaller teeth which decrease progressively cephalad; the second spine from the median one on each side is elevated dorsally along its whole length in a keel-like form, the elevated portion projecting cephalad over base in a rounded, tubercle-like process.

First three pairs of coxae proximally parallel, those of the first two pairs distally curved considerably cephalad, the third ones straight throughout. Second coxae but little more than one fifth longer than the third (15:11). The coxae of the second and third pairs along anteroventral surface with a low, sharply elevated edge which is obscurely tuberculate; first coxae with no elevated edge but with a row of very small tubercles. Fourth coxae very strongly enlarged as usual and directed caudad; each one terminating at distal end on ectal side above in a stout acute spine and on opposite mesal side of end in a similar but smaller spine; elsewhere smooth, not tuberculate or dentate.

Spiracles distinct, rather large.

Mandibles stout; first article strongly narrowed proximally, the expanded distal portion with a strongly elevated, long, keel-like hump above which is smooth; second article in front sparsely clothed with hairs and with fewer hairs behind toward distal end, (Plate 5, fig. 2).

Pedipalps rather short, when extended scarcely as long as carapace; not crossed. Trochanter short, subcylindrical, with a low hump above on which are one or two slight tubercles; ventrally with a few hairs springing from slightly tubercular bases. Femur cylindrical, not compressed, moderately convexly elevated from end to end above; wholly without spines; a few short hairs from slightly tubercular bases below. Patella unarmed. Tibia not compressed; along mesoventral edge with two rather slender, acutely acuminate spines and between these a minute third one; along ectoventral edge with three long spines and between the caudal and middle one of these a fourth minute one; the middle one of the larger spines much largest



and a little surpassing the distal end of tarsus when joints are flexed, the other two spines proximally abruptly thicker than distad, anterior spine cognate to base of large spine. Tarsus on mesal side ventrally with a series of four slender, distally bristle-like spines; on ectal side with a series of about twelve pale slender spines which are very short excepting two which are much larger and of about same size as the three of mesal side; tarsal claw of about same length as tarsus, (Plate 5, fig. 3).

First three pairs of legs with femora, patellae, and tibiae especially on ventral surface finely but rather sparsely tubercular, a hair arising from each tubercle, distal joints wholly smooth. Fourth legs stout, with tarsi abruptly much more slender than the metatarsi; trochanter with two robust granules on ectal side and at distal end on mesal side with a stout thorn; femur granular above, along ventroectal edge with a series of mostly stout conical spines which, beginning at about one fourth the length from the proximal end as low tubercles increase regularly in length distad; along mesoventral surface a series of fewer and lower conical tubercles and on the mesal surface with two or three irregular series of conical tubercles and spines; patella strongly tubercular above and laterally, and with tubercles replaced by stout conical spines of which three or four are comparable in length to the larger ones of femur; tibia above and laterally strongly tubercular, below with tubercles replaced by stouter conical tubercular elevations and longer spines like those of the proximal joints; metatarsus above and laterally densely granular, below with stouter seriate cones or teeth, much smaller and more uniform than the spines of the proximal joints. Tarsus I with five joints, three of which are in the distal division; tarsus II with eight joints; III and IV with six joints.

General color dilute ferruginous, the head region weakly dusky; caudal border of carapace and the first two tergites of abdomen black; patellae and distal ends of femora and tibiae of legs dusky or black, the fourth legs a darker, more strictly ferruginous cast than the others. Abdomen darker beneath than coxae of legs.

Length to base of median caudal spine 10.2 mm.; to tip of caudal spine 12.3 mm. Greatest width of carapace 6 mm.

Length of leg I, (exclusive of coxa) *cir.* 15 mm.; of leg II, 22 mm.; of leg III, 7 mm.; of leg IV, 30 mm.

*Locality*.—Huadquina, 5,000 feet, July. (Type, M. C. Z. 131). San Miguel, 6,000 feet, July. (Paratype, M. C. Z. 132, one specimen).



## COSMETIDAE.

## PARAVANONES PERUVIANUS, sp. nov.

## Plate 2, fig. 1-6.

General background of body a dilute ferruginous. Carapace dusky from a close network of black lines, the color less dusky in a deltoid area back of eye-tubercle with apex caudad and embracing two short black stripes, one caudad of each eye, in a narrow mid-longitudinal line, and along the transverse sutures and in a broader area along each side of the carapace, tubercles pale. Ventral surface of cephalothorax and coxae paler, a clearer light ferruginous; under lens seen to be covered with a less dense network of dark lines. Abdominal segments both above and below black or nearly so, a line back of each segment white. Legs also with an inconspicuous network of fine dark lines; femora, patellae, and tibiae dark at distal ends and tarsus of leg I also blackish.

Carapace widest at level of third sulcus, convexly rounded, abruptly narrowed a little in front of caudal end and at level of caudal edge of third legs in front of which the sides converge but moderately, the anterior corners more oblique.

Carapace crossed by five transverse furrows which are wide, not suture like, and of which the first is bent back angularly at the middle. Eye-tubercle much wider than long, concavely depressed from ends toward middle; a series of four tubercles in a curved line on each elevated end subparallel with edge of ocellus and several weaker tubercles immediately mesad of these; the median portion of eye-tubercle smooth. Anterior margin not elevated or only obscurely so on each side, the median portion between eye-tubercle and front margin broadly elevated. At each anterolateral corner a prominent process, (Plate 2, fig. 3), the border near level of anterior edge of second coxae with a process projecting caudoventrad and meeting a process from second coxae. Edges of carapace in its widest part with a number of rather low conical tubercles, the tubercles across caudal border more numerous and with two much larger subcylindrical processes near middle; the more anterior lateral margins essentially smooth. On areas between furrows a limited number of tubercles which are larger and somewhat more numerous in caudal than in anterior region, and in each area a pair of tubercles which are higher



and more cylindric than the others; surface of carapace in general granulate, (Plate 2, fig. 3).

A row of conical tubercles across each abdominal segment. Anal scutum proximally with smaller granules and tubercles, distally with a number of larger tubercles, about five of which appear as dentations on the caudal margin, one at middle and two or three on each side of it.

First coxae bent forwards at ends, the second slightly so. Third coxae but little shorter than the second. Coxa I in both male and female on caudal side above middle with two conical processes and at distal end on caudoventral corner with a longer process which is bent dorsad; along its anteroventral surface a row of tubercles the most distal of which appears at the anteroventral corner as a freely projecting larger conical process; from anterior surface at distal end a long cylindrical process which bends dorsad close to surface and overlaps the end of a process springing from anterodorsal surface. A low broad process from distal end of coxa II near anterodorsal corner; a row of a few tubercles along anteroventral line and a similar one on third coxae. Coxa IV at distal end on mesal side with a low rounded process, (Plate 2, fig. 4-6).

Spiracles clearly exposed.

First joint of mandible strongly elevated above distad of the constriction; with a transverse row of caudally projecting teeth or conical tubercles across upper border of caudal surface of the dorsal hump; dorsal surface of hump with fine teeth or granules; second article rather short and broad with a few hairs at distal end below (caudad) and more in front, (Plate 2, fig. 1).

Pedipalps short, closely flexed ventrad and caudad, not crossed. Coxa subcylindric. Trochanter narrow at base, expanding distad, with a broad conical projection beneath. Femur strongly flattened from side to side, being abruptly very high immediately distad of the narrow base; a row of teeth along the middorsal line and a series of longer subcylindric, distally rounded processes along ventral line. Patella of usual form; bearing small setigerous tubercles above. Tibia strongly flattened from side to side, especially on ventral half, clavately increasing in height from base distad; with a number of small tubercles on dorsal surface proximad. Tarsus subcylindric, with a low thin keel from ventral surface at proximal end, (Plate 2, fig. 2).

Femora, patellae, and tibiae of legs I to III finely tubercular or granular, the metatarsi more abruptly so proximally and especially



on legs III. Leg IV in female similar to leg III; in male with a series of much stronger teeth along dorsal or mesodorsal line and on ventral surface at distal end with a series of five conspicuous long processes of which the second is longest and is bent at distal end, the others being straight and decreasing in length distad; the patella with a stout spine above at proximal end. Tarsus I with five segments; II with thirteen segments; III with six segments, of which the last three are abruptly more slender; IV with seven segments of which three are in the second division; tarsi III and IV clothed with fine hair on ventral surface.

Length of male type 6 mm.; greatest width of carapace, 4.5 mm.; length of leg I cir. 1 mm.; of leg II, 21.5 mm.; of leg III, 13 mm.; of leg IV, 8 mm.

Length of female paratype 6 mm.; greatest width of carapace 4.5 mm.; length of leg I, 10.5 mm.; of leg II, 20 mm.; of leg III, 14 mm.; of leg IV, 18 mm.

*Localities*.—Santa Ana, 3,000 feet, August 4. (Type, M. C. Z. 133, male; paratype, M. C. Z. 34, female). San Miguel, 6,000 feet, July. (M. C. Z. 135, one female).

## PHALANGIIDAE.

### LIOBUNUM MONTICOLA, sp. nov.

Plate 5, fig. 9; Plate 6, fig. 1-3.

Body above brown, a paler longitudinal median stripe which narrows to a point at caudal end of abdomen, this stripe on anterior portion of abdomen embracing a deep black, sharply defined median stripe. Eye-tubercle black. Ventral surface of body yellowish. Trochanters all deep black and coxae dusky distad; patellae also solid black and tibiae black at distal ends.

Body bluntly rounded behind, the abdomen broadest across caudal end; carapace narrowed markedly cephalad. Entire surface of body above and below densely granular, the granules conically acutely pointed. Abdomen clearly set off from cephalothorax by a suture; the two segments at end distinct.

Eye-tubercle high, its anterior and posterior faces subvertical or a little constricted at base; a curving line of acute spinous points



mesad of each ocellus and curving caudoectad and ventrad on the caudal surface of tubercle, (Plate 6, fig. 1).

First joint of mandible nearly smooth, a little roughened over dorsal surface; hairs above few and straight, more on mesal surface. Second joint also smooth except for a light dorsal roughening; with a few longer hairs at distal end above and laterally with a more numerous patch on mesal side distad, (Plate 6, fig. 2, 3).

Pedipalps moderately long. Femur ventrally along ectal and similarly along mesal side with a row of acute teeth; also with a patch of teeth above and laterally at distal end. Dorsoectal and dorso-mesal surfaces of patella with fine teeth which are largest and most numerous on the dorsomesal process, a narrow dorsal stripe free from teeth or nearly so. Tibia with teeth ventrally and especially laterally and dorsolaterally, a middorsal stripe free from teeth. The long slender tarsus free from teeth but with numerous short fine and a few coarser short hairs.

Legs with numerous fine teeth which become smaller and less conspicuous in going distad.

Length of body 3.8 mm. Length of palp cir. 4.5 mm.; of leg I, 32.5 mm.; of leg II, cir. 80 mm.; of leg III, 41 mm.; of leg IV, 51.5 mm.

*Localities*.—Paltaybamba, 5,000 feet, August 27. (Type, M. C. Z. 136). Santa Ana, 3,000 feet, August 3. (Paratype, M. C. Z. 137, one specimen).

LIOPAGUS,<sup>1</sup> gen. nov.

Eye-tubercle weakly longitudinally furrowed; wholly smooth, bearing no teeth or spines or other processes.

Body essentially smooth.

Scutum unarmed.

First joint of mandible at base with the usual ventral process.

Patella of pedipalp with a moderate inner apophysis. Claw distinctly pectinate.

A one pointed process on dorsal margin of distal end of all coxae. Legs thin; moderately long. Femur II with two false sutures; III with none and IV with one.

Genotype.—*Liopagus simplex*, sp. nov.

Related to *Prionostemma* Pocock in the presence of false sutures only on second and fourth femora. From that genus it is most easily distinguished in having on femur II only two sutures or joints instead of the three uniformly present in *Prionostemma*.

<sup>1</sup> λείος, smooth, πᾶγος, a peak.



## LIOPAGUS SIMPLEX, sp. nov.

## Plate 5, fig. 4-8.

Body above brownish grey, darker caudad; similar below with a darker brown or dusky stripe across each abdominal segment. Femora toward distal end each with a conspicuous deep black annulus. Legs brown; patellae and the distal ends of tibiae darker.

Body nearly parallel sided from level a little back of eye-tubercle to one a little caudad of ends of coxae IV, then abruptly narrowing to caudal end and semicircularly rounded in front. Obscurely granular in a line across border of segments.

Eye-tubercle as wide as high. Viewed from behind appearing conspicuously constricted at base, the front face subvertical, not so convex as the caudal. Tubercle wholly smooth; slightly depressed longitudinally along middle line, (Plate 5, fig. 4, 5).

All joints of legs free from tubercles but with scattered very fine teeth on femora and a large one at distal end above on femora and patellae. Coxae with a single slender process from distal end above.

First joint of mandible smooth, with the process below as usual; a few short hairs above and a series of them along a mesoventral line. Second joint small; with a few short hairs above, glabrous beneath, (Plate 5, fig. 6).

Femur of pedipalp between two and three times as long as the patella without its apophysis; with a series of short stout hairs beneath and smaller, less erect ones on dorsal surface but with no teeth. Patella with apophysis moderately slender, cylindric, more densely clothed with hair. Tibia also with more numerous short stiff hairs; a slight rounded process at distomesal corner, this clothed with hairs as elsewhere on joint. Tarsus with numerous fine short appressed hairs and fewer shorter, stiff erect hairs. Claw pectinate, (Plate 5, fig. 7, 8).

Length *cir.* 3.5 mm. Leg I missing. Length of leg II *cir.* 42 mm.; of leg III, 21.5 mm.; leg IV broken off at tip.

*Locality.*—Huadquina, 5,000 feet, July 30. (Type, M. C. Z. 138).



## ARANEIDA.

## AVICULARIIDAE.

## HEMIRRHAGUS PERUVIANUS, sp. nov.

Plate 6, fig. 4-10; Plate 7, fig. 1-2.

Integument of carapace, chelicerae, femora of legs and palpi, sternum and labium dark chocolate-brown, the other parts of legs and palpi lighter brown, in part of dilute reddish tinge; sternum and femora of legs beneath sometimes lighter than above. Integument of abdomen brown, paler beneath than above; above with a small light area toward anterior end. Carapace covered with a woolly coat of russet-brown hair of a more or less coppery lustre, and some longer grey ones at caudal edge especially. The legs are thickly clothed with short brownish hairs with deep black ones more sparsely intermixed; the numerous longer bristles are dark proximally, becoming grey, grey or white distad, these forming rather indistinct longitudinal streaks on the femora and patellae. Abdomen densely clothed with brown hair of a distinctly coppery lustre, that of anterior surface black and forming a distinct black area; longer bristles of dorsal surface grey distally; sometimes dark hairs form a larger element on the ventral surface and this surface then appears dark grey or blackish instead of copper-brown as more usual. Fringes of endites and chelicerae orange proximally, lighter distad.

Eye-tubercle sharply limited; of moderate height. Eye-area less than twice as wide as long in both male and female (67:37); rows subequal or the posterior one slightly longer than the anterior (up to ratio 67:65). Anterior row of eyes in dorsal view a little procurved; in anterior view rather strongly procurved. Anterior median eyes with diameter not much more than half that of the laterals (*cir.* 6:11), a little more than their radius apart, but decidedly less than their radius from the laterals. Posterior row of eyes conspicuously recurved. Posterior laterals smaller than the anterior laterals from which separated by less than their radius. Posterior medians three fourths the diameter of the laterals; mesal side more curved than the ectal, more or less angulate anteroectally, (Plate 6, fig. 4).

Head low, only slightly rising in front of the thoracic groove;



highest some distance caudad of eyes. Thoracic fovea some distance back of middle of carapace; straight, transverse.

Sternum subequal in length and breadth, being sometimes slightly longer than wide (male) and sometimes slightly wider than long (female). Moderately convex. Sigillae submarginal.

Labium a little wider than long. Spinules in a transverse band of about four rows, irregularly and closely arranged.

All tarsi densely scopulate; the scopulae of the anterior tarsi divided by a narrow setose line, those of the posterior tarsi by a broad setose band which, however, is narrower than the joint. Anterior metatarsi scopulate mostly more than half way to base, the posterior metatarsi scopulate at distal ends only. Hair on anterior surface of coxa I both above and below suture moderately long, in part prone, with in addition a number of finer and shorter straight hairs which tend to be somewhat clubbed at tip; no spinescent bristles. Paired claws bearing from three to four moderate teeth, commonly three or two being fully developed with one or two appearing as mere points, (Plate 7, fig. 1, 2). In addition to the scales of the ordinary type occurring on dorsal surface of tarsi, (Plate 6, fig. 5) occasionally one of the second type, (Plate 6, fig. 6), is to be seen.

Metatarsus I ventrally with an apical and a subbasal spine, a long one also on anterior surface. Tibia of male with three spines along ventrocaudal line and a fourth a little more dorsad; or with spines as many as seven to none, there being on caudoventral surface three basal, two submedian and one apical, and on anteroventral a pair toward apex and one lateral surface (male from Huadquina); the number may differ on the right and left legs of same specimen. Patella armed with a spine on caudal surface (male). Metatarsus IV with three pairs of ventral spines and two on anterior and also on posterior surface (female) or with five or six on each lateral surface (male).

Inferior spur of tibia I of male longer than the superior, moderately curved and bearing a large stout black spine inserted on its dorso-caudal surface. The superior spur bearing a similar stout spine on mesal surface, (Plate 6, fig. 7).

Tibia of male palpus thicker proximally than patella or femur, narrowing distad; a narrow ridge on mesal side from middle distad, elevated at distal end into a low tubercle. Tarsus short, bilobate as usual. Palpal organ with spine in lateral view appearing at right angles to the main axis of bulb, narrowing distad, with apex slender and acute, below tip with a short, stout, subtriangular spur. In



anterior view the tip of process is seen to curve rather abruptly ectad, the spine occurring at the bend on the convex side, (Plate 6, fig. 10).

*Male (Tincochaca).* Length, 15 mm. Length of cephalothorax, 7.3 mm.; width, 6.0 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	6.2 mm.	9.0 mm.	4.0 mm.	3.5 mm.	24.7 mm.
Leg II	6.0	7.0	3.6	3.0	19.6
Leg III	5.1	6.2	4.6	3.0	18.9
Leg IV	7.2	8.5	7.0	4.0	26.7

*Female (Tincochaca).* Length, 17 mm. Length of cephalothorax, 8.5 mm.; width, 7.0 mm.

	fem	tib.+pat.	met.	tar.	total
Leg I	5.8 mm.	7.8 mm.	3.3 mm.	3.2 mm.	20.1 mm.
Leg II	5.1	6.2	2.7	2.6	16.6
Leg III	4.6	5.7	3.3	3.2	16.8
Leg IV	6.0	8.0	5.4	3.2	24.6

*Localities.*—Huadquina, 5,000 feet, July. (Type, M. C. Z. 139, male; paratype, immature female 324). Tincochaca, 7,000 feet, August. (M. C. Z. 140, male and female). Santa Ana, 3,000 feet, August. (M. C. Z. 141, one female). Urubamba, 9,500 feet, July 18. (M. C. Z. 325).

#### HEMIRRHAGUS MAJOR, sp. nov.

Plate 7, fig. 3-8.

Integument of carapace, sternum, legs, and palpi dark brown or chocolate to chestnut; that of labium and endites reddish brown or chestnut. Hairs of carapace somewhat wavy, moderately thick, light brown of more or less dark golden or bronze lustre. Hair of chelicerae dense, light brown or bronze lustre. Sternum clothed with a dense coat of short brown hair with black ones sparsely intermixed; bristles dark proximally, rufous distally, mostly of moderate length. Legs clothed with a coat of short brown hair with darker dusky or blackish hairs intermixed and especially abundant on dorsal surface of femora, the brown hair in part of shining brown lustre; a narrow stripe of grey or white hairs across ends of joints above; two longitudinal stripes on patellae above formed by hair free and bristle



free areas over which the lighter hairs unmixed with dark extends from each side. Bristles of legs shorter proximad, becoming longer and more numerous especially on tibiae ventrally and on metatarsus above as well as laterally and ventrally; bristles dark proximally, becoming light rufous distally, rather coarse. Integument of abdomen above dark, somewhat dusky brown, ventrally lighter brown, with several small obscure white spots on each side; bristles of dorsum subdense, forming a light brick-red area.

Eye-tubercle black, well defined, moderate in height, highest between posterior median eyes, more strongly convex anteriorly than posteriorly. Eye-area trapeziform, the posterior row being distinctly longer than the anterior, the difference typically distinctly more marked than in *peruvianus* (up to 85:78); area from a little less than half as long as greatest width to a little more thus also differing from *peruvianus*. Anterior row of eyes from moderately procurved to nearly straight, much more procurved in anterior view than in dorsal. Anterior median eyes with diameter two thirds that of laterals; about two thirds their diameter apart, less than their radius from the laterals. Posterior lateral eyes about three fourths the diameter of the anterior laterals, less than their radius from the latter. Posterior medians pyriform in outline, being narrowed to a point caudad and widely rounded cephalad, (Plate 7, fig. 3).

Head moderately elevated, in outline slightly convex, highest a little caudad of eye-tubercle. Fovea straight or vaguely procurved, short and deep.

Sternum longer than wide. Posterior sigillae about their length from margins. Median ones submarginal; anterior marginal.

Mesal margin of furrow or chelicera bearing a row of fourteen teeth.

Labium wider than long, truncate distad. Spinules in a narrow band (about four rows deep) across distal end, the spinules not dense.

Spinules on proximal end of endite rather numerous.

Anterior surface of coxa I with longer in part semiprone hairs and some of the short, slender, distally obtuse or clubbed hairs such as are present in *peruvianus* but in addition below the suture with numerous dark, strongly chitinized spiniform bristles, these more numerous distally, some rather more slender ones also occurring above suture.

Tarsal claws four or five (anterior and posterior of leg I respectively), proportionately shorter, more slender and more uniform than in *peruvianus*. On the posterior claws, which are longer and propor-



tionately more slender, one or two extra points may occur in addition to the five ordinary teeth, (Plate 7, fig. 5-7).

Scopulae of anterior tarsi divided by a narrow setose line, the posterior ones by a broader one, but this much narrower than the joint. Anterior metatarsi scopulate well toward base; posterior with scopular hairs only distally and there sparse or absent. Metatarsus I (female) ventrally with a pair of small apical spines and a single one proximad of middle. Tibia I (female) also ventrally with a pair of spines at distal end and a single submedian one; in the male with seven spines on ventral and ventrocaudal surface and two on anterior surface. Metatarsus IV with fifteen to eighteen spines irregularly arranged; tibia IV with eight to ten.

In the male the metatarsus of leg I is abruptly much more slender than the tibia and is strongly bowed dorsad. The spurs of the tibia are elevated on a conspicuous common basal process standing at right angles to the article; the inferior process is not much longer than the superior but it is proximally stouter being narrowed distad, moderately curved toward end, bearing on dorsal surface a dark, stout, acute process attached near apex and corresponding to the larger one of *peruvianus*; superior process directed more cephalad, more uniform in diameter, curved a little mesad toward tip, the spine rather slender, closely applied to surface excepting at tip which is divergent, (Plate 7, fig. 4).

In the male palpus the tibia is thicker than the patella or femur, narrowing distad, a narrow ridge-like thickening mesoventral edge from middle distad and elevated at distal end into a low tubercle, ventrally with a dense growth of long bristles. Tarsus short, bilobate as usual, the mesal lobe at distomesal corner adjacent to bulb extended into a blackish, densely chitinated tubercle. Spine of bulb proportionately much longer than in *peruvianus*, basal part with axis corresponding with long axis of bulb, curving semicircularly first ventrad and then forwards as shown in the figure, a slight tooth a little distad of middle, in anterior view the process bends first somewhat ectad.

*Male* (Type, *Cuzco Valley*). Length, 29 mm. Length of cephalothorax, 14 mm.; width, 12.3 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	10.8 mm.	14 mm.	8.1 mm.	5.4 mm.	38.3 mm.
Leg II	10	12.2	7.8	5	35.0
Leg III	9	11.2	8.3	4.5	33.0
Leg IV	11.2	14.2	11.2	5.8	42.4
	Tibia I, 7.1 mm.		Tibia IV, 8.9 mm.		



*Female (Urubamba).* Length, 37 mm. Length of cephalothorax, 15.8 mm.; width, 13.1 mm. (In a female from Cuzco Valley the cephalothorax is proportionately broader, the ratio of length and breadth being 16:14.3).

	fem.	tib.+pat.	met.	tar.	total
Leg I	11.8 mm.	15.3 mm.	7.5 mm.	5.6 mm.	40.2 mm.
Leg II	11.0	13.0	7.1	5.3	36.4
Leg III	10.0	11.8	8.8	5.5	36.1
Leg IV	12.5	15.5	13.0	6.4	47.4

*Localities.*—Cuzco Valley. (Type, M. C. Z. 142, one male; paratype, M. C. Z. 143, one female) E. D. Flint coll. Urubamba, 9,500 feet, July. (M. C. Z. 144, one female).

#### HEMIRRHAGUS sp.

*Locality.*—Urubamba, 9,500 feet, July. (M. C. Z. 326, several immature females).

#### EURYPELMA AYMARA,<sup>1</sup> sp. nov.

Integument of carapace when dry black or nearly so, when wet appearing of slight chestnut tinge. Sternum chestnut, darker cephalad. Labium nearly black. Endites chestnut. Legs proximally blackish like the carapace, becoming slightly more chestnut distad. Carapace clothed with a coat of sandy grey and light brown hair of a golden lustre. Hair of femora dusky brown of rufous tinge, that of more distal joints with a larger proportion of grey intermixed; bristles numerous and long, of rufous or rust color proximally, paler, greyish yellow distad. Hair of venter of abdomen brown and black intermixed, chiefly the latter. Dorsum with a thick coat of long rufous bristles.

Pars cephalica moderately high, highest a little caudad of eye-tubercle.

Eye-tubercle rather high, sharply limited; highest along the median longitudinal line which descends a little from between the posterior median eyes cephalad. Eye-area considerably less than twice as wide as long (25:16). Anterior row of eyes slightly shorter than

<sup>1</sup> Aymara, a tribe of the indigenes of Peru.



the second (25:24); in dorsal view considerably procurved, a line tangent to the anterior edges passing through the anterior third of the lateral eyes. Anterior median eyes much smaller than the laterals, their diameters being about as 2 to 3; medians three fourths their diameter apart and near the same distance from the laterals. Posterior lateral eyes of nearly same size as the anterior laterals from which they are separated by less than their radius. Posterior median eyes much smaller than the laterals; oblong, with sides straight and ends more rounded. A line tangent to caudal edges of the two posterior eyes of each side intersects the anterior median eye of opposite side.

Metatarsus I and II scopulate very nearly to base; metatarsus III scopulate over distal third; metatarsus IV scopulate only at distal end.

*Female.* Length 38 mm. Length of cephalothorax, 21.2 mm.; width, 18.1 mm. Length of pars cephalica, 13.8 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	15 mm.	20.9 mm.	10 mm.	6.5 mm.	52.4 mm.
Leg II	13.8	18.1	9.9	6.1	47.9
Leg III	12.3	16	11	6.1	45.4
Leg IV	15.7	20	15.6	6.8	58.1

*Locality.*—Peru: Aymas, Dr. W. H. Jones. (Type, M. C. Z. 145, one female).

This seems to be the only true *Eurypelma* thus far recorded from Peru.

#### DIPLURA MONTICOLENS,<sup>1</sup> sp. nov.

Plate 7, fig. 9-10.

Cephalothorax dusky brown, the margins of carapace and the eye-area darkest. Edges of sternum darker than median portion. Chelicera palpi and legs testaceous. Integument of abdomen dark above, light beneath; a series of three pairs of obscure light stripes extending from near dorsal median line obliquely ventrocaudad across sides. Spinnerets testaceous, in part dusky, especially at ends. Hair of carapace light brown, those of sternum sparse, darker. Bristles of abdomen dark rufous brown, the shorter hairs mostly lighter.

Eye-area twice as wide as long or very nearly so (67:34). Eyetubercle highest beneath anterior median eyes, behind which it descends almost immediately and also slopes laterally from this

<sup>1</sup> Mons, mountain, incolens, inhabiting.



point, the eyes being set obliquely to the horizontal plane. Anterior row of eyes in dorsal view a little procurved, in anterior view strongly recurved. Anterior median eyes inclusive of rim with diameter more than three fourths as great as that of the anterior laterals, less than their radius from each other and closer to the laterals; exclusive of rim the median eyes are less than their diameter apart and are near their radius from laterals. Anterior laterals very oblique, the anterior, narrow end lying in front of the ectal edge of the median eye. Posterior lateral eyes clearly smaller than the anterior laterals (diameters nearly as 3:4). Posterior median eyes smaller than laterals, closer to them than to the anterior medians. A line tangent to the caudal edges of posterior eyes on each side is tangent to or passes near caudal edge of anterior median eye of opposite side, (Plate 7, fig. 9, 10).

Cephalothorax broad and low anteriorly (the width across eye area to greatest width about as 47:76). Thoracic fovea small, oval, transverse, situated considerably behind middle of length of carapace.

Labium much wider than long, with anterior margin mesally incurved. On anterior edge with two spinules present, a scar in type seeming to indicate the normal presence of a third one.

Endites at proximal corner with a small group of few (8-10) spinules.

Sternum as wide as long. The sigillae marginal.

Tarsi of legs slender, all conspicuously curved, those of the anterior pairs most strongly so. Paired claws each with a double row of mostly eight teeth. Inferior claw smooth, slender. Metatarsus I with three pairs of ventral spines; femur I with a spine at distal end on anterior side and above and another smaller one on the posterior side; other femora with corresponding spines, the posterior one increasing in size in going caudad. Posterior metatarsi much more strongly spined. None of the tarsi spined.

Posterior spinnerets as long as abdomen; slender; articles subequal, the first thickest, the distal one most slender, narrowing distad. Anterior spinnerets short, distally acuminate.

*Female.* Length 8.4 mm. Length of cephalothorax 3.4 mm.; width, 2.8 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	3.4 mm.	4.5 mm.	2.9 mm.	2.2 mm.	13.0 mm.
Leg II	3.1	4.1	2.8	2.2	12.2
Leg III	2.9	3.8	2.8	2.0	11.5
Leg IV	4.0	5.0	4.0	2.5	15.2

*Locality.*—Huadquina, 5,000 feet, July. (Type, M. C. Z. 146, female).



## BRACHYTHELE KEITHI, sp. nov.

## Plate 7, fig. 11.

Integument of cephalothorax and legs light chestnut-brown; that of the chelicerae dark chestnut; integument of abdomen and spinnerets clear brown. Pubescence of carapace brown of golden lustre; that of abdomen dense, of similar golden brown color or of more coppery lustre.

Eye-tubercle strongly convexly elevated between the posterior median eyes. Eye-area twice as wide as long (45:22); anterior row a little shorter than the posterior (45:42). Anterior row a little procurved. Anterior median eyes a little more than their radius apart, closer to the lateral eyes; diameter but little more than two thirds the longer diameter of the lateral eyes (ratio near 23:31). Posterior lateral eyes slightly longer than the anterior (33:31). Posterior median eyes elongate, narrowed caudad, length to width about as 3:5 — smaller than lateral eyes (lengths as 25:33), nearer to these than to anterior medians. A line tangent to caudal edges of posterior eyes on each side in type passing through anterior third of opposite anterior median eye, (Plate 7, fig. 11).

Labium clearly wider than long; distal margin mesally incurved. Spinules none.

Spinules on proximal corner of endites short and stout, constricted near or a little above base, distally expanded and rounded.

Thoracic fovea recurved.

Sternum longer than wide; gently convex. The sigillae at level between second and third legs most distinct, marginal. Sternum with numerous fine tubercles from each of which arises a hair.

Paired claws with teeth in two rows; teeth of each row mostly seven or eight in number. Unpaired claw smooth. Tarsal scopulae dense, extending to base; none divided by a setose line or band. Spines long and moderately stout, black.

Posterior spinnerets more than two thirds as long as the abdomen ventrally; the three joints subequal in length, decreasing in diameter distad, the second being more slender than the first and the third than the second. Anterior spinnerets twice or more their diameter apart at base.

*Female.* Length, 30 mm. Length of cephalothorax, 14 mm.; width, 12 mm.



	fem.	tib.+pat.	met.	tar.	total
Leg I	12 mm.	15 mm.	9.5 mm.	8 mm.	44.5 mm.
Leg II		missing			
Leg III	10	12.5	10	7.5	40.0
Leg IV		missing			

Length of spinnerets 12.2 mm.

*Locality*.—Huadquina, 5,000 feet, wet season. (Type M. C. Z. 147, one female).

Named for Minor C. Keith of New York.

### BRACHYTHELE INCURSUS, sp. nov.

#### Plate 7, fig. 12.

Integument of cephalothorax and legs brown, that of carapace and femora of legs above deeper in color; chelicerae above blackish brown. Integument of abdomen above dusky brown; below light brown. Spinnerets blackish. Hair of carapace and abdomen golden brown. Hair of sternum blackish. Fringe of chelicerae rufous.

Eye-area less than twice as wide as long (57:30). Anterior row of eyes of same length as posterior. Anterior row straight. Anterior median eyes slightly more than their radius apart (6:5.5), nearer to the laterals; diameter but little more than half that of lateral eye (11:20). Posterior lateral eyes clearly smaller than the anterior laterals (ratio of diameters 3:4), lateral eyes nearly contiguous as usual. Posterior median eyes elliptic, about three fourths as wide as long, four fifths as long as the laterals. A line tangent to caudal edges of two posterior eyes of each side passes clearly caudad of anterior median eye of opposite side, (Plate 7, fig. 12).

Labium wider than long in the ratio 9.5:6.8; distal margin a little incurved. A row of low stout, rounded spinules across apical portion.

Endites at proximal corner with the patch of spinules as usual.

Thoracic fovea a little recurved.

Sternum longer than wide. Hairs not dense, black, longer about margins.

Paired claws of legs each with two rows of from six to eight teeth. Single claw smooth. In the stage of growth represented by the type the anterior tarsi are not densely scopulate and the metatarsi are scopulate only distally; the posterior tarsi are scopulate only



distally, ordinary bristles covering the proximal portion while the metatarsi are not at all scopulate. The tarsi are not armed. Patellae, tibiae, and metatarsi armed with stout black spines as usual.

Spinnerets short, about one half the length of the abdomen on ventral side, much less slender relatively than in *keithi*: each joint attenuated distad. Black in color.

*Female (not fully mature)*. Length, 13 mm. Length of cephalothorax, 6.2, mm.; width, 5 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	4.3 mm.	5.6 mm.	2.8 mm.	2.0 mm.	14.7 mm.
Leg II	4.0	4.7	2.3	1.8	12.8
Leg III	3.2	4.1	2.2	1.8	11.3
Leg IV	4.3	5.5	3.2	2.0	15.0

*Locality*.—Huadquina, 5,000 feet, July. (Type, M. C. Z. 148, one young female).

The female described above is apparently not fully grown; but the differences it presents especially in eye sizes and relations added to the differences in proportions of joints of legs, the presence of spinules on the labium and especially the pronounced differences in form and relative length of spinnerets render it impossible to regard it as identical with the preceding species which comes from the same locality.

## ULOBORIDAE.

### ORINOMUS,<sup>1</sup> gen. nov.

Posterior eyes small, subequal, the series strongly recurved, narrower than the cephalothorax, the medians farther apart than from the laterals. Anterior eyes in a procurved series; medians farther from laterals than from each other. Area of median eyes much wider than long and much narrower in front than behind.

First leg much the longest, the others in order IV, II, III. Metatarsus I clearly shorter than tibia + patella I. Calamistrum not reaching distal end of metatarsus IV. -

Cribellum narrow; entire.

Abdomen subglobose; bigibous above, not produced or acuminate behind; spinnerets not quite terminal.

<sup>1</sup> ὄρεινόμος, mountain ranging.



Genotype.—*Orinomus lamprus*, sp. nov.

Apparently closest to *Uloborus*, a genus occurring widely in this and adjoining regions as well as elsewhere.

ORINOMUS LAMPRUS,<sup>1</sup> sp. nov.

Plate 8, fig. 1-4.

Carapace nearly black, a narrow median longitudinal line yellowish, the clypeus also paler. Carapace clothed with grey hair. Sternum black; a pale median mark. Coxae dusky beneath. First legs with femora, patellae, and tibiae black, with a few small light spots; metatarsi and tarsi yellow. Other legs yellow, with dusky annuli. Abdomen somewhat yellowish white, finely spotted with black, a dark median longitudinal line over entire length and a deeper, more distinct one on each side from the hump caudad; venter with a geminate black stripe along the middle.

Posterior row of eyes conspicuously recurved, a line tangent to caudal edges of median eyes passing through the anterior third of laterals; median eyes three times their diameter apart, half as far from the laterals which are nearly of same size. Posterior lateral eyes as far from the anterior laterals as from the posterior medians (once and a half their diameter), the anterior laterals with diameter two thirds as large. Anterior median eyes only a little more than their diameter apart but more than once and a half their diameter from the laterals; row conspicuously procurved. Area of median eyes wider than long nearly in ratio 5:3; twice as wide behind as in front. Clypeus slanting ventrocephalad; about equal in width to diameter of median eye.

Labium wider than long; subtriangular, the sides being straight and meeting at an angle, (Plate 8, fig. 4).

Sternum caudally produced as a short tongue between the separated posterior coxae, the tongue rounded at end. More than twice as wide as long (20:9), (Plate 8, fig. 2).

*Female.* Length 3 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	1.6 mm.	1.6 mm.	1.2 mm.	.6 mm.	5.0 mm.
Leg II	1.0	1.1	1	.3	3.4

*Locality.*—Urubamba, 9,500 feet, July. (Type, M. C. Z. 149, one female).

<sup>1</sup> λαμπρός, distinct.



## DICTYNIDAE.

## AMAUROBIUS, sp. a.

An immature male and female from Ollantaytambo (9,000 feet, July. M. C. Z. 150). The abdomen is marked with a distinct median longitudinal black stripe of narrowly hastate form and with indented edges and with a bright white spot each side of middle of its length. Carapace with head dark brown, elsewhere dusky. Sternum dark, dusky brown.

Two immature males apparently of same species from Urubamba (9,500 feet, July. M. C. Z. 151). They are darker throughout, the sternum being nearly black and the abdomen so dark that the dorsal median black line is almost obliterated; but the two white spots are conspicuous.

## AMAUROBIUS sp. b.

One immature female with lateral eyes nearer together than usual in the genus. Carapace yellow with each eye enclosed in black. Sternum light brown, a little dusky. Legs yellow, tibiae very obscurely ringed. Abdomen grey of olive cast; above conspicuously marked with a series of dark chevron lines from middle caudad, all of which are broken at middle.

*Locality*.—Urubamba, 9,500 feet, July. (M. C. Z. 152).

## AMAUROBIUS PLATEI Cambridge.

Journ. Linn. soc. London, 1898, **27**, p. 18, pl. 2, f. 3.

One specimen probably this species was secured at Ollantaytambo, 9,000 feet in July. (M. C. Z. 166).

AYMARELLA,<sup>1</sup> gen. nov.

Pars cephalica relatively broad, convex, and high.

Anterior row of eyes substraight or slightly procurved, the medians much smaller than the laterals, farther from the laterals than from each other. Posterior row of eyes recurved; subequal, the medians

<sup>1</sup> Diminutive of Aymara.



farther from the laterals than from each other. Area of median eyes distinctly narrower in front than behind. Lateral eyes close together, not more than their radius apart.

Clypeus narrower than the anterior lateral eyes.

Chelicera with lower margin short, but little oblique, armed with two (or three) small teeth; upper margin with three teeth of which the median one is largest.

Labium longer than wide, narrowed distad, obtuse.

Length of legs in order I-IV, II, III. Robust. Moderately spined. Metatarsi much longer than the tarsi.

Cribellum bipartite. Calamistrum uniseriate.

Genotype.—*Aymarella munda*, sp. nov.

This genus would seem to be closely related to *Calleva*, a genus based by Simon upon an Argentine species; but it differs clearly in having the lateral eyes much closer together, in having the legs spined, and in having the metatarsi much longer than the tarsi. *Callevopsis*, a Chilean genus, differs, *e. g.*, in having the eyes of the anterior row equidistant and the lower margin of the chelicera armed with four teeth.

AYMARELLA MUNDA,<sup>1</sup> sp. nov.

Plate 9, fig. 1-5.

Carapace brown to fuscous with darker lines radiating from thoracic furrow. Sternum fuscous to nearly black; clothed with numerous black hairs. Legs testaceous, typically of rufous tinge distad on anterior pairs; femora darker, dusky to nearly black.

Palpi fuscous. Chelicerae nearly black. Labium and endites very dark, pale across tips. Abdomen olive-grey; without distinct markings but in some with a median hastate mark very vaguely outlined in dark and followed behind by several faint light colored chevron lines, the lines very thin, and also a small light dot each side of middle median mark.

Posterior row of eyes decidedly longer than the anterior (3.4:2.9), a little recurved; median eyes smaller than laterals (7:9), 1.7 their diameter apart, a third farther from the laterals. Anterior row of eyes viewed from above with line of apices a little recurved; viewed from in front the line of centres is a little procurved; median eyes

<sup>1</sup> *mundus*, fine, neat.



with diameter about three fifths that of the laterals; laterals on well-marked tubercles. Area of median eyes narrower in front than behind in ratio 10:13. Lateral eyes usually their radius apart, the distance being somewhat variable.

Pars cephalica large, conspicuously elevated, highest immediately behind eye-area, smooth and shining, (Plate 9, fig. 1).

Sternum longer than wide in about ratio 5:4. Caudal process short, narrow, (Plate 9, fig. 2).

Labium grooved across base as usual; narrowed conspicuously from above groove distad; distally obtuse, (Plate 9, fig. 3).

Tarsus of palpus armed with a claw and a number of spines; other joints unarmed.

Femur I armed with a single spine on anterior surface toward distal end; other femora unarmed. Patellae unarmed. Tibia III armed on anterior surface in subapical position with one spine; other tibiae unarmed. Metatarsi I and II armed ventrally with three pairs of spines; IV also with spines which are not distinctly arranged in pairs but are more distributed along surface of joint.

Superior margin of furrow of chelicera armed with three teeth of which the median is largest; lower margin nearly transverse and with two rather small teeth.

Abdomen broadly subelliptic in outline.

Cribellum bipartite, (Plate 9, fig. 5).

*Female (San Miguel).* Length 8 mm. Length of cephalothorax 3.2 mm.; width, 2.2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2.5 mm.	3 mm.	2 mm.	1.2 mm.	8.7 mm.
Leg II	2.25	2.7	1.9	1	7.85
Leg III	2.1	2.2	1.5	1	6.8
Leg IV	2.5	3.1	2	1.1	8.7

*Localities.*—San Miguel, 6,000 feet, July. (Type, M. C. Z. 153 female; paratypes, M. C. Z. 154, females). Torontoy, 8,000 feet, July. (M. C. Z. 155, several females). Lucma, 7,000 feet, August (M. C. Z. 156). Urubamba, 9,500 feet, July. (M. C. Z. 157, one female). Huadquina, 5,000 feet, July. (M. C. Z. 158, one female). Ollantaytambo, 9,000 feet, July. (M. C. Z. 159, one female).

#### AUXIMUS sp.

A single immature male of a species of this genus was secured at Lucma in August. (M. C. Z. 160).



## AUXIMUS PRODUCTUS, sp. nov.

## Plate 8, fig. 5-7.

Carapace dusky brown or fuscous. Caelicerae similarly dusky over a more reddish or chestnut background. Legs testaceous; the tibiae, tarsi, and metatarsi of legs I and II dusky, almost black or tibia with an apical and a broader subbasal dark annulus indistinctly set off; tibiae of legs III and IV with apical and subbasal dusky annulus distinct and metatarsus of these legs with an apical and a broader, less distinctly limited subbasal dark band. Patellae dusky. Femora without rings or distinct marks, usually dusky beneath proximally. Tibia and tarsus of palpus dusky or almost black like the distal articles of anterior legs. Sternum dusky brown. Labium and endites darker than sternum, pale across tips. Abdomen above with background of greyish yellow of slight olivaceous tinge; at base above with a black median sagittate stripe the acute apex of which is at middle; this mark is followed caudad by a series of four, successively smaller and smaller chevron-shaped black lines the angle of the first of which is at the point of the sagittate mark; chevron marks with ends on each side united by a longitudinal black line. Dorsum elsewhere with small black, in part angular, dots, these more numerous on the sides where they are confluent with enclosed areas dusky and entire surface thus appearing blackish. A broad median band along venter immaculate greyish yellow of slight olivaceous cast like background of dorsum.

Posterior row of eyes considerably procurved, a line through middles of median eyes being nearly tangent to caudal edges of laterals; median eyes clearly less than twice their diameter apart (11:7) and nearly the same distance from the laterals; smaller than the laterals (7:9). Anterior row of eyes with line of apices as seen from above very slightly procurved; viewed from in front the row is nearly straight, the centres of the laterals being slightly lower; median eyes with diameter half as great as that of laterals, four fifths their diameter apart, nearly same distance or slightly farther from laterals. Anterior laterals equal to posterior laterals from which they are separated by a distance not more than equalling half the radius.

Labium about two thirds as broad at base as long; narrowed distad; apically truncate.

Sternum longer than wide, the length inclusive of caudal process being to width as 9:6.5 and the length only to level of anterior proximal corner of coxa IV being as 7:6.5.



Abdomen in outline broadly subovate.

Lower margin of furrow of chelicera with six teeth of which the two farthest from claw are much smaller and the first is smaller than the succeeding three.

All femora dorsally with a submedian spine and at distal end with one toward anterior side and there may be a smaller one in corresponding position on posterior side. Tibia I with a submedian pair of spines on ventral side and a single one on anterior side between middle and proximal end. Tibia II with a single submedian ventral spine; and tibiae III and IV unarmed. Metatarsus I with three pairs of ventral spines.

Femur of palpus with a spine in submedian position above; tibia with three long, almost bristle-like, spines, two toward mesal side above and one ectal in position; tarsus with numerous spines, the proximal ones long and slender, the distal ones shorter and stouter.

*Female.* Length, 7.5 mm. Length of cephalothorax, 3 mm.; width, 2.5 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2.4 mm.	3.25 mm.	2.1 mm.	1.1 mm.	8.85 mm.
Leg II	2.2	2.9	2	1.1	8.2
Leg III	2.2	2.2	1.6	1	7.0
Leg IV	2.4	2.9	2	1.25	8.55

*Locality.*—Tincochaca, 7,000 feet, August. (Type, M. C. Z. 161, one female).

While a number of species of *Auximus* have been described from Ecuador, only one was previously known from Peru, *A. funestus* (Keys.), a species differing rather widely from the present one in having its posterior row of eyes straight, in the sparser spining of legs, in the different form of epigynum as well as in color.

#### DICTYNA HESPERIA,<sup>1</sup> sp. nov.

#### Plate 8, fig. 8.

Thoracic part of carapace fuscous, yellow along edges; head testaceous. Legs and palpi yellow, the tarsi in part dusky. Sternum yellow, faintly dusky. Labium dusky yellow. Abdomen opaque yellowish white, venter covered with a broad, more or less dusky band, a more blackish area about the spinnerets; above there is a

<sup>1</sup> ἑσπέριος, western.



median dorsal accent shaped black stripe with point cephalad and base at middle; enclosing dorsal area is a dark band of elliptical form with a cross connection toward caudal end, also united with anterior band along middle line, and a network of finer dark lines connecting with the median dark mark elsewhere within the ellipse.

Posterior row of eyes a little recurved; a little longer than the anterior row; median eyes farther from each other than from the laterals; laterals equal to the medians. Anterior row of eyes in dorsal view recurved in such degree that a line tangent to anterior edges of laterals passes through the posterior fourth of medians; in anterior view the row is straight; median eyes but little smaller than the laterals, near their diameter apart and three fourths as far from the laterals. Area of median eyes somewhat trapeziform, the width anteriorly being less than that posteriorly in about ratio 5:6. Anterior lateral eyes their diameter from lower edge of clypeus.

Epigynum with openings widely separated, protected by laminae, (Plate 8, fig. 8).

Sternum much longer than wide (18:13).

Cribellum undivided as in most species.

*Female*. Length 3.25 mm. Length of cephalothorax 1.1 mm.; width .86 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	1.38 mm.	1.3 mm.	.9 mm.	.6 mm.	4.18 mm.
Leg II	1.3	1.12	.74	.48	3.64
Leg III	1.2	1	.7	.44	3.34
Leg IV	1.38	1.3	.86	.5	4.04

*Locality*.—San Miguel 6,000 feet, July. (Type, M. C. Z. 162, one female).

Four species, all based similarly upon females, have been previously described from Peru. The present species is most readily separated from these and other South American species through the different form of the epigynum, the eye relations, and the coloration.

## SCYTOTIDAE.

### LOXOSCELES RUFESCENS (Dufour).

*Scytodes rufescens* Dufour, Ann. gén. sci. phys., 1820, 4, p. 203, pl. 77, f. 5.

Numerous specimens of both sexes were taken at Huadquina in July and August, 5,000 feet. (M. C. Z. 163, 164). This species is widespread in both hemispheres.



## THOMISOIDES Nicolet.

Nicolet, Gay hist. Chile. zool., 1847?, pl. 1 Arachn., 1849, **3**, p. 352.

As Plate I of Nicolet's work on spiders in Gay's *Histoire de Chile* was issued and in Walckenaer's hands before the publication of volume four of the *Histoire naturelle des Insectes Aptères*, the species illustrated on that plate and named at the bottom must be dated at the latest from 1847 rather than from 1849 when the text was published, since the issuance of figures of this kind with accompanying names constitutes publication. *Thomisoides* is used in the legend of the plate in combination with specific names and must accordingly be regarded as having been established at the same time. Walckenaer's genus *Sicarius*, like his species *thomisoides*, was based upon the published plate of Nicolet's work, and I can see, therefore, no other way than to drop both *Sicarius* and *thomisoides* as clear synonyms.

## THOMISOIDES TERROSUS Nicolet.

Plate 9, fig. 6-10; Plate 10, fig. 1-3.

*Thomisoides terrosus* Nicolet, Arachn. pl. 1, fig. 9, Gay's Hist. Chile, 1847?,

Gay's Hist. Chile, 1849, **3**, p. 352, Arachn., pl. 1, fig. 9.

*Sicarius terrosus* Simon, Hist. nat. Araign., 1893, **1**, p. 271.

In alcohol the cephalothorax is reddish brown, the abdomen grey-brown, and the legs and sternum brown of lighter shade than carapace.

Cephalothorax wider than long; width across head decidedly less than half the greatest width; low; shorter than tibia I but longer than tibia IV. The margins and the anterior surface of the head bearing numerous short, stout, spiniform bristles which are distally blunt and toothed like those of the legs.

Sternum almost circular, equal in length and breadth (3.15 mm.) or very slightly wider than long; depressed behind at middle in front of caudal margin and giving the appearance of being deeply emarginate though the caudal edge at middle is really convexly rounded; with two or three rows of stiff bristles along the edge and smaller bristles arranged on radii with their free ends towards centre of sternum; between the bristles short fine hair.

Labium gradually narrowing from base distad; tip obtusely



rounded; about two thirds as wide at middle as long, length in measured specimen 1.6 mm., (Plate 9, fig. 8).

Endites very long, arched and meeting in front of labium in usual way. Endites and labium covered with stiff short hairs like those of sternum.

Claw of chelicera small; apparently less strongly curved than usual in the family; chitinous appendage rather large, overlapping apical portion of claw, (Plate 9, fig. 7, 9) covered with stiff bristles.

Clypeus very wide, the distance from lower edge to edge of anterior median eyes being 1.35 mm.

Anterior median eyes rather less than their radius from each other; six times their diameter from the anterior laterals. Anterior row of eyes seen from above slightly recurved, a line tangent to caudal edges of median eyes being tangent to anterior edges of the laterals. Lateral eyes of each side equal in size and clearly larger than the anterior median eyes, a little less than their diameter apart, (Plate 9, fig. 6).

Palpi lacking claw. Stridulating tubercles of palpus only four in number in specimen described. The stridulating plate of the chelicera, (Plate 9, fig. 7). Palpi covered with stiff bristles like those of mandibles, etc.

Claws of legs curved; each with a single row of usually 12-13 teeth, (Plate 9, fig. 10). The spines and bristles on legs and body with regular dark longitudinal ribs which under high magnification are seen to be serrated. The distal end of the spines is acute but that of the bristles is in the form of a crown of teeth, (Plate 10, fig. 3).

Bristles on legs short and stiff, spinescent, arranged in regular rows, the spines inserted in line with the bristles. On the femora are two rows of bristles below and three rows above, the sides being covered with bristles irregularly arranged. Patellae with five less regular rows above, of which the three median rows are best developed; below with irregular bristles. Tibiae, metatarsi, and tarsi with two rows above, two on each side, and two below. Fine short hair between the rows on all the joints, (Plate 10, fig. 2, 3).

The tibiae of all legs have six pairs of spines beneath and the metatarsi four or five pairs. On the anterior surface of tibiae I and II are five spines in lower row of bristles and four in the upper; tibia III has five in the lower and three in the upper; and tibia IV has four in the lower and one in the upper. On the posterior surface of tibia I there are six spines in the lower row of bristles and six in the upper; tibia II has six in the lower row and seven in the upper; and tibiae III and IV six in the lower and five in the upper. On the anterior surface



of all metatarsi there are four spines in the lower row of bristles and four also in the upper. On the posterior surface of metatarsus I there are four spines in the lower row and four in the upper; on metatarsus II there are four and three respectively; on III five and three; and on IV, four and three.

Abdomen, (Plate 10, fig. 1), covered with small scattered groups of short, curved, stiff bristles and over whole surface uniformly with very short hair.

Spinnerets small, dark brown, removed from end of abdomen in usual way. Colulus thin, pale, almost half as long as spinnerets.

*Female.* Length, 18.3 mm. Length of cephalothorax, 7.3 mm.; width, 7.6 mm.; width in front, 3.4 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	8 mm	10.5 mm.	5.8 mm.	3.8 mm.	28.1 mm.
Leg II	8.6	10.8	6.3	3.6	29.3
Leg III	8.5	10.0	5.7	3.8	28.0
Leg IV	8.2	9.8	5.8	3.8	27.6

Tibia I, 7.8 mm. Tibia IV, 7 mm.

*Locality.*—Santa Ana, 3,500 feet, August. (Type, M. C. Z. 165, female).

## DYSDERIDAE.

ARIADNA HOTCHKISSI, sp. nov.

Plate 10, fig. 4, 5.

Carapace dusky brown or fuscous, not adeolate. Sternum, chelicerae and coxae of palpi dusky, not areolate or only slightly so; labium darker, nearly black. Abdomen beneath dark grey; above obscurely mottled with partly confluent small areas of dusky purple, a more solid median longitudinal stripe at base; hairs long and short, numerous, dark.

Eyes large, the medians and laterals equal or very nearly so. Line formed by two anterior lateral eyes shorter than the posterior in ratio 17:15. Median eyes contiguous, their diameter or a little less from the laterals. Lateral eyes contiguous, (Plate 10, fig. 4). Clypeus equal in width to the diameter of an anterior lateral eye or a little narrower.

Chelicerae short; smooth.



Labium nearly four fifths as wide as long; strongly narrowed distad; apically obtusely rounded, the proximal notches long, (Plate 10, fig. 5).

Sternum long, the ratio of length to width being 85:53; caudal end obtusely angular.

Femur of leg I armed on anterior (inner) side with one large spine; patella unarmed; tibia armed ventrally with four pairs of uniform spines, not armed laterally; metatarsus armed ventrally with a double row of spines (6-6 or 6 + 7 in number) of which in each row the first three or four and the distal one are longer than the others. In leg II the femur and patella are unarmed; the tibia and metatarsus are armed like those of leg I. The femur and patella of leg III are also unarmed; the tibia is armed ventrally in the median line with two spines, one proximad of and one distad of the middle; the metatarsus is armed ventrally toward the caudal side with two spines, one median and one subbasal, and at distal end with three spines. Leg IV wholly unarmed as usual.

*Female.* Length 7 mm. Length of cephalothorax 2.8 mm.; width 2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2 mm.	2.6 mm.	1.3 mm.	.9 mm.	6.8 mm.
Leg II	1.8	2.2	1.2	.8	6.0
Leg III	1.7	1.8	1	.7	5.2
Leg IV	2	2.2	1	.8	6.0

Tibia I, 1.6 mm. long.

*Locality.*—Lucma, 7,000 feet, August. (Type, M. C. Z. 167, one female).

Named for H. Stuart Hotchkiss of New Haven, a patron of the expedition.

## CAPONIDAE.

### NOPS BELLULA, sp. nov.

Plate 10, fig. 6-8; Plate 11, fig. 1-3.

Carapace and sternum light orange-yellow; legs more lemon-yellow or with femora of legs I and II tinged with orange. Eyes on a black spot. Abdomen pale grey-green; dorsally at base with a small deep brown or blackish triangular spot of which the apex is cephalad, followed by a series of chevron marks of a color a little darker than that of the general surface, (Plate 11, fig. 1).



Pars cephalica rather broader and less convex along anterior margin than in related species.

Clypeus slanting.

Eyes large; five sixths their diameter apart, a little less than three times their diameter (25:9) from lower edge of clypeus. Eye-tubercle rather low but distinct, (Plate 10, fig. 7).

Sternum longer than wide in ratio 25:19; narrowing from middle caudad with the caudal end obtusely rounded, (Plate 10, fig. 6).

Labium subcordate; distally acute; basal notches short, relatively deep; a little longer than wide, the ratio being about 17:16, (Plate 10, fig. 8).

Coxae I and IV longer than others, subequal or I but slightly longer than IV. Trochanter IV longest, I next.

Claws of anterior legs with five long, stout teeth. An unpaired claw is present on anterior legs, this being rather long, parallel with paired claws, smooth. Membranous laminae below claws as in other species, (Plate 11, fig. 3). Membranous appendage at base of anterior tarsi and the membranous keel beneath anterior metatarsi as in other species of the genus. All tarsi distinctly clavate excepting the fourth which is but slightly so and more slender. The division of tarsus most complete in fourth legs in which the parts are flexible at joint. Hairs of tarsus all simple, none clubbed as *e. g.*, in *coccineus*, (Cf. Plate 11, fig. 2).

Inferior piece of lorum of pedicel as usual.

Inferior and median spinnerets in a recurved transverse row as in the other species. The superior spinnerets shorter than in most species, not so much exceeding those of the lower row.

*Female.* Length 6.7 mm.

	coxa	fem.	pat.	tib.	met.	tar.	total (excl. coxa)
Leg I	.76 mm.	1.6 mm.	.8 mm.	1.03 mm.	.84 mm.	.56 mm.	4.84 mm.
Leg II	.6	1.36	.8	.92	.8	.56	4.52
Leg III	.52	1.2	.68	.88	.8	.56	4.12
Leg IV	.72	1.6	.8	1.28	1.36	.72	5.76

*Locality.*—Ollantaytambo, 9,000 feet, July. (Type, M. C. Z. 168, one female).

This form differs from all other species of the genus, according to the published accounts, in having a large median claw on the anterior tarsi in addition to the paired membranous laminae. Simon, in discussing the Caponidae, says in regard to the inferior claw in this



family (Hist. nat. Araign., 1, p. 325) "la griffe inferieure est assez petite et toujours mutique; chez les Nops elle est remplacée aux paires antérieures par deux petites lames membraneuses." But since in the case of the present species both the claw and the laminae are present at the same time, we cannot look upon the development of the laminae as such a replacing. The median claw is higher than usual in position, being inserted on a level with and lying between the paired claws so that it is easily overlooked; it is quite possible, therefore, that it will be found in some degree of development in other species. The superior spinnerets seem to be relatively considerably shorter than usual. The color-pattern of the abdomen is distinctive. In our present state of knowledge, it is impossible to give a wholly satisfactory judgment as to the position and relationships of the present form.

## DRASSIDAE.

### DRASSODES sp.

An immature specimen of uncertain species was taken at Cuzco, 11,500 feet, in July. (M. C. Z. 169).

### DRASSODES ARAUCANIUS,<sup>1</sup> sp. nov.

Plate 11, fig. 4-8; Plate 12, figs. 1-2.

Carapace light brown or testaceous; eyes, excepting sometimes the posterior medians, ringed with black and the intervening area in some dusky. Chelicerae brown to dilute chestnut. Sternum and endites like the carapace; labium dark dusky brown to dusky chestnut. Legs light brown or testaceous, the anterior pairs darker distally. Tarsus of palpus abruptly darker than proximal joints. Abdomen clear brown-grey without markings, paler beneath than above. Carapace clothed with numerous fine greyish hairs, a large proportion of which are plumose, with coarser, black, more erect hairs sparsely intermixed. Sternum densely clothed with similar mostly plumose hairs and sparsely with coarser, more bristle-like, black hairs. Legs clothed with finer appressed plumose grey hairs, more erect, stiffer

<sup>1</sup> Araucania, a tribe of South American Indians.



simple grey hairs proportionately more numerous distad, and with numerous intermixed stiff black hairs. The abdomen is clothed with similar plumose grey pubescence and numerous longer stiff grey hairs with the black bristles more sparsely intermixed.

Posterior row of eyes longer than the anterior in the ratio 63:53. Posterior row of eyes moderately procurved; median eyes placed very obliquely, subelliptic (ratio of axes 11:8), half of their smaller diameter apart, about twice their diameter from the laterals and their long diameter or a little more from the anterior medians; laterals with diameter smaller than long diameter of medians (9:11) and slightly exceeding the lesser diameter (9:8). Anterior row of eyes in dorsal view a little recurved, in anterior view considerably procurved; median eyes subequal to the laterals, their diameter apart and less than their radius (three fifths) from the laterals; eyes their diameter from lower margin of clypeus. Anterior lateral eyes somewhat larger than the posterior laterals from which they are separated by less than the diameter of the former, nearer together than the anterior and posterior medians. Area of median eyes equal in length and breadth, longer in front than behind in ratio 29:25, (Plate 11, fig. 4).

Labium longer than wide in ratio 7:5; narrowing moderately distad, apically broadly obtusely rounded, (Plate 11, fig. 6).

Sternum longer than wide in ratio 13:9. Acutely pointed caudad, (Plate 11, fig. 5).

Leg I with femur above in median line with a distally bristle-like, but basally stout, subbasal spine and a submedian one, and with one on anterior side between middle and distal end; patella unarmed; tibia armed at distal end with one spine; metatarsus at base with two; metatarsus scopulate to base. Leg II with femur spined as in I with in addition a submedian one in line with the one on anterior surface and one in corresponding position on caudal side; patella unarmed; tibia ventrally with a distal and a submedian pair of spines and a single spine at base; metatarsus with a pair of spines at proximal end, scopulate to base. Leg III with femur spined as in II excepting for the addition of a subapical one (and sometimes a second one proximad of it) in the median dorsal line and another one in line with the one on the caudal side between middle and distal end, there being thus three or four median dorsal, two anterior, and two posterior spines; patella armed on the caudal side with one spine; tibia with three pairs of ventral spines, two in line on ventral part of anterior side, two in corresponding position on the posterior, one subdorsal



on anterior side and one subbasal toward caudal side of dorsal surface; metatarsus with three pairs of ventral spines, two spines in line on caudal and two in line on dorsal surface, and two pairs (apical and submedian) on dorsal surface; metatarsus not at all scopulate. Leg IV with femur armed above in median line with two spines, on caudal side toward distal end above with one (or exceptionally two close together) spine and on anterior with two in line (the distal of which may be doubled); patella with one spine on caudal surface; tibia with three pairs of ventral spines, two in line on caudal surface and three on the cephalic, the most proximal of the latter more ventral in position; metatarsus with three pairs of ventral spines (or one spine absent from subbasal pair), two (apical and submedian) on cephalic side, and two pairs and a single subbasal spine on caudal side; metatarsus not at all scopulate. Claws of leg I with five slender teeth, (Plate 12, fig. 2).

*Female.* Length 12 mm. Length of cephalothorax 5 mm.; width 3.8 mm.

	fem.	tib + pat.	met.	tar.	total
Leg I	3.6 mm.	4.4 mm.	2.1 mm.	1.3 mm.	11.4 mm.
Leg II	3	4.1	2	1.2	10.3
Leg III	3	3.2	2	1.2	9.4
Leg IV	3.7	5	3	1.9	13.6

Tibia I, 2.4 mm. Tibia IV, 3.1 mm.

*Locality.*—Cuzco, 11,500 feet, July 4. (Type M. C. Z. 170, female; paratypes, no. 171, females). Ollantaytambo, 9,000 feet, July. (M. C. Z. 327, several females).

#### APODRASSUS,<sup>1</sup> gen. nov.

Cephalothorax low, pars cephalica in profile descending moderately anteriorly, much narrowed in front; thoracic stria fine, distinct, moderate in length.

Eyes relatively large. Posterior row of eyes strongly procurved, the medians considerably farther from each other than from the laterals. Anterior row of eyes also rather strongly procurved; the medians the larger, widely separated from each other but very close

<sup>1</sup> ἄπο, away from, Drassus.



to anterior and also to posterior laterals. Lateral eyes on each side subcontiguous. Clypeus narrow, its width not exceeding the radius of an anterior lateral eye.

Labium wider than long.

Lower margin of chelicera with one tooth; upper with three of which the median is largest.

Legs slender; well spined; tarsi scopulate but not densely so.

Inferior spinnerets widely separated; median spinnerets moderate, cylindrical.

Genotype.—*Apodrassus andinus*, sp. nov.

Related to *Leptodrassus* Simon, but differing in the much narrower clypeus, more strongly recurved eye-rows, in having the posterior median eyes decidedly farther from each other than from the laterals, the tarsi moderately scopulate, and the inferior spinnerets widely separated instead of connivent.

APODRASSUS ANDINUS, sp. nov.

Plate 12, fig. 3-8.

Carapace and legs light brown, the carapace and femora slightly dusky. Sternum and coxae of legs beneath clearer, more testaceous. Abdomen beneath light brown, above darker, dusky brown.

Posterior row of eyes very strongly procurved, a line tangent to the anterior edges of the medians being nearly tangent to the posterior edges of the laterals; medians elongate (axes to each other as 8:5), set very obliquely, separated by a distance equal to the lesser diameter, closer to the laterals about three fifths as far; lateral eyes a little larger than the medians (long diameters about as 9:8), about half their radius from the anterior laterals to which they are subequal in size. Anterior row of eyes scarcely longer than the posterior; in dorsal view a little procurved, in anterior view strongly so, a line tangent to lower edges of medians passing through caudal third of laterals; medians circular with diameter larger than the long diameter of the laterals (10:9), three fifths their diameter apart, much closer both to the anterior and the posterior laterals; laterals separated from lower edge of clypeus by a distance equal to their radius or a little less, the medians by about four fifths their diameter, (Plate 12, fig. 5).



Sternum longer than wide in ratio 7:5 (Plate 12, fig. 3).

Labium somewhat wider than long (nearly as 8:7); distad of proximal third broadly, almost semicircularly rounded, but distally a little depressed, (Plate 12, fig. 6).

Tarsi III and IV a little curved, I and II straight. Anterior tarsi not densely scopulate, the scopular hairs of tarsi III and IV more sparse; metatarsi I and II with a few scopular hairs extending nearly to base, III and IV without any. Scopular hairs very broad and strongly clavate. Leg I with femur bearing two long spines in middorsal line (between middle and base and middle and distal end respectively) and one on anterior surface between middle and distal end; tibia with three pairs of ventral spines; metatarsus with one subbasal pair. Leg II with spines same as those of I. Leg III with femur bearing three spines along middorsal line, two on anterior side and two on posterior side; patella with a spine on anterior and also one on posterior surface; tibia on ventral surface with a pair of spines at distal end and two single ones in line more proximad, two on anterior and two on posterior surface, and one subbasal one on dorsal surface; metatarsus on ventral surface with a distal pair and three (or four?) more proximal ones rather irregularly arranged, a spine at distal end on each side and dorsally a median distal one, a submedian pair and a single subbasal one. Leg IV with femur armed with three spines along middorsal line, two on anterior side and one on posterior; patella with a spine on anterior and one on posterior side; tibia with two pairs of dorsal spines, the anterior spine of each pair much smaller than the caudal one, ventrally with one distal pair, a submedian pair and a single subbasal spine; metatarsus with two pairs of dorsal spines, (between middle and base and middle and distal end respectively), three on anterior side and two on posterior, on ventral surface with two at distal end, one toward middle and one toward base. Claw of leg I with seven long teeth, (Plate 12, fig. 7).

Inferior spinnerets widely separated, more than their diameter apart; spinning tubules very large, arranged in a semicircle.

Spermatheca large, broadly fusiform, densely chitinated and dark in color, showing distinctly through surface integument, the openings small. The integument over the spermatheca in type is torn so that its precise configuration cannot be made out, but its modifications seem to be very slight, (Plate 12, fig. 8).

*Female.* Length 6.2 mm. Length of cephalothorax 2.5 mm.; width 2 mm.



	fem.	tib.+pat.	met.	tar.	total
Leg I	2.1 mm.	2.4 mm.	1.6 mm.	1.1 mm.	7.2 mm.
Leg II	1.9	2.35	1.6	1.1	6.95
Leg III	1.65	2.0	1.4	.9	5.95
Leg IV	2.25	2.85	2.25	1.1	8.45

Tibia I, 1.55 mm. Tibia IV, 1.8 mm.

*Locality*.—Huadquina, 5,000 feet, July. (Type, M. C. Z. 172, female).

## PHOLCIDAE.

### HYPSORINUS,<sup>1</sup> gen. nov.

Eyes elevated on a tubercle. Anterior row of eyes strongly recurved; median eyes with radius one third more or less than that of the laterals, near together and only about their radius from laterals. Posterior row of eyes a little procurved, the space between medians in type only one and a third times their long diameter. Area of median eyes trapeziform, clearly longer than posterior width.

Abdomen short, strongly elevated, and in type distinctly higher than long.

Legs in both sexes without spines.

Chelicera in male with a short stout tooth near base of claw on upper surface, (Plate 14, fig. 3).

Tarsus of palpus much longer than the tibia; pointed distad but not abruptly more slender than tibia.

Genotype.—*Hypsorinus binghamae*, sp. nov.

This genus is most closely related to *Smeringopus* of Simon from which it is here separated chiefly because of the following differences:—the abdomen is high and subglobose instead of elongate and slenderly cylindrical; the tarsus of the female palpus is much longer than the tibia instead of abruptly much shorter and more slender; and the posterior row of eyes is procurved instead of recurved, while the anterior median eyes are much closer to the laterals.

### HYPSORINUS BINGHAMAE, sp. nov.

Plate 13, figs. 1–9; Plate 14, figs 1–7.

Carapace and sternum very light greyish brown, a darker median longitudinal stripe narrowing up the clypeus over the eye-area and

<sup>1</sup> ὕψος, top, ὄρεινός, mountaineer.



thoracic groove to the caudal margin where it is reduced to a mere line, the carapace elsewhere with scattered small dark dots. Legs dilute testaceous to nearly grey; femora toward distal end with two darker, somewhat reddish brown, annuli incomplete dorsally and with more indistinct dark cross-marks more proximad; patellae with a dark annulus over most of length; tibiae with three annuli, one sub-basal, one distad of middle, and one distal or with the dark color more diffused and no distinct annuli indicated. Abdomen dull grey, more or less closely mottled with very small, not strongly contrasting, silver spots, a clear narrow median stripe free from spots extending three fourths the distance to the caudal end; on each side of median stripe two or more pairs of dark dots of which one pair near the caudal and one near the anterior end are more conspicuous.

Eye-tubercle conspicuous, subdivided by a y-shaped furrow with the branches cephalad, the tubercle between them bearing the anterior median eyes and each lateral tubercle bearing two lateral and the one posterior median eye of the corresponding side. Anterior row of eyes strongly procurved both in dorsal and in anterior view as in *Smeringopus*; median eyes much smaller than laterals the diameter of which is somewhat more than 1.5 times greater, less than their radius apart and only their radius from the laterals. Posterior row of eyes a little procurved; median eyes smaller than the laterals (ratio of long diameters near 5:6), very close to laterals, once and a third their long diameter apart. Lateral eyes equal or nearly so, their radius or a little less apart. Area of median eyes in dorsal view trapeziform, narrower in front than behind in about ratio 25:43, longer than greatest width (ratio 7:6), (Plate 13, fig. 2).

Clypeus high, nearly twice as high as length of median eye area.

Cephalothorax convex and very high. Thoracic groove very deep, radial impressions distinct. Pars cephalica small, not elevated.

Sternum wider than long nearly in ratio 3:2.

Labium large, convexly rounded at tip, (Plate 13, fig. 3).

Paired claws with eight to twelve long teeth, (Plate 14, fig. 5). Unpaired claw with a single long tooth, (Plate 13, fig. 7). Bristles of legs with slender teeth near base, mostly two to four in number on one side but one or more may also be present on the other, while in a number near the claw the number of branches or teeth is much larger, (Plate 13, fig. 9; Plate 14, fig. 2). A feather-hair, of which a pair occur near claw of leg I, is represented, (Plate 14, fig. 1).

The abdomen is distinctly higher than long. The spinnerets are borne considerably farther forward beneath abdomen in the female than in the male, (*cf.* Plate 13, fig. 1).



*Male* (Type). Length 5.5 mm. Length of cephalothorax 2.3 mm.; width, 2.4 mm.

	fem.	tib.+pat.	met.
Leg I	10.8 mm.	12.2 mm.	16.2 mm.
Leg II	8.2	8.8	11.0
Leg III	6.5	7.0	8.8
Leg IV	9.0	9.0	11.8

*Female*. Length 5.5 mm. Length of cephalothorax 2.2 mm.; width 2.4 mm.

	fem.	tib.+pat.	met.
Leg I	10.8 mm.	11.8 mm.	14.5 mm.
Leg II	7.8	8.0	10.0
Leg III	6.3	6.3	8.2
Leg IV	8.8	8.8	11.0

(Because of the curling of the tarsi it is very difficult to determine their lengths accurately, so these are not given above).

*Locality*.—Huadquina, 5,000 feet, July. (Type, M. C. Z. 173, male; paratypes, M. C. Z. 174, one adult female and two immature specimens).

Named for Mrs. Alfreda Mitchell Bingham.

#### LITOPORUS ABERRANS, sp. nov.

Plate 14, fig. 8, 9; Plate 15, fig. 1-3.

Carapace dilute yellow, a deep brown or blackish median band extending from caudal margin across eye-area and down the clypeus to its lower edge, this band widening up the posterior declivity but of uniform width in front of this, enclosing a narrow paler longitudinal area between the eyes; a dark band extends on each side from the caudal end of the median band along the margin ectad and forward some distance in front of middle of length. Sternum brown, paler along borders. Legs brown, the femora each with a black annulus at distal end set off by a light ring adjacent to it on its proximal side, also somewhat darker at proximal end; patella dark; tibia with a dark annulus at each end; other joints not ringed. Abdomen with ground color whitish; above weakly suffused with blue and with deeper solid blue spots in a row each side of a middle stripe the row curving ectad at caudal end and not attaining the posterior end of abdomen; on each side a few less deeply colored spots; caudal surface



of abdomen with a large dark area of continuous dilute blue closely covered with deeper blue spots, this area reaching to the spinnerets; ventrally there is a moderately large quadrate area of brown in the genital region.

Posterior row of eyes with median eyes essentially contiguous with the laterals as usual, separated from each other by a distance somewhat greater than their diameter (9:7), smaller than the laterals (diameters as 7:10) which are about equal to the anterior laterals. In dorsal view the anterior row of eyes is distinctly procurved; in anterior view by their centres they are strongly procurved but with upper edges in a straight line; the median eyes are nearly contiguous, separated by a distance clearly less than their radius, separated from the laterals by a distance greater than their radius but less than their diameter, (Plate 15, fig. 1).

Chelicera of male without the usual tooth on the anterior face and also lacking a true carina toward base; inner chitinous edge bent outward at clypeal margin and showing as a dark chitinous line or ridge.

Labium broad, distally truncate, (Plate 14, fig. 8).

Sternum wider than long in ratio 6:5; the wide caudal margin between coxae of fourth legs convex, (Plate 14, fig. 8).

*Male.* Length 4 mm. Length of cephalothorax 1.5 mm. (to edge of clypeus); width 1.4 mm.

	fem.	tib.+pat.	met.
Leg I	5.2 mm.	6 mm.	6.2 mm.
Leg II	4.2	4.2	4.3
Leg III	3.2	3.1	4
Leg IV	4.6	5.	5

*Locality.*—Urubamba, 9,500 feet, July. (Type, M. C. Z. 175, one male).

Aberrant in its genus in lacking any distinct tooth or true carina on anterior face of chelicera but in other respects apparently conforming to the genus in its typical form. The abdomen is higher than usual.

## THERIDIIDAE.

### ARGYRODES VITTATUS Keyserling.

Spinnen Amerikas. Theridiidae, 1884, 2, pt. 1, p. 191, pl. 9, f. 114.

One female of this species from San Miguel, 6,000 feet, July. (M. C. Z. 176).



## ARGYRODES LUCMAE, sp. nov.

Plate 15, fig. 4-6.

Carapace pale yellow. Sternum dusky brown or blackish. Labium blackish, pale across tip. Endites yellowish with some dusky markings. Legs pale yellow or, especially the caudal pairs, proximally whitish. Abdomen covered with scales of shining silver over a pale yellow ground.

Abdomen moderately elongate; roundly elevated above toward base, (Plate 15, fig. 5).

Posterior row of eyes straight or very nearly so; medians about five sevenths their diameter apart, a little closer to the somewhat smaller laterals (6:7). Lateral eyes contiguous, subequal. Anterior row of eyes straight; medians their radius or slightly more apart, about half as far from the laterals which are smaller (diameters about as 6:7). Clypeus slightly narrower than the diameter of a median eye.

Labium wider than long (*cir.* 4:3); sides but little convex and moderately converging distad; distally widely truncate.

Sternum broadest across anterior end, rounded caudad and extended as a slender acute process between the fourth coxae; total length to the width about as 9:8, (Plate 15, fig. 4).

*Male.* Length 3.8 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	5 mm.	6.2 mm.	7 mm.	1.6 mm.	19.6 mm.
Leg II	3.2	3.7	3	1.1	11.0
Leg III	2.6	2.5	2	.9	8.0
Leg IV	3	2.2	2.3	1.0	8.5

Tibia I, 5.8 mm.

*Locality.*—Lucma, 7,000 feet, August. (Type, M. C. Z. 177, one male).

## THERIDION sp. a.

A young female of doubtful species from Lucma, 7,000 feet, August. (M. C. Z. 178).

## THERIDION sp. b.

An immature female from the Conservidayo River, August. (M. C. Z. 179).



THERIDION TOSUM,<sup>1</sup> sp. nov.

Plate 16, fig. 1-4.

Carapace and chelicerae pale testaceous; sternum, labium, and endites yellow; legs yellow except proximally above where similar to carapace; all these parts without special markings. Abdomen grey, a longitudinal wavy white line on each side of middle of dorsum the two lines converging to spinnerets; a few small light dots between the wavy lines caudally; otherwise the abdomen is unmarked.

Posterior row of eyes substraight or slightly recurved; eyes nearly equidistant, the medians being about their diameter apart and the same distance or slightly farther from the laterals. Posterior lateral eyes equal to the anterior laterals or very nearly so. Anterior row of eyes in front view straight; median eyes slightly smaller than laterals, to which they are closer than to each other, more than their diameter apart. Area of median eyes equal in width in front and behind, equal in length and breadth or slightly wider, (Plate 16, fig. 3).

Labium wider than long as usual; distally widely semicircularly rounded, (Plate 16, fig. 1).

Sternum longer than wide in ratio 6: 5, more narrowly attenuated, and rounded caudad than, *e. g.*, in the succeeding species, (Plate 16, fig. 2).

Anterior paired claw of leg IV with four teeth of which the most distal is very long and reaches about the same level as tip of claw; teeth of other claw shorter. Unpaired claw untoothed.

*Female.* Length 4.3 mm. Length of cephalothorax, 2 mm.; width, 1.47 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2.3 mm.	2.9 mm.	1.9 mm.	.9 mm.	8.0 mm.
Leg II	2	2.1	1.5	.7	6.3
Leg III	1.9	1.5	1.0	.6	5.0
Leg IV	2.9	2.2	1.9	.8	7.8

*Locality.*—Huadquina, 5,000 feet, July. (Type, M. C. Z. 180, one female).

## THERIDION LEGUIAI, sp. nov.

Plate 15, fig. 7-10.

Carapace on sides obscure olive-white, a broad black median longitudinal band over clypeus and eye-area and narrowing from there

<sup>1</sup> *Gosiute tosibil, tosa*, white or light colored.



caudad down posterior declivity of cephalothorax; lateral borders also black, the lateral bands confluent with the median one in front; clypeal margin pale. Sternum testaceous, broadly bordered with black. Labium and endites blackish. Chelicerae testaceous in front, darker, chestnut, distally. Legs black, conspicuously annulate with yellow or testaceous; femora with a broad light band proximally and a narrower one toward distal end; patellae with one subdistal annulus; tibiae with an annulus at proximal end and one between middle and distal end; metatarsi with annuli corresponding to those of tibiae; tarsi entirely light or light at the ends. Abdomen black; on dorsum toward caudal end in median line a row of three small light dots and in front of these two pairs of separated oblique light marks of which the anterior send a slender branch forward. Hairs of abdomen short, numerous.

Posterior row of eyes a little procurved; median eyes only slightly elongate and oblique, about seven tenths their longer diameter apart and nearly the same distance from the laterals; laterals equal in size to the medians, larger than the anterior laterals with which they are contiguous. Anterior row of eyes in dorsal view strongly recurved, the median eyes being carried considerably forward as usual, larger than the laterals (diameters as 11:7), a little more than their radius apart (six elevenths of diameter), only half as far from the laterals; in front view the row is straight or nearly so. Area of median eyes subquadrate, being very slightly wider in front than behind. Chelicerae much longer than the height of the clypeus, (Plate 15, fig. 8).

Labium wider than long in ratio 22:13; distally widely truncate.

Sternum subtriangular; longer than wide in ratio 6:5.5; caudal process obtusely rounded, (Plate 15, fig. 7).

Paired claw of leg I with seven or eight teeth of which the proximal ones are very short, (Plate 15, fig. 9).

Abdomen subglobose, smoothly rounded, with no irregularities or tubercles.

*Female.* Length, 5.1 mm. Length of cephalothorax, 2.2 mm.; width, 1.85 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	3.6 mm.	4 mm.	3 mm.	1.3 mm.	11.9 mm.
Leg II	2.3	2.8	2	1.2	8.3
Leg III	2	2	1.3	1	6.3
Leg IV	3.1	3	2.2	—	—

*Locality.*—Conservidayo River, August. (Type, M. C. Z. 181, one female).

Named for Mr. A. B. Leguia, former President of Peru.



GARRICOLA,<sup>1</sup> gen. nov.

Cephalothorax broadly ovate, much narrowed cephalad; front narrow, convex. Thoracic furrow transverse, wide, recurved.

Eyes of the posterior row procurved; subequal; the medians farther apart than from the laterals from which they are separated by much less than their diameter. Anterior eyes subequal, in a strongly procurved row, medians well separated but very close to the laterals. Area of median eyes quadrate, of equal width anteriorly and posteriorly.

Sternum as wide as or wider than long; posteriorly obtuse, with the coxae rather widely separated.

Labium not free; much wider than long, distally narrowed, convex.

Endites bent, conspicuously converging over labium which extends rather beyond the middle of their length.

Legs slender, of moderate length, clothed with slender bristles. Teeth of claws few, divaricate.

Genotype.— *Garricola sanctus*, sp. nov.

## GARRICOLA SANCTUS, sp. nov.

## Plate 16, fig. 5, 7.

Carapace and sternum dilute yellow. Legs dilute yellow, dusky especially distad. Abdomen grey.

Cephalothorax broad, subcircular in outline caudad, strongly narrowed cephalad. Eye-tubercle elevated. Thoracic furrow transverse, broad, recurved, (Plate 16, fig. 5).

Posterior row of eyes distinctly procurved; medians a little larger than the laterals, about three fourths their long diameter apart and about their radius from the laterals. Lateral eyes contiguous, scarcely differing in size. Anterior median eyes three fourths their diameter apart and about one half their radius from the laterals, which are of an equal size or nearly so; anterior row of eyes strongly procurved. Area of median eyes equal in length and breadth, of same width anteriorly and posteriorly; clypeus lower than length of chelicerae and a little wider than length of median eye-area (6:5), oblique, slanting cephalomesad.

Sternum convex and prominent; wider than long (10:9); broad

<sup>1</sup> Gosiute *garri*, mountain range, *cola*.



anteriorly and triangularly narrowing caudad, but truncate between the widely separated fourth coxae, (Plate 16, fig. 6).

Labium not free; distally strongly convexly rounded; much wider than long (*cir.* 7:4).

Abdomen subglobose. Spinnerets terminal, (Plate 16, fig. 5).

Bristles in comb of fourth tarsus eight or nine in number. Teeth of claws few, divaricate.

Epigynum proportionately large, (Plate 16, fig. 7).

Length of female, 3 mm.

*Locality*.—San Miguel, 6,000 feet, July. (Type, M. C. Z. 182, one female).

#### LATRODECTUS MACTANS (Fabricius).

*Aranea mactans* Fabr., Ent. syst., 1775, 2, p. 410.

A species occurring widely in the western hemisphere from New England to Terra del Fuego.

*Localities*.—Ollantaytambo, 9,000 feet, July 21. (M. C. Z. 183, five females and one male). Cuzco, 11,500 feet, July 12. (M. C. Z. 184, two females).

#### LITHYPHANTES NIGROFEMORATUS Keyserling.

Spinnen Amerikas. Theridiidae, 1884, 2, pt. 1, p. 139, pl. 6, f. 87.

A species previously known from Monterico in Peru and from Guatemala.

*Localities*.—Huadquina, 5,000 feet, July. (M. C. Z. 185, one female). Cuzco, 11,500 feet, July. (M. C. Z. 186, one female).

#### ENOPLOGNATHA sp.

A young female of uncertain species from Tincochaca, 7,000 feet, July. (M. C. Z. 187).

#### ENOPLOGNATHA PERUVIANA, sp. nov.

Plate 16, fig. 8–11; Plate 17, fig. 1–2.

Carapace and legs light brown or testaceous; sternum darker, of somewhat chestnut cast. Abdomen over anterior and caudal ends



and over upper part of sides dark, somewhat greyish black, a wavy or zig-zag light line dividing the dark along the upper part of the dark area of each side; dorsum light, the light area divided by a median longitudinal stripe formed by two contiguous triangular areas of which the apices are cephalad; lower portion of sides lighter, crossed by several more or less obscure light lines; median portion of venter dark, a light longitudinal line on each side. Spinnerets light testaceous or yellow.

Posterior row of eyes a little procurved; median eyes much the largest of all, elongate, long axis paralld with that of body, only about one third their long diameter apart, much farther, about four fifths their diameter, from the laterals; laterals about one third their diameter from the anterior laterals which are considerably smaller. Anterior row of eyes straight; median eyes distinctly smaller than the laterals (diameters about as 11:13), their radius apart and only their diameter from the laterals. Area of median eyes longer than wide (9:8), wider behind than in front not quite as 8:7, (Plate 17, fig. 1).

Labium as usual much wider than long (ratio 11:8); semi-circularly rounded distad, (Plate 17, fig. 2).

Sternum subtriangular, narrowed caudad to a slender process extending between coxae of last legs, (Plate 16, fig. 8).

Paired claws with numerous long teeth, the tips of which are in a straight line, these on leg I numbering ten or eleven, (Plate 16, fig. 9). Unpaired claw with a single small denticle, (Plate 16, fig. 10).

*Female.* Length, 8 mm. Length of cephalothorax, 3 mm.; width 2.4 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	3 mm.	3.6 mm	2.2 mm.	1 mm.	9.8 mm.
Leg II	2.6	3	2	.9	8.5
Leg III	2.3	2.9	1.8	.9	7.9
Leg IV	3.1	3.6	2.2	1.2	10.1

*Locality.*—Urubamba, 9,500 feet, July. (Type, M. C. Z. 188, female; paratype, M. C. Z. 189, 2 females).

#### ENOPLOGNATHA DUBIA, sp. nov.

Plate 17, fig. 3.

Carapace dilute testaceous, a blackish median longitudinal stripe over stria thoracica, this becoming wider and more dilute cephalad



toward eyes; lateral margins dusky. Sternum dusky testaceous, more blackish caudad. Labium blackish; endites paler, testaceous. Legs testaceous; the femora with three wide dusky annuli; patellae dusky around distal end and tibiae with three dark rings, the annuli of all joints most distinct on anterior legs. Abdomen somewhat pale testaceous over sides; above a narrow, solid black, foliate mark over entire length, the edges wavy and bordered on each side by a distinct white line; venter with a black longitudinal stripe over entire length which narrows somewhat from anterior end caudad.

Posterior row of eyes straight; median eyes a little smaller than the laterals (diameters about as 7:8), a little less than their diameter apart and a little more than their diameter from the laterals. Lateral eyes contiguous, subequal. Area of median eyes of nearly equal length and breadth; of same width in front as behind. Anterior row of eyes straight; median eyes their diameter apart, considerably nearer to the laterals (near their radius). Clypeus of nearly same width as area of median eyes, but not much more than half as wide as the length of the chelicerae.

Labium about three fourths as long as wide; the distal margin convex.

Sternum not quite five sixths as wide as long; process between posterior coxae distally rounded, not acute.

*Female.* Length, 5.2 mm. Length of cephalothorax, 2 mm.; width, 1.6 mm.

*Locality.*— Sorontoy, 7,000 feet, September. (Type, M. C. Z. 190, one female).

## LINYPHIIDAE.

ERIGONE TAIBO,<sup>1</sup> sp. nov.

Plate 17, fig. 5.

Carapace, sternum, mouthparts, palpi, and legs brownish black. Abdomen yellowish white; epigynum and spinnerets blackish.

Posterior row of eyes a little recurved; eyes equidistant, the medians one and two thirds their diameter apart. Lateral eyes contiguous, the anterior the larger. Area of median eyes wider behind than in front in the ratio 10:7; about equal in length and greatest width.

<sup>1</sup> Gosiute *taibo*, a white person.



Anterior row of eyes slightly procurved; median eyes two thirds their diameter apart, one and two thirds or more their diameter from the laterals; median eyes nearly four times their diameter from lower margin of the clypeus.

Carapace smooth; not marginally dentate.

Lower margin of furrow of chelicera with three or four teeth of which the one nearest the claw is double or bifid.

Length of female 3.5 mm.

*Locality*.—Urubamba, 9,500 feet, July. (Type, M. C. Z. 191; paratypes M. C. Z. 192, three females).

ERIGONE NIWINA,<sup>1</sup> sp. nov.

Plate 17, fig. 4.

Carapace, sternum, and coxae of legs light red or dilute chestnut. Legs distad of coxae dusky brown or blackish. Entire abdomen grey-black.

Carapace smooth.

Posterior row of eyes straight; median eyes their diameter apart, a little farther from the laterals (*cir.* one and a fifth). Lateral eyes on each side subcontiguous, the anterior distinctly the larger. Area of median eyes wider behind than in front in the ratio 11:7; slightly longer than the greatest width (12:11). Anterior row of eyes slightly procurved; median eyes smaller than the laterals in about ratio 3:4, two thirds their diameter apart, one and two thirds their diameter from the laterals and four times their diameter from the lower margin of clypeus.

Sternum of the usual general form; equal in length and breadth or slightly wider.

Upper margin of furrow of chelicera typically with a triple or trifid tooth nearest claw and two isolated teeth; lower margin with five teeth.

Epigynum of same general form as that of *E. taibo*, (Plate 17, fig. 4).

Length of female 3.5–4 mm.

*Locality*.—Urubamba, 9,500 feet, July. (Type, M. C. Z. 193, female; paratype, M. C. Z. 194, one female).

<sup>1</sup> Gosiute *niwina*, an Indian.



OEDOTHORAX MELACRA,<sup>1</sup> sp. nov.

Plate 17, fig. 6, 7.

Carapace and legs light brown or the latter somewhat more yellowish, the former dusky anteriorly and along lateral edges. Sternum black. Abdomen typically pink, more rarely brown or only faint pinkish tinge; tip of abdomen about bases of spinnerets black; epigynum black.

Posterior row of eyes straight; eyes equal in size; median eyes but little more than their radius apart, three fourths their diameter from the laterals. Lateral eyes contiguous, equal in size or the anterior, but slightly larger. Anterior row of eyes straight or very slightly recurved; median eyes with diameter three fourths that of the laterals, not fully their radius apart, two thirds their diameter from the laterals, three times their diameter from the lower edge of clypeus. Area of median eyes wider behind than in front in ratio 10:7.

Carapace of male smooth, without processes.

Chelicera of male with a rather long, acute process or tooth near middle of length on anterior side, this directed anteroventrad.

Sternum with process between posterior coxae with sides convex, the process widening a little distad of its middle and distally truncate.

Tibia with two spines on outside at distal end on a common base.

*Locality*.—Cuzco, 11,500 feet, July. (Type, M. C. Z. 195, male; paratypes M. C. Z. 196, three females).

OEDOTHORAX ORINUS,<sup>2</sup> sp. nov.

Plate 17, fig. 8.

Carapace and legs light brown. Sternum dusky. Abdomen dark grey; a median longitudinal black line; caudal portion with several black chevron-marks of which the more anterior are crossed by the median line.

Carapace smooth, without teeth.

Posterior row of eyes very slightly procurved; eyes subequal; median eyes three fifths their diameter apart and the same distance, or very nearly so, from the laterals. Lateral eyes on each side con-

<sup>1</sup> μέλας black, ἄκρα, tip.

<sup>2</sup> ὄρεινός, mountaineer.



tiguous, equal. Quadrangle of median eyes wider behind than in front in the ratio 6:5, equal in length and breadth or scarcely longer. Anterior row of eyes straight or but very slightly recurved; median eyes smaller than the laterals (diameters about as 4:5), one fourth their diameter apart, their radius from the laterals, two and a half times their diameter from the lower margin of the clypeus.

Sternum equal in length and width or slightly wider; the intercoxal caudal process narrow.

Upper margin of furrow of chelicera typically with four teeth of which the three nearest the claw are long and conical or with the one nearest claw smaller, the fourth much smaller than others; sometimes only three teeth of which the one nearest claw may be bifid.

*Locality*.—Cuzco, 11,500 feet, July. (Type, M. C. Z. 197, female; paratypes, M. C. Z. 198, two females).

TUTAIBO,<sup>1</sup> gen. nov.

Cephalothorax short; broadly ovate; frons obtuse and moderately wide.

Posterior row of eyes substraight or weakly recurved; median eyes farther apart than from the laterals, distinctly more than their diameter apart. Anterior row of eyes decidedly procurved, its eyes subequidistant. Area of median eyes wider than long and wider behind than in front.

Legs slender; anterior tarsi shorter than the metatarsi.

Frons without special process in the male.

Tibia of palpus in the male with a conspicuous dorsal spine.

Genotype.—*Tutaibo debilipes*, sp. nov.

TUTAIBO DEBILIPES,<sup>2</sup> sp. nov.

Plate 17, fig. 9–10.

Carapace and sternum black. Legs black or blackish brown, somewhat paler distally. Abdomen entirely shining black.

Posterior row of eyes slightly recurved; median eye a little more than once and a half their diameter apart, only about their diameter from the laterals. Lateral eyes on each side elevated on a common

<sup>1</sup> Gosiute *tutaibo*, a negro.

<sup>2</sup> *debilis*, feeble, *pes*, foot.



tubercle, contiguous, subequal. Quadrangle of median eyes wider behind than in front in the ratio 13:11, and wider than long in the same ratio or nearly so. Anterior row of eyes conspicuously pro-curved; eyes subequal; median eyes two thirds their diameter, or slightly more, apart and the same distance from the laterals, three and a half times their diameter from lower margin of clypeus (male).

Sternum with process between posterior coxae moderately wide, the distal margin a little incurved.

Tibia of male palpus with a stout, acutely pointed, subconical process from dorsal surface near the proximal end.

Length of male 2.2 mm.; of female, 3 mm.

*Locality*.—Huadquina, 5,000 feet, July. (Type, M. C. Z. 199, male; paratypes M. C. Z. 200, one male, five females).

## ARGIOPIDAE.

### TETRAGNATHA TINCOCHACAE, sp. nov.

Plate 18, fig. 2, 3.

Carapace and chelicerae yellowish, a black marginal line on each side and a dusky median longitudinal stripe which widens and becomes more diffuse upon the head. Sternum dusky brown or blackish. Legs yellow, either unmarked or with femora and tibiae of anterior pairs darker at distal ends and patellae also more or less darkened. Ground color of abdomen silvery white as usual, overlaid with a network of dark lines; venter with a median longitudinal brown stripe; a narrow black stripe along each side expanded near its middle into a larger spot; typically with a fine more or less broken longitudinal black line on each side of dorsum just above the lateral stripe; dorsum with a median longitudinal grey line giving off side branches as usual.

Posterior row of eyes (in female) conspicuously recurved as usual; median eyes twice their diameter apart, nearly same distance from the laterals. Lateral eyes separated by about their diameter, their tubercles touching at base. Area of median eyes wider behind than in front in ratio 6:5; shorter than wide (5:6), the length equalling the width at anterior end. Anterior row of eyes recurved; median eyes equal to the posterior medians or scarcely smaller, once and a half their diameter apart and twice their diameter or more from the laterals.



Chelicera of male with fang having a nodule or cusp at base; the conspicuous dorsal spine well removed from the line of teeth; upper row of teeth with the second tooth from claw; the large tooth, conspicuously long and stout, six teeth proximad of large tooth. Tooth nearest fang on lower margin the largest, the second small. Chelicera of female lacking the dorsal spine; teeth of upper margin similar to those of the male but the tooth nearest fang more reduced and the "big" tooth shorter, (Plate 18, fig. 2).

Legs with rather numerous spines on the femora, these equal in length to diameter of joint or but little longer; spines of more distal joints fewer but proportionately longer.

*Male.* Length 6.1 mm. Length of cephalothorax 2.1 mm.; width, 1.4 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	6 mm.	6.8 mm.	5.8 mm.	1.8 mm.	19.4 mm.
Leg II	4.2	4.2	3.6	1.1	13.1
Leg III	2.3	1.6	1.5	.9	6.3
Leg IV	4	3.3	3	1.1	11.4

*Locality.*—Tincochaca, 7,000 feet, August. (Type, M. C. Z. 201, male; paratypes, M. C. Z. 202, three females).

#### TETRAGNATHA SCOPUS,<sup>1</sup> sp. nov.

Plate 18, fig. 1.

Carapace and chelicerae light brown to testaceous. Legs brownish yellow to yellow. Sternum from dusky yellow to dusky brown. Abdomen with ground-color silver-white covered with a fine network of grey. A longitudinal band over the venter in which the light dots are much reduced and almost obliterated limited on each side by a more silvery line on the outside of which is typically an irregular line of dark grey or blackish. Dorsum of abdomen lighter than sides and venter; a middorsal longitudinal grey line presenting several uneven pairs of branches extending in a caudoectal direction, in most specimens a large dark brown or black spot on each side near middle of length contiguous with a dark stripe along each side.

Abdomen conspicuously broadened and gibbous in front; about 2.7 times longer than the greatest width; dorsal line convex.

<sup>1</sup> σκοπός, a watcher.



Posterior row of eyes recurved as usual; median eyes near two and two fifths their diameter apart and about the same distance from the laterals. Lateral eyes their diameter apart, their tubercles in contact at base. Anterior row of eyes slightly procurved; median eyes once and a half their diameter apart, twice their diameter from the laterals. Area of median eyes much wider behind than in front (ratio 5:4).

Upper margin of furrow of chelicera with six (or five) teeth of which the one nearest the claw is much the largest; this separated from the second by a wide space, the second, third, and fourth about equal in size and spacing, the two most proximal smaller. Lower margin with four teeth equally spaced but with the first considerably largest as in the upper row, (Plate 18, fig. 1).

Legs with the spines of the distal joints long, slender, and sub-appressed, clearly longer than in the succeeding species, *T. quechua*.

*Female*. Length 7.7 mm. Length of cephalothorax 2 mm.; width 1.6 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	4.9 mm.	5.1 mm.	4.2 mm.	1.2 mm.	15.4 mm.
Leg II	3.2	3.3	3.8	1	11.3
Leg III	1.7	1.7	1.2	.6	5.2
Leg IV	3.1	3	2.2	1	9.3

Tibia I, 4.2 mm. Tibia IV, 2.3 mm.

*Locality*.—Conservidayo River, August. (Type, M. C. Z. 203, female; paratypes, M. C. Z. 204, numerous specimens, chiefly immature males and females).

#### TETRAGNATHA QUECHUA,<sup>1</sup> sp. nov.

Plate 18, fig. 4.

Carapace and chelicerae light brownish yellow. Sternum somewhat dusky yellow. Legs yellow, femora, and tibiae darker at the distal ends but legs not truly annulate. Abdomen above silvery white in numerous spots separated by a close network of fine grey lines; a median longitudinal grey line throughout length, this widest at the anterior end and giving off a principal pair of branches in a caudo-

<sup>1</sup> The Quechuas are the indigenous people of Peru and Ecuador.



lateral direction at about one fourth length from anterior end; on caudal half on each side a row of four moderately large dark dots. Venter of abdomen with ground-color and network like dorsum but darker; a narrow median longitudinal stripe solid grey, a darker line along border of venter on each side.

Posterior row of eyes strongly recurved; median eyes about two and one fifth their diameter apart and about three times their diameter from the laterals. Lateral eyes on each side separated by their diameter, their tubercles distinct but contiguous at base or nearly so. Anterior row of eyes recurved as usual; median eyes equal in size to the posterior medians, one and a fifth their diameter apart and more than three times their diameter from the laterals. Area of median eyes much wider behind than in front, the ratio being 11:9, slightly wider than long.

Upper margin of furrow of chelicera in female with nine teeth; of these the first and third from the fang are the largest and are separated by a wide space in which the much smaller second tooth lies, (Plate 18, fig. 4). Teeth of lower margin with nearly the same arrangement as those of the upper.

Abdomen long and slender, somewhat more than four times longer than the greatest width, narrowly rounded caudad and gradually widening cephalad; anterolateral corners subrectangular, not gibbous.

Legs with few spines of which those on femora are shorter than the diameter of the joint and those on the more distal joints are longer. Hairs more numerous on distal joints, somewhat oblique, of moderate length.

*Female.* Length 11 mm. Length of cephalothorax 3 mm.; width, 1.9 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	8.1 mm.	9.6 mm.	9.1 mm.	2.1 mm.	28.9 mm.
Leg II	5.3	5.3	5	1.5	17.1
Leg III	3.1	2.2	2.2	1	8.5
Leg IV	5.6	5.6	5	1.3	17.5

Tibia I, 8.8 mm. Tibia IV, 4.8 mm.

*Locality.*— Sorontoy, 7,000 feet, September. (Type, M. C. Z. 205, female).

#### TETRAGNATHA sp.

*Locality.*— San Miguel, 6,000 feet, July. (M. C. Z. 328, immature).



## LEUCAUGE MARIANA (Keyserling).

*Meta mariana* Keyserling, Verh. Zool. bot. ges. Wien, 1880, **30**, p. 560, pl. 16, f. 10.

*Argyropeira mariana* Keyserling, Spinnen Amerikas. Epeiridae, **4**, 1893, p. 345, pl. 18, f. 10.

*Locality*.—Conservidayo River, August. (M. C. Z. 211, one female). Previously known from Amable Maria and Lima, Peru.

## LEUCAUGE IDONEA O. P. Cambridge, var.

*Argyropeira idonea* O. P. Cambridge, Biol. Cent. Americana, 1889, **1**, p. 4, pl. 1, f. 7.

*Locality*.—Panama, June. (M. C. Z. 212, three females).

## META EXPLORANS, sp. nov.

## Plate 18, fig. 5.

Carapace yellow with a brown ocellate spot on each side of head, a brown line from each spot extending to the thoracic groove. Sternum black. Legs brown, typically with femora marked with one or two dark annuli at distal end; patellae with one dark annulus; tibiae with three dark annuli and metatarsus with two. Sides of dorsum of abdomen silvery white covered with a network of fine dark lines, the median portion crossed by a rather narrow dark band extending from spinnerets to anterior third or fourth of length, widening cephalad, its lateral edges wavy and the anterior margin arcuate and in front of it often an inverted v-shaped mark; sides and anterior face of abdomen dusky but showing the same areolation as the lateral portions of dorsum; venter of abdomen with a median longitudinal blackish brown band between spinnerets and genital furrow, this bordered on each side by a white, finely areolated stripe.

Posterior row of eyes slightly recurved; median eyes five sixths their diameter apart, one and a third their diameter from the laterals. Lateral eyes on each side contiguous; anterior with diameter exceeding that of posterior in ratio 7:5. Anterior row of eyes recurved; median eyes equal to the posterior medians, two thirds their diameter apart, once and a half their diameter from laterals. Median eyes once and



a third their diameter from the lower edge of clypeus. Area of median eyes wider behind than in front in ratio 4:3, scarcely wider than long.

Sternum triangular, the caudal apex narrowly truncate between last coxae. Nearly equal in width and length or scarcely longer (25:24). Lower margin of furrow of chelicera with four teeth of which the end ones are longer than the two intervening.

Length of female 5.5 mm.

*Locality*.—Conservidayo River, August. (Type, M. C. Z. 206; paratypes, M. C. Z. 319, fifteen specimens). Tincochaca, 7,000 feet, August. (M. C. Z. 207, two immature specimens).

### ARGIOPE ARGENTATA (Fabricus).

*Aranea argentata* Fabr., Ent. syst., 1775, 2, p. 414.

A very widespread species in tropical and subtropical portions of the western hemisphere, occurring from the southern United States to Patagonia.

*Localities*.—Panama, June. (M. C. Z. 208, one immature female). Huadquina, 5,000 feet, July. (M. C. Z. 209, one female).

### GEA PANAMENSIS, sp. nov.

#### Plate 19, fig. 8.

Carapace brown with the sides dusky. Sternum blackish at sides, a median longitudinal stripe yellow. First pair of legs with femora, patellae, and tibiae black, the tibiae each with two narrow pale rings; metatarsi yellow, with three black annuli; tarsi yellow. Second legs similar to the first but femora mostly yellow marked with black especially distad, the third legs being like the second. Fourth legs colored like the first, the femora being more nearly entirely black than that of second or third. Abdomen above with a dark, wavy edged folium-mark embracing a pale sagittate area in the anterior portion which is limited by a dark longitudinal line; venter with a black median longitudinal stripe which widens caudad to spinnerets limited by a yellow line.

Posterior row of eyes very strongly procurved; median eyes twice their diameter apart or nearly so. Lateral eyes contiguous, the posterior on each side much the larger, its diameter being about three



times that of the anterior. Anterior row of eyes a little procurved; median eyes carried forward on a conspicuously bulging tubercle, six sevenths their diameter apart, distinctly larger than the posterior medians and much larger than the laterals. Area of median eyes wider behind than in front in about ratio 10:9. Clypeus viewed in projection directly from in front distinctly narrower than anterior median eye.

Sternum subtriangular, acutely pointed caudad. Winder than long in about ratio 22:19.

Labium with apical portion subtriangular as usual. Endites typical.

Spines of legs few, moderate in length.

*Locality*.—Panama, June. (Type, M. C. Z. 210, one male).

ACACESIA PERUVIANA, sp. nov.

Plate 18, fig. 6.

Carapace brown. Sternum a paler brown. Legs brown, with the femora of first pair black except at ends, the femur of leg II also dark except proximally, the femora of posterior pairs dark at distal end only. Abdomen above with a dusky or blackish subtriangular mark or folium with wavy edges, this area embracing a wavy edged sagittate mark in its anterior half much as in *foliata*; but the folium narrower and more elongate; venter marked with a deep black median longitudinal stripe from the epigynum to the spinnerets, this narrowing moderately caudad.

Median eyes elevated on a conspicuous rounded tubercle projecting dorsocephalad. Posterior row of eyes strongly recurved; median eyes facing ectad on tubercle, once and a half their diameter apart or nearly so. Lateral eyes not elevated on a tubercle, separated by more than their radius, the anterior one the larger. Anterior row of eyes substraight; median eyes a little smaller than the posterior medians, nearly twice their diameter apart. Area of median eyes slightly wider than long, of equal width anteriorly and posteriorly. Sternum with a short triangular process at caudal end; longer than wide in ratio 6.5:4.5.

Teeth of lower margin of furrow of chelicera three, these small well separated.

Legs with spines of tibiae few, very slender, more sparse on the metatarsi. Anterior legs much longer than the posterior.



Cephalothorax with head strongly narrowed. Abdomen more nearly strictly rhomboidal than in *foliata*.

Length of female 6.7 mm.

*Locality*.—San Miguel, 6,000 feet, July. (Type, M. C. Z. 213, one female).

Among other features this species would seem to be clearly separated from *foliata* by the presence of the conspicuous black band along the venter.

### EUSTALA FUSCOVITTATA (Keyserling).

*Epeira fusco-vittata* Keyserling, Sitzungsab. Naturw. ges. Isis, 1863, p. 129, pl. 6, f. 18.

*Cyclosa thorelli* McCook, Amer. spiders, 1893, 3, p. 228, pl. 19, f. 11.

*Eustala caudata* Banks, Proc. Cal. acad. sci., 1898, 1, p. 255, pl. 15, f. 5.

*Eustala fusco-vittata* O. P. Cambridge, Biol. Cent. Americana, 1904, 2, p. 505, pl. 48, f. 3, 4.

A species previously known from Mexico and the West Indies south to Brazil and Paraguay.

*Locality*.—Panama, June. (M. C. Z. 214, three females).

### EUSTALA ANDINA, sp. nov.

Carapace with thoracic part pale yellow, the head light brownish. Sternum light brown, a pale median longitudinal line. Legs testaceous; femora with a broad dark band at distal end, a broader median one, and an indistinct proximal one; patellae dusky, black at distal end; tibiae with three broad dark rings not sharply delimited; metatarsi also with three dark rings; tarsi dark except at proximal end, the mesal portion darkest. Abdomen deep brown in an area covering most of the dorsum, this area with sides concave and converging caudad, the edges wavy, dark, and bordered with yellow; sides dusky or brownish over a yellowish background. Median portion of venter more blackish, enclosing a yellow median dot midway between the genital furrow and the spinnerets and a pair of these nearer the spinnerets.

Abdomen subtriangular with the anterior corners rounded and the caudal end narrowly truncate, this truncate caudal end presenting three low elevations or crenulations.

Posterior row of eyes conspicuously recurved; median eyes once and a fourth their diameter apart and about three times their diameter



from the laterals. Lateral eyes equal in size, their radius or scarcely more apart. Anterior row of eyes recurved; median eyes larger than the posterior median eyes (11:8.5), just their diameter apart, farther from the laterals. Area of median eyes wider in front than behind in the ratio 6:5 and wider in front than long in the ratio 10:9.

Lower margin of furrow of chelicera with three teeth of which the most proximal is largest; upper margin with three teeth of which the median is much the stoutest and longest.

Sternum with caudal portion narrowly triangular as in the succeeding species, and the caudal process similarly narrowly truncate.

Spines of legs sparser, short and slender.

*Female.* Length, 8 mm. Length of cephalothorax, 3.2 mm.; width, 2.7 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	4 mm.	4.2 mm.	3 mm.	1.1 mm.	12.3 mm.
Leg II	3.3	4	2.6	1	10.9
Leg III	2.3	2.2	1.3	.9	6.7
Leg IV	3.7	4	2.6	1.1	11.4

Tibia I, 2.8 mm. Tibia IV, 2.2 mm.

*Locality.*—Huadquina, 5,000 feet, July. (Type, M. C. Z. 215, one female, not quite adult).

#### EUSTALA MONTICOLA, sp. nov.

Plate 18, fig. 7.

Cephalothorax low, only moderately convex; head low; thoracic groove deep, longitudinal. Abdomen in outline from above subtriangular.

Carapace yellow of very dilute brownish tinge. Sternum and coxae of legs beneath yellow. Legs testaceous, the femora with a wide dusky ring at distal end and one near middle with in some legs a narrower one near base, these rings in the female type not sharply limited, the dusky color being more or less diffused, but in the male more sharply defined; tibiae with three broad dusky rings between which the dark color may also be more weakly diffused; metatarsi of posterior pairs with three annuli of which the proximal one is least distinct, these less clearly defined on the anterior pairs; tarsi with a submedian dark annulus. Abdomen above dark greyish brown, embracing numerous fine dots and spots of white, several pairs of transverse dark lines running from outside a little caudad of mesad



but not meeting at middle, the median dorsal line being occupied by a fine dark line which presents short lateral branches; in the male there are caudad on each side two large proximate white spots and farther forward two short white marks. General background of venter of abdomen pale; just back of epigynum a median white spot on each side of which is a black spot of about equal size and farther laterad a longitudinal fine black line which reaches to a dusky area about the spinnerets.

Posterior row of eyes strongly recurved; median eyes a little more than their diameter apart, nearly three times their diameter from the laterals. Lateral eyes on each side their radius apart, scarcely differing in size. Anterior row of eyes recurved; median eyes a little smaller than the posterior medians (diameters as 7:8), twice their diameter apart, and between two and a half and three times their diameter from the laterals. Area of median eyes wider in front than behind in ratio 25:22; wider in front than long (25:22).

Sternum longer than wide in about ratio 5:4. Caudally triangular, the tip narrowly truncate.

Lower margin of furrow of chelicera with three stout conical teeth; upper margin also with three.

Legs well spined, the spines moderate, appressed, blackish.

*Female*. Length, 7.3 mm. Length of cephalothorax, 3.5 mm.; width, 2.9 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	4.1 mm.	5.2 mm.	3 mm.	1.2 mm.	13.5 mm.
Leg II	4	4.7	3	1	12.7
Leg III	2.3	2.1	1.2	1	6.6
Leg IV	4.6	3.9	2.2	1.1	11.8

Tibia I, 3.8 mm. Tibia IV, 2.3.

*Locality*.—San Miguel, 6,000 feet, July. (Type, M. C. Z. 216, female; paratype, M. C. Z. 217, immature male).

#### ARANEA sp. a.

An immature female from Huadquina, 5,000 feet, July. (M. C. Z. 218).

#### ARANEA sp. b.

An immature female of a second species also from Huadquina. (M. C. Z. 219).



## ARANEA sp. c.

An immature female of uncertain species from San Miguel, 6,000 feet, July. (M. C. Z. 220).

## ARANEA sp. d.

An immature female from Paltaybamba, 5,000 feet, August. (M. C. Z. 221).

## ARANEA ABUNDA (Taczanowski).

*Epeira abunda* Taczanowski, Horae Soc. ent. Ross., 1878, **14**, 152, pl. 1, f. 7.

Reported by Taczanowski from many localities in Peru.

*Localities*.—San Miguel, 5,000 feet, September. (M. C. Z. 222, one somewhat variant female). Tincochaca, 7,000 feet, August 9. (M. C. Z. 223, one female also apparently variant).

## ARANEA NIGROVENTRIS (Taczanowski).

*Epeira nigroventris* Taczanowski, Horae Soc. ent. Ross., 1878, **14**, p. 151, pl. 1, f. 6.

*Locality*.—Cuzco, 11,500 feet, July 6, 12. (M. C. Z. 320, one female; July 12. M. C. Z. 224, numerous specimens).

## ARANEA ZELOTYPY (Keyserling).

*Epeira zelotypa* Keyserling, Verh. Zool. bot. ges. Wien, 1882, **32**, p. 202, pl. 15, f. 7.

Previously known from San Mateo, Peru.

*Localities*.—Tincochaca, 7,000 feet, August. (M. C. Z. 225, one female). Urubamba, 9,500 feet, July. (M. C. Z. 226, one female).

ARANEA ORINA,<sup>1</sup> sp. nov.

Plate 19, fig. 3.

Carapace brownish yellow, dusky in an area on each side of caudal portion of head, with also a transverse row of four small black dots across the furrow. Sternum and coxae of legs beneath clear yellow. Endites and labium dusky yellow, whitish across tips. Legs yellowish;

<sup>1</sup> ὄρεινός, pertaining to mountains.



femora I and II with two broad dark annuli, one just proximad of middle and one at about distal third; femora III with a narrower band at distal end; femora IV black from proximad of middle to distal end; patellae I and II unmarked, but III and IV black at both ends; anterior tibiae with two black bands, one about middle and one at distal end; metatarsi and tarsi dark at distal end, the posterior metatarsi also with a vague dark ring near middle. Bulb of palpus blackish. Abdomen yellow; venter dusky back of the genital furrow except in a narrow transverse band in front of the spinnerets, the dark area divided by a longitudinal median yellow line; dorsum with a folium outlined, a black mark at base and a diamond shaped one near the middle.

Carapace broad, cordate, being very strongly narrowed cephalad. Groove, fine, longitudinal.

Posterior row of eyes strongly recurved; median eyes a little more than their diameter apart, four times or more their diameter from lateral eyes. Lateral eyes on each side separated by about their radius. Area of median eyes conspicuously wider in front than behind (*cir.* 15:11); and wider in front than long in ratio 15:13. Anterior row of eyes nearly straight, the median eyes clearly larger than the posterior medians (ratio of diameters about as 10:7), nearly once and a half their diameter apart and two times their diameter from the laterals.

Sternum not fully two thirds as wide as total length; acutely narrowed caudad.

Lower margin of furrow of chelicera with three teeth; upper margin also with three.

Legs with all joints excepting the tarsi aculeate or spined as usual.

Patella of palpus of male with a very long spine above; tibia on ventral side extended into a thin blade-like process as wide as the length of the joint; process of cymbium on exterior side narrow proximally and expanded distad into a tomahawk form with the blade partially double.

*Male.* Length 7.7 mm. Length of cephalothorax 3.7 mm.; width 3.1 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	5.6 mm.	6.1 mm.	3.9 mm.	1.5 mm.	17.0 mm.
Leg II	4.2	5	3.2	1.4	13.8
Leg III	3	2.7	1.6	1	8.3
Leg IV	4	4	2.9	1.1	12.0

Tibia I, 4.3 mm. Tibia IV, 2.8 mm.

*Locality.*—San Miguel, 6,000 feet, July. (Type, M. C. Z. 227, one male).



## ARANEA QUECHUANA, sp. nov.

## Plate 19, fig. 1.

Carapace testaceous, unmarked. Sternum dusky brown or blackish. Labium and endites dusky, pale across tips. Legs pale yellow; femora with a wide dusky ring near one third the distance from the distal end or in less deep shade including also the distal portion; posterior patellae darker and the posterior tibiae with darker annulus at distal end. Abdomen whitish yellow; venter with a black area immediately back of the genital furrow but this typically not extending to spinnerets, weakly dusky over each anterolateral corner and caudad from there over upper portion of each side; dorsum with a fine median longitudinal dark line extending from in front of middle caudad and sending off laterad a number of pairs of fine branches, a row of from two to four black dots on each side caudad of the middle, these two rows somewhat converging toward the spinnerets.

Carapace broad and low; groove longitudinal, distinctly impressed, crossed behind by a vague transverse impression.

Posterior row of eyes distinctly recurved as usual; median eyes only five eighths their diameter apart, two and a half times their diameter from the laterals. Lateral eyes subequal, contiguous, raised on a common low black tubercle. Anterior row of eyes slightly recurved; median eyes a little longer than the posterior medians (diameters as 5:4), their diameter apart, once and a third their diameters from the laterals. Area of median eyes wider in front than behind in ratio 14:11; wider than long in about ratio 14:13.

Sternum slenderly extended caudad between the posterior coxae.

Legs abundantly aculeate or spined as usual; two rows of spines on anterior face of tibia II shorter and distinctly stouter than those found elsewhere.

Patella of palpus above at distal end with two long slender spines. Process of cymbium undivided, somewhat clavately expanded distad, moderately curved.

*Male.* Length 6.2 mm. Length of cephalothorax 3.1 mm.; width 2.8 mm. Tibia I, 3.6 mm.; Tibia IV, 2.1 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	4.25 mm.	5 mm.	4 mm.	1.5 mm.	14.75 mm.
Leg II	4	4.1	3	1.2	12.3
Leg III	2.5	2.25	1.9	1	7.65
Leg IV	3	3.2	2.6	1	9.8



*Localities*.—Huadquina, 5,000 feet, July. (Type, M. C. Z. 228, male; paratypes, M. C. Z. 229, one immature male). Lucma. (M. C. Z. 329, one male).

ARANEA TIGANA,<sup>1</sup> sp. nov.

Plate 19, fig. 2.

Carapace pale brown, a broad stripe along each side chocolate or blackish. Sternum blackish. Legs yellow; femora dark at distal ends in a broad band; patellae and tibiae also dusky at distal ends. Abdomen with dorsum white faintly tinged with yellowish, the dorsal light area enclosing four dark dots and in the caudal portion a median black line with side branches; the sides blackish, the lateral dark bands converging caudad and meeting considerably in front of the caudal end.

Posterior row of eyes strongly recurved; medians their radius apart, two and a fourth or more times their diameter from the laterals. Lateral eyes nearly contiguous, the anterior one the larger, elevated on a low common tubercle. Area of median eyes wider than long in about ratio 25:22 and wider in front than behind in about ratio 5:4. Anterior row of eyes distinctly recurved; median eyes larger than the posterior medians (diameters as 5:4), three fifths their diameter apart and not fully their diameter from the laterals.

Sternum of usual shape, being conspicuously narrowed caudad.

Labium of usual form, distinctly triangular.

Legs abundantly spined as usual; spines on the anterior face of tibia II shorter and stouter, in two series.

Palpus with patella above having two long spines at distal end. Tibia flattened and extended ectad as in various other species. Process of cymbium of nearly uniform width throughout, bent nearly at right angles near middle.

*Male*. Length 6.6 mm. Cephalothorax, length 3 mm.; width, 2.2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	3.8 mm.	4.4 mm.	3.2 mm.	1.6 mm.	13.0 mm.
Leg II	3.1	3.3	2.5	1.1	10.0
Leg III	2.2	2	1.2	1	6.4
Leg IV	3.1	2.7	2	1	8.8

Tibia I, 3.2 mm.

*Locality*.—Lucma, 7,000 feet, August. (Type, M. C. Z. 230, one male).

<sup>1</sup> Gosiute *tigana*, *leguna*, close to.



ARANEA COMPSA,<sup>1</sup> sp. nov.

## Plate 19, fig. 6.

Carapace black excepting the anterior region of the head about the eye-area which is abruptly lighter, pale brown; the pale color extending farther caudad on lower side of head clothed with long grey or white hair. Sternum black with a bright yellow median longitudinal stripe which is interrupted across its anterior portion. Labium and endites black, pale across tips. Legs with femora pale yellow-brown proximally, the distal half blackish; patellae black; tibiae black excepting for a light annulus at the middle; metatarsi and tarsi pale with no distinct black annuli or metatarsus black at extreme distal end. Abdomen brownish grey; venter, anterior face and a broad band reaching back across each anterolateral corner and along side black. A series of yellow dots and marks on each side between black of venter and that of side; dorsum covered with a broad folium-mark a little darker than adjacent parts, the folium embracing a narrow median stripe limited by whitish marks and extending over entire length and marked with light colored paired transverse lines each side of this middle stripe, especially caudad.

Posterior row of eyes decidedly recurved; median eyes three fourths their diameter apart and two and a half or a little more their diameter from the laterals. Lateral eyes on each side contiguous, moderately elevated. Anterior row of eyes clearly recurved; median eyes a little smaller than the posterior medians, more than their diameter apart (once and a half), nearly two and a half times their diameter from the laterals. Area of median eyes nearly equal in length and breadth or slightly wider; wider in front than behind in ratio 11:10.

Thorax of typical form, smooth, without processes; head narrow; groove transverse, not profound.

Labium with distal end triangular.

Sternum about six sevenths as wide as long, constricted to a narrow, distally rounded tongue behind.

Upper margin of furrow of chelicera with four teeth; lower margin with three.

Legs strongly aculeate, the spines long and slender, all joints excepting the tarsi being well armed.

<sup>1</sup> κομψός, pretty.



Epigynum with scape short; broad at base but narrowed to a slender tip projecting caudoventrad, (Plate 19, fig. 6).

*Female.* Length, 6.7 mm. Length of cephalothorax, 2.9 mm.; width, 2.3 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	3.25 mm.	3.2 mm.	3 mm.	1.1 mm.	10.55 mm.
Leg II	3.1	3	2.2	1	9.3
Leg III	2.1	2	1	0.9	6.0
Leg IV	3	2.8	2	1	8.8

Tibia I, 2.1. Tibia IV, 1.9 mm.

*Localities.*—Ollantaytambo, 9,000 feet, July. (Type, M. C. Z. 231, female; paratype, M. C. Z. 232, female). Urubamba, 9,500 feet, July. (M. C. Z. 233, female).

ARANEA PLESIA,<sup>1</sup> sp. nov.

Plate 19, fig. 5.

Carapace deep chestnut or blackish, paler along middle part of head. Sternum black. Legs light brownish yellow, the joints annulate with dark about distal ends, the tibiae of anterior pairs also with a subbasal and narrow basal band. Abdomen with median portion of venter black, the black area limited on each side by a narrow yellow longitudinal stripe; lower portion of side black, the rest of sides and the dorsum paler, whitish yellow covered with a close network of fine dark lines; back of middle of length a row of short, solid black, transverse spots or lines each side of the middle, the anterior of these bordered in front with white, on anterior portion of dorsum two curving white lines meeting at an angle on the median line, the figure thus formed having its edges lined with black.

Posterior row of eye conspicuously recurved; median eyes their diameter apart and between two and a half and three times their diameter from the laterals. Lateral eyes subcontiguous and slightly elevated together as usual. Anterior row of eyes straight or slightly recurved; median eyes equal in diameter to posterior medians, nearly one and three sevenths their diameter apart and about the same distance from the laterals or but slightly more. Area of median eyes wider in front than behind (11:10), nearly equal in length and breadth.

<sup>1</sup> πλησίος, close to.



Sternum of usual general shape; caudad abruptly narrowed into a narrow tongue projecting between coxae.

Legs spined as usual; spines of tibiae II not specially modified.

Scape of epigynum long and a little clavate, projecting caudad, (Plate 19, fig. 5).

*Female.* Length, 5.1 mm. Length of cephalothorax, 2.5 mm.; width, 2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2.25 mm.	3.1 mm.	2.1 mm.	1 mm.	8.45 mm.
Leg II	2	2.3	1.6	.7	6.6
Leg III	1.3	1.8	.9	.5	4.5
Leg IV	2.1	2.1	1.3	.9	6.4

Tibia I, 2 mm. Tibia IV, 1.2 mm.

*Locality.*—Sorontoy, 7,000 feet, September. (Type, M. C. Z. 234).

#### ARANEA SANTA, sp. nov.

#### Plate 19, fig. 10.

Carapace with pars cephalica testaceous, the pars thoracica abruptly darker, dusky. Sternum testaceous, somewhat dusky, with a clear white T-shaped mark of which the cross-piece is at the anterior end. Labium and endites dusky testaceous. Legs light brown or testaceous, the joints vaguely darker at distal ends but not distinctly annulate. Abdomen above whitish, covered with a close network of fine dark lines and on each side with a series of dark oblique areas; back of middle a median longitudinal black line and a little each side of and parallel with this a broader dark stripe embracing about five small triangular black spots, these two more lateral stripes converging moderately caudad to spinnerets, a small white spot each side of and a little in front of the spinnerets. Anterior face of abdomen brown or dusky brown.

Abdomen suborbicular or but slightly extended at ends, not at all angulate or tuberculate.

Posterior row of eyes conspicuously recurved as usual; median eyes only about six sevenths their diameter apart, twice their diameter from the laterals. Lateral eyes contiguous, subequal. Anterior row of eyes distinctly recurved; median eyes equal to the posterior medians, a little more than their diameter apart, and the same dis-



tance or but little farther from the laterals. Area of median eyes equal in length and breadth, wider in front than behind in ratio 10:9.

Sternum of usual general shape; posterior portion triangular, acutely pointed caudad.

Legs abundantly armed with the usual long slender spines.

Length of female 4.7 mm.

*Locality*.—Santa Ana, 3,000 feet, August. (Type, M. C. Z. 235, one female).

ARANEA SEXTA, sp. nov.

Plate 19, fig. 7.

Carapace broad behind with the head narrow; thoracic furrow transverse.

Abdomen angulate above on each side near middle, (Plate 19, fig. 7).

Carapace pale testaceous, the head-region darker and with a fine light median longitudinal line extending caudad from between eyes. Sternum light testaceous. Legs testaceous, not at all annulate with dark. Abdomen in front of level of angles pale testaceous or even of whitish cast cephalad; a white transverse band at level of angles, the abdomen behind this a darker brown; venter pale, somewhat whitish mesally, brown laterally and caudally.

Posterior row of eyes recurved as usual; median eyes circular, their diameter apart or slightly less, nearly three times their diameter from the laterals. Lateral eyes on each side nearly contiguous, the anterior a little the larger. Anterior row of eyes clearly recurved; median eyes equal in diameter to the posterior medians, once and a half their diameter apart and no farther from the laterals. Area of median eyes much wider in front than behind (16:13) and a little wider in front than long (about 8:7).

Sternum with process between posterior coxae long, distally rounded.

Labium and endites of the usual form.

Femora and patellae of legs unspined; the tibiae, metatarsi, and tarsi with fewer long spines and numerous slender short, seriate or subseriate ones chiefly on the anterior surface.

Length of female 4.4 mm.

*Locality*.—Panama, June. (Type, M. C. Z. 236, female).



ARANEA DUOCYPHA,<sup>1</sup> sp. nov.

Plate 18, fig. 8-10.

Abdomen above with two conspicuous conical tubercles, one on each side toward anterolateral corner.

Carapace testaceous, unmarked. Sternum and coxae of legs beneath yellow. Legs dark testaceous, the tibiae obscurely marked with three darker bands, the metatarsi and tarsi darker. Palpi dark at tips. General color of abdomen above yellowish; a black line extending transversely between the tips of the two angular tubercles, this line bent forward at middle and continued cephalad as a median line; caudad of this line a series of other parallel transverse black lines, (Plate 18, fig. 8). Venter yellow, marked obscurely with a network of somewhat darker lines; epigynum very dilute chestnut.

Posterior row of eyes conspicuously recurved medians nearly once and a third their diameter apart; nearly twice their diameter from the posterior laterals. Lateral eyes on each side separated by about their radius. Anterior row of eye straight or slightly procurved; medians slightly smaller in diameter than the posterior medians, one and two thirds their diameter apart and nearly an equal distance from the laterals; medians just their diameter from the lower edge of the clypeus. Area of median eyes wider in front than behind (10:9) and wider in front than long (also as 10:9).

Caudal end of sternum narrowly triangular, not projecting between coxae; longer than wide in ratio 47:43, (Plate 18, fig. 9).

Labium and endites of the usual form.

Epigynum with scape very broad, long triangular, projecting much caudad of the genital furrow, (Plate 18, fig. 10).

Legs sparsely and weakly aculeate, the aculei more numerous distally and on anterior surface.

Length 4.2 mm.

*Locality*.—Huadquina, 5,000 feet, July. (Type, M. C. Z. 237, one female).

ARANEA CALOTYPA,<sup>2</sup> sp. nov.

Plate 19, fig. 4.

Abdomen in outline subelliptic, narrowly obovate when viewed from above, being narrower caudad than cephalad.

<sup>1</sup> δύο, two, κῆφος, a hump.

<sup>2</sup> κάλός, pretty, τύπος, mark.



Carapace yellowish or pale testaceous. Eyes black. Sternum yellow. Legs clear yellow, wholly unmarked. Abdomen beneath pale yellowish or whitish yellow, unmarked, but the spinnerets abruptly darker and together appearing like a black spot at the tip of the abdomen; lower part of sides with fine dark dots and streaks; dorsum above dark grey, the color mesally solid and laterally in a fine network enclosing light spots, along the middle line with a series of whitish spots extending over whole length, the most conspicuous marks being three pairs of widely separated black dots and in addition toward caudal end a quadrangle of four more closely approximate black spots.

Posterior row of eyes strongly recurved; medians four fifths their diameter apart and three and three fifths their diameter from the laterals. Lateral eyes contiguous, nearly equal. Anterior row of eyes a little recurved; medians their diameter or a little more apart, not quite fully three times their diameter from the laterals. Area of median eyes a little wider in front than behind (13:121), very slightly wider than long.

Sternum longer than wide in the ratio 11:9, caudad narrowly triangular, the caudal tip not sharply defined.

Labium and endites of typical general form.

Legs of male conspicuously spined as usual, the spines of tibiae, especially of tibia I, longer, stouter and more numerous than those of femora and patellae as usual, the metatarsi and tarsi with but few spines. Legs in the female more weakly aculeate as usual.

Process of cymbium in palpus of male on ectal side of base, arising from a broad base, curved, ending in a swollen tip or button. Patella with a single long spine at distal end above.

Length 5-6 mm.

*Localities*.—Below Lucma. (Type, M. C. Z. 238; paratypes, M. C. Z. 239, one adult male, one immature male, and three immature females). Tincochaca, 7,000 feet, August. (M. C. Z. 240, one male).

#### ANAWIXIA,<sup>1</sup> gen. nov.

Thoracic furrow deep, longitudinal, continued upon head, not separated from cervical depression.

Area of median eyes much wider in front than behind. Posterior median eyes decidedly smaller than the anterior, separated by a distance somewhat greater than their diameter. Anterior median

<sup>1</sup> 'ανᾶ, towards, Wixia.



eyes prominent. Lateral eyes on each side contiguous, on a common prominent tubercle. Posterior row of eyes strongly procurved.

Clypeus much narrower than the eye area; but little exceeding diameter of an anterior eye.

Labium not discrete from sternum; wider than long.

Femur I with three very short ventral spines in a series, five longer, stouter spines along anteroventral surface; tibia I with two ventral spines, five on anterior surface and two on the posterior. Femur II with six ventral spines; tibia II moderately incrassate, with two stout ventral spines and on anterior surface with two series of short, stout spines, six in each series. Femur III unarmed beneath. Femur IV beneath with a series of about eight, mostly very short, spines. Trochanter IV in type with a single stout spine beneath. Coxa I with a hook as in related genera. Posterior tarsi setose beneath; with some accessory claws or stout seriate bristles at the distal end.

Abdomen elongate; much extended caudad beyond the spinnerets which are ventral and submedian in position and with a conspicuous cylindrical slender caudal process; with spinous points above at proximal end and near base of caudal process.

Coxa of pedipalp (male) with a cone-shaped spur distally and femur with the usual chitinous ridge. Patella with a single apical spine. Tarsal sheath with a strongly chitinized non bifid process at base.

Genotype.—*Anawixia atopa*, sp. nov.

Differing from *Cyclosa*, in the wider separation of the posterior median eyes, and in the spining of the legs.

#### ANAWIXIA ATOPA,<sup>1</sup> sp. nov.

Plate 20, fig. 1-3.

Carapace with thoracic part black, the head yellow. Sternum blackish over a yellow background; labium and endites similar except at tips which are clear yellow. Chelicera yellowish, dusky especially proximally. Leg I with femur dusky beneath, deeper black distad, yellowish above; patella black; distal joints yellowish or the tibia somewhat dusky or black distad. Other legs with the femora yellow except at distal end where dusky or black, and two less distinct dark rings, one at middle and one more proximad, the tibiae black at distal end beneath as in Leg I. Abdomen blackish; dorsum with a

<sup>1</sup> ἄτοπος, strange.



small pale median spot at base and vague paler markings over middle and caudal regions; venter with a vague pale line on each side and also paler in front of genital furrow.

Cephalothorax broadly ovate; the head much narrowed, projecting conspicuously forward above and over the clypeus, highest midway between eyes and caudal end.

Abdomen slender, narrowed caudad, at caudal end produced caudo-dorsad into a long, slender, cylindrical process, on each side at base of which is an acute spinous process or point, an acute process or point also occurring toward each anterolateral corner; lower, less distinct cornicles also occurring elsewhere over the dorsum, (Plate 20, fig. 2).

Posterior row of eyes strongly recurved; median eyes a little more than their diameter apart, and between three and four times their diameter from the laterals. Lateral eyes on each side contiguous, borne upon a common low tubercle at a considerably more ventral level than the medians, the posterior one smaller than the anterior. Quadrangle of median eyes distinctly narrower caudad than cephalad (4:5), wider in front than long (about 25:22), the median eyes raised on a broad, common elevation. Anterior row of eyes straight or slightly recurved; median eyes larger than the posterior medians (diameters about as 9:7), not fully their diameter apart, two and a half times their diameter from the laterals; median eyes projecting conspicuously forward over the receding clypeus. Median eyes about once and a third their diameter from edge of clypeus but seen in projection directly in front appearing only about one half their diameter removed from this edge, (Plate 20, fig. 1).

Labium not distinctly separated from the sternum; much wider than long; distal portion triangular, its sides straight and meeting at an angle in the median line; proximal portion transversely depressed. Endites well bent, curving over the labium, the inner side conspicuously curved.

Sternum longer than wide in nearly ratio 13:10 or 13:11; widest at level between second and third legs, abruptly indented as usual opposite bases of first coxae slender acute extensions between coxae of legs.

Spinnerets borne on venter not far caudad of middle of length, the abdomen projecting widely over and caudad of them.

Trochanter IV with an acute black spur beneath at the distal end; tibia I with a series of slender spines beneath, (Plate 19, fig. 3); tibia II proportionately stouter, more strongly spined with short stouter spines on anterior surface, having also two spines toward



base on ventral surface; femora I and II with series of ventral spines; femur III with no spines beneath.

*Male.* Length (not including caudal process), 7.2 mm. Length of cephalothorax, 3.1 mm.; width 2.25 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	4.1 mm.	4.3 mm.	2.3 mm.	1 mm.	11.7 mm.
Leg II	3	3.1	2.1	.9	9.1
Leg III	2.25	2.1	1.1	.6	6.05
Leg IV	2.9	2.9	2	1	8.8

Tibia I, 3 mm.

*Locality.*—San Miguel, 6,000 feet, July. (Type M. C. Z. 241, one male).

SCOLODERUS HYBUS,<sup>1</sup> sp. nov.

Plate 19, fig. 9.

Caudal region of head strongly elevated as usual, the tubercle rounded; posterior declivity of cephalothorax steep. Abdomen large and very high, its surface clothed with numerous very short, straight and acutely pointed hairs as is also that of the carapace.

Carapace and legs dusky red-brown, the latter obscurely annulate. Sternum dusky brown, the coxae of legs beneath paler. Abdomen above brownish grey, with vague chevron-lines caudad, the anterior face and sides dusky with on the anterior face a small median white spot, the dark of the sides in part in oblique stripes more vaguely extending upon the dorsum; venter dusky or blackish mesally, paler laterally.

Posterior row of eyes strongly recurved; median eyes one and three fifths their diameter apart, four times their diameter, or somewhat more, from the laterals. Lateral eyes at clypeal corners as usual, contiguous. Anterior row of eyes conspicuously procurved in the typical manner, the median eyes equal in size to the posterior medians, one and two fifths their diameter apart, twice their diameter from lower edge of clypeus, the latter narrower than eye area. Area of median eyes wider than long (9:7); wider behind than in front in the ratio 9:8.

Lower margin of furrow of chelicera with three teeth of which the most proximal is largest; upper margin with four teeth.

Spines of legs few, long.

Epigynum small, of form, (Plate 19, fig. 10).

<sup>1</sup> ὑβός, hump-backed.



Length of female 4 mm.

*Locality*.—Paltaybamba, 5,000 feet, August. (Type, M. C. Z. 242, one female).

MICRATHENA CALA,<sup>1</sup> sp. nov.

Plate 20, fig. 5.

Carapace brown, the lateral and caudal slopes of the thoracic part dusky. Anterior pairs of legs dark brown, coxae and proximal ends of femora yellowish; posterior pairs yellowish or light testaceous. Sternum solid black. Abdomen above white of a slight yellowish tinge, a dusky mark at each anterior corner and a spot or two in line with this farther caudad; venter and lower portion of sides blackish, the caudal end between apices of lobes also black.

Abdomen bifid behind, each lobe ending in two spines, one above the other; near base of lobe on each side a spinous point and one farther forward toward anterior corner.

Posterior row of eyes recurved as usual; median eyes just their diameter apart, a little more than three times as far from the lateral. Lateral eyes on each side nearly contiguous, the anterior somewhat the larger. Anterior row of eyes recurved; median eyes slightly smaller than the posterior medians, four fifths or a little less their diameter apart, their diameter from lower margin of clypeus, more than three times their diameter from the laterals. Area of median eyes wider behind than in front in about ratio 15:13, nearly equal in length and breadth.

Sternum shield shaped; longer than wide nearly in ratio 7:6.

Lower margin of furrow of chelicera with three teeth of which the most proximal is largest.

Spines on anterior face of femora longest.

Length of female 5.3 mm.

*Locality*.—San Miguel, 6,000 feet, July. (Type, M. C. Z. 243, female).

GASTERACANTHA RAIMONDI Taczanowski, var.

Horae Soc. ent. Ross., 1879, 15, p. 106, pl. 1, f. 25, 26.

Previously known from various other localities in Peru and from Brazil.

*Locality*.—Huadquina, 5,000 feet, July. (M. C. Z. 246, one female).

<sup>1</sup> καλός, beautiful.



## MIMETIDAE.

GELANOR INNOMINATUM,<sup>1</sup> sp. nov.

Plate 20, fig. 6.

Carapace from greenish yellow to light brown, either not at all distinctly marked or, in lighter individuals, with two dark marks on caudal region of head and one on each side of the pars thoracica. Sternum yellow to pale brown, with the labium a little darker. Chelicera from yellow to pale brown of a slightly reddish cast. Legs yellow; first pair typically with four black or dark brown spots on caudal side of femur with a fine unbroken black line along the dorsal surface; tibia dark about the distal end. Second legs marked like the first but the spots narrower and together appearing more like a broken line. Femora of legs III and IV with a fine median longitudinal dorsal dark line at distal end. Tibia IV and metatarsus IV with a fine median dorsal longitudinal dark line over entire length. Abdomen above dark brown over proximal half, testaceous over caudal; typically with five narrow transverse light stripes with each margin limited by a fine black line, two pale spots in front of the first of these and a black mark caudad of the last; venter yellow or somewhat testaceous, dusky in front of the spinnerets and just in front of the genital furrow.

Posterior row of eyes recurved; median eyes a little more than their radius apart, slightly less than three times their diameter from the laterals which are of equal diameter; laterals slightly larger than the anterior laterals with which they are contiguous. Anterior median eyes about one and two thirds the diameter of the laterals; four fifths their diameter apart, and about once and a fifth their diameter from the lateral one on each side.

Labium with sides strongly convex; much narrowing distad; distal margin subtruncate or slightly convex.

Sternum less than three fifths as wide as total length inclusive of the process between the posterior coxae.

The first two pairs of legs are much longer and stouter than the two posterior pairs; but the second are decidedly smaller and less stout than the first. Anterior tibiae moderately bowed, the metatarsi more conspicuously so.

<sup>1</sup> *innominatus*, nameless.



Tibia I with seven of the longer spines and four or five smaller distally curved ones between each two longer ones, these smaller ones increasing in length distad as usual; four large spines on metatarsus I, the number of small spines between each two large ones increasing distad, those distad of the last large spine much more numerous. Large spines of tibia II mostly five, of metatarsus II three.

Length of female, 5.7 mm. Length of cephalothorax, 3 mm.; width, 2.1 mm.

*Locality*.—San Miguel, 6,000 feet, July. (Type, M. C. Z. 244, female; paratypes, M. C. Z. 245, two females).

### THOMISIDAE.

#### MISUMENOPS CONSPERSA (Keyserling).

*Misumena conspersa* Keyserling, Spinnen Amerikas. Laterigradae, 1880, **1**, p. 107, pl. 2, f. 59.

*Localities*.—Huadquina, 5,000 feet, July. (M. C. Z. 321, one female). Santa Ana, 3,000 feet, August. (M. C. Z., 249, one male, one female).

Previously known from Guadalupe, Vacarmayu, and San Malu, Peru.

#### MISUMENOPS PALLENS (Keyserling).

*Misumena pallens* Keyserling, Spinnen Amerikas. Laterigradae, 1880, **1**, p. 96, pl. 2, f. 52.

*Localities*.—Huadquina, Peru, 5,000 feet, July. (M. C. Z. 247, one female). Panama, June. (M. C. Z. 248, one female).

Previously known from Guatemala, Colombia, Peru, and Chile.

#### THANATUS TAQUARAE Keyserling.

Spinnen Amerikas. Bras. Spinnen, 1891, **3**, p. 252, pl. 10, f. 191.

*Localities*.—Huadquina, 5,000 feet, July. (M. C. Z. 250, one young female). Ollantaytambo, 9,000 feet, July. (M. C. Z. 251, female).

Previously known from Brazil (Taquara) as well as from Peru (Yura).



## TIBELLUS PUNCTULATUS (Taczanowski).

*Thanatus punctulatus* Taczanowski, Horae Soc. ent. Ross., 1872, 9, p. 10.

*Locality*.— Santa Ana, 3,000 feet, August. (M. C. Z. 253, female).  
Previously known from Guiana.

## CLUBIONIDAE.

## EUSPARASSUS SHEFTELI, sp. nov.

Plate 20, fig. 7-8; Plate 21, fig. 1.

Carapace dark chestnut, blackish over anterior cephalic region and along the lateral margins. Chelicerae black. Femora chestnut, distally more blackish; distal joints blackish over a chestnut background. Sternum dark chestnut or mahogany, the labium and endites similar excepting for the paler distal ends. Hair of these parts mostly of a golden lustre, that of the carapace in part grey; hair of the legs long. Abdomen light brown; hair long, subdense, yellowish.

Posterior row of eyes much longer than the anterior (39:34), moderately procurved; eyes subequal; median eyes near once and a half their diameter apart, a little farther from the laterals. Posterior laterals two thirds their diameter from the anterior laterals, larger in the ratio 10:9. Anterior row of eyes straight, the median eyes a little larger than the laterals (ratio 11:10), about their radius apart and the same distance from the laterals. Median eye-area wider behind than in front in ratio 8:7; its length equal to anterior width.

Upper margin of chelicera with two teeth; the lower with three of which the most proximal is the smallest.

Labium semicircular; more than twice as wide as long (42:19); notches at base slight, (Plate 20, fig. 8).

Claw of palpus distinct; pectinate. Tarsus densely scopulate over nearly entire surface both above and below. Femur and tibia each with a long subbasal spine toward the distal end.

Sternum subtriangular; anterior margin straight; narrowly acutely extended between posterior coxae, (Plate 20, fig. 7).

Femora of first three pairs of legs with three spines on anterior, three on posterior, and two on dorsal surface; femur IV with spining the same excepting that the spines of the posterior surface are lacking.



Each patella with a single spine on its posterior side. Tibiae I and II with 3-3 spines beneath, two on the anterior side, two on the posterior, and one above; tibiae III and IV the same except for absence of the dorsal spine. All metatarsi with two spines beneath, two in front, and two behind. Claws all strongly pectinate, the teeth increasing in length distad. All tarsi and metatarsi scopulate beneath.

*Female.* Length, 17.5 mm. Length of cephalothorax, 7.5 mm.; width, 7 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	8 mm.	10 mm.	6.5 mm.	2.2 mm.	26.7 mm.
Leg II	8.8	10.9	7.2	2.3	29.2
Leg III	7.2	8.0	5.0	2.0	22.2
Leg IV	7.2	7.9	5.5	2.2	22.8

Tibia I, 6.8 mm. Tibia IV, 5.2 mm.

*Locality.*—Santa Ana, 3,000 feet, August 3. (Type, M. C. Z. 252, female).

This species is named in honor of Mr. Herbert Sheftel of New York.

### HORIOCTENUS,<sup>1</sup> gen. nov.

Cephalothorax ovate, convex; thoracic stria long and distinct, radial lines not evident.

Posterior row of eyes strongly recurved or appearing as two rows; eyes subequal, the medians nearer to each other than to the laterals. Anterior row of eyes recurved; eyes subequal and nearly equidistant, the median eyes in type a little the smaller. Area of median eyes longer than wide, a little narrower in front.

Clypeus narrower than length of area of median eyes, receding from the anterior eyes ventrocaudad.

Labium wider than long.

Lower margin of furrow of chelicera with one tooth, the upper with three.

Legs robust. Tibiae of first and second legs armed beneath with three pairs of spines; the metatarsi with a single pair of long spines at the proximal end; metatarsi and tarsi densely scopulate. Tarsi of posterior legs more sparsely scopulate.

Inferior spinnerets (in type species) not contiguous at base. Superior spinnerets with second article short.

<sup>1</sup> ὅριος, pertaining to the borders or limits, etc. and Ctenus.



Genotype.—*Horioctenus lycosoides*, sp. nov.

Readily distinguished from *Caloctenus* and *Odo*, both occurring in the Andean region, in having but a single tooth on the lower margin of the chelicera, as well as in eye relations and characters of legs.

HORIOCTENUS LYCOSEIDES,<sup>1</sup> sp. nov.

Plate 21, fig. 2-4.

Integument of carapace dark brown with a median longitudinal yellow or light testaceous stripe from the eye-area to the caudal margin; this median stripe anteriorly as wide as the eye-area from where it first widens and then narrows again and remains of nearly uniform width to the posterior declivity down which it narrows to the caudal margin; also a narrow paler supramarginal stripe along each side; carapace clothed densely with chiefly light grey or white hairs, dark hairs much sparser. Sternum dusky chestnut, the labium similar excepting at the tip, the endites paler, all these parts clothed with grey hair like that of the carapace. Legs brown, irregularly but abundantly, especially the femora, streaked and spotted with blackish; hair chiefly grey but with stiffer dark bristles more abundantly intermixed than on the carapace. Abdomen with the integument brown, a sagittate outline in some vaguely indicated at the base above, this followed by a series of equally vague cross-marks; densely clothed with grey and coarser brown hairs intermixed.

Posterior row of eyes longer than the anterior; very strongly recurved; median eyes but little larger, separated from the laterals by about their diameter, only half as far from each other. Anterior row of eyes decidedly recurved both in dorsal and in anterior view, the median eyes being borne well forwards; eyes equidistant, less than their radius apart; median eyes smaller than the laterals (ratio of diameters about as 4:5).

Labium clearly wider than long (23:19); sides convex, decidedly converging to the rounded or mesally truncate anterior margin; basal notches short, (Plate 21, fig. 2).

Endites not impressed.

Palpus strongly spined; claw with five teeth.

Teeth of upper margin of chelicera rather slender, decreasing from

<sup>1</sup> *Lycosa*, εἶδος, form.



the one nearest claw proximad; single tooth of lower margin also small, (Plate 21, fig. 4).

Sternum moderately convex; anterior margin widely weakly convex; caudad acutely narrowly pointed, not separating the fourth coxae; widest near middle; longer than wide in about ratio 5:4.

Epigynum proportionately large, (Plate 21, fig. 3).

*Female.* Length, 9 mm. Length of cephalothorax, 4 mm.; width, 3.1 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	3.25 mm.	4.2 mm.	2.2 mm.	1.6 mm.	11.25 mm.
Leg II	3.0	4.0	2.0	1.5	10.5
Leg III	3.0	3.5	2.0	1.4	9.9
Leg IV	3.5	4.8	3.8	2.0	14.1

Tibia I, 2.9 mm. Tibia IV, 3 mm.

*Localities.*—Ollantaytambo, 9,000 feet, July. (Type, M. C. Z. 254, one female). Urubamba, 9,500 feet, July. (M. C. Z. 255, two females).

#### GAYENNA MONTICOLA, sp. nov.

##### Plate 22, fig. 6.

Carapace yellow; a dusky median longitudinal line which is geminate back of the eyes as in *Pirata* sp.; also a dusky supramarginal stripe on each side extending forward to the head. Sternum yellow, dusky at margins. Endites yellow. Labium dusky yellow. Legs yellow, dark about the bases of spines and in other small spots, giving the appearance of broken annulations on the proximal joints. Integument of abdomen greyish brown; above with a narrowly lanceolate dark median stripe at base, followed by a series of paired dark marks which extend to a little in front of the spinnerets, the two lines converging caudad; a dusky stripe along each dorsolateral line proximally below which are scattered inconspicuous dark spots; venter clear excepting for an interrupted median longitudinal dark line.

Posterior row of eyes moderately procurved; median eyes once and a half their diameter apart, their diameter from the laterals which are a little the larger (diameters about as 7:6). Posterior laterals subequal to anterior laterals from which they are separated by four sevenths their diameter. Anterior row of eyes straight, decidedly shorter than the posterior; laterals larger than the medians (diameters as 7:6); medians near their radius apart, contiguous with the laterals or nearly



so. Clypeus about four sevenths as wide as diameter of an anterior lateral eye. Area of median eyes equal in length and breadth or slightly longer than wide (22:21); narrower in front than behind in about the ratio 15:21.

Sternum longer than wide in nearly ratio 35:24. Truncate anteriorly; widest near middle; angle at caudal end moderate, scarcely acute. Labium narrowed from basal notches distad, the sides being weakly convex; distal margin truncate.

Upper margin of furrow of chelicera armed with the usual three teeth of which the median is much the largest; lower margin with two subequal teeth.

Tibia I and II with three pairs of spines beneath, of which the distal are much the smallest, the two proximal pairs being long and appressed; metatarsi I and II with a single basal pair of long spines beneath. Posterior tibiae and metatarsi strongly spined beneath, laterally and above. Femur I with five spines above, (three in a transverse row distally, one submedian and one subbasal). Metatarsi and tarsi I and II scopulate to base; tarsi III and IV more sparsely scopulate, the corresponding metatarsi not at all.

*Female.* Length, 8 mm. Length of cephalothorax, 2.7 mm.; width, 2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2.0 mm.	2.3 mm.	1.3 mm.	1 mm.	6.6 mm.
Leg II	2.1	2.3	1.3	1	6.7
Leg III	2	2.1	1.2	1	6.3
Leg IV	2.3	2.9	1.5	1.1	7.8

*Localities.*—Cuzco, 11,500 feet, July. (Type M. C. Z. 256, female). Ollantaytambo, 9,000 feet, July. (M. C. Z. 257).

#### ANYPHAENA ANDINA, sp. nov.

#### Plate 22, fig. 4.

Carapace yellow, of a darker shade along the sides; blackish over eye-area, in a short narrow streak caudad from each posterior median eye and in a short median line, bifurcate behind, just in front of the fovea thoracica. Sternum and endites clear yellow, the labium of a little darker tinge. Legs yellow, indistinctly marked with broken annuli of which one at distal end of femora and one on patella (especially of the posterior legs) are most pronounced. Abdomen ventrally



and laterally yellow; the dorsum covered with a close network of mostly confluent dusky brown spots among which a median longitudinal pale line limited by uneven dark lines may be traced.

Posterior row of eyes only slightly procurved, nearly straight; medians a little more than their diameter (*cir.* once and a seventh) apart, a little less than their diameter (six sevenths) from the laterals. Anterior row of eyes much shorter than the posterior (41:31); straight or scarcely recurved; medians smaller than the laterals (ratio of diameters 5:7), slightly more than their radius apart (three fifths diameter) and almost contiguous with the laterals. Clypeus narrower than diameter of eyes. Area of median eyes equal in length and breadth; three fourths as wide in front as behind.

Sternum longer than wide nearly in ratio 15:11.

Labium much longer than wide; crenately notched or incised mesally at distal end.

Lower margin of furrow of chelicera with four or five teeth of which the two more distal are longer than the others.

Tibia I with three pairs of ventral spines of which the distal are short and those of the other two pairs long; also bearing on the anterior side three spines and one dorsally. Metatarsus I below with a basal pair of long appressed spines; on anterior side with two spines of which the basal is smaller than the median, and three pairs of dorsal or subdorsal spines. Femur I with three spines along mid-dorsal line. Anterior tarsi scopulate; metatarsi sparsely scopulate distad; posterior tarsi scarcely truly scopulate or with but few scopular hairs.

Distal article of superior spinnerets abruptly narrower than the proximal, cylindroconical, small.

Rima ventralis nearly equidistant between bases of spinnerets and the genital furrow.

*Female.* Length, 6.8 mm. Length of cephalothorax, 2.7 mm.; width, 2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2.1 mm.	3.1 mm.	1.8 mm.	1.2 mm.	8.2 mm.
Leg II	2.1	2.6	1.7	1.1	7.5
Leg III	2	2.1	1.2	1	6.3
Leg IV	2.2	3.0	2.2	1	8.4

Tibia I, 2.2 mm.

*Locality.*—Tincochaca, 7,000 feet, August. (Type, M. C. Z. 258, one female).



ANYPHAENA APORA,<sup>1</sup> sp. nov.

Plate 22, fig. 2-3.

Carapace a brownish or dusky yellow with no distinct markings. Chelicerae dilute chestnut. Sternum nearly same as carapace. Endites pale chestnut, the labium darker excepting at pale tip. Legs dusky yellow above, darker distad, clearer yellow beneath; darker annuli vaguely indicated on tibiae. Abdomen dusky grey over a yellowish background, the venter somewhat paler than the dorsum, with no distinct markings.

Posterior row of eyes nearly straight or only very slightly procurved; medians their diameter apart, slightly closer to the laterals. Anterior row of eyes shorter than the posterior in the ratio 41:55; straight or very slightly recurved; medians much smaller than the laterals (diameters as 7:10), about four sevenths their diameter apart and one seventh their diameter from the laterals; median eyes nearly their diameter from the lower edge of the clypeus, the laterals but little more than their radius. Posterior lateral eyes larger than the anterior medians from which they are separated by only about one fourth their diameter. Area of median eyes equal in length and breadth; wider behind than in front in ratio 28:17.

Sternum longer than wide in ratio 45:37.

Labium much longer than wide (40:25). Basal notches long. Sides only weakly convex and but little converging distad; distal margin conspicuously concave from side to side, (Plate 22, fig. 2).

Lower margin of furrow of chelicera with four moderately large, well-spaced teeth.

Tibia I armed with three pairs (or 2, 2, 1) of ventral spines of which the most distal are some distance proximad of the distal end of the article and are of smaller size; two spines on anterior side and two on the posterior. Metatarsus I with one pair of long appressed, subbasal spines on ventral surface and with two pairs of subdorsal (each on dorsolateral line) in position. Femur I above with three spines along middorsal line, three in line cephalad of these and two in a line caudad. Anterior tarsi and metatarsi scopulate to base and tibia I also with some scopular hairs at distal end.

*Female.* Length, 8 mm. Length of cephalothorax, 3.6 mm.; width, 2.8 mm.

<sup>1</sup> ἀπορος, difficult.



	fem.	tib.+pat.	met.	tar.	total
Leg I	4 mm.	5.2 mm.	3 mm.	2 mm.	14.2 mm.
Leg II	3.8	5	3	1.8	13.6
Leg III	3	3.2	2.5	1.2	9.9
Leg IV	3.2	4.2	3.3	1.3	12.0

Tibia I, 4 mm. Tibia IV, 2.9 mm.

*Locality*.—Conservidayo River, August. (Type, M. C. Z. 259).

ANYPHAENA POICILA,<sup>1</sup> sp. nov.

Plate 22, fig. 5.

Carapace dusky brown with a clear yellow stripe along each side above a black marginal line that completely encircles the carapace; a lighter median longitudinal area on head back of eyes this narrowing caudad and enclosing a black line over and back of each posterior median eye; a black line from clypeus over each anterior median eye and extending back across each posterior lateral eye. Sternum black; a narrow interrupted yellow marginal line, a very narrow median yellow line from anterior margin to middle and on each side a series of three small yellow dots converging caudad where there is a median spot. Labium and endites dusky over a yellow background, pale across tips. Legs yellow; a heavy black annulus on femora just distad of middle, one at proximal end of tibia and one near each end of metatarsus. Tarsus of palpus with a distinct black ring at proximal end, the tibia also with an interrupted narrower line across proximal end and small spots across distal; patella and femur also with small black dots. Abdomen in general yellow; above with a narrowly deltoid dark brown mark at middle, this continuing forward from its apex in a narrower median stripe which expands at the base into a mark of lanceolate form with apex cephalad. Anterior portion of sides brown, each band followed caudad toward spinnerets by a number of brown spots, some of which unite in several lines across dorsum in front of spinnerets. Venter with a median longitudinal brown stripe which is broadest caudad, is broken across middle, and extends to the genital furrow; on each side of this with scattered small dots, some of which are arranged in lines, (Plate 22, fig. 5).

Posterior row of eyes decidedly procurved, a line tangent to anterior

<sup>1</sup> ποικίλος, spotted.



edges of medians intersecting the laterals back of their middles; medians their diameter apart, five sixths as far from the laterals which are of the same size or nearly so. Posterior lateral eyes equal to the anterior laterals from which they are separated by two thirds their diameter. Anterior row of eyes shorter than the posterior in ratio 25:33; slightly recurved; medians smaller than laterals, their diameters being to each other nearly as 2:3, their radius apart, nearly half as far from the laterals. Clypeus a little narrower than diameter of a median eye. Area of median eyes longer than wide in ratio 7:6; wider behind than in front in ratio 3:2.

Sternum longer than wide in the ratio 62:47.

Labium some more than two thirds as wide as long; apex squarely truncate, not incised or indented.

Lower margin of furrow of chelicera with four small teeth decreasing in size proximad as usual.

Tibia I with three pairs of ventral spines of which the two first pairs are long, those of the basal pair reaching the bases of the median ones, the distal pair small; two spines on the anterior and two on the posterior surface. Metatarsus I with the usual pair of long ventral spines at base; two spines on anterior and two on posterior side. Scopulae very sparse. Femur I with three spines in middorsal line, and also one caudad of this line and two cephalad.

*Female.* Length, 5.1 mm. Length of cephalothorax, 2 mm.; width, 1.8 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2.1 mm.	3 mm.	1 mm.	1 mm.	7.1 mm.
Leg II	2	2.8	1.7	1	7.5
Leg III	1.8	1.9	1.1	.9	5.7
Leg IV	2.1	2.2	1.7	1.1	7.1

Tibia I, 1.3 mm. Tibia IV, 21 mm.

*Locality.*—Huadquina; 5,000 feet, July. (Type, M. C. Z. 260, one female not quite mature).

#### ANYPHAENA sp.

*Locality.*—Tincochaea, 7,000 feet, August. (M. C. Z. 330, one immature specimen).



## CASTANEIRA QUECHUA, sp. nov.

## Plate 22, fig. 1.

Carapace, sternum, and chelicerae black; labium and endites also nearly black excepting for pale tips. Coxae ventrally yellowish, the femora black, the succeeding joints more or less dark testaceous, except the tibia and metatarsus of fourth legs which are nearly black. Abdomen black, a vague light line across middle above and laterally but not crossing middle part of the venter. Carapace with numerous white plumose hairs. Legs with similar hairs but also with numerous black hairs intermixed. Abdomen with white plumose hairs and many simple black hairs.

Posterior row of eyes procurved in such degree that a line tangent to the anterior edges of the medians cuts the laterals near the beginning of the caudal third; medians nearly once and a third their diameter apart, less than their diameter from the laterals which are of the same size or nearly so. Area of median eyes equal in length and breadth or very nearly so, scarcely narrower anteriorly than posteriorly. Anterior row of eyes procurved; median eyes their radius apart, half as far from the laterals; medians with diameter exceeding that of laterals in ratio 9:7; the long diameter of the laterals exceeding the lesser diameter nearly in ratio 7:5. Clypeus a little wider than the diameter of a median eye (about as 11:9).

Sternum three fourths as wide as long; borders depressed as usual; anterior margin straight, sides converging to meet at an angle caudad but the angle not acute.

Labium and chelicerae typical.

Tibia of leg I armed beneath with three pairs of spines, metatarsus with two pairs. Tibia II with but two pairs of spines beneath, the metatarsus also with two pairs. Tarsi and metatarsi I and II scopulate to base; metatarsi III and IV scopulate only distally.

*Female.* Length, 8 mm. Length of cephalothorax, 3.25; width, 2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2.6 mm.	3 mm.	2 mm.	1.2 mm.	8.8 mm.
Leg II	2.2	2.8	1.9	1.1	8.0
Leg III	2.2	2.4	2.0	1.1	7.7
Leg IV	2.6	3.5	3.1	1.3	10.3

Tibia I, 2.1 mm. Tibia IV, 2 mm.



*Locality*.—Conservidayo River, August. (Type M. C. Z. 261, one female).

QUECHUELLA, gen. nov.

Cephalothorax ovate with the frons moderately broad; stria thoracica fine but distinct, of moderate length.

Posterior eyes subequal (in type the lateral a little the larger), nearly equidistant, in a weakly procurved row. Lateral eyes on each side separated by less than their diameter. Anterior eyes in a recurved row; median eyes much smaller than the laterals, separated from each other but nearly contiguous with the laterals.

Clypeus much narrower than the anterior median eyes.

Lower margin of furrow of chelicera armed with four small teeth.

Labium extending beyond middle of endites; longer than wide though not greatly so; distally truncate.

Anterior tibiae (compressed in type) without spines.

Furrow of posterior spiracle well in front of middle.

Distal article of superior spinnerets short, conical.

Genotype.—*Quechuella lampra*, sp. nov.

Distinguished from *Anyphaena* and related genera similarly having the furrow of the posterior spiracle in front of middle in wholly lacking of spines on the anterior tibiae and by its very narrow clypeus.

QUECHUELLA LAMPRA,<sup>1</sup> sp. nov.

Plate 21, fig. 5-8.

Carapace pale yellowish brown, dusky over sides and eye-region. Sternum, endites, and labium yellow. Coxae of legs beneath and proximal portions of femora yellow; legs more distad, especially the tibiae and metatarsi, dusky to nearly black, the tarsi again paler. Abdomen ventrally and over lower portion of sides a dilute yellowish white; dorsum a very dilute brownish, marked at the base in the median line with a darker narrow stripe which is followed caudad by a series of paired dark dots extending to the spinnerets and on each side of dorsum and upper part of sides also darker, (Plate 21, fig. 7).

Posterior row of eyes very slightly procurved; medians slightly smaller than the laterals (ad. 5:6), a little less than their diameter

<sup>1</sup> λαμπρός, distinct.



(four fifths) apart, their diameter from the laterals. Lateral eyes on each side equal, their radius apart. Anterior row of eyes recurved; medians smaller than the laterals (diameters as 4.5:6), one third their diameter apart, closer to the laterals. Clypeus very narrow, about one third the diameter of an anterior median eye wide. Area of median eyes nearly equal in length and breadth; wider behind than in front in ratio 2:3, (Plate 21, fig. 8).

Sternum widest back of middle, much narrowed cephalad; more abruptly narrowed caudad, the caudal angle not very acute; wider than long in ratio 15:13, (Plate 21, fig. 6).

Anterior tibiae flattened dorsoventrally, apparently wholly unspined; anterior metatarsi with a pair of very short spines beneath. Posterior tibiae and metatarsi with spines as usual.

Furrow of posterior spiracle situated at about one third the distance from the genital furrow to the spinnerets.

Length of female, 4.1 mm. Length of cephalothorax, 1.7 mm.; width, 1.2 mm.

*Locality*.—San Miguel, 6,000 feet, July. (Type, M. C. Z. 262, one female not fully mature).

#### TRACHELOPACHYS BICOLOR, sp. nov.

Plate 21, fig. 9-10.

Cephalothorax with chelicerae, labium and endites, and the entire abdomen solid black or the abdomen above with very vague chevron-lines caudad. Spinnerets yellowish. Legs clear yellow, the scopulae giving them a dusky appearance at distal ends.

Posterior row of eyes recurved in such degree that a line tangent to caudal edges of medians cuts through the anterior fourth of the laterals; median eyes a little smaller than the laterals, twice their diameter apart, farther from the laterals. Anterior row of eyes a little procurved; laterals much larger than the medians (diameters about as 3:2); median eyes their diameter apart, about half as far from the laterals. Clypeus twice as wide as diameter of median eye. Area of median eyes equal in length to width behind; wider behind than in front in ratio 7:6.

Sternum longer than wide in a little less than the ratio 4:3; strongly convex, the borders being much above (dorsad of) level of median portion.



Labium strongly thickened across base, the thickened portion separated by a distinct transverse furrow from the distal portion; sides moderately converging distad, substraight proximad, convex toward tip; apically truncate; wider than long in ratio 6:5, (Plate 21, fig. 9).

Upper margin of furrow of chelicera with the usual three stout teeth of which the median is largest; lower margin with two stout and subequal teeth.

Palpus of female unspined; claw smooth.

Tarsi and metatarsi of legs I and II densely scopulate and with some scopular hairs on distal end of tibia; tarsi and distal portion of metatarsi also scopulate in legs III and IV. All legs without spines.

*Female.* Length 8 mm. Length of cephalothorax 4 mm.; width, 3.2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	3 mm.	3.7 mm.	2 mm.	1.3 mm.	10.0 mm.
Leg II	2.8	3.3	1.9	1.2	9.2
Leg III	2.2	2.7	1.8	1	7.7
Leg IV	3.2	3.8	2.7	1.3	11.0

Tibia I, 2.2 mm. Tibia IV, 2.4 mm.

*Localities.*—Urubamba, 9,500 feet, July. (Type, M. C. Z. 263, female; paratype, no. 264, one female). Ollantaytambo, 9,000 feet, July. (M. C. Z. 265, one female).

## PISAUROIDAE.

### TRECHALEA sp.

Three immature specimens of an uncertain species were secured at Huadquina, 5,000 feet, July. (M. C. Z. 266).

### TRECHALEA MONTICOLA, sp. nov.

#### Plate 23, fig. 1.

Carapace brown, darker, more black, along the lateral borders; on each side a pale supramarginal stripe uniting with the one of opposite side across the clypeus, these stripes more or less zig-zag; a median longitudinal pale band narrow from caudal margin to the pars cephalica upon which it expands to nearly the width of the eye-area and then extends as a narrow tongue between the eyes, this broad portion embracing a longitudinal dark line back of each posterior



median eye and a pair of broader stripes between this and the one of opposite side. Sternum yellow, a pair of large dark spots on the middle portion and a dusky line within each lateral border. Labium dusky, pale across tip. Endites yellow. Chelicerae yellowish, somewhat darker proximally. Legs yellowish brown or testaceous, the femora and coxae beneath clear yellow or whitish yellow, the femora darker distad; over the anterodorsal surface the femora are marked with a series of four large dark spots. Abdomen with venter dusky yellowish; sides and dorsum greyish black, a lanceolate outline at base above in black and a series of about four white spots on each side.

Face and clypeus much sloping as usual.

Anterior row of eyes slightly recurved; shorter than the row formed by the two posterior median eyes (28:31); median eyes much larger than the laterals, the diameter being nearly twice as great (15:8); median eyes not fully their radius apart (five sevenths) and scarcely more than half as far from the laterals; medians about once and a third their diameter from lower margin of clypeus. Posterior median eyes with diameter one and a third times that of the anterior medians, their diameter apart and less than their radius from the anterior medians. Area of posterior eyes wider behind than in front in ratio 115:62, nearly 2.4 times wider than long.

Lower margin of furrow of chelicera with three stout conical teeth.

Labium longer than wide in ratio 7:6; basal notch one fourth the total length; distal margin widely but very weakly convex, subtruncate; sides convex and moderately converging distad.

Total length of sternum including caudal process exceeding the width nearly as 10:9.

Tarsi of legs all slender and distinctly curved or bent, their diameter least near middle of length. Paired claws of leg I with five slender and moderately divergent teeth on the proximal half; unpaired claw small, abruptly bent, with one slender spine or tooth, (Plate 23, fig. 1).

Female. Length, 9 mm. Length of cephalothorax, 4.3 mm.; width, 4.7 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	5.6 mm.	7.1 mm.	5.25 mm.	3 mm.	20.95 mm.
Leg II	7	8.7	6.6	3	25.3
Leg III	5.8	6.5	5.1	3	20.4
Leg IV	6.3	8	7.25	4	25.55

Tibia I, 5 mm. Tibia IV, 6 mm.

*Locality*.—Santa Ana, 3,000 feet, August. (Type, M. C. Z. 267, one female, not quite adult).



TUNABO,<sup>1</sup> gen. nov.

Cephalothorax longer than broad, moderately convex, the posterior declivity abrupt; thoracic stria long.

The anterior row of eyes weakly procurved; median eyes farther from each other than from the laterals, a little larger than the laterals. Posterior eyes in two distinct rows as in *Lycosa*, much larger than those of the anterior row. Area of median eyes decidedly wider than long and much wider behind than in front. Clypeus much narrower than area of median eyes, only a little exceeding the diameter of an anterior median eye; subvertical.

Labium wider than long.

Lower margin of furrow of chelicera with four teeth.

All tarsi, and the anterior metatarsi at least in part, scopulate. Anterior tibiae armed beneath with five pairs of spines, the distal pair small and the others very long; the metatarsi armed beneath with three pairs of spines.

Genotype.— *Tunabo peruvianus* sp. nov.

Easily distinguished from *Trechalea*, the preceding genus, in having the anterior eyes in a procurved row, and from *Hygropoda*, also occurring in the Andean region and a closely related genus, in the relatively much larger posterior eyes, in the much narrower clypeus, and in having leg IV longer than leg I.

## TUNABO PERUVIANUS, sp. nov.

## Plate 22, fig. 7-9.

A sharply defined median longitudinal stripe over entire length of carapace and abdomen, this limited on each side on the carapace by a black stripe below which is a testaceous stripe of about the same width, this enclosing some dark dots, the margins darker; on the abdomen the median stripe is limited on each side by a dark brown stripe, the sides and venter of abdomen pale, brownish grey with numerous small dark dots. Sternum yellow or dilute light brown minutely spotted with black and with a median longitudinal black line on caudal half. Labium and endites yellow or testaceous. Legs brown, the coxae and the femora beneath paler; femora marked above with longitudinal blackish lines and the legs elsewhere minutely spotted and streaked with dark. Chelicera each with a black longitudinal stripe down its front face.

<sup>1</sup> Gosiute *tuna*, straight, and *nabo*, a mark.



Anterior row of eyes shorter than the second (about as 11:12); slightly procurved; diameter of medians greater than that of laterals in ratio 4:3; medians three fourths their diameter (or a little farther) apart, their radius or slightly more from the laterals; median eyes more than their diameter from the lower edge of the clypeus (about once and a fourth), the laterals nearly once and two thirds their diameter from it. Diameter of eyes of second row exceeding that of the anterior medians in about ratio 5:2; eyes of second row more than their radius apart (about three fifths diameter), less than their radius from anterior medians (two fifths diameter). Posterior eyes a little smaller than the second, three and a half or a little more times their diameter apart. Quadrangle of posterior eyes contained in total length of cephalothorax about 3.75 times. Area of median eyes much wider than long (48:34), wider behind than in front (12:5).

Total length of sternum exceeding the width in ratio 8.5-9:7, (Plate 22, fig. 8).

Labium wider than long, (Plate 22, fig. 7).

Upper margin of furrow of chelicera with the usual three teeth; lower margin with four teeth of which the third from the distal end is much the smallest, the other three stout, conical, equal, (Plate 22, fig. 9).

Anterior tarsi and metatarsi scopulate to base; the posterior metatarsi scopulate lightly on distal portion only. Tibia I with five pairs of ventral spines, these being very long, the first or basal ones overlapping bases of those of the third pair, the distal spines much shorter than those of first and second pairs; also a short spine on anterior and one on posterior face. Metatarsus I with three pairs of ventral spines of which the first two pairs are very long like those of the tibiae; also with three spines on anterior and three on posterior surface and a pair of dorsal ones near distal end.

Anterior piece of lorum of pedicel notched behind, the posterior piece rounded anteriorly and fitting into the notch.

Process of tibia of palpus in male ventral in position; subconical and low in specimen lacking one moult of maturity.

*Male.* Length, 9 mm. Length of cephalothorax, 3 mm.; width, 2.5 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	3.1 mm.	4 mm.	2.1 mm.	1.3 mm.	10.5 mm.
Leg II	3.1	3.8	2.1	1.3	10.3
Leg III	2.3	3	2	1.1	8.4
Leg IV	3.7	4	3	1.3	11.0



*Locality*.—Huadquina, 5,000 feet, July. (Type, M. C. Z., 322, male lacking apparently one moult of maturity; paratype, M. C. Z., 268, one male in same stage as type).

## LYCOSIDAE.

*PORRIMA HARKNESSI*, sp. nov.

Plate 23, fig. 2-6.

Carapace with integument from light brown to darker, nearly chocolate-brown; the lateral margins black with a pale supramarginal, stripe on each side; eye-region blackish; a pale median longitudinal line extending from the eye-area caudad and on each side of this a pale or whitish line converging toward the corresponding one of the opposite side with which it unites caudad of the stria. Sternum dark brown to blackish, paler about margin and with a pale median longitudinal mark in the anterior portion. Labium dusky, paler across the distal end. Endites lighter brown. Chelicerae dark brown to somewhat mahogany color. Legs dilute testaceous to dark brown or dusky brown. Abdomen above almost black, the blackish area limited on each side by a clear white line from which, beginning near middle, a series of very short lines are given off on the inner side and extend a little cephalad of mesad; sides and venter paler, from dusky testaceous to nearly black; the venter showing a vague pale longitudinal line on each side. The light lines of carapace and abdomen clothed densely with white hairs, the margin of carapace also clothed with white hair, the hair of other parts dark.

Carapace with dorsal line in profile nearly horizontal, a little depressed at the groove; pars cephalica anteriorly very narrow.

Anterior row of eyes strongly procurved, much longer than the second row (posterior medians) but shorter than the third (posterior laterals); median eyes much smaller than the laterals (diameters nearly as 2:3), about their radius apart and about half as far from the laterals; lateral eyes not fully their radius from the lower edge of clypeus. Eyes of the second row but slightly larger than the anterior lateral eyes, about their radius apart. Eyes of the third row clearly smaller than those of the second, their diameters being as 4:5; each its diameter from corresponding eye of the second row, a little more than three times their diameter apart. Cephalothorax between six



and a half and seven times as long as area of the two posterior rows of eyes.

Labium a little longer than wide (28:25), reaching a little distad of middle of endites; proximal notches long; distal margin wide, a little incurved, (Plate 23, fig. 2).

Sternum but little longer than wide, convexly rounded in front; caudally ending in a short acute process between the last coxae.

Chelicerae long and cylindrical, not very stout; lower margin with three subequal teeth; upper margin with three teeth of which the median is largest as usual.

Tibiae I and II with three pairs of ventral spines of which the first two are very long and appressed, the distal pair much shorter; two spines on anterior and two on posterior surface. Femur I with three spines in middorsal line and with two on the anterior side of this and three on the posterior. Patellae I and II unarmed; III and IV with a spine on anterior and one also on posterior surface. Paired claws with mostly eleven or twelve long teeth, these a little curved distad; unpaired claw with two short teeth at base, (Plate 23, fig. 6).

*Male (Type).* Length, 15 mm. Length of cephalothorax, 7 mm.; width, 5 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	7 mm.	8.5 mm.	5.7 mm.	3.5 mm.	24.7 mm.
Leg II	6.9	8	5.6	3.5	24.0
Leg III	6.7	7	5.5	3	22.4
Leg IV	7.5	9	8.3	4	28.8

Tibia I, 5.25 mm. Tibia IV, 6.8 mm.

*Female.* Length, 13.3 mm. Length of cephalothorax, 6 mm.; width, 4.6 mm.

	fem.	tib +pat.	met.	tar.	total
Leg I	5.9 mm.	5.9 mm.	4.2 mm.	3 mm.	19.0 mm.
Leg II	5.1	6.1	4.1	2.8	18.1
Leg III	5	5.3	4	2.2	16.5
Leg IV	6.2	7	6.6	3.1	22.9

Tibia I, 4.9 mm. Tibia IV, 5.2 mm.

*Locality.*—Huadquina, 5,000 feet, July 26. (Type, M. C. Z. 269, male; paratypes, M. C. Z. 270, one male and one female).

Named for Edward S. Harkness of New York, a patron of the expedition.



## LYCOSA SECURIFER Tullgren.

Arkiv. f. zool., 1905, **2**, p. 66, pl. 8, f. 32.

The specimens here listed are, with slight doubt, referable to *L. securifer* described by Tullgren from Argentina.

*Localities*.—Cuzco, 11,500 feet, July. (M. C. Z. no. 271, one adult female with egg sac and one immature female taken under stone). Urubamba, 9,500 feet, July. (M. C. Z. 272).

## LYCOSA GUMIA Petrunkevitch.

*Lycosa gulosa* Tullgren, Arkiv. f. zool., 1905, **2**, p. 63, pl. 8, f. 30.

*Lycosa gumia* Petrunkevitch, Bull. Amer. mus. nat. hist., 1911, **29**, p. 560.

*Localities*.—Tincochaca, 7,000 feet, August. (M. C. Z. 273, six females). San Miguel, 6,000 feet, July. (M. C. Z. 274, one female).

## LYCOSA THORELLI (Keyserling).

*Tarentula thorelli* Keyserling, Verh. Zool. bot. ges. Wien, 1876, **26**, p. 650, pl. 1, f. 28.

*Localities*.—Huadquina, 5,000 feet, July. (M. C. Z. 275, one female). Lucma, 7,000 feet, August. (M. C. Z. 276, one female adult, and one immature female).

## LYCOSA sp. a.

An immature male of doubtful species collected at Paltaybamba, 5,000 feet, August 27. (M. C. Z. 277).

## LYCOSA sp. b.

An immature male from Panama, June. (M. C. Z. 278). It is near *L. dilatata* F. Cambridge, but is probably undescribed.

## LYCOSA sp. c.

An immature female from Ollantaytambo, 9,000 feet, July. (M. C. Z. 279).



## LYCOSA sp. d.

An immature female of uncertain species from Santa Ana, 3,000 feet, August. (M. C. Z. 280).

## LYCOSA sp. e.

An immature female from the Conservidayo River collected in August. (M. C. Z. 281).

LYCOSA LIOPUS,<sup>1</sup> sp. nov.

## Plate 24, fig. 4.

Carapace with sides brown, a supramarginal stripe on each side and a broad median longitudinal stripe light testaceous, the latter stripe narrowed between eyes and again gradually narrowing caudad, not distinctly constricted in front of the groove; lateral margins dusky. Hair of the light stripes when dry grey or somewhat brownish grey. Sternum and legs light testaceous, the femora of legs beneath paler, more yellow; legs without any markings. Labium dusky except across tip. Endites light chestnut, tips pale. Chelicerae chestnut. Venter of abdomen yellow, dorsum and sides darker, especially across anterolateral corners; dorsum with a median wedge-shaped black mark at base, the mark abruptly narrowed into a narrow tongue caudad.

Anterior row of eyes shorter than the second; clearly procurved median eyes with diameter larger than that of laterals in ratio 16:13, their radius apart and only half as far from the laterals. Anterior median and anterior lateral eye each its diameter from the lower margin of clypeus. Eyes of second row greatly exceeding those of the first, their diameter being to that of the anterior medians as 2:1; not fully two thirds their diameter apart ( $9/16$ ) scarcely one third their diameter from anterior median eyes. Eyes of third row about seven eighths the diameter of the second, between 2.25 and 2.5 times their diameter apart. Length of cephalothorax to length of area of four posterior eyes as 4.75:1.

Lower margin of furrow of chelicerae with the usual three teeth, these stout, conical, and subequal.

<sup>1</sup> λεῖος, smooth, πούς, foot.



Sternum 2.8 mm. wide and 3.8 mm. long.

Anterior tarsi and metatarsi scopulate to the base, the tibiae also scopulate at distal end; posterior metatarsi only sparsely scopulate distad. Tibia I with ventral spines as usual, moderate in size, the basal spines largest, a little overlapping those of the second pair; on anterior side with two (or on one side with three) spines the posterior side with none; spines of tibia II the same excepting there are two anterior spines on both right and left legs in type and there is on one side a minute distal spine on the caudal side.

*Female.* Total length, 15.5 mm. Length of cephalothorax, 8.1 mm.; width, 6 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	5.2 mm.	6.4 mm.	4 mm.	2.8 mm.	18.4 mm.
Leg II	5.1	6.4	3.9	2.8	18.2
Leg III	5.1	5.7	4.2	2.5	17.5
Leg IV	6.3	7.1	6.1	3.25	22.75

Tibia I, 4 mm. Tibia IV, 4.7 mm.

*Locality.*—Santa Ana, 3,000 feet, August. (Type, M. C. Z. 282, one female).

# LYCOSA ORINUS,<sup>1</sup> sp. nov.

## Plate 24, fig. 1.

Carapace with integument dark brown, a supramarginal pale stripe on each side and a broad median longitudinal testaceous stripe extending from between eyes to the caudal margin, this stripe constricted a little in front of the groove and narrowing down the posterior declivity; the pale stripes, and the border beneath the lateral ones as well, clothed with bronze-brown hair intermixed, especially in the eye-region, with black bristles; hair of other parts of carapace darker. Sternum black. Labium and endites deep chestnut or blackish, pale across the tip. Chelicerae black clothed in front below with orange hair. Legs testaceous to brown, the coxae beneath all black; femora I and II also black beneath but femora III and IV merely with a black stripe across distal end beneath; all patellae black beneath; all tibiae with a broad black band across distal end; the anterior metatarsi black beneath, the posterior metatarsi black at the distal ends,

<sup>1</sup> ὄρεινός, mountaineer.



the hair of black areas of legs black, of the other parts above brown with darker longer bristles intermixed in the usual way, but the light areas beneath clothed with more grey colored hair. Abdomen beneath solid black; sides grey-brown; dorsum very dark brown, dusky, a median blackish wedge-shaped mark outlined by light lines in the front third of the length, this followed by a series of black chevron-lines each bordered caudad by a light line which commonly terminates at each end in a light spot, the light lines clothed with hair which is yellow when dry, there being other spots and streaks of same as well.

Cephalothorax in profile with the dorsal line rising gradually and moderately from the posterior declivity to the third eyes.

Anterior row of eyes a little shorter than the second (17:18), pro-curved as usual; medians larger than the laterals (diameters as 19:16) scarcely their radius apart, nearer to the laterals; median eye separated from eye of second row of same size by a distance equal to diameter of lateral eye; anterior lateral eye once and a fourth their diameter from lower edge of clypeus. Eyes of second row with diameter fully twice that of anterior medians, about five eighths their diameter apart. Posterior eyes with diameter three fourths that of the second eyes, not quite three times their diameter apart. Area of four posterior eyes just one fifth total length of carapace.

Sternum broadly elliptic, three fourths as wide as long.

Anterior tarsi and metatarsi and distal end of tibiae densely scopulate; posterior metatarsi scopulate only at distal end. Anterior tibiae with the usual three pairs of spines beneath, these very short as are also the small spines on the anterior and posterior surface.

*Female.* Length, 18.5 mm. Length of cephalothorax, 9.4 mm.; width, 7 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	7.1 mm.	8.1 mm.	5 mm.	3.5 mm.	23.7 mm.
Leg II	6.5	7.3	5	3	21.8
Leg III	6	6.8	4.6	3	20.4
Leg IV	7.8	8.8	7.0	3.7	24.3

*Locality.*—Cuzco, 11,500 feet, July 6, 7. (Type, M. C. Z. 283; paratypes M. C. Z. 284, two mature and one immature females and three immature males).



## LYCOSA ANDINA, sp. nov.

## Plate 24, fig. 2-3.

Carapace dark brown, a broad median longitudinal stripe from eyes caudad and narrowing to caudal edge testaceous, this stripe limited as far back as the thoracic furrow by a narrow black line; a narrow pale supramarginal stripe on each side. Sternum, labium, endites, and coxae of legs beneath deep blackish brown in alcohol or dense blackish when dry. Chelicerae black; a dense coat of orange colored hair on anterior face, especially distally. Legs brown, femora paler beneath; patella black across ventral surface; tibiae with a broad black band across distal end on ventral half. Abdomen grey-brown, venter wholly dusky; dorsally with a median longitudinal black stripe at base this first clavately widening and then abruptly narrowed to continue as a narrow tongue to middle where it bifurcates in two narrow pointed branches; caudad of this mark two or three slender black chevron-marks are usually distinctly indicated. The male is colored similarly to the female but the venter back of the genital furrow is solid black and the abdomen in a stripe across each anterolateral corner and caudad along side of abdomen is also black.

Cephalothorax in profile with the dorsal line convex, very little rising cephalad of the groove.

Anterior row of eyes procurved, equal in length to the second; median eyes decidedly larger than the laterals (diameters as 4:3), rather less than their radius apart, closer to the laterals; anterior medians about their diameter from lower edge of clypeus. Eyes of second row with diameter larger than that of anterior median eye in about ratio 18:11, nearly two thirds their diameter apart. Eyes of third row smaller than those of the second (diameters nearly as 5:6); about five sixths their diameter from eyes of second row, more than twice their diameter apart. Cephalothorax between 7.25 and 7.5 times longer than the quadrangle of the second and third eye rows.

The three teeth of the lower margin of furrow of chelicera long, conical, stout, the most proximal one a little largest.

Distal edge of labium broad, very slightly incurved from end to end.

Sternum semicircular, longer than wide in about ratio 3.1:2.9.

All tarsi and metatarsi scopulate to base; anterior tibiae also densely scopulate over distal half or more. Anterior tibiae with the usual ventral spines only; posterior tibiae in addition to the ventral



spines with two spines in the middorsal line and with two each on the anterior and posterior side above.

*Male.* (Type, *Tincochaca*). Length, 24.5 mm. Length of cephalothorax, 9 mm.; width, 6.2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	6.8 mm.	8.3 mm.	6 mm.	3.5 mm.	24.6 mm.
Leg II	6	7.3	4.2	3.1	20.0
Leg III	5.4	6	4.2	3	14.6
Leg IV	7.3	8.8	7.2	4.0	27.3

Tibia I, 5.2 mm. Tibia IV, 5.6 mm.

*Female* (*Torontoy*). Length, 24.5 mm. Length of cephalothorax, 9 mm.; width, 6.2 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	6.5 mm.	8 mm.	5 mm.	3.2 mm.	22.7 mm.
Leg II	6	7.3	4.2	3.1	20.7
Leg III	5.4	6	4.2	3	18.6
Leg IV	7.3	8.8	7.2	4	27.3

Tibia I, 5 mm. Tibia IV, 7 mm.

*Localities.*—Tincochaca, 7,000 feet, August. (Type, M. C. Z. 285, male; paratype, M. C. Z. 286, female). Lucma, 7,000 feet, August. (M. C. Z. 287, six specimens). Torontoy, 8,000 feet, July. (M. C. Z. 288, one female). Urubamba, 9,500 feet, July. (M. C. Z. 289, one immature female).

#### LYCOSA ALGINA,<sup>1</sup> sp. nov.

Plate 24, fig. 5-6.

Sides of carapace blackish brown; the usual pale supramarginal line on each side extending forward to pars cephalica; a median longitudinal pale stripe extending from between eyes which are enclosed in black, to caudal margin, this being a little constricted at a point between eyes and groove, narrowing down posterior declivity as usual. Sternum yellow with a solid black median longitudinal stripe across the entire length. Chelicerae testaceous with a few, in part obscure, blackish longitudinal lines. Coxae of legs beneath yellow. Leg I

<sup>1</sup> αλγεινός, giving pain.



partly regenerated and not normal nearly clear yellow, markings obscure. Other legs with femora marked by four wavy or serrate edged black annuli; patellae nearly entirely blackish; tibiae with two broad black bands leaving between them only a narrow circle of yellow at the middle; metatarsi with three broad black annuli; tarsi without dark bands.

Abdomen beneath yellow, black at base of spinnerets; sides above finely densely spotted with black, the spots fewer below, a black patch on each anterolateral corner; dorsum pale in a band about a black basal mark and also paler transversely at caudal end and in a narrow median line connecting with the anterior light area.

Carapace moderately high, the posterior declivity steep; dorsal line in profile a little depressed at dorsal groove.

Anterior row of eyes distinctly shorter than the second (9:10); moderately procurved; median eyes clearly less than their radius apart (four elevenths of diameter), closer to the laterals, their diameter exceeding that of the laterals in about the ratio 11:9. Anterior median eyes separated from the lower edge of clypeus by less than their diameter (about 8:11). Eyes of second row not quite twice the diameter of the anterior median eyes, more than their radius apart (about thirteen twentieths of diameter); separated from anterior median eyes by about the radius of the latter. Area of median eyes wider than long in ratio 10:7; wider behind than in front in ratio 2:1. Eyes of third row distinctly smaller than the second (diameters about as 9:11), near 2.22 their diameter apart. Cephalothorax only 3.96 times longer than area of posterior eyes.

Spines of anterior tibiae and metatarsi as usual in number; the first two pairs very long, the distal ones much shorter.

Labium a little wider than long (15:14); notches about one third the total length, (Plate 24, fig. 5).

*Male.* Length, 7 mm. Length of cephalothorax, 4 mm.; width, 3 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	—	—	—	—	—
Leg II	3.2 mm.	4 mm.	2.6 mm.	1.4 mm.	11.2 mm.
Leg III	3	3.5	3	1.6	11.1
Leg IV	4	4.8	4.8	2.2	15.8

Tibia IV, 3.1 mm.

*Locality.*—Paltaybamba, 5,000 feet, August. (Type, M. C. Z. 290).



A species in several respects much like a *Pardosa* rather than a *Lycosa*. The palpal organ of the male has the structure typical of a *Lycosa*.

*ARCTOSA ALTAMONTIS*, sp. nov.

Plate 23, fig. 7-9.

Carapace with the usual wide median pale spot back of the eyes with radiating lines down the sides, this area abruptly narrowed at caudal end of thoracic groove and running as a much narrower tongue down the posterior declivity; on each side above the black margin a series of large, in part confluent light spots, the row bending up to the third eye on each side. Eye-area black excepting for short tongue of light color between the third eyes. The light areas clothed with grey hair. Sternum black. Labium black except distally. Endites testaceous. Chelicerae brown or light testaceous. Legs yellow, closely annulate with black, the annuli commonly incomplete below and often broken into spots; femora with four dark rings of which the most distal is proximad of the end; papilla with one ring at proximal end; tibia with two rings and metatarsus with three. Abdomen with venter and lower part of sides clear greyish yellow; a dusky band over each anterolateral corner broken into irregular spots farther caudad; at base with a median longitudinal lanceolate mark of brown with two small triangular black marks on the edge of each side; basal mark followed behind by a series of pairs of dark, often indistinct, marks which may in part be confluent.

Cephalothorax low. Head rather broad with sides of face sloping outward as usual; the eyes removed from lateral edges of the head.

Anterior row of eyes clearly shorter than the second (38:45); a little procurved; median eyes decidedly larger than the laterals (ratio of diameters as 10:7), three fifths their diameter apart, not fully a third as far from the laterals. Clypeus narrower than the anterior median eyes (about three fifths as wide). Eyes of the second row one and three fifths the diameter of an anterior median eye; their diameter or very nearly so, apart. Third eyes each slightly smaller than the second (about as 15:16 in diameters), just twice their diameter apart. Quadrangle of posterior eyes much wider behind than in front (57:45), wider than long (57:48); length to that of cephalothorax nearly as 1:4.

Upper margin of furrow of chelicera with the three teeth as usual; lower margin with three stout conical teeth which commonly decrease in size proximad.



Labium a little longer than wide (17:16); notches one fourth the total length; sides convex, converging distad; distal margin widely weakly incurved.

Scopulae of tarsi as usual, those of the anterior tarsi entire though not dense, those of the posterior pairs more sparse and divided by a wide setose band. Tibia I with the usual three pairs of ventral spines; tibia II with the usual distal pair of spines but with single median and basal spines toward caudal side, in place of the usual pairs. No median dorsal spine at base of posterior tibiae, this as usual represented merely by a long bristle in each case. Patellae not armed in median dorsal line.

*Female.* Length, 10 mm. Length of cephalothorax, 4 mm.; width, 3.1 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	3 mm.	3.6 mm.	2.1 mm.	1.8 mm.	10.5 mm.
Leg II	3	3.1	2.1	1.7	9.9
Leg III	2.7	3.1	2.3	1.7	9.8
Leg IV	4	4.3	3	2.1	13.4

Tibia I, 2 mm.

Length of male, 8 mm.; length of cephalothorax, 3.8 mm., width, 2.7 mm.

*Localities.*—Cuzco, 11,500 feet, July. (Type, M. C. Z. 291, female; paratypes, M. C. Z. 292, numerous females). Arequipa, 7,600 feet, June 28. (M. C. Z. 323, one female). Urubamba, 9,500 feet, July. (M. C. Z. 293, on male, two females).

### ORINOCOSA,<sup>1</sup> gen. nov.

Cephalothorax much as in *Lycosa*, but with sides of head steeper.

Anterior eyes small, the medians larger than the laterals to which they are closer than to each other; anterior row much shorter than the second, strongly procurved. Eyes of second row large, less than their diameter apart. Quadrangle of posterior eyes wider behind than in front (in type species the length of quadrangle is to length of cephalothorax as 1:3.6 or 3.7).

Clypeus receding from median eyes; narrow, but equal in width to diameter of an anterior median eye.

<sup>1</sup> Greek *ὄρεινός*, mountaineer, *Lycosa*.



Upper margin of furrow of chelicera with three teeth of which the median is longest; lower with three teeth of which the most proximal may be reduced.

Labium as wide as long or nearly so. Basal notch in type short, about one fourth the total length.

Legs distally slender. Metatarsus IV equal in length to tibia C + patella IV. Tarsi setose beneath, none truly scopulate. Tibia I with three pairs of ventral spines, the distal reduced, the first two but slightly exceeding the diameter of the joint. Tibiae III and IV above with a stout median apical spine and a median basal spine.

Epigynum with median guide and transverse arms; lateral cavities deeper cephalad as in *Lycosa*.

Genotype.—*Orinocosa aymara*, sp. nov.

Most readily distinguished from related genera by presence of the stout median dorsal spines on the posterior tibiae. Its affinities seem to be closest with *Lycosa*.

ORINOCOSA AYMARA, sp. nov.

Plate 24, fig. 7-8.

Carapace with sides nearly black; on each side a narrow, supra-marginal light line which does not reach upon pars cephalica; median pale stripe beginning back of second eyes extending between third behind which it widens to width of eye-area, then abruptly narrower some distance in front of the thoracic furrow and gradually narrowing to caudal margin, the stripe embracing a dark mark back of each eye of the third row. Sternum black, with a median longitudinal yellow mark in the anterior half. Labium dusky. Endites brown or somewhat chestnut. Chelicerae light chestnut. Coxae of legs beneath yellow; other joints yellow, with exception of tarsi closely ringed with black, there being three distinct annuli on femora of which the distal is very broad and two on the tibia of such breadth that only a small ring of yellow remains at the middle; metatarsus also with two broad rings nearly embracing the whole length. Venter of abdomen brown, black at base of spinnerets; sides with a few black spots; a large solid black spot over each antero-lateral corner; dorsum greyish yellow covered with a very fine areolation in dark, embracing a short, faint lanceolate outline at base which sends off a pair of short side branches at tip and one on each side near middle, behind tip of



lanceolate mark a small triangular black spot and on each side of dorsal light area two black spots of which the most anterior is on a level with tip of lanceolate mark.

Anterior row of eyes much shorter than the second (33:48); strongly procurved; laterals with diameter three fourths that of the median; medians their radius apart and half as far, or scarcely more, from the laterals. Clypeus conspicuously receding; width about equal to diameter of median eye. Eyes of second row more than twice the diameter of an anterior median eye (about 5:2), not quite three fourths their diameter apart (about 10:7), one fourth their diameter from anterior median eyes. Area of median eyes very much wider than long (ratio about 16:9), wider behind than in front in ratio 48:17, or nearly three times. Eyes of third row clearly smaller than those of the second (diameters about as 17:20), less than 2.5 times their diameter, apart. Area of posterior eyes to total length of carapace nearly as 1:3.6 or 3.7.

Labium nearly as wide as long; basal notches one fourth or but little more of the total length of labium, (Plate 24, fig. 7).

Sternum about six sevenths as wide as the total length.

Lower margin of furrow of chelicera with three stout teeth of which the most proximal may be smaller than the others; upper teeth as usual.

Spines of anterior tibiae and metatarsi as usual in *Pardosa* or nearly so. Patellae of posterior legs with a spine not only on each lateral surface but also with two dorsal spines, one basal and one strictly distal.

Tibia IV with spine at base above. None of tarsi scopulate, strongly setose beneath. Paired claws with about 10, closely set teeth.

*Female.* Length 6 mm. Length of cephalothorax 3.2 mm.; width, 2.1 mm.

	fem.	tib.+pat.	met.	tar.	total
Leg I	2.1 mm.	2.7 mm.	1.8 mm.	1.2 mm.	7.8 mm.
Leg II	2	2.3	1.4	1.1	6.8
Leg III	2	2.1	1.7	1	6.8
Leg IV	3	3.1	3	1.8	10.9

*Localities.*—Santa Ana, 3,000 feet, August. (M. C. Z. 294, one female). Huadquina, 5,000 feet, July. (M. C. Z. 295).



## OXYOPIDAE.

## OXYOPES SALTICUS Hentz.

Boston journ. nat. hist., 1845, **5**, p. 196, pl. 16, f. 10.

*O. varians* Taczanowski, Horae Soc. ent. Roos., 1873, **10**, p. 95.

*O. gracilis* Keyserling, Verh. Zool. bot. ges. Wien, 1877, **27**, p. 698, pl. 2, f. 63, 64. O. P. Cambridge, Biol. Cent. Americana, 1902, **2**, p. 342, pl. 32, f. 14, 15.

*Localities*.— Santa Ana, 3,000 feet, August. (M. C. Z. 332, five females and one male).

Panama, June. M. C. Z., 333, three females and one male).

## PEUCETIA RUBRALINEATA Keyserling.

Verh. Zool. bot. ges. Wien., 1876, **26**, p. 704, pl. 2, 70, 71.

*Localities*.— Near Paltaybamba, 6,000 feet, August. (M. C. Z. 334, one female). Huadquina, 5,000 feet, July. (M. C. Z. 335, two females and one male).

## TAPINILLUS sp. a.

Two immature specimens of uncertain species).

*Locality*.— San Miguel, 6,000 feet, July. (M. C. Z. 336).

## TAPINILLUS, sp. b.

An immature specimen of uncertain species.

*Locality*.— Huadquina, 5,000 feet, July. (M. C. Z. 337).

## SALTICIDAE.

## DENDRYPHANTES BISQUINQUEPUNCTATUS Taczanowski.

Bull. Soc. imp. nat. Moscow, 1878, p. 309.

*Locality*.— Paltaybamba, originally described from Pumamarca, Peru, 5,000 feet, August. (M. C. Z. 296, one male).



## DENDRYPHANTES ANDINUS, sp. nov.

Plate 25, fig. 5, 6.

Carapace with integument reddish brown, darker cephalad, but covered in life with hair and scales in a broad median longitudinal band of metallic green color, this band being as wide cephalad as the eye-area and narrowing strongly caudad, and in a wide supramarginal band of white hair on each side. Chelicerae chestnut. Sternum, labium, and endites brown; coxae of legs beneath yellow; other joints of legs yellowish or testaceous, each with a black annulus at distal end, but the first pairs darker, dusky chestnut throughout. Abdomen above encircled with a stripe of white hair and along median portion five pairs of small white dots outside of which are black dots, the dorsum elsewhere being clothed with scales of the metallic green lustre; venter brown, limited on each side with a line of white hair; sides clothed with white and green hair intermixed.

Ocular quadrangle wider behind than in front (12:11) and wider than long as usual. Eyes of second row minute, situated considerably in front of the middle. Anterior row of eyes strongly recurved; median eyes with diameter two and a third that of the laterals, one seventh diameter apart and about same distance from the laterals.

Length of male 6.3 mm.; length of cephalothorax 3 mm., width, 2.2 mm.

*Locality*.— San Miguel, 6,000 feet, July. (M. C. Z. 297, one male).

DENDRYPHANTES CALUS,<sup>1</sup> sp. nov.

Plate 25, fig. 7, 8.

Carapace with integument black or nearly so, a wide supramarginal stripe of white scales on each side. Chelicerae black, the claws brown. Sternum black. Coxae of legs testaceous; femora and tibiae of leg I black, patella black distally, testaceous proximally, distal half of metatarsus I black, testaceous proximally, tarsus testaceous; other legs paler, more yellowish, with narrow annulus of black at distal end of each. Abdomen in life with the dorsum black, a band of white hair across anterior surface and continuing half way back along the sides,

<sup>1</sup> καλός, beautiful.



with three narrow lines of white extending from sides a short distance mesad on the dorsum on each side at and caudad of the middle; venter brown.

Ocular quadrangle much wider than long and wider behind than in front in the usual way. Second eyes minute and well in front of the middle. Eyes of first row about as in the preceding species.

Chelicerae long and slender; the claw slender and as long as the chelicera, with a double curve; tooth of lower margin bent conspicuously toward distal end of chelicera, (Plate 25, fig. 8).

Tibia I with two pairs of ventral spines toward distal end and a single ventral spine toward ectal side well toward base of joint. Metatarsus I with two pairs of ventral spines, one distal and one at middle.

Length, 5.1 mm.; length of cephalothorax, 2.5 mm., width, 1.9 mm.

*Localities*.— Santa Ana, 3,000 feet, August. (Type, M. C. Z. 298, male; paratype, M. C. Z. 299, one male). San Miguel, 6,000 feet, July. (M. C. Z. 331, one male). Paltaybamba, 5,000 feet, August. (M. C. Z. 300, one male). Huadquina, 5,000 feet, July. (M. C. Z. 301, an immature female).

#### DENDRYPHANTES AMPHIBOLUS,<sup>1</sup> sp. nov.

#### Plate 25, fig. 9.

Carapace with integument reddish black, clothed over whole surface with white scales of greenish lustre. Sternum and labium brownish black, the endites a paler brown. Legs yellowish or pale testaceous, the femora, patellae, tibiae, and metatarsi typically dark at tips, at least ventrally, but the annuli may be clearly evident only on the posterior pairs. Abdomen above with several pairs of large brown spots the most anterior of which are confluent across anterior end and with less distinct chevron-lines between caudal ends of others; in the elongate yellowish grey area between anterior pairs of spots is a longitudinal brown line or mark bisecting the same; the hair across the anterior face and bordering the brown spots is white; venter dilute yellowish grey, with or without three longitudinal brown lines on the caudal portion. Spinnerets narrowly enclosed at base with brown.

Tibia I (female) with two pairs of short spines toward the distal end and one ventral spine on the ectal or caudal side toward the base; metatarsus I with two pairs of spines, one distal and one mesal.

<sup>1</sup> ἀμφιβολος, ambiguous.



Tooth of lower margin of chelicera (female) short, stoutly conical, acute; teeth of upper margin two, small (or an obsolete third tooth may be present).

Ocular quadrangle much wider than long, conspicuously wider behind than in front, with the minute second eyes in front of the middle as usual. Eyes of the first row as in the preceding species.

Length of female 5 mm.; length of cephalothorax 2 mm.; width, 1.4 mm.

*Localities*.—Huadquina, 5,000 feet, July. (Type, M. C. Z. 302, female; paratypes, M. C. Z. 303, six females). Paltaybamba, 5,000 feet, August. (M. C. Z. 304, three females).

DENDRYPHANTES sp. a.

A female from Huadquina, 5,000 feet, July. (M. C. Z. 309) cannot be satisfactorily determined.

DENDRYPHANTES sp. b.

An immature female of doubtful species from San Miguel, 6,000 feet, July. (M. C. Z. 310).

WALA sp.

An immature male and female of uncertain species from San Miguel, 6,000 feet, July. (M. C. Z. 305).

WALA NODA,<sup>1</sup> sp. nov.

Plate 25, fig. 2.

Carapace with integument brownish black, rubbed in part but apparently clothed in life with greyish scales which on the head are more brownish. Legs brown. Sternum brownish black. Abdomen grey-brown beneath. Above clothed with light grey scales except for two pairs of elongate subtriangular dark areas of which the apices are directed forwards and the edges are curved; a narrow chevron-mark between the two pairs of dark spots.

<sup>1</sup> *νωδός*, edentate.



Lower margin of furrow of chelicera unarmed or with but a minute pale rudiment of a tooth.

Tibia I armed beneath with three pairs of spines; metatarsus I with two longer pairs; tibia II beneath with an apical pair and a single spine toward middle in the usual way.

Ocular quadrangle much wider than long (13:9), fully as wide in front as behind. Eyes of second row slightly in front of the middle.

Length of female, 6 mm.; cephalothorax, in length, 2.8 mm.; width, 1.8 mm.

*Locality*.—Torontoy, 8,000 feet, July 22. (Type, M. C. Z. 306, female; paratype, M. C. Z. 307, one female).

One female from the Conservidayo River in bad condition is this species or very close to it.

#### EVOPHRYS CRUX Taczanowski.

Bull. Soc. imp. nat. Moscow, 1878, p. 284.

Described originally from Amable Maria, Peru.

*Locality*.—Tincochaca, 7,000 feet, August. (M. C. Z. 311, female).

#### EVOPHRYS PERUVIANA Taczanowski.

Bull. Soc. imp. nat. Moscow, 1878, p. 280.

Previously known from Amable Maria and Pumamarca, Peru.

*Locality*.—Conservidayo River, August. (M. C. Z. 312, four females).

#### EVOPHRYS sp. a.

*Locality*.—Santa Ana, 3,000 feet, August. (M. C. Z. 313, one immature female).

#### EVOPHRYS sp. b.

*Locality*.—Santa Ana, 3,000 feet, August. (M. C. Z. 314, one immature female).

#### EVOPHRYS sp. c.

*Locality*.—Lucma, 6,000–7,000 feet, August. (M. C. Z. 315, one immature male in coloration much like *E. crux* Tacz.).



EVOPHRYS SIMA,<sup>1</sup> sp. nov.

Plate 25, fig. 1.

Carapace with a broad median longitudinal light band anteriorly as broad as the ocular quadrangle but narrowing caudad to a point at the caudal edge, this band reddish on head and becoming yellow caudad; sides blackish brown with a narrow supramarginal pale stripe on each side. Sternum yellow. Last three pairs of legs yellow; first pair of legs with femora reddish brown, more yellow distally, the more distal joints light brown, the metatarsus clothed with a brush of long spatulate hairs on ventral surface, similar but more sparse ones on ventral surface of femur and patella. Palpi reddish brown, the femur with numerous white hairs above and with black scopulate hairs below which also occur on other joints. Dorsum of abdomen black with a narrow median longitudinal yellow stripe over the entire length, the edges of this stripe dentate along caudal half of length; sides yellow finely dotted with black and a more solid stripe below at the anterior end; venter yellow with a few dots at the sides. Spinnerets dusky.

Tibia I with the usual three pairs of ventral spines; one small spine toward the distal end on lower anterior surface. Metatarsus I with two pairs of spines as usual.

Ocular quadrangle a little wider in front than behind and rather more than one fourth wider than long. Eyes of second row caudad of middle. Eyes of first row nearly contiguous, medians twice the diameter of the laterals.

Length of male, 4 mm. Length of cephalothorax, 2.2 mm.; width, 1.6 mm.

*Locality*.—San Miguel, 6,000 feet, July. (M. C. Z. 316, one male).

## PHIALE PANAMAE, sp. nov.

Plate 25, fig. 4.

Carapace black with a reddish yellow median longitudinal stripe crossed by a black band at level of the third eye row and narrowing to the posterior margin; also a reddish supramarginal stripe on each side. Sternum yellow, dusky at margins. Legs and palpi dusky brown, the posterior pairs somewhat paler. Spinnerets and venter

<sup>1</sup> Gosiute *sima*, one.



of abdomen dusky; dorsum black, the anterior face and anterolateral corners and sides whitish, three pale spots in a triangle near middle and several fainter, smaller ones farther caudad.

Ocular quadrangle slightly wider in front than behind; eyes of second row minute, behind middle. First row of eyes decidedly recurved; eyes contiguous or nearly so, the median eyes with diameter two and a half times that of the laterals.

Femora I and II with three moderately long spines at the distal end on anterior part of dorsal surface and with two spines in the middorsal line farther proximad. Tibia I with the usual three pairs of rather short ventral spines and two on anterior surface; metatarsus I with two pairs of ventral spines and one on anterior surface at the distal end.

Tibia of palpus with apophysis at distal end from dorsoectal corner subconical, distally curved.

Length of male, 4 mm.; length of cephalothorax, 2.1 mm.; width, 1.3 mm.

*Locality*.—Panama, June. (M. C. Z. 317, one male).

#### PHIALE HUADQUINAE, sp. nov.

#### Plate 25, fig. 3.

Carapace with integument solid shining black, a band of white hair along each side. Sternum and mouthparts also black, the endites pale across tips. Last two pairs of coxae yellowish beneath, the anterior pairs darker; femora, patellae, and tibiae black. Metatarsus black distally, testaceous proximally; tarsi testaceous. Integument of abdomen black clothed with hair of golden brown lustre; hair of venter grey.

Lower margin of furrow of chelicera with one stout tooth; upper margin with two teeth united at base.

Ocular quadrangle wider in front than behind (46:43). Eyes of second row minute, at middle of length of quadrangle or scarcely in front. Anterior row of eyes strongly recurved; median eyes a little more than twice the diameter of the lateral, about one seventh their diameter apart and from the laterals.

Tibia I with three pairs of spines below and three single ones on anterior surface; metatarsus with two pairs beneath.

Length of male, 7 mm.; length of cephalothorax, 3.1 mm.; width, 2.1 mm.

*Locality*.—Huadquina, 5,000 feet, July. (M. C. Z. 318, one male).





Chamberlin, Ralph V. 1916. "Arachnida." *Bulletin of the Museum of Comparative Zoology at Harvard College* 60, 175–299.

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