

American Museum Novitates

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CENTRAL PARK WEST AT 79TH STREET, NEW YORK 24, N.Y.

NUMBER 1920

DECEMBER 31, 1958

The Spider Family Plectreuridae

BY WILLIS J. GERTSCH¹

The primitive hunters of the family Plectreuridae are among the most generalized of all the haplogyne ecribellate spiders. They alone, of a sizable series largely comprising six-eyed types, still retain the full complement of eight eyes. Their habitus is that of the segestriids in that they are short-sighted, nocturnal animals that live a semisedentary life in a silken tube. The males have developed coupling spurs on the tibiae of their front legs and probably use them for restraining or positioning the female during courtship and mating. In this feature they are like the males of *Ariadna* and also, except for smaller size, some of the trap-door spiders. These latter they also resemble in their stance and deliberate gait.

The plectreurids spin tubular retreats similar to those of *Ariadna*, with small entrances fringed or ringed with silk, and they place these domiciles in a variety of dark situations. Favored spots are spaces under stones and ground detritus, in small holes of banks along roads and streams, in crevices in the masonry of stone walls and bridges, in adobe walls of fences and houses, and in other appropriate locations. Some species have been taken from cave entrances and others from the floors and walls deep inside caves. The females and various immature stages live in their retreats and rarely stray far from them. At night they move to the retreat opening, where they station themselves to seize passing insects. The males live in similar retreats until maturity and then leave them to stalk about in search of the females.

The present paper is concerned largely with the systematics of this little-studied, exclusively North American group of relict haplogyne

¹ Curator, Department of Insects and Spiders, the American Museum of Natural History.

spiders. Enough material has now been collected to give us greater insight into the morphology and distribution of the family. About three-fourths of the known fauna of 26 species are described as new in this paper.

This study is based largely on the collection of the American Museum of Natural History, where most of the types and a large portion of the known specimens are deposited. I take this opportunity to acknowledge with gratitude the cooperation of the following individuals and institutions in making available important study material: Dr. Ralph V. Chamberlin, University of Utah, Salt Lake City, Utah; Mr. Wilton Ivie, Rushland, Pennsylvania; Dr. Herbert Levi, Museum of Comparative Zoölogy, Cambridge, Massachusetts; Dr. Henry Dietrich, Cornell University, Ithaca, New York; Drs. E. S. Ross and H. B. Leech of the California Academy of Sciences, San Francisco, California; Mr. Robert X. Schick, University of California at Los Angeles, California; and Mr. Vincent Roth, United States Department of Agriculture, Yuma, Arizona. The drawings were prepared by Miss Marjorie Stat-ham from pencil sketches provided by the author.

FAMILY PLECTREURIDAE

Plectreuridae BANKS, 1898, Proc. California Acad. Sci., ser. 3, vol. 1, p. 208 (part).

Ecribellate spiders of the suborder Araneomorphae. Respiratory system consisting of a pair of book lungs at base of the abdomen. Tracheae and tracheal spiracles presumably obsolete, the latter originally located in an inconspicuous, transverse groove in advance of the spinnerets. Spinnerets small, set close together, six in number, the front and hind pairs two-segmented but their apical segments small and conical. Colulus obsolete or nearly so, a small brownish plaque bearing two bristles. Chelicerae without boss, tied together at base for half of their length by a flexible white membrane, the inner margins apically provided with a transparent lamina produced at the tip of the fang into a triangular tooth. Outer side of the chelicera with a large stridulating file of fine grooves in both sexes. Femur of the pedipalp with a single small stridulating pin at base on the prolateral side. Labium subtriangular, longer than broad, free; maxillae long, convergent around the labium, with a conical spur at base. Eyes eight, in two essentially straight rows, the anterior median eyes slightly to considerably smaller than the others. Claws three in number; several serrated bristles present on all tarsi. Paired claws similar, pectinated in a single series; median claw strongly bent, with a single basal denticle. Female pedipalp without claw, terminating in a corneous point.

Female copulatory organ of the haplogyne type, the seminal receptacles opening directly into the vagina. Genital groove of female in some individuals with grooves or lobes. Male palpus a simple bulb without hematochoa, without a conductor, the embolus a simple tube or enlarged spine.

TYPE OF THE FAMILY: The genus *Plectreurys* Simon.

The family name Plectreuridae was first proposed in 1898 by Banks who used it in the broad sense to include the genus *Diguetia* as well as the type genus *Plectreurys*. Although this new family was offered without explanation, it was appropriately placed between the families Filistatidae and Scytodidae. The genus *Diguetia* has since been assigned to a separate family. Eugene Simon regarded *Plectreurys* as representing merely a subfamily, Plectreurinae, of the family Sicariidae. For many years this practice has been the accepted one, and there were good reasons for such a disposition in terms of Simon's conservative outlook in regard to families. In 1946 the family Plectreuridae was reinstated by me in my book "American spiders" in the belief that proportionate treatment made necessary subdivision of the quite heterogeneous Sicariidae of Simon.

The plectreurids are haplogyne spiders in which the chelicerae are bound together for about half of their length by an inner white membrane and have transparent laminae running forward to the apex to form a sucking trough. In this feature they resemble the cribellate family Filistatidae, the ecribellate Pholcidae, and the several haplogyne families previously assigned to the Sicariidae. The plectreurids, and these other families as well, are easily derived from ancient filistatoid stock by mere loss of the cribellum and calamistrum. This complex of families also shows close relationship to the Segestriidae and other families in which the chelicerae are free and variously toothed.

The family Plectreuridae is an exclusively North American group which ranges from the southwestern United States deep into Mexico. The center of greatest development is the arid Sonoran region of the United States and western Mexico, where many distinctive species occur. The two known genera can be separated by the following key:

First femur robust, curved, typically shorter than the carapace, lacking dorsal spines except rarely at base; first tibia of male with a stout retrolateral process at apex, which bears a heavy spine *Plectreurys* Simon
 First femur more slender, essentially straight, much longer than the carapace, with a dorsal series of spines the whole length; first tibia of male without process and modified spine *Kibramoa* Chamberlin

THE MALE AND FEMALE GENITALIA

The male palpi of the Plectreuridae are rather short appendages,

with segments little modified and of moderate stoutness. The femur is an elongate, slightly curved segment and bears a single, small, stridulating pin at the base, which is rubbed across the file of fine transverse grooves on the side of the chelicera. The patella is short and thinner than the breadth of the femur. The tibia is a little more than half as long as the femur and is moderately to considerably thickened, especially at the base. The tarsus is a short, suboval segment not much longer than broad. All the segments are liberally clothed with fine hairs and longer, somewhat feathery setae.

The insertion of the bulb to the tarsus is ventral in position. The bulb is of simple form and lacks the conductor of the embolus and apophyses of any kind. It is often spherical or piriform in shape and of quite large size, but in the *Plectreurys castanea* group it is sometimes subdivided into large lobes. The embolus is ordinarily long and thin, essentially straight or variously coiled, but in the *castanea* group it may be a relatively short spur.

The genital organs of the female are hidden beneath the integument as in other typical haplogyne families. In immature females the genital groove is a simple, transverse fissure. In mature females the lips of the groove are swelled out in more or less distinctive fashion and are more strongly sclerotized and tinted with darker color than the adjacent integument. In several large species of *Plectreurys* the sclerotized lips bear deep emarginations or angled lobes distinctive for the species. These modifications are of the same grade as the foveae of *Scytodes* and *Drymusa* or the more elaborate ridges and fingers found in the Pholcidae. Whether these precursory features can be called "epigynum" depends largely on what is the definition of that term. There is every intergradation in spider families from the simplest internal genital organ, with its receptacles opening directly into the vagina, and the most complicated organ, with internal fertilization ducts and external orifices leading to the receptacles. In the intermediate families, such as the Mimetidae, Nesticidae, and numerous others, there can be seen stages in the subdivision of the primary genital tubes into the fertilization ducts and the tubes leading to the external orifices. A single term could appropriately cover this whole system. The term "epigynum" when used to designate only the superficial facies of what is obviously a single unit is an unnecessary luxury. It would be more usefully used as an exact synonym of female genital organ.

In the family Plectreuridae the female genital organ consists of a voluminous transverse enlargement of the vulval cavity, a bursa copulatrix (BC), just inside and largely developed anterior to the vaginal opening. It is a broad bursa with sclerotized bands and rings to hold

the thin walls rigid and shows no distinct, paired, seminal receptacles as in most spiders. Dorsal views of the genital organs of *Plectreurys tristis* and *castanea* are illustrated in figures 88 and 83. Schematic sections of these same organs are shown in figures 87 and 84. A semidia-grammatic caudal view of the genital organ of *tristis* is shown in figure 86. In *tristis* there are present narrow, transverse folds in front and behind that might serve as seminal receptacles, and they are so labeled (ASB and PSB) on the drawings. In *castanea* the anterior seminal bursa is a very small pocket, and the posterior bursa is enlarged. The limits of the genital organ are marked internally by a sclerotized transverse band, with a broad, tightly closed, slit opening presumably running into the thinner walled uterus. This is labeled the uterine valve (UV), and it is visible to some extent in the dorsal views of the genital organs.

There is considerable similarity in design of the plectreurid female genital organ to that of the genus *Diguetia*. In *Diguetia canities* (fig. 89) there is a single median receptacle into which it can be presumed the emboli of both palpi may be inserted. This corresponds to the single posterior seminal bursa of *Plectreurys*. The frontal bursa of *canities* presumably receives the spatulate conductor of the embolus, a structure lacking in *Plectreurys*.

Nothing is known about the copulatory habits of the Plectreuridae. The presence of a coupling spur on the front tibiae of the males suggests that these spurs are engaged with parts of the legs or chelicerae of the female during the mating. This would result in the assumption of the *Dysdera* stance in which the male advances beneath the ventral surface of the female. Whether the plectreurids introduce both palpi simultaneously into the vulval opening, or alternate one at a time, still remains to be ascertained. The male plectreurid is not inferior in size or strength to the female, may sometimes exceed her in size, and has much longer legs.

GENUS *PLECTREURYS* SIMON

Plectreurys SIMON, 1893, Ann. Soc. Ent. France, vol. 62, p. 300; 1893, Histoire naturelle des araignées, vol. 1, pt. 2, p. 266. CHAMBERLIN, 1924, Proc. California Acad. Sci., ser. 4, vol. 12, p. 585.

Carapace suboval, relatively broad in front, rather low, of moderate convexity, the median groove faintly indicated or obsolete. Eyes eight, placed in two transverse rows, the lateral eyes of each side placed on a slightly elevated, connate tubercle. Anterior eye row weakly procurved or straight, the median eyes smaller and nearer to each other than to the lateral eyes. Second eye row weakly recurved, essentially straight, or

weakly procurved (the *castanea* group), the eyes subequal in size and subequidistantly spaced. Median ocular quadrangle broader than long and narrowed in front, the front eyes usually smaller. Clypeus subvertical or sloping forward slightly, higher than the median ocular quadrangle. Sternum suboval, truncated in front, bluntly pointed behind, where the posterior coxae are subcontiguous. Labium subtriangular, basally very broad, slightly longer than broad. Maxillae convergent around the labium, each produced basally into a heavy conical spur which is directed backward and downward. Chelicerae short and stout, bound at base on the inner side by a white membrane running about half of the length, the outer side with a large stridulating file of transverse striae more strongly developed in males. Upper margin of the chelicera with a stout, triangular lamina which projects as an apical tooth and two denticles at base of the claw; lower margin with two denticles at base of the claw. Femur of palpus with a small stridulating pin at base on the prolateral side. Tarsus of female palpus thin apically, without claw, ending in a corneous point; tarsus of penultimate male thickened apically and twisted in distinctive fashion. Leg formula, 1423, the legs typically stout, the first pair robust, longest, the femur strongly to moderately thickened, typically about as long as the carapace. First tibia of male with a stout spur at distal end on the retrolateral side, which supports a heavy spine. First metatarsus and tarsus of male curved, the tarsus made pliable by a series of false sutures in the distal half, without onychium. First leg of male with few spines; first leg of female with more numerous spines, with paired ventral spines on the tibia and metatarsus. Tarsal claws three, the paired claws similar, with eight or more teeth in a single series, the unpaired claw with a single tooth.

TYPE OF THE GENUS: *Plectreuryx tristis* Simon.

The development of a conspicuous coupling spur on the front legs of males of *Plectreuryx* is presumed to be a derivative feature. The legs bear fewer spines than are present in *Kibramoa*, and the typically heavier femora lack dorsal spines except for very weak ones near the base. The female palpal tarsus is a cylindrical segment of variable thickness which gradually tapers apically and ends in a corneous point. The palpal tarsus of the penultimate male shows wide variation in this genus and furnishes characters useful in the separation of the species. In some cases the segment is quite thin and slightly curved, whereas in others it may be thick and curved or broadly coiled. A certain degree of correspondence can be noted between the undeveloped tarsus and the matured palpus (see figs. 49 and 52).

The members of this genus are rather readily separated into two series on the basis of the following combination of characters.

Posterior eye row typically a little recurved, more rarely straight; male palpus typically with a short, heavy embolus*castanea* group
 Posterior eye row slightly to moderately recurved, rarely straight; male palpus with a long, thin embolus*tristis* group

THE *castanea* GROUP

A relatively short male palpus with robust bulb and embolus characterizes this group of medium-sized species. In *castanea* the bulb is pinched into two large divisions and forms, with the broad embolus a Z-shaped figure. In *angela* the embolus is drawn out into a long blade. In all the males the first tibia bears near the apex a conspicuous spur on the retrolateral side, at the end of which is firmly socketed a long, stout spine. The size and shape of this coupling spur are similar in all the species and are well illustrated by *conifera*, as shown in figure 25. The spine on the spur is not included in the spinal formulas for any of the species.

The slight procurvature of the posterior eye row is a special feature of this group and ordinarily is a reliable character. However, the row is essentially straight in an occasional specimen. The lack of lateral leg spines, except on the prolateral surfaces of the femora, is a feature present in both sexes.

The females are difficult to separate and present only small differences in size, robustness of legs, leg spination, and eye relations. These differences are subject to variation, which makes their use as diagnostic characters somewhat unreliable. The internal genital organ is similar in form in the species so far examined. The sclerotized lips of the genital groove present little difference in their form, and the extremes are shown for *castanea* and *conifera* (figs. 18 and 29).

All the members of this species group occur in California except *tecate*, which comes from just below the border in Baja California. The distinctive form of the male palpus makes identification of this sex very easy.

Plectreurys castanea Simon

Figures 1, 2-10, 16-19, 83, 84

Plectreurys castanea SIMON, 1893, Ann. Soc. Ent. France, vol. 62, p. 301; 1893, Histoire naturelle des araignées, vol. 1, pt. 2, p. 266. BANKS, 1910, Bull. U. S. Natl. Mus., no. 72, p. 5 (catalogue). COMSTOCK, "1912" [1913], The spider book, p. 304. PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 119 (catalogue).

MALE FROM JASPER RIDGE, SAN MATEO COUNTY, CALIFORNIA: Total length, 7.6 mm.; carapace, 3.6 mm. long, 2.3 mm. wide, 1.4 mm. wide at the second eye row; abdomen, 4.1 mm. long, 2.7 mm. wide.

Carapace and appendages chestnut brown, essentially smooth and quite shiny but under higher power finely and evenly roughened. Clothing of the carapace sparse, consisting of inconspicuous subprocumbent, blackish hairs, the thorax with a marginal row and a few scattered hairs above the posterior declivity, the head with four lines

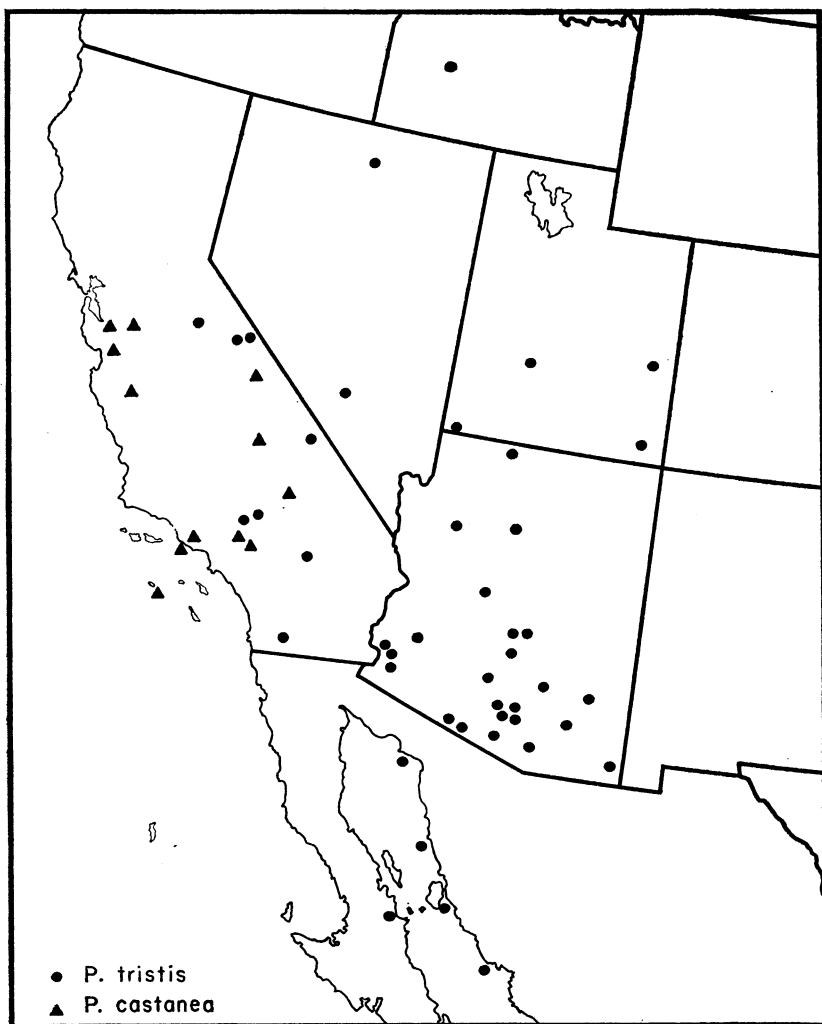


FIG. 1. Distribution of *Plectreurus tristis* and *castanea*.

of hairs running back from the eye region to join at the median groove, and the clypeus with a marginal row and a few hairs just above, all of these directed towards the midline of the head. Carapace (fig. 2) longer than broad, elongate-oval in shape, evenly convex, rather broad in front, the median groove essentially obsolete, evident as a slight linear depression. Carapace as viewed from the side (fig. 5) low, moderately convex, the highest point just behind the eyes. Sternum, 1.9 mm. long, 1.35 mm. wide, provided with suberect black hairs. Labium, 0.7 mm. long, 0.65 mm. wide. Maxilla, 1.1 mm. long, 0.5 mm. wide. Chelicera set in front and on the outer edge with rows of coarse tubercles from which originate short hairs. Outer side of the chelicera with a large stridulating file of transverse striae. Abdomen quite uniform gray or yellowish, oval in dorsal and lateral outline, evenly clothed with subprocumbent black hairs.

Ratio of the eyes: Anterior lateral eye; anterior median eye; posterior lateral eye; posterior median eye=17;11;14;14. First eye row slightly procurved as seen from in front, straight from above, the anterior edges forming a straight line, the median eyes separated by about one-fourth of their diameter (3/11), one diameter from the lateral eyes. Second eye row weakly procurved, a line along the caudal edges of the lateral eyes cutting the posterior third of the oval median eyes, which are separated by their long diameter. Median ocular quadrangle broader than long (38/30), narrowed in front (38/26). Lateral eyes of each side slightly separated, placed on weakly elevated, connate tubercles. First eye row narrower than the second (38/43); the eye group four-sevenths as wide as the head at the second eye row. Clypeus sloping quite steeply, subvertical, 0.42 mm. long.

	I	II	III	IV
Femur	3.25 mm.	2.50 mm.	1.75 mm.	2.60 mm.
Patella	1.28	1.00	0.85	1.10
Tibia	2.48	2.00	1.45	2.25
Metatarsus	1.85	1.85	1.50	2.15
Tarsus	1.10	0.80	0.80	0.80
Total	9.96 mm.	8.15 mm.	6.35 mm.	8.90 mm.

Leg formula, 1423. First leg much more robust and darker brown than the others, the comparative width and length of each segment, measured from above, as indicated by the following ratios, the first number representing the width: femur, 1/3; patella, 1/2; tibia, 1/33; metatarsus, 1 (at middle)/8; tarsus, 1/5.5. Tibia of the first leg with a stout retrolateral spur tipped with a heavy spine. First leg without spines except as follows: Femur with five prolateral spines; tibia with a short subbasal spine near the retrolateral side and a subdistal one

on the prolateral side (presumably the mate of the one on the retro-lateral spur); metatarsus with 1-1-1-2 ventral spines, the last pair distal in position. First metatarsus and tarsus curved, the latter with false sutures in the distal half. Second tibia with 1-2-2-2-2 and the second metatarsus with 2-2-2 ventral spines. Paired claws of first tarsus with eight teeth; unpaired claw with one denticle.

Palpus as shown in figures 16 and 17. Maxilla with a heavy, conical lobe at base, which is directed caudad. Femur of palpus, 0.82 mm. long, 0.28 mm. wide at juncture with the patella, clothed below with a few long setae, the prolateral side smooth and armed at base with a small stridulating pin. Patella as broad as long, 0.38 mm., as seen from above. Tibia subglobose, nearly as broad as long as seen from above (0.47 mm./0.52 mm.), 0.48 mm. wide as seen from the side. Tarsus three-fourths as broad as long as viewed from above (0.3 mm./0.4 mm.). Bulb heavy, attached ventrally, curved strongly forward, and with the quite heavy embolus directed at a right angle to the bulbal portion.

FEMALE FROM JASPER RIDGE, SAN MATEO COUNTY, CALIFORNIA: Total length, 7.6 mm.; carapace, 3.25 mm. long, 2.3 mm. wide, 1.6 mm. wide at the second eye row; abdomen, 4.5 mm. long, 2.75 mm. wide.

Coloration as in the male. Clothing of the carapace as in the male, but the principal setae longer and more erect, those on the cheliceral margin and above it longer and projecting over the chelicerae. Form and structure of the carapace, as shown in figures 2 and 5, essentially as in the male. Under side of the carapace as illustrated in figure 4.

Eye group (fig. 3) as in the male except as follows: anterior median eyes separated from the lateral by more than a diameter (10/12); posterior median eyes often separated by slightly more than their long diameter, as far from the lateral eyes. Clypeus, 0.42 mm. long. Chelicerae coriaceous, lacking the heavy tubercles present in the male, the hairs originating from small tubercles much longer. Stridulating file on outer side of the chelicera consisting of extremely fine, scarcely discernible, transverse striae.

	I	II	III	IV
Femur	2.65 mm.	2.15 mm.	1.70 mm.	2.40 mm.
Patella	1.15	1.00	0.85	1.00
Tibia	2.00	1.65	1.20	2.00
Metatarsus	1.65	1.48	1.35	1.85
Tarsus	0.80	0.75	0.70	0.75
Total	8.25 mm.	7.03 mm.	5.80 mm.	8.00 mm.

Leg formula, 1423. First leg much more robust than the others, the

comparative width and length of each segment, measured from above, as indicated by the following ratios, the first number representing the width: femur, $1/3$; patella, $1/2$; tibia, $1/3.3$; metatarsus, $1/5$; tarsus, $1/3.5$. First leg spined as follows: femur, four prolateral spines; tibia, 1-2-2-2-2 ventral spines; metatarsus, 2-2-2-(2)-2 ventral spines; spines somewhat variable, with an extra pair sometimes present, or one of a pair missing. First leg proportionately less robust than in the male, the metatarsus less curved, and the tarsus without false sutures. Tibia of second leg (fig. 7) usually with 2-2-2-2, the metatarsus with 2-2-2-(1)-2, ventral spines. Paired claws of tarsi (fig. 9) similar, with about 11 teeth in a single series; the unpaired claw with a weak ventral denticle.

Abdomen gray or yellowish, oval in outline, evenly covered with short, curved, blackish hairs. Genital opening a transverse slit, with front lip slightly puffed out, lightly sclerotized, light brown in color, as shown in figure 18. Internal genital organ as shown in figures 83 and 84.

TYPE LOCALITY: Central California, female type in the Museum National d'Histoire Naturelle, Paris.

DISTRIBUTION: California (see fig. 1).

KNOWN RECORDS: *California*: Clayton, April 2-28, 1941 (W. M. Pearce), two males, four females, immatures; April 4, 1939 (A. E. Michelbacher), one female; April 16, 1939 (E. S. Ross), one female. Palo Alto, four females, immatures. Jasper Ridge, near Palo Alto, 1921 (J. C. Chamberlin), two males, five females, immature. Black Mountain, August 28, 1928 (J. C. Chamberlin), two females. San Antonio Valley, Santa Clara County, March 11, 1948 (P. Hurd), male. Saddle Peak, 2000 feet, Santa Monica Mountains, November 8-16, 1955 (R. X. Schick), female and immature; December, 1955 (R. X. Schick), female. Near Topanga, July (W. J. Gertsch), female. Big Tujunga Canyon, San Gabriel Mountains, January, 1953 (R. X. Schick), two females, two immature. Vallyermo, 4000 feet, San Gabriel Mountains, October 15, 1955, one immature. Santa Barbara Island, May 29, 1939, one female from under stone. Six miles south of Victorville, March 9, 1941 (A. and W. Ivie), two females, six immature. Kings Ranch, east of Tres Pinos, 2000 feet, San Benito County, June 24, 1933, male. Yermo, July 4, 1936 (W. M. Pearce), female, immature. Hammil Station, May 27, 1941 (W. M. Pearce), immature. Linnie Station, June 8, 1941, two females.

***Plectreuryx monterea*, new species**

Figures 14, 15

MALE: Total length, 6.2 mm.; carapace, 3.1 mm. long, 2.1 mm. wide,

1.25 mm. wide at second eye row; abdomen, 3.2 mm. long, 2.1 mm. wide.

Coloration and structure essentially as in *castanea*. First leg: femur, 3 mm.; patella, 1.2 mm.; tibia, 2.5 mm.; metatarsus, 2 mm.; tarsus, 1 mm.; total length, 9.72 mm. Spines of first leg: femur, four prolateral, three weak dorsal at base; tibia unspined except for the robust one on the tibial spur; metatarsus, one ventral pair at apex.

Palpus as shown in figures 14 and 15. Embolus ending in a shallow spatulate process.

FEMALE: Total length, 7.4 mm.; carapace, 3.8 mm. long, 2.55 mm. wide, 1.6 mm. wide at second eye row; abdomen, 3.7 mm. long, 2.5 mm. wide.

Structure in close agreement with that of *castanea*. Carapace of moderate height, evenly convex, the inclined clypeus equal in height to three and one-half diameters of an anterior lateral eye. Carapace finely roughened, essentially smooth, sparsely set with black setae, several on midline well developed and six on clypeal margin prominent and long. Eyes typically small, the group at the second eye row occupying three-fifths of the width of the pars cephalica. First eye row moderately procurved, the dark median eyes separated by the radius, a full diameter from the lateral eyes which are much larger in the ratio of 20/12. Second row gently procurved, the median eyes separated by the diameter, a little farther from the subequal lateral eyes. Median ocular quadrangle broader than long (41/29), much narrowed in front (41/26), the posterior eyes larger (15/12).

Sternum longer than broad (2.1 mm./1.4 mm.), bluntly rounded in front of fourth coxae which are subcontiguous at their bases. Maxilla with blunt spur near base. Entire under side clothed thinly with suberect black hairs. First leg longer and more robust than the others; femur, 3.2 mm.; patella, 1.35 mm.; tibia, 2.6 mm.; metatarsus, 2.2 mm.; and tarsus, 1.2 mm. long. First femur curved, thickened on inner face to about one-third of the length, armed prolaterally with four spines. First tibia with 1-2-2-1-2-2 spines below, the last pair apical. First metatarsus with 2-2-2-1-2-1-2 spines, the last pair apical. First leg without dorsal or lateral spines except those on femora. Posterior legs with weak lateral and ventral spines. Tibia and patella of fourth leg, 3.6 mm. long.

TYPE LOCALITY: Hastings Natural History Reservation, Monterey County, California, February 10, 1941 (J. M. Linsdale), male holotype and female allotype in the American Museum of Natural History.

This species is closely allied to *Plectreurys castanea* Simon, and the

females are difficult to separate. In female *castanea* the first legs are somewhat shorter and more robust, the first tibia being about 3.3 times as long as broad as measured from above. In female *monterea* this leg is proportionately more slender, the first tibia being four times as long as broad. The male of *monterea* is easily separated by the form of the embolus of the palpus. In addition, the more slender first leg lacks ventral spines on the tibia and metatarsus.

***Plectreurys tecate*, new species**

Figures 20, 21

MALE: Total length, 6 mm.; carapace, 3.1 mm. long, 2.2 mm. wide, 1.3 mm. wide at second eye row; abdomen, 3.2 mm. long, 2.5 mm. wide.

Coloration and structure essentially as in *castanea*. Carapace and first legs chestnut brown, but the other legs and the palpi orange. Abdomen gray, with a bluish cast, clothed with procumbent blackish hairs. Posterior eye row weakly procurved, essentially straight, the round median eyes separated by only slightly more than the diameter ($13/12$), as far from the equal lateral eyes.

First leg: femur, 3.25 mm.; patella, 1.25 mm.; tibia, 2.75 mm.; metatarsus, 2 mm.; tarsus, 1.2 mm.; total length, 10.45 mm. Tibia and patella of fourth leg, 3.4 mm. Ratio of widths to lengths of segments of first leg: femur, $1/3.8$; patella, $1/2$; tibia, $1/4$; metatarsus, 1 (at middle)/ 8 ; tarsus, $1/5$. Spines of first leg: femur, five to seven prolateral; otherwise none except for the enlarged spine on the retrolateral spur of the tibia.

Palpus as shown in figures 20 and 21, similar to that of *castanea* except for the details of the bulb, which is pinched to form a large basal globe and a smaller apical element from which arises the short embolus.

FEMALE: Total length, 6.5 mm.; carapace, 3.3 mm. long, 2.3 mm. wide, 1.6 mm. wide at second eye row; abdomen, 3.3 mm. long, 2.2 mm. wide.

Carapace and legs orange, the coloration and structure otherwise much as in the male. Posterior eye row gently procurved, the median eyes separated by the diameter, as far from the equal lateral eyes.

First leg: femur, 2.8 mm.; patella, 1.2 mm.; tibia, 2.5 mm.; metatarsus, 1.8 mm.; and tarsus, 1 mm. Spines of first leg: femur, three or four prolateral; tibia, 2-2-2-1-2 ventral; metatarsus, 2-2-2-2-2 ventral; elsewhere none.

TYPE LOCALITY: Eight miles west of Tecate, Baja California, May

16, 1952, male holotype, male paratype, and female allotype (W. Creighton), in the American Museum of Natural History.

***Plectreurys mojavea*, new species**

Figure 24

MALE: Total length, 7 mm.; carapace, 3.5 mm. long, 2.35 mm. wide, 1.6 mm. wide at second eye row; abdomen, 3.5 mm. long, 2.5 mm. wide.

Coloration and structure essentially as in *castanea*. Carapace and appendages chestnut brown, the posterior pairs of legs paler. Abdomen gray, clothed evenly with subprocumbent black hairs. Posterior eye row very weakly procurved, the round median eyes separated by the full diameter, as far from the subequal lateral eyes.

First leg: femur, 3.5 mm.; patella, 1.25 mm.; tibia, 3.0 mm.; metatarsus, 2.3 mm.; tarsus, 1.2 mm.; total length, 11.25 mm. Tibia and patella of fourth leg, 3.8 mm. Ratios of width to length of segments of first leg: femur, $1/4$; patella, $1/2$; tibia, $1/4.3$; metatarsus, $1/9$; tarsus, $1/6$. Spines of first leg: femur, six or seven; tibia, one prolateral near base, 1-2-1 ventral in basal half; metatarsus, one distal pair.

Male palpus as shown in figure 24. Tibia subglobose, five-eighths as deep as long. Bulb inflated, considerably exceeding the tibia in size, narrowed apically and terminating in a large, subtriangular, trifurcate spur of which one process is the embolus.

FEMALE: Total length, 9.3 mm.; carapace, 4 mm. long, 2.6 mm. wide, 1.7 mm. wide at second eye row; abdomen, 5.6 mm. long, 3.8 mm. wide.

Coloration and structure essentially as in the male. Posterior eye row straight, the round median eyes separated by more than the full diameter ($15/11$), as far from the subequal lateral eyes.

First leg: femur, 3.7 mm.; patella, 1.5 mm.; tibia, 3 mm.; metatarsus, 2.35 mm.; tarsus, 1.1 mm.; total length, 11.65. Tibia and patella of the fourth leg, 4.2 mm. Spines of first leg: femur, six or seven prolateral; tibia, 1-2-2-2-2 ventral; metatarsus, 2-2-2-2-1-2 ventral.

TYPE LOCALITY: Palmdale, 2655 feet, Mojave Desert, California, September, 1956, male holotype, in the American Museum of Natural History; April 19, 1952, male paratype, female allotype, and four immatures; all collected by R. X. Schick.

***Plectreurys conifera*, new species**

Figures 25-28

MALE: Total length, 8.5 mm.; carapace, 4.25 mm. long, 2.85 mm.

wide, 1.8 mm. wide at second eye row; abdomen, 4.5 mm. long, 3.2 mm. wide.

Coloration and structure essentially as in *castanea*. Carapace and first legs dark chestnut brown and the other legs orange to brown. Abdomen gray, with a bluish cast, the dorsum with a pale streak at base, the clothing consisting of short, subprocumbent, black hairs. Posterior eye row weakly procurved, the suboval median eyes separated by the long diameter, as far from the equal lateral eyes.

First leg: femur, 4.7 mm.; patella, 1.5 mm.; tibia, 3.2 mm.; metatarsus, 2.5 mm.; tarsus, 1.3 mm.; total length, 13.2 mm. Tibia and patella of fourth leg, 4.2 mm. Ratios of width to length of segments of first leg: femur, 1/3.8; patella, 1/2; tibia, 1/4; metatarsus, 1 (at middle)/8; tarsus, 1/6. Spination of first leg: femur, seven or eight prolateral; tibia, one prolateral near base, 2-2-2(1) ventral; metatarsus, 1-1-1-2.

Palpus as shown in figures 26 to 28. Tibia globular, two-thirds as wide as long, twice as long as the tarsus. Bulb subglobose, somewhat exceeding the tibia in size, apically narrowed into a heavy, subtriangular embolus.

FEMALE: Total length, 10 mm.; carapace, 4.5 mm. long, 3 mm. wide, 1.8 mm. wide at second eye row; abdomen, 6 mm. long, 4.5 mm. wide.

Coloration as in the male, but all the legs are bright orange to chestnut brown. Posterior eye row essentially straight, the median eyes separated by the full diameter in some specimens, by considerably less in others, about as far from the equal lateral eyes.

First leg: femur, 3.7 mm.; patella, 1.5 mm.; tibia, 3 mm.; metatarsus, 2.3 mm.; tarsus, 1.3 mm.; total length, 11.8 mm. Tibia and patella of fourth leg, 4 mm. Spination of first leg: femur, four to seven prolateral; tibia, (2)-2-2-2-2 ventral; metatarsus, 2-2-2-2-1-2 ventral; elsewhere none.

TYPE LOCALITY: Idyllwild, San Jacinto Mountains, California, June 18, 1952, male holotype (W. J. Gertsch), in the American Museum of Natural History.

KNOWN LOCALITIES: *California*: Idyllwild, San Jacinto Mountains, June 18, 1952 (W. J. Gertsch), three males, female, two immature; July 7, 1953 (W. J. and J. W. Gertsch), two males, two immature; July 1, 1956 (W. J. Gertsch and V. Roth), female; June 2, 1936 (E. S. Ross), male, female; July 10, 1952 (R. X. Schick), female. Guatay, July 9, 1953 (W. J. and J. W. Gertsch), female. Mt. Lowe, San Gabriel Mountains, 5500-6100 feet, November 29, 1910 (W. M. Wheeler), female, probably this species. Claremont, April, 1913 (R. V. Chamberlin), female, probably this species.

Plectreurys deserta*, new species*Figure 30**

MALE: Total length, 7 mm.; carapace, 3.35 mm. long, 2.25 mm. wide, 1.5 mm. wide at second eye row; abdomen, 3.7 mm. long, 2.5 mm. wide.

Coloration and structure essentially as in *castanea*. Carapace and first legs chestnut brown, and the other legs yellowish brown. Abdomen grayish, with a bluish cast, with a pale streak above at base, clothed with subprocumbent blackish hairs. Posterior eye row weakly procurved, the oval median eyes separated by their diameter and as far from the equal lateral eyes.

First leg: femur, 3.2 mm.; patella, 1.25 mm.; tibia, 2.7 mm.; metatarsus, 2.1 mm.; tarsus, 1.1 mm.; total length, 10.35 mm. Tibia and patella of fourth leg, 3.5 mm. Ratio of width to length of segments of first leg: femur, 1/3.7; patella, 1/2; tibia, 1/3.6; metatarsus, 1 (at middle)/8; tarsus, 1/5. Spines of first leg: femur, six prolateral; tibia, one weak prolateral or none, one weak retrolateral or none, 2-2-1 ventral; metatarsus, one apical pair.

Male palpus as shown in figure 30. Tibia subglobose, two-thirds as deep as long. Bulb subglobose, exceeding the tibia in size; narrowed gradually to a heavy tube and ending in a heavy, laterally directed embolus.

FEMALE: Total length, 8.8 mm.; carapace, 3.6 mm. long, 2.35 mm. wide, 1.7 mm. wide at second eye row; abdomen, 5.3 mm. long, 3.5 mm. wide.

Coloration paler chestnut brown than in the male. Posterior eye row straight, the oval median eyes separated by scarcely the full diameter, about as far from the subequal lateral eyes.

First leg: femur, 3.25 mm.; patella, 1.25 mm.; tibia, 2.5 mm.; metatarsus, 2.1 mm.; tarsus, 0.95 mm.; total length, 10.05 mm. Tibia and patella of fourth leg, 3.6 mm. Spines of first leg: femur, five or six prolateral; tibia, 2-2-2-2-2 ventral; metatarsus, 2-2-2-1-2 ventral.

TYPE LOCALITY: Three miles north of White Water, California, March 10, 1941, male holotype, female allotype, and two immatures, (Wilton Ivie), in the American Museum of Natural History.

OTHER LOCALITY: *California:* Twentynine Palms, March-April, 1945 (J. H. Branch), male paratype.

Plectreurys schicki*, new species*Figures 32, 33**

MALE: Total length, 6 mm.; carapace, 3.3 mm. long, 2.3 mm. wide, 1.5 mm. wide at second eye row; abdomen, 3.2 mm. long, 2 mm. wide.

Coloration and structure essentially as in *castanea*. Carapace and front legs dark chestnut brown, the other legs paler. Abdomen grayish, clothed evenly with procumbent black hairs. Posterior eye row very gently procurved, essentially straight, the quite round median eyes separated by the full diameter, as far from the equal lateral eyes.

First leg: femur, 3.35 mm.; patella, 1.25 mm.; tibia, 2.8 mm.; metatarsus, 2.15 mm.; tarsus, 1.1 mm.; total length, 11.65 mm. Tibia and patella of fourth leg, 3.7 mm. Ratios of width to length of segments of first leg: femur, $1/3.3$; patella, $1/2$; tibia, $1/4$; metatarsus, 1 (at middle)/8; tarsus, $1/5$. Spines of first leg: femur, seven prolateral; tibia, 2-2 at base; metatarsus, one apical pair.

Male palpus as shown in figures 32 and 33, closely resembling that of *deserta* except for the differences in the shape of the twisted embolus.

TYPE LOCALITY: Snow Creek Canyon, San Jacinto Mountains, California, April 13, 1955, male holotype (R. X. Schick), in the American Museum of Natural History.

OTHER LOCALITIES: *California*: Andreas Canyon, Riverside, April 24, 1941 (W. Ivie), male paratype. Snow Creek Canyon, San Jacinto Mountains, April 12, 1957 (R. X. Schick and D. Verity), female allotype.

Plectreurys oasa, new species

Figure 31

MALE: Total length, 5.5 mm.; carapace, 2.8 mm. long, 2 mm. wide, 1.3 mm. wide at second eye row; abdomen, 2.8 mm. long, 1.8 mm. wide.

Carapace and appendages dull chestnut brown. Abdomen gray, covered evenly with subprocumbent blackish hairs. Structure essentially as in *castanea* and *conifera*. Posterior eye row very weakly procurved, the subround median eyes separated by more than the full diameter ($15/12$), about the diameter from the equal lateral eyes.

First leg: femur, 2.7 mm.; patella, 1.2 mm.; tibia, 2.3 mm.; metatarsus, 1.7 mm.; tarsus, 1 mm.; total length, 8.9 mm. Tibia and patella of fourth leg, 3 mm. Ratio of width and length of segments of first leg: femur, $1/3.5$; patella, $1/2$; tibia, $1/4$; metatarsus, 1 (at middle)/8; tarsus, $1/6$. Spines of first leg: femur, six or seven prolateral; tibia, 1-1 at base on prolateral edge; metatarsus, one apical pair.

Palpus as shown in figure 31. Tibia subglobose, five-sevenths as deep as long. Bulb subglobose, exceeding the tibia in size, apically drawn out to a thin tube which gives rise to the embolus, a thin bar at right angle to the bulb.

TYPE LOCALITY: Mountain Springs, California, March 13, 1941,

male holotype (Wilton Ivie), in the American Museum of Natural History.

***Plectreureys angela*, new species**

Figures 22, 23

MALE: Total length, 6 mm.; carapace, 3.7 mm. long, 2.6 mm. wide, 1.5 mm. wide at second eye row; abdomen, 3 mm. long, 2 mm. wide.

Coloration and structure essentially as in *castanea*. Posterior eye row weakly procurved, the round median eyes separated by the full diameter, as far from the subequal lateral eyes. Anterior median eyes larger than usual, about three-fourths of the diameter of the anterior lateral eyes.

First leg: femur, 3.5 mm.; patella, 1.4 mm.; tibia, 3.2 mm.; metatarsus, 2.3 mm.; tarsus, 1.3 mm.; total length, 11.6 mm. Tibia and patella of fourth leg, 4 mm. Ratios of width to length of segments of first leg: femur, $1/3.5$; patella, $1/2.1$; tibia, $1/4.5$; metatarsus, 1 (at middle)/ 8 ; tarsus, $1/6$. Spines of first leg: femur, six or seven pro-lateral; metatarsus, one apical pair; elsewhere none.

Male palpus as shown in figures 22 and 23. Tibia suboval, two-thirds as deep as long. Bulb basally heavy, considerably exceeding the tibia in size, narrowing apically to form a heavy, curved tube, the embolus, which is longer than the bulbal portion and ends in a rounded tip.

TYPE LOCALITY: Desert Springs, California, April, 1941, male holotype, in the American Museum of Natural History.

THE *tristis* GROUP

The species of this series typically have somewhat longer, thinner legs, usually set with more numerous lateral spines. The male palpi are similar to those of the genus *Kibramoa* and feature a spherical bulb with a long, thin, and in some specimens coiled embolus. The coupling spur on the front tibiae of the males, which is well developed but somewhat less robust than that found in *castanea* and relatives, lies essentially parallel to the tibial segment. The male of *zacateca* has a small horn on the front face of the chelicera.

The posterior eye row is slightly to distinctly recurved in most of the species, but in an occasional specimen it may be essentially straight. Two species of this group, *zacateca* and *tristis*, are very large, black spiders, with thick legs set with many short ventral and lateral spines. In others the thinner legs and different leg spine formulas characterize the species.

The internal genital organs of the females show differences, but they are not readily useful for separating the species. In four of the large species the lips of the genital groove are embellished with median emarginations and lateral lobes, features that make their identification easy.

This group is most abundant in Mexico, particularly along the west coast and in Baja California, and only the species *tristis* occurs in the southwestern United States.

Plectreurys tristis Simon

Figures 1, 11–13, 37–48, 85–88

Plectreurys tristis SIMON, 1893, Ann. Soc. Ent. France, vol. 62, p. 300; 1893, Histoire naturelle des araignées, vol. 1, pt. 2, p. 266, figs. 220–222. BANKS, 1901, Proc. U. S. Natl. Mus., vol. 23, p. 581, pl. 22, fig. 6; 1910, Bull. U. S. Natl. Mus., no. 72, p. 4 (catalogue); 1913, Proc. Acad. Nat. Sci. Philadelphia, vol. 65, p. 181, pl. 12, fig. 29. PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 119 (catalogue). COMSTOCK, "1912" [1913], The spider book, p. 304. CHAMBERLIN, 1924, Proc. California Acad. Sci., ser. 4, vol. 12, p. 589 (part). CHAMBERLIN AND GERTSCH, 1928, Proc. Biol. Soc. Washington, vol. 41, p. 176. CHAMBERLIN AND WOODBURY, 1929, Proc. Biol. Soc. Washington, vol. 42, p. 132.

Plectreurys bispinosa CHAMBERLIN, 1924, Proc. California Acad. Sci., ser. 4, vol. 12, p. 586, figs. 12–16. ROEWER, 1942, Katalog der Araneae, vol. 1, p. 322.

MALE FROM NEAR TUCSON, ARIZONA: Total length, 11.5 mm.; carapace, 5.35 mm. long, 3.65 mm. wide, 1.75 mm. wide at second eye row; abdomen, 6.2 mm. long, 5.1 mm. wide.

Integument of the carapace and appendages dark reddish brown to black, shining, very finely and evenly coriaceous, the short hairs subprocumbent but with elevated alveoli that give the carapace a rougher appearance than that of *castanea*. Structure of the carapace essentially as in *castanea*, but the median groove obsolete, the head moderately broad, with shallow cervical grooves, the carapace with inconspicuous, impressed grooves. Sternum with long, suberect, black hairs that spring from round tubercles. Chelicera granulose in front, with long black hairs, with a large patch of coarse striae on the outer side, the grooves of which have rows of tiny tubercles that reflect the light.

Eye group (fig. 13) three-fifths as wide as the width of the carapace at the second eye row. Ratio of the eyes: anterior lateral eye; anterior median eye; posterior lateral eye; posterior median eye = 23;19;20;21. Anterior eye row weakly procurved as seen from in front, slightly recurved from above, the median eyes separated by one-fifth of their diameter, a full diameter from the anterior lateral eye. Posterior eye

row slightly recurved, a line along the caudal edges of the median eyes cutting the posterior third of the lateral eyes, the oval median eyes separated by their long diameter, slightly farther from the lateral eye (20/22). Median ocular quadrangle four-fifths as long as broad (20/52), narrowed in front in the same ratio. Lateral eyes of each side slightly separated, elevated on a connate tubercle. Clypeus sloping, 0.8 mm. long. Sternum, 2.8 mm. long, 2 mm. wide; labium, 1 mm. long, 0.9 mm. wide; maxillae 1.4 mm. long, 0.7 mm. wide.

	I	II	III	IV
Femur	4.50 mm.	3.40 mm.	3.15 mm.	3.90 mm.
Patella	1.85	1.68	1.35	1.65
Tibia	3.75	3.10	2.35	3.55
Metatarsus	3.00	3.00	2.75	3.60
Tarsus	2.10	1.35	1.20	1.35
Total	15.20 mm.	12.53 mm.	10.80 mm.	14.05 mm.

Leg formula, 1423. First leg (fig. 40) longest, robust, the comparative width and length of each segment, measured from above, as indicated in the following ratios: femur, 1/3.5; patella, 1/1.8; tibia, 1/3.7; metatarsus, 1 (at middle)/4.3; tarsus, 1/5.2. Tibia of first leg with short, stout, retrolateral spur supporting a robust spine. Spines of first leg; femur, four prolateral; metatarsus, one retrolateral, one prolateral, two ventral, all close together at apex. Paired claws of tarsi similar, with seven or eight teeth in a single series; unpaired claw with a single denticle.

Palpus as shown in figures 37, 42, 45, and 46. Maxilla with a stout, ventrally directed lobe at caudal edge. Femur of palpus, 1.6 mm. long, 0.53 mm. wide at the patella. Patella as broad as long (0.52 mm.). Tibia moderately incrassated, thickest at the base as viewed from the side, 1.2 mm. long, 0.7 mm. wide in dorsal view. Tarsus longer than broad (0.6 mm./0.46 mm.), emarginated distally. Bulb of the palpus subspherical (1.1 mm. broad), the embolus a long, slender, curved tube with a concavity at tip bearing a short, pale spine.

FEMALE FROM TUCSON, ARIZONA: Total length, 12 mm.; carapace, 4.4 mm. long, 3 mm. wide, 1.8 mm. wide at second eye row; abdomen, 7.2 mm. long, 4.6 mm. wide.

Coloration and structure in close agreement with those of the male. Hairs of the carapace longer, suberect, those on the cheliceral margin and chelicerae very long. Chelicerae not granulose in front, the outer side provided with a patch of coarse, shallow striae.

Eyes as illustrated in figure 11. Ratio of the eyes: anterior lateral

eye; anterior median eye; posterior lateral eye; posterior median eye = 18;13;17;17. Anterior eye row slightly narrower than the second, weakly procurved as seen from in front, recurved from above, the median eyes separated by scarcely their radius (5/13), nearly two diameters from the lateral eyes (13/23). Posterior eye row recurved, the median eyes separated by more than the long diameter (20/17), as far from the lateral eyes. Median ocular quadrangle broader than long (46/33), narrowed in front (46/31). Clypeus, 0.77 mm. high. Sternum, 2.4 mm. long, 1.7 mm. wide; labium, 0.9 mm. long, 0.95 mm. wide; maxillae, 1.3 mm. long, 0.6 mm. wide.

	I	II	III	IV
Femur	3.70 mm.	3.00 mm.	2.35 mm.	3.40 mm.
Patella	1.55	1.30	1.20	1.40
Tibia	2.90	2.35	1.80	2.68
Metatarsus	2.25	2.05	1.95	2.50
Tarsus	1.35	1.10	0.98	1.15
Total	11.75 mm.	9.80 mm.	8.28 mm.	11.13 mm.

Leg formula, 1423. First leg longest, robust, the comparative width and length of each segment, measured from above, as indicated by the following ratios: femur, 1/3.4; patella, 1/1.9; tibia, 1/3.5; metatarsus, 1 (at middle)/5.4; tarsus, 1/4.2. Spines of first leg: femur, five prolateral; tibia, two and four prolateral in two rows, one subdistal retrolateral, 2-2-2-2-2 ventral; metatarsus, four prolateral, four retrolateral, 1-2-2-2 ventral. Arrangement of spines as shown in figure 47. Second leg with lateral and ventral spines. First tarsus without false sutures. Paired claws of tarsi similar, with eight teeth; unpaired claw with ventral tooth.

Abdomen oval, gray in color, evenly clothed with long black hairs. Female genital organ as illustrated in figures 85 to 89.

MALE FROM OAK CREEK CANYON, ARIZONA: Carapace, 5.25 mm. long. First leg: femur, 5 mm.; patella, 2 mm.; tibia, 4.5 mm.; metatarsus, 3.25 mm.; tarsus, 2.5 mm.; total length, 17.25 mm. First tibia four and one-half times as long as broad. Male palpus as shown in figures 45 and 46, the embolus very long.

FEMALE FROM OAK CREEK CANYON, ARIZONA: Carapace, 6.25 mm. long. First leg: femur, 5.25 mm.; patella, 2.25 mm.; tibia, 4.25 mm.; metatarsus, 3.35 mm.; tarsus, 1.8 mm.; total length, 16.9 mm. First tibia four and one-fourth times as long as broad. Spines on first leg more numerous than in typical *tristis*, essentially as in the following female.

FEMALE FROM FREDONIA, ARIZONA: Carapace, 5 mm. long. First leg: femur, 4.6 mm.; patella, 1.8 mm.; tibia, 3.5 mm.; metatarsus, 2.75 mm.; tarsus, 1.6 mm.; total length, 14.25 mm. First tibia four times as long as broad. Spines on first leg (as shown in fig. 48) more numerous than in *tristis*. Eyes more widely spaced as shown in figure 12.

TYPE LOCALITIES: Of *tristis*, Arizona, male and female cotypes in the Museum National d'Histoire Naturelle, Paris; of *bispinosa*, Patos Island, Gulf of California, Sonora, Mexico, male type in the California Academy of Sciences.

DISTRIBUTION: Southwestern states from Utah and Idaho southward into Sonora (see fig. 1).

SELECTED RECORDS: *Idaho*: Between Bruneau and Wickahoney, May 23, 1931 (J. C. Chamberlin), female. Six miles north of Glenns Ferry, October 24, 1930 (J. C. Chamberlin), three immatures. *Nevada*: Alamo, January 23, 1941 (Ira LaRivers), male probably this species. Twenty miles west of Elko, September 5, 1935 (R. V. Chamberlin and W. Ivie), female. *Utah*: Fruita, July 2, 1940 (W. J. Gertsch and L. Hook), one immature. Bluff, April 17, 1928 (W. J. Gertsch), one immature. Near Gunlock, April 19, 1932 (W. Ivie), female. *Arizona*: Common over most of the state; more than 30 separate collections studied. *California*: Twentynine Palms, January–February, 1945 (J. H. Branch), male, female. Benton, Mono County, May 1, 1942 (W. M. Pearce), female. Benton Station, Mono County, July 15, 1941 (W. M. Pearce), one subadult female; May 10, 1941 (W. M. Pearce), several immatures. Clark Mountain, March 8, 1941 (W. Ivie), female. Barstow, San Bernardino County, May 11, 1957 (A. Klair), female. Cow Creek Canyon, Funeral Mountains, April 24, 1955 (R. Schick), male. Borrego State Park, April 24, 1955 (R. D. Schuster), male. Mojave Desert, Banks collection. Little Rock, May 26, 1957 (R. X. Schick and D. Verity), female. *Sonora*: Isla Patos, May 2, 1944 (B. Osorio), male, females, immature; April 2, 1921, females. La Choya, March 28, 1949 (G. M. Bradt), female. Isla Pelicano, April 30, 1944 (B. Osorio), immature. Georges Island (J. C. Chamberlin), male, females. Guaymas (J. C. Chamberlin), female. *Baja California*: San Francisquito Bay, May 10 (J. C. Chamberlin), one male.

This distinctive black species has a quite wide distribution in the southwestern United States and adjacent Mexico, where it lives in a variety of climates ranging from cool mountains up to about 6000 feet, arid foothill country, and also in the low, hot deserts. It is not surprising that these quite sedentary spiders exhibit considerable variation over this range. In southern Utah and northern Arizona

both sexes have longer legs, and the eyes are more widely spaced. It seems probable that adequate collections will demonstrate that this population represents a distinct subspecies.

Most males of *tristis* have a single heavy spine firmly socketed on the tibial spur. *Plectreurys bispinosa* was based on specimens from Isla Patos, near Tiburon Island, just off the coast of Sonora. The male type and a paratype have twin spines on the tibial spur (fig. 44). These are set in two separate but closely placed alveoli, and the spines are shaped to fit quite close together. This doubling occurs in *tristis* sporadically in other parts of the range. In a few examples it is present only on one leg. The second spine is, in some specimens, more separated from the primary one and thus presumably has no role in the coupling. Specimens from other localities in Sonora have only a single spine on the tibial spur. The name *bispinosa* may ultimately be used in a subspecific sense to designate the population of *tristis* occurring from Sonora northward into western Arizona and southern California. Much more material is needed to clarify the distribution pattern throughout the range.

***Plectreurys zacateca*, new species**

Figures 34–36, 61, 62, 82

MALE: Total length, 12 mm.; carapace, 6 mm. long, 4 mm. wide, 2.3 mm. wide at second eye row; abdomen, 6.5 mm. long, 4.6 mm. wide.

Carapace and appendages light chestnut brown in the recently molted specimen, probably typically darker as in the female when full-colored. Abdomen gray, dusky behind, clothed thickly with black hairs.

Structure and appearance essentially as in *tristis*. Posterior eye row very gently recurved, the oval median eyes separated by the long diameter, about as far from the slightly smaller lateral eyes. Chelicera with a small horn just below the base.

First leg: femur, 6 mm.; patella, 2.3 mm.; tibia, 5 mm.; metatarsus, 3.6 mm.; tarsus, 3.1 mm.; total length, 20 mm. Tibia and patella of fourth leg, 6.3 mm. Ratios of width to length of segments of first leg: femur, 1/4; patella, 1/2; tibia, 1/4.6; metatarsus, 1 (at middle)/5; tarsus, 1/8. Spines of first leg: femur, seven to nine prolateral; tibia, one prolateral near base; elsewhere none. Distal segments of first leg as shown in figure 34.

Palpus as shown in figures 35 and 36. Tibia obovate as seen in lateral view, moderately enlarged, longer than deep (11/8). Bulb piri-

form, larger than the tibia, apically produced into a long, heavy, apically curved embolus ending in a small spatula. Penultimate palpus as shown in figures 61 and 62.

FEMALE: Total length, 16.5 mm.; carapace, 7 mm. long, 4.5 mm. wide, 3 mm. wide at second eye row; abdomen, 10 mm. long, 7 mm. wide.

Carapace and legs in adult females shining dark chestnut brown to mahogany, the clothing of erect black setae sparse except on the clypeus. Sternum, labium, maxillae, and first coxae concolorous, but the other coxae paler. Coloration of immature specimens light chestnut brown. Abdomen gray to yellowish, without contrasting markings, clothed evenly with quite long black hairs.

Anterior eye row straight, the median eyes narrowly separated by one-fourth of the diameter, somewhat more than the full diameter from the lateral eyes (24/20) which are larger in the ratio of 27/20. Posterior eye row straight, the oval median eyes separated by a little more than the long diameter (30/26), nearer the lateral eyes (30/25), which are usually slightly smaller. Median ocular quadrangle only slightly broader than long (70/64) and narrowed in front (70/46). Clypeus 1 mm. wide, sloping forward, convex, equal to five diameters of an anterior median eye. Sternum, 4 mm. long, 2.4 mm. wide.

First leg: femur, 6 mm.; patella, 2.5 mm.; tibia, 4.85 mm.; metatarsus, 4 mm.; tarsus, 2.2 mm.; total length, 19.55 mm. Tibia and patella of the fourth leg, 6.75 mm. Ratio of width to length of segments of first leg: femur, 1/3.5; patella, 1/2; tibia, 1/4.8; metatarsus, 1 (at middle)/8; tarsus, 1/7. Spines of first leg: femur, four to six prolateral; tibia, 1-1 submedian prolateral, one apical retrolateral, 1-2-1 ventral, the last spine apical; metatarsus, 1-1-1-1 prolateral, 1-1-1 retro-lateral in apical half, about 10 ventral in three or four pairs and the others single.

Lips of the genital groove (fig. 82) thick, brown, sclerotized, the caudal lip with a median emargination, the width of the sclerotized area a little less than the width of the sternum.

TYPE LOCALITY: Ten miles east of Zacatecas, Zacatecas, Mexico, August 3, 1954, male holotype, female holotype, and numerous female and immature paratypes (W. J. Gertsch), in the American Museum of Natural History.

***Plectreurys vaquera*, new species**

Plectreurys tristis CHICKERING, 1937, Univ. Michigan Studies, Sci. Ser., vol. 12, p. 274.

FEMALE: Total length, 8.4 mm.; carapace, 4.15 mm. long, 2.75 mm. wide, 2 mm. wide at second eye row; abdomen, 4.5 mm. long, 4 mm. wide.

Thorax of the poorly preserved specimen dark reddish brown, the head bright reddish brown, the clothing of erect pale hairs on the carapace sparse. Legs dull orange to reddish brown, the femora darkest at their base, and the front metatarsi and tibiae orange brown. Abdomen whitish, with a narrow dusky streak faintly visible at base, clothed with pale hairs.

Structure similar to that of *tristis* and *zacateca*, but the size very much smaller. Anterior eye row weakly procurved, the median eyes separated by their radius, not fully two diameters from the laterals (16/26) which are larger in the ratio of 21/16. Posterior eye row weakly recurved, the oval median eyes separated by more than the diameter (30/18), about as far from the equal lateral eyes. Median ocular quadrangle broader than long (56/38), narrowed in front in about the same ratio, the front eyes only slightly smaller.

First leg: femur, 3.7 mm.; patella, 1.5 mm.; tibia, 3 mm.; metatarsus, 2.6 mm.; tarsus, 1.35 mm.; total length, 12.15 mm. Tibia and patella of fourth leg, 4 mm. Ratio of width to length of segments of first leg: femur, 1/4; patella, 1/2; tibia, 1/5; metatarsus, 1 (at middle)/8; tarsus, 1/6. Spines of first leg: femur, seven prolateral; tibia, one or two median prolateral, nine ventral, of which most are paired; metatarsus, one distal prolateral, eight ventral, of which six are paired.

TYPE LOCALITY: Rancho El Milagro, San Carlos Mountains, Tamaulipas, Mexico, July (H. H. Bartlett and L. R. Dice), female holotype and two immature female paratypes, in the Museum of Comparative Zoölogy.

This interesting species has relatively short, thick legs as in *tristis* but is readily separated by its pale coloration, small size, proportionately larger anterior median eyes, and the far fewer leg spines.

Plectreurys valens Chamberlin

Figure 91

Plectreurys valens CHAMBERLIN, 1924, Proc. California Acad. Sci., ser. 4, vol. 12, p. 587, fig. 18. ROEWER, 1954, Katalog der Araneae, vol. 1, p. 322.

FEMALE: Total length, 12 mm.; carapace, 5.4 mm. long, 3.5 mm. wide, 2.3 mm. wide at second eye row; abdomen, 6.5 mm. long, 4.5 mm. wide.

Carapace and femora of legs dark mahogany, the remaining leg

segments chestnut brown, clothed sparsely with black hairs. Abdomen gray, clothed with fine black hairs.

Carapace finely roughened but still quite shining. Anterior eye row weakly procurved as seen from in front, the smaller median eyes separated by about two-thirds of their diameter, more than two full diameters from the larger lateral eyes. Posterior eye row moderately procurved, the round median eyes separated by more than the diameter (24/16), more than two diameters (37/16) from the equal lateral eyes. Median ocular quadrangle broader than long (57/40), narrowed in front by about the same ratio, the front eyes slightly smaller in the ratio of 15/17. Clypeus sloping, equal in height to nearly five diameters of an anterior median eye. Sternum, 2.8 mm. long, 2.1 mm. wide.

First leg: femur, 5.3 mm.; patella, 1.8 mm.; tibia, 4.5 mm.; metatarsus, 4 mm.; tarsus, 1.7 mm.; total length, 17.3 mm. Tibia and patella of fourth leg, 6.1 mm. Ratio of width to length of segments of first leg: femur, 1/5; patella, 1/2.5; tibia, 1/6.5; metatarsus, 1 (at middle)/13; tarsus, 1/8. Spines of first leg: femur, six or seven prolateral; tibia, 1-1-1-1 prolateral, 1-1-1 retrolateral, eight to 10 ventral, usually in three or four pairs, and the others single.

Lips of the genital groove (fig. 91) dark reddish brown, strongly sclerotized and colored to near the base, the front lip with a rounded process on each side widely separated by the full width of the sternum.

TYPE LOCALITY: Cuesta Blanca, 15 miles north of Loreto, Baja California, May 21, 1921, female holotype (J. C. Chamberlin), in the California Academy of Sciences.

KNOWN RECORDS: *Baja California Sur*: Coronados Island, May 18, 1921 (J. C. Chamberlin), female. San Marcos Island, May 12, 1921 (J. C. Chamberlin), female. Danzante Island, May 24, 1921 (J. C. Chamberlin), female, immature females. Puerto Escondido, May 29, 1921 (J. C. Chamberlin), female, immature female.

Plectreuryx arida, new species

Figure 90

Plectreuryx tristis CHAMBERLIN, 1924, Proc. California Acad. Sci., ser. 4, vol. 12, p. 589 (part).

Plectreuryx valens CHAMBERLIN, 1924, Proc. California Acad. Sci., ser. 4, vol. 12, p. 587 (part).

FEMALE: Total length, 10.6 mm.; carapace, 4.8 mm. long, 3.3 mm. wide, 2.3 mm. wide at second eye row; abdomen, 6 mm. long, 4.7 mm. wide.

Carapace and appendages bright mahogany brown, quite smooth and shining, clothed sparsely with black hairs. Abdomen gray, covered evenly with fine, suberect, black hairs.

Anterior eye row very weakly procurved as seen from in front, essentially straight, the small median eyes separated by their radius, nearly two full diameters from the lateral eyes which are larger in the ratio of 22/13. Posterior eye row slightly recurved, the oval median eyes separated by the long diameter, farther from the subequal lateral eyes (27/17). Median ocular quadrangle broader than long (47/33), narrowed in front by about the same ratio, the front eyes smaller (13/17). Clypeus sloping and rounded, equal in height to five diameters of an anterior median eye. Sternum, 2.5 mm. long, 1.8 mm. wide.

First leg: femur, 4 mm.; patella, 1.65 mm.; tibia, 3.3 mm.; metatarsus, 2.8 mm.; tarsus, 1.4 mm.; total length, 13.15 mm. Tibia and patella of fourth leg, 4.6 mm. Ratios of width to length of segments of first leg: femur, 1/4; patella, 1/2.2; tibia, 1/4.8; metatarsus, 1 (at middle)/9; tarsus, 1/5.6. Spines of first leg: femur, five prolateral; tibia, 1-1-(1)-1 prolateral, 1-0-1 retrolateral, 12 ventral, usually in five pairs and two in single arrangement; metatarsus, one basal, one apical prolateral, two basal, one apical retrolateral, and 13 ventral, usually two single and six pairs. Posterior legs strongly spined.

Lips of the genital groove (fig. 90) dark reddish brown, strongly sclerotized, the lateral margin in front marked by a small, rounded process, the width of the area far exceeding the width of the sternum, about equaling its length.

TYPE LOCALITY: Ballena Island, Baja California, June 9, 1921, female holotype (J. C. Chamberlin), in the California Academy of Sciences.

KNOWN LOCALITIES: *Baja California Sur*: Ballena Island, June 9, 1921 (J. C. Chamberlin), three females, one immature. San Diego Island, May 27, 1921 (J. C. Chamberlin), female. Espiritu Santo Island, June 1, 1921 (J. C. Chamberlin), female. San Marcos Island, May 2, 1921 (J. C. Chamberlin), female. Monserrate Island, May 25, 1921 (J. C. Chamberlin), female.

Plectreurys paisana, new species

Figures 53, 54

MALE: Total length, 4.2 mm.; carapace, 2.25 mm. long, 1.6 mm. wide, 0.9 mm. wide at second eye row; abdomen, 2 mm. long, 1.5 mm. wide.

Carapace bright orange-brown, the head slightly paler and the eye

tubercles black. Sternum, labium, maxillae, and first pair of legs orange-brown, sparsely clothed with suberect black hairs; remaining legs and palpi yellowish brown. Abdomen whitish, clothed sparsely with subprocumbent black hairs.

Structure essentially as in *castanea*. Carapace finely granulated. Anterior eye row moderately procurved as seen from in front, the dark median eyes separated by one-third of their diameter, twice as far from the lateral eyes which are larger in the ratio of 17/15. Posterior eye row distinctly recurved, a line along the front edges of the lateral eyes cutting the front third of the median, the round median eyes separated by more than the diameter (18/15), a little nearer the equal lateral eyes. Median ocular quadrangle broader than long (45/32), narrowed in front in the same ratio, the eyes equal in size. Clypeus nearly vertical, as high as about two and one-half diameters of an anterior median eye. Sternum, 1.2 mm. long, 0.8 mm. wide.

	I	II	III	IV
Femur	2.40 mm.	2.00 mm.	1.70 mm.	2.30 mm.
Patella	0.75	0.70	0.65	0.65
Tibia	3.20	1.75	1.25	2.10
Metatarsus	1.70	1.60	1.40	2.00
Tarsus	1.20	0.85	0.70	0.80
Total	9.25 mm.	6.90 mm.	5.70 mm.	7.85 mm.

Leg formula, 1423. Legs quite long and thin, the first pair longest and somewhat more robust, the ratios of width to length of the segments as follows: femur, 1/7; patella, 1/2; tibia, 1/10; metatarsus, 1 (at middle)/8; tarsus, 1/7. First leg spined as follows: femur, three prolateral in distal half; tibia, 1-1-1 prolateral, 1-1 retrolateral, 1-1-1-0 ventral.

Palpus as shown in figures 53 and 54. Tibia suboval in lateral view, thicker at base, about two-thirds as deep as long. Bulb nearly spherical, broader than the tibia, with a long, thin, tubular embolus which makes a wide curve and is twice as long as the bulb.

FEMALE: Total length, 6.3 mm.; carapace, 3 mm. long, 1.8 mm. wide, 1.35 mm. wide at second eye row; abdomen, 3.7 mm. long, 2.7 mm. wide.

Coloration and structure essentially as in the male. Eyes as in the male, but the anterior median eyes are smaller and more widely separated from the lateral by somewhat more than the diameter. Posterior eye row slightly recurved, the round median separated by more than the diameter (16/12).

First leg: femur, 2.3 mm.; patella, 0.85 mm.; tibia, 2 mm.; metatarsus, 1.6 mm.; tarsus, 0.9 mm.; total length, 7.65 mm. Tibia and patella of fourth leg, 2.8 mm. Legs proportionately shorter than in the male. First femur slightly incrassated, four times as long as broad. Spines of first leg: femur, three or four prolateral; tibia, one prolateral at middle, 2-1-1-2-1 ventral; metatarsus, one prolateral, 1-2-2-2 ventral.

TYPE LOCALITY: Pujal, San Luis Potosi, Mexico, March 13, 1940, male holotype and female allotype (William Bridges), in the American Museum of Natural History.

OTHER LOCALITIES: *Hidalgo*: Near Chapulhuacan, September 1, 1946 (C. and M. Goodnight), one immature probably this species. Twenty miles south of Jacala, July 8, 1944 (L. I. Davis), one immature probably this species.

Plectreurys bicolor Banks

Figures 49-52

Plectreurys bicolor BANKS, 1898, Proc. California Acad. Sci., ser. 3, vol. 1, p. 208, pl. 13, fig. 9. PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 119. ROEWER, 1942, Katalog der Araneae, vol. 1, p. 322.

Plectreurys castanea BANKS, 1898, Proc. California Acad. Sci., ser. 3, vol. 1, p. 208 (not *castanea* Simon).

MALE: Total length, 5.5 mm.; carapace, 2.85 mm. long, 1.8 mm. wide, 1.1 mm. wide at second eye row; abdomen, 2.7 mm. long, 1.7 mm. wide.

Carapace and first pair of legs light to dark chestnut brown, the remaining legs yellow to light chestnut brown. Abdomen gray, covered with black hairs. Structure essentially as in *paisana*. Anterior median eyes about equal in size to the lateral eyes, from which they are separated by more than the diameter (14/11). Posterior eye row slightly recurved, the median eyes separated by more than the diameter (14/12), as far from the equal lateral eyes.

First leg: femur, 3.2 mm.; patella, 1.1 mm.; tibia, 2.8 mm.; metatarsus, 2.3 mm.; tarsus, 1.3 mm.; total length, 9.7 mm. Tibia and patella of fourth leg, 3.75 mm. Ratios of width to length of segments of first leg: femur, 1/5.4; patella, 1/2.2; tibia, 1/6; metatarsus, 1 (at middle)/14; tarsus, 1/8. Spines of first leg: femur, eight prolateral; tibia, 1-1 prolateral, 1-1 retrolateral at base, 2-1-1-2 ventral; metatarsus, one apical.

Male palpus as shown in figures 49 and 50. Tibia suboval in lateral view, moderately inflated, two-thirds as deep as long. Bulb greatly in-

flated, a flattened sphere, from which arises a tubular embolus which forms a basal coil and then curves distad, the length of the embolus far exceeding the bulb. Penultimate palpus as shown in figures 51 and 52.

FEMALE: Total length, 6 mm.; carapace, 3.1 mm. long, 1.8 mm. wide, 1.25 mm. wide at second eye row; abdomen, 3 mm. long, 2 mm. wide.

Coloration and structure essentially as in the male.

First leg: femur, 2.6 mm.; patella, 0.9 mm.; tibia, 2.1 mm.; metatarsus, 1.7 mm.; tarsus, 1.1 mm.; total length, 8.4 mm. Tibia and patella of fourth leg, 3 mm. Spines of first leg: femur, four prolateral; tibia, 1-1-1 prolateral and retrolateral, 2-1-2-2 ventral; metatarsus, 1-0-1 prolateral, 2-2-1-2 ventral.

TYPE LOCALITY: San José del Cabo, Baja California, types, formerly in the California Academy of Sciences, destroyed, cotypes in the Museum of Comparative Zoölogy.

KNOWN RECORDS: *Baja California Sur*: San José del Cabo, March 19, 1945 (M. Correa), male and female; penultimate male probably this species (Eisen and Vaslit), labeled *castanea* by Banks. Sierra Laguna (Banks, 1898).

Plectreurys nahuana, new species

FEMALE: Total length, 8 mm.; carapace, 3.5 mm. long, 2.25 mm. wide, 1.65 mm. wide at second eye row; abdomen, 5 mm. long, 3.5 mm. wide.

Carapace dark chestnut brown, clothed sparsely with suberect black setae. Legs orange-brown, but the first pair chestnut brown except for the patellae and tops of the femora which are orange. Sternum, labium, and maxillae dark chestnut brown, set sparsely with black setae. Coxae orange-brown, the posterior ones palest. Abdomen grayish, clothed evenly with subprocumbent black hairs. Structure essentially as in *castanea*. All the eyes subequal in size. Posterior eye row straight, the round median eyes separated by the full diameter, slightly nearer the lateral eyes. Median ocular quadrangle broader than long (9/7), narrowed in front by about the same ratio. Clypeus nearly vertical, equal in height to three diameters of an anterior median eye.

First leg: femur, 2.8 mm.; patella, 1.1 mm.; tibia, 2.2 mm.; metatarsus, 1.75 mm.; tarsus, 1.15 mm.; total length, 9 mm. Tibia and patella of fourth leg, 3.2 mm. Legs rather short and quite thin, the first femur only slightly incrassated, in side view 4.3 times as long as broad. Spines of the first leg: femur, three prolateral; tibia, one or two

submedian ventral; metatarsus, 1-1-1-2 ventral in distal half; elsewhere none.

TYPE LOCALITY: Ten miles west of Jalapa, Veracruz, Mexico, July 20, 1956, female holotype and penultimate male (V. Roth and W. J. Gertsch), in the American Museum of Natural History.

OTHER LOCALITIES: *Chiapas*: Prusia, April-May, 1942 (H. Wagner), one immature probably this species.

***Plectreurys ardea*, new species**

Figures 55, 56

SUBADULT FEMALE: Total length, 8 mm.; carapace, 3.5 mm. long, 2.2 mm. wide, 1.4 mm. wide at second eye row; abdomen, 4.7 mm. long, 3.3 mm. wide.

Carapace, sternum, labium, maxillae, and chelicerae dusky orange-brown, clothed sparsely with fine black hairs. Legs quite bright orange to reddish brown except the femora which are dusky brown. Abdomen grayish, clothed with fine black hairs.

Structure essentially as in *paisana*. Anterior eye row slightly pro-curved as seen from in front, the median eyes separated by their radius, one and one-half diameters from the lateral eyes which are larger (17/12). Posterior eye row moderately recurved, the median eyes separated by more than the full diameter (20/15), as far from the subequal lateral eyes. Median ocular quadrangle broader than long (46/33), narrowed in front in about the same ratio, the posterior eyes larger (15/12). Clypeus subvertical, equal in height to about three and one-half diameters of an anterior median eye. Sternum, 1.8 mm. long, 1.3 mm. wide.

First leg: femur, 3 mm.; patella, 1.15 mm.; tibia, 2.4 mm.; metatarsus, 2.15 mm.; tarsus, 1.2 mm.; total length, 9.9 mm. Tibia and patella of fourth leg, 3.6 mm. First leg spines as follows: femur, three to five prolateral; tibia, 2-1-2-2 ventral; metatarsus, 2-1-2-2-2 ventral.

SUBADULT MALE: Total length, 8.5 mm.

Views of palpus in penultimate stage as shown in figures 55 and 56.

TYPE LOCALITY: Near Concordia, 30 miles east of Mazatlan, Sinaloa, Mexico, August 3, 1956, subadult female holotype and numerous subadult paratypes of both sexes (W. J. Gertsch and V. Roth), in the American Museum of Natural History.

***Plectreurys misteca*, new species**

SUBADULT FEMALE: Total length, 7.7 mm.; carapace, 3.7 mm. long, 2.3 mm. wide, 1.7 mm. wide at second eye row; abdomen 4.3 mm. long, 2.5 mm. wide.

Carapace and chelicerae dusky chestnut brown, clothed sparsely with fine black hairs. Under side of carapace and legs dull yellowish brown. Abdomen grayish, clothed with rather short black hairs.

Structure essentially as in *paisana*. Anterior eye row slightly pro-curved as seen from in front, the median eyes separated by one-third of the diameter, one diameter from the larger lateral eyes (20/14). Posterior eye row slightly recurved, the nearly round median eyes separated by the diameter, as far from the subequal lateral eyes. Median ocular quadrangle broader than long (50/37), narrowed in front in about the same ratio, the posterior eyes larger (17/14). Clypeus subvertical, equal in height to about three and one-half diameters of an anterior median eye. Sternum, 2 mm. long, 1.25 mm. wide.

First leg: femur, 3.25 mm.; patella, 1.3 mm.; tibia, 2.6 mm.; metatarsus, 2.1 mm.; tarsus, 1.2 mm.; total length, 10.45 mm. Tibia and patella of fourth leg, 3.5 mm. Spines of first leg: femur, three pro-lateral; metatarsus, 0-1-2.

TYPE LOCALITY: Pico San Felipe, 9000 feet, Oaxaca, Mexico, September 11, 1945, subadult female, holotype (H. Wagner), in the American Museum of Natural History.

GENUS *KIBRAMOA* CHAMBERLIN

Kibramoa CHAMBERLIN, 1924, Proc. California Acad. Sci., ser. 4, vol. 12, p. 589.

Characters of the genus *Plectreurys* except as follows: legs much longer and more slender, the first femur typically longer than the carapace, essentially straight and not much thickened, the dorsal spines numerous; first tibia of male leg lacking a coupling spur with large spine.

TYPE OF THE GENUS: *Kibramoa suprenans* Chamberlin.

The genus *Kibramoa*, which lacks a coupling spur on the tibia of the first leg in the male, is otherwise closely related to the *tristis* group of *Plectreurys*. The long legs bear numerous lateral spines, and the thin femora are armed above with a linear series of setaceous spines running from the base nearly to the apex. The female palpal tarsus is a thin, apically acuminate segment terminating in a corneous point. This tarsus of the penultimate male is also a thin segment, but it is apically slightly curved, enlarged, and truncated. The palpal tarsus of *Kibramoa hermani* is shown in figure 77 and is quite representative for the entire group. The functional male palpi are all quite similar, with large bulbs and long, thin emboli. The internal genital organs of the females are similar in the species so far examined, and the lips

of the genital groove offer no features useful for species separation.

The several species of *Kibramoa* are similar in general appearance and morphology. They are best separated by differences of size, leg length, leg spination, details of the male palpi, and their distribution. The subadult males and females have essentially the same leg spination as the adult females. On the other hand, the adult males may have very distinctive spine formulas on some or all of the leg segments. Thus, in *isolata* the male lacks all ventral spines on the first tibia, whereas seven or eight spines are present in the penultimate male and the subadult and adult female. The following key to the males makes their separation relatively easy, but no key is offered for the females.

KEY TO THE MALES OF THE GENUS *Kibramoa*

1. First femur with 15 or fewer prolateral spines2
 First femur with 18 or more prolateral spines5
2. First tibia with five ventral spines; embolus one and one-half times as long as the bulb (fig. 78)*yuma*, new species
 First tibia with seven to 10 ventral spines; embolus and bulb of nearly equal length3
3. First metatarsus with four pairs of ventral spines; carapace higher and the eyes larger and closer together, the posterior median eyes separated by slightly more than the full diameter (21/18)*suprenans* Chamberlin
 First metatarsus with one or two pairs of ventral spines4
4. First metatarsus with two pairs of ventral spines; central California*madrona*, new species
 First metatarsus with a single apical pair of ventral spines; Baja California*guapa*, new species
5. First femur with 38 prolateral spines; first tibia without ventral spines; very large species (carapace, 10.5 mm. long) from Guadalupe Island*isolata*, new species
 First femur with 18 or 19 prolateral spines; first tibia with numerous ventral spines6
6. First femur one and one-half times as long as the carapace; first tibia with about 15 ventral spines*paiuta*, new species
 First femur twice as long as the carapace; first tibia with seven or eight ventral spines*hermani* Chamberlin and Ivie

Kibramoa suprenans Chamberlin

Figures 57, 58, 63, 66-69, 73, 74

Plectreurys suprenans CHAMBERLIN, 1919 (1920), Jour. Ent. Zool. Pomona College, vol. 12, p. 4, pl. 2, fig. 1 (advance reprint in 1919).

Kibramoa suprenans CHAMBERLIN, 1924, Proc. California Acad. Sci., ser. 4, vol. 12, p. 589. ROEWER, 1954, Katalog der Araneae, vol. 1, p. 322. BONNET, 1957, Bibliographia araneorum, vol. 2, pt. 3, p. 2330.

MALE FROM MT. SAN ANTONIO, CALIFORNIA: Total length, 7.7 mm.; carapace, 4 mm. long, 2.6 mm. wide, 1.6 mm. wide at second eye row; abdomen, 3.7 mm. long, 2.7 mm. wide.

Integument of the carapace and appendages bright reddish brown, the sides of the head slightly darker, the femora somewhat dusky, and the eye tubercles black. Clothing of the carapace a few small subprocumbent hairs placed in rows. Carapace low, longer than broad, elongate-oval, very weakly produced to outline the head portion, the cephalic sutures faintly indicated, and the median groove obsolete. Head broadly rounded in front, convex, slightly higher than the broader thorax. Sternum clothed with short black hairs, with which are interspersed a few much longer ones. Chelicera sparsely clothed with black hairs, with a patch of fine stridulating ridges on the outer side. Sternum, 2 mm. long, 1.5 mm. wide; labium, 0.85 mm. long, 0.8 mm. wide; maxillae, 1.3 mm. long, 0.5 mm. wide. Abdomen gray to black, with a greenish tinge, the dorsum often with a basal pale streak, the clothing fine black hairs.

Ratio of the eyes: anterior lateral eye; anterior median eye; posterior lateral eye; posterior median eye=18;12;20;18. Anterior eye row slightly recurved as seen from above, straight from the front, the median eyes separated by scarcely their radius (5/12), one and two-thirds diameters from the lateral eyes (12/20). Posterior eye row slightly recurved, a line along the caudal edges of the median eyes cutting the posterior fourth of the lateral eyes, the oval median eyes separated by slightly more than their diameter (21/18), nearer the lateral eyes (17/18). Median ocular quadrangle broader than long (50/37), narrowed in front (50/30). Lateral eyes of each side slightly separated, placed on moderately elevated connate tubercles. Clypeus sloping, 0.6 mm. high.

	I	II	III	IV
Femur	5.45 mm.	5.10 mm.	3.75 mm.	4.75 mm.
Patella	1.35	1.30	1.10	1.20
Tibia	5.55	5.10	3.05	4.50
Metatarsus	3.80	4.85	3.75	5.00
Tarsus	1.75	1.50	1.10	1.25
Total	17.90 mm.	17.85 mm.	12.75 mm.	16.70 mm.

Leg formula, 1243, all the legs slender, the first and second legs longer than the hind pairs. Comparative width and length of each joint of the first leg, measured from above, as indicated in the following ratios: femur, 1/7.7; patella, 1/2.4; tibia, 1/12; metatarsus, 1/9.5;

tarsus, 1/8.5. All legs spinose. Spines of the first leg: femur, seven or eight prolateral, five retrolateral and seven or eight dorsal; tibia, three prolateral, three retrolateral, and eight ventral spines in two rows; metatarsus, four ventral pairs. Tarsus with false sutures in the distal half. Paired claws of the first tarsus with 10 teeth; the unpaired claw with a single denticle.

Male palpus as shown in figures 73 and 74. Femur with a small stridulating cusp near the base on the prolateral side. Femur slender, slightly curved, about six times as long as the width at the base. Patella a short segment nearly as broad as long. Tibia thickened, deepest at base, twice as long as broad as seen from the side. Tarsus suboval, not fully half as long as the tibia. Bulb greatly inflated, piriform, its width nearly the length of the tibia, the embolus a thin, curved spine about as long as the bulbal portion.

FEMALE FROM MT. SAN ANTONIO, CALIFORNIA: Total length, 8 mm.; carapace, 4.3 mm. long, 2.65 mm. wide; 1.70 mm. wide at second eye row; abdomen, 4 mm. long, 2.8 mm. wide.

Coloration and structure essentially as in male. Lips of the genital groove as shown in figure 57. Sternum, 2 mm. long, 1.5 mm. wide; labium, 1 mm. long, 0.9 mm. wide, maxillae, 1.5 mm. long, 0.6 mm. wide.

Ratio of the eyes: anterior lateral eye; anterior median eye; posterior lateral eye; posterior median eye=20;12;20;20. Anterior eye row essentially straight as seen from in front, the median eyes separated by less than their radius (5/12), nearly two diameters from the lateral eyes (21/12). Posterior eye row slightly recurved, the median eyes separated by their long diameter, about as far from the lateral eye. Median ocular quadrangle broader than long (50/36), narrowed in front (20/28). Clypeus, 0.6 mm. high. Chelicera relatively smooth, clothed with fine black hairs, the outer side with a patch of fine striae.

	I	II	III	IV
Femur	4.50 mm.	4.15 mm.	3.40 mm.	4.65 mm.
Patella	1.30	1.30	1.15	1.25
Tibia	4.15	3.75	2.75	4.00
Metatarsus	3.60	3.70	3.25	4.25
Tarsus	1.50	1.35	1.15	1.30
Total	15.05 mm.	14.25 mm.	11.70 mm.	15.45 mm.

Leg formula, 4123, the legs all long and slender but proportionately shorter than in the male. Segments of the first leg essentially equivalent in relative length and thickness to those of the male, the femur

only moderately thickened. Spines of the legs numerous, those on the first leg as follows: femur, 10 prolateral, three weak retrolateral, and nine or 10 dorsal; tibia, four prolateral, three retrolateral, and eight ventral in two rows of four; metatarsus, about 15 ventral spines in two rows (7-8), with occasional extra intermediate spines. Second leg much as the first, but the metatarsus with a prolateral and three retrolateral spines. Paired claws of first tarsus with 11 to 13 teeth; the unpaired claw with a single denticle.

TYPE LOCALITY: Los Angeles County, California, female holotype in the Museum of Comparative Zoölogy.

KNOWN RECORDS: *California*: Tanbark Flats, San Gabriel Mountains, June 20, 1952 (W. J. Gertsch), males, females, immature. Mt. San Antonio (Old Baldy), July, male, female; May 7, 1936, male immature. Claremont, males, females. San Antonio Canyon, near Claremont, July 1, 1956 (V. Roth and W. J. Gertsch), males, female, immature. Bear Canyon, near Claremont, December 7, 1921, two females. Santa Monica, January, February (R. X. Schick), females. Skyline Ranch, Santa Monica Mountains, May 18, 1957 (V. A. Tucker), female. Kawea River, 5 miles east of Three Rivers, 1258 feet, July 17, 1952 (W. J. Gertsch), immature female. Near Roads End, Kern River, July 3, 1956 (W. J. Gertsch and V. Roth), two males.

***Kibramoa suprenans pima*, new subspecies**

FEMALE: Total length, 9.5 mm.; carapace, 4.75 mm. long, 2.9 mm. wide, 1.75 mm. wide at second eye row; abdomen, 4.75 mm. long, 3 mm. wide.

Coloration essentially as in typical *suprenans*, but the femora of the legs less darkened.

Posterior eye row slightly recurved, the oval median eyes separated by the long diameter, about as far from the subequal lateral eyes. First leg: femur, 4.7 mm.; patella, 1.4 mm.; tibia, 4.35 mm.; metatarsus, 3.7 mm.; tarsus, 1.7 mm.; total length, 15.95 mm. Spines of first leg: femur, five prolateral, two retrolateral, about eight dorsal; tibia, four prolateral, 10 ventral; metatarsus, 10 ventral.

TYPE LOCALITY: Brown Canyon, Baboquivari Mountains, Pima County, Arizona, June 9, 1952, female holotype and paratypes (W. J. Gertsch), in the American Museum of Natural History.

OTHER RECORDS: *Arizona*: Brown Canyon, Baboquivari Mountains, September 4, 1951 (W. C. Creighton), three immature. Rancho El Mirador, Baboquivari Mountains, September 4, 1950 (W. J. Gertsch), subadult female.

This population lives far outside the range of typical *suprenans* in the Baboquivari Mountains of Arizona. It is readily distinguished by small differences in coloration and leg spination, as indicated in the description.

Kibramoa madrona, new species

Figures 75, 76

MALE: Total length, 8 mm.; carapace, 4.25 mm. long, 2.75 mm. wide, 1.4 mm. wide at second eye row; abdomen, 3.7 mm. long, 2.5 mm. wide.

Carapace orange-brown, somewhat dusky, the head darker, the covering a few fine black hairs, those on the head longer and suberect. Legs dull yellowish brown basally, but the segments beyond the patellae bright orange to reddish brown, the first pair darkest. Abdomen grayish, clothed with fine black hairs.

Structure essentially as in *suprenans*. Carapace proportionately broader and flatter, and the eyes smaller. Posterior eye row moderately recurved, a line along the caudal edges of the median eyes cutting through the centers of the lateral eyes, the round median eyes separated by much more than the diameter (19/12), as far from the subequal lateral eyes. Median ocular quadrangle much broader than long (42/47), narrowed in front by about the same ratio, the anterior eyes only slightly smaller.

First leg: femur, 5.2 mm.; patella, 1.4 mm.; tibia, 4.8 mm.; metatarsus, 3.7 mm.; tarsus, 1.7 mm.; total length, 16.8 mm. Tibia and patella of fourth leg, 5.8 mm. Spines of first leg: femur, nine prolateral, five retrolateral, seven or eight dorsal; tibia, five prolateral, four retrolateral, nine or 10 ventral, of which some are paired; metatarsus, one prolateral, two retrolateral and two ventral pairs, one basal and one apical.

Male palpus as shown in figures 75 and 76, essentially as in *suprenans*, but the elements a little stouter. Femur slender, about four times as long as broad at base. Tibia moderately enlarged, swollen at base where the depth is five-eighths of the length. Bulb enlarged, piriform, about equaling the width of the tibia, the embolus about the same length as the bulbal portion.

FEMALE: Total length, 10 mm.; carapace, 5.2 mm. long, 3.25 mm. wide, 2 mm. wide at second eye row; abdomen, 5.3 mm. long, 4 mm. wide.

Carapace and legs quite uniform yellow to dark orange-brown. Abdomen gray. Structure essentially as in the male. Eyes somewhat

larger, the posterior median being separated by somewhat more than the full diameter (20/15) and considerably exceeding the anterior median eyes in size (15/10).

First leg: femur, 5 mm.; patella, 1.7 mm.; tibia, 4.6 mm.; metatarsus, 3.75 mm., tarsus, 1.5 mm.; total length, 16.55 mm. Tibia and patella of fourth leg, 5.8 mm. Legs stouter than those of *suprenans*, the first femur being five times as long as broad as seen from above and somewhat thicker in lateral aspect. Spines of first leg: femur, 12-14 prolateral, three retrolateral, eight or nine dorsal; tibia, five prolateral, three retrolateral, about 16 ventral in two rows of nine and seven, many in pairs, these spines quite stout, all shorter than the width of the segment; metatarsus, one or two prolateral and retrolateral, about 19 ventral in two subequal rows, many in pairs.

TYPE LOCALITY: Hastings Natural History Reservation, Monterey County, California, July 19, 1953, male holotype and paratype (W. J. Gertsch), in the American Museum of Natural History.

KNOWN RECORDS: The following specimens are marked as paratypes: *California*: Hastings Natural History Reservation, March 23, 28 (J. Linsdale), subadult males and females. Coalinga, June 2, 1907 (J. C. Bradley), female. Marsh Creek Canyon, 6 miles southwest of Brentwood, March 8, April 16, 1945 (E. G. Linsley and R. F. Smith), subadult males and females. Corral Hollow, Alameda County, March 23, 1945 (R. F. Smith), immature female. Del Puerto Canyon, Stanislaus County, April 19, 1945 (R. F. Smith), immature male. West of Patterson, February 24, 1958 (W. M. Pearce), subadult male and female. Mt. Diablo, Contra Costa County, March 25, 1947 (B. Malkin), two immature.

***Kibramoa guapa*, new species**

MALE: Total length, 9 mm.; carapace, 4.4 mm. long, 2.85 mm. wide, 1.6 mm. wide at second eye row; abdomen, 4.5 mm. long, 3.3 mm. wide.

Carapace dusky orange-brown, the sides of the head a little darker, covered very sparsely with inconspicuous hairs and a few bristles on the head. Femora of the legs dusky reddish brown, but all the other segments bright orange in the preserved specimens, quite likely bright red in life. Abdomen grayish, with bluish markings showing through the integument, clothed with suberect blackish hairs.

Structure essentially as in *suprenans*. Posterior eye row slightly re-curved, the broadly oval median eyes separated by the long diameter, as far from the equal lateral eyes. Median ocular quadrangle broader

than long (50/33), narrowed in front in the same ratio, the much smaller front eyes about two-thirds of the diameter of the posterior eyes.

First leg: femur, 6.25 mm.; patella, 1.5 mm.; tibia, 6.25 mm.; metatarsus, 4.8 mm.; tarsus, 1.8 mm.; total length, 20.6 mm. Tibia and patella of fourth leg, 7.2 mm. Spines of first leg: femur, 15 prolateral, 15 retrolateral, eight dorsal; tibia, five prolateral, four retrolateral, seven ventral; metatarsus, one ventral pair at apex.

Male palpus essentially as in *madrona*.

FEMALE: Carapace, 3.8 mm. long, 2.4 mm. wide. First leg: femur, 3.7 mm.; patella, 1.25 mm.; tibia, 3.35 mm.; metatarsus, 2.7 mm.; tarsus, 1.35 mm.; total length, 12.35 mm. Spines of first leg: femur, five prolateral, seven dorsal; tibia, two prolateral and retrolateral, eight ventral; metatarsus, 11 ventral, mostly paired.

TYPE LOCALITY: Eight miles west of Tecate, Baja California, 700 feet, May 16, 1952, male holotype (W. S. Creighton), in the American Museum of Natural History.

OTHER LOCALITIES: *Baja California Norte*: Five miles south of Rosarito, 55 feet, May 15, 1952 (W. S. Creighton), male and fragmented female paratypes. Rosarito Beach, April 5, 1939 (A. S. Ross), penultimate male. *California*: San Diego (Crotch), immature male and female probably this species. Lemon Grove, San Diego County, March 16, 1947 (W. M. Pearce), immature female probably this species.

This species is most closely related to *suprenans*, from which it is readily distinguishable by the bright orange or red legs. The legs are shorter and stouter, especially the femora of the males, and they are armed with more spines.

***Kibramoa yuma*, new species**

Figures 78, 79

MALE: Total length, 6.7 mm.; carapace, 3.7 mm. long, 2.3 mm. wide, 1.25 mm. wide at second eye row; abdomen, 3.2 mm. long, 2 mm. wide.

Carapace bright orange-brown, the head somewhat darker, the eye tubercles black, the clothing of subprocumbent hairs very sparse. Front legs light chestnut brown, but the others orange, all clothed with inconspicuous fine black hairs and thin black spines. Abdomen whitish, evenly covered with black hairs.

Structure essentially as in *suprenans*. Anterior eye row straight as seen from in front, the median eyes separated by one-third of their

diameter, their full diameter from the lateral eyes which are larger (17/12). Posterior eye row moderately recurved, the oval median eyes separated by the short diameter, as far from the subequal lateral eyes. Median ocular quadrangle broader than long (35/30), narrowed in front (35/25), the front eyes smaller (15/12). Clypeus subvertical, 0.4 mm. high.

	I	II	III	IV
Femur	5.70 mm.	5.20 mm.	4.15 mm.	5.40 mm.
Patella	1.35	1.25	1.00	1.25
Tibia	6.00	5.15	3.35	5.10
Metatarsus	3.80	5.00	4.20	5.70
Tarsus	2.00	1.70	1.30	1.65
Total	18.85 mm.	18.30 mm.	14.00 mm.	19.10 mm.

Leg formula, 4123, the first and fourth legs subequal in length. First femur thin, cylindrical, nine times as long as wide from above. Spines of first leg: femur, seven or eight prolateral, about nine retrolateral, eight dorsal; tibia, five prolateral, three or four retrolateral, five ventral; metatarsus, one prolateral, one retrolateral, one ventral pair at apex.

Male palpus as shown in figures 78 and 79. Femur quite long and thin, about six times as long as broad. Tibia basally inflated, about twice as long as deep. Bulb piriform, of medium size, bearing a long, thin embolus one and one-half times as long as the bulb.

FEMALE: Total length, 9.5 mm.; carapace, 4.3 mm. long, 2.5 mm. wide, 1.7 mm. wide at second eye row; abdomen, 5.2 mm. long, 4 mm. wide.

Carapace and appendages golden yellow to orange. Eyes as in the male, but the anterior median eyes a little farther from the anterior lateral eyes, and the posterior median eyes separated by the full diameter. Legs proportionately shorter and stouter than in the male. First leg: femur, 4.3 mm.; patella, 1.35 mm.; tibia, 4.2 mm.; metatarsus, 3.4 mm.; tarsus, 1.5 mm.; total length, 14.75 mm. Tibia and patella of the fourth leg, 4 mm. Spines of first leg: femur, seven prolateral, one subapical retrolateral, six dorsal; tibia, four prolateral, four retrolateral, 11 ventral, of which some are paired; metatarsus, 14 ventral, of which 12 are paired.

TYPE LOCALITY: Tinajas Altas, Yuma County, Arizona, February 3, 1957, male holotype and penultimate male paratype (Vincent Roth), in the American Museum of Natural History.

OTHER LOCALITIES: *Arizona*: Junction of Salt and Verde rivers,

April 9, 1935 (W. Ivie), female allotype and paratype. Eight miles north of Roosevelt Dam, April 11, 1935 (W. Ivie), female and penultimate male paratypes.

***Kibramoa paiuta*, new species**

Figures 80, 81

MALE: Total length, 8.5 mm.; carapace, 5 mm. long, 3.35 mm. wide, 1.75 mm. wide at second eye row; abdomen, 3.5 mm. long, 2.5 mm. wide.

Carapace and appendages of the poorly preserved specimen dusky reddish brown. Abdomen grayish. General appearance and structure essentially as in *suprenans*.

Anterior eye row straight, the median eyes separated by two-thirds of their diameter, more than their full diameter from the lateral eyes (18/15) which are larger in size (21/15). Posterior eye row moderately recurved, a line along the hind edges of the median eyes cutting through the centers of the lateral eyes, the median eyes separated by the diameter and about the same distance from the subequal lateral eyes. Median ocular quadrangle broader than long (50/35), narrowed in front by about the same ratio, the posterior eyes larger (20/15). Clypeus sloping, 0.6 mm. high. Sternum, 2.65 mm. long, 1.65 mm. wide.

First leg: femur, 7.5 mm.; patella, 1.8 mm.; tibia, 7.6 mm.; metatarsus, 5.7 mm.; tarsus, 2.2 mm.; total length, 24.8 mm. Tibia and patella of the fourth leg, 8 mm. Spines of first leg: femur, 18 prolateral, 22 retrolateral, eight dorsal; tibia, six prolateral, five retrolateral, 15 ventral in two rows of seven and eight, many in pairs; metatarsus, one apical pair. First femur rather robust, about eight times as long as the greatest width, one and one-half times as long as the carapace.

Palpus as shown in figures 80 and 81, similar to that of *suprenans*, but the tibia is more swollen, and the bulb is somewhat larger.

TYPE LOCALITY: Gypsum Cave, Clark County, Nevada, July 17, 1952, male holotype (R. de Saussure), from Room 3 tunnel in total darkness, in the American Museum of Natural History.

***Kibramoa hermani* Chamberlin and Ivie**

Figures 70-72, 77

Kibramoa hermani CHAMBERLIN AND IVIE, 1935, Bull. Univ. Utah, biol. ser., vol. 2, no. 8, p. 11. ROEWER, 1942, Katalog der Araneae, vol. 1, p. 322. BONNET, 1957, Bibliographia araneorum, vol. 2, pt. 3, p. 2330.

MALE: Total length, 11.7 mm.; carapace, 6 mm. long, 3.65 mm. wide, 2.2 mm. at second eye row; abdomen, 5.7 mm. long, 4.5 mm. wide.

Carapace bright reddish brown, the sides of the head and clypeal area darker, clothed with a few inconspicuous hairs. Legs mostly dark reddish brown but paler apically, the clothing fine black hairs and thin spines. Abdomen gray, covered evenly with black hairs.

Anterior eye row slightly procurved, essentially straight, the median eyes separated by two-thirds of their diameter, nearly two diameters from the lateral eyes (25/14), which are much larger (25/14). Posterior eye row moderately recurved, the oval median eyes separated by the long diameter, as far from the subequal lateral eyes. Median ocular quadrangle broader than long (67/43), narrowed in front (67/37), the front eyes much smaller (23/14). Clypeus high, 0.8 mm., sloping forward.

	I	II	III	IV
Femur	12.20 mm.	11.25 mm.	9.00 mm.	11.00 mm.
Patella	2.25	2.00	1.80	2.00
Tibia	13.80	12.50	8.00	10.80
Metatarsus	14.00	14.20	10.50	13.70
Tarsus	3.30	3.00	2.25	2.75
Total	45.55 mm.	42.95 mm.	31.55 mm.	40.25 mm.

Leg formula, 1423, the legs very long and thin, with numerous spines. Femora cylindrical, slightly curved, the first femur 13 times as long as the basal width. Spines of first leg: femur, 19 prolateral, 13 retrolateral, eight dorsal; tibia, nine prolateral, eight retrolateral, seven or eight ventral; metatarsus, one prolateral, one retrolateral, one ventral at apex.

Male palpus as shown in figures 71 and 72. Femur about five times as long as the basal width, slightly curved. Tibia inflated at base, about twice as long as deep. Bulb piriform, with a thin sinuous embolus forming a small terminal curl.

IMMATURE MALE HOLOTYPE: Total length, 8.7 mm.; carapace, 4.6 mm. long, 2.65 mm. wide, 1.7 mm. wide at second eye row; abdomen, 4.3 mm. long, 2.8 mm. wide.

Carapace and appendages bright orange brown, shining, the eye tubercles black. Abdomen grayish. General structure and eye relations essentially as in the adult male. Sternum, 2.3 mm. long, 1.7 mm. wide; labium, 1.1 mm. long, 0.95 mm. wide; maxillae, 1.6 mm. long,

0.6 mm. wide. Clypeus, 0.7 mm. high. Eyes as illustrated in figure 70.

Penultimate palpus as shown in figure 77.

	I	II	III	IV
Femur	6.65 mm.	6.15 mm.	5.00 mm.	6.50 mm.
Patella	1.45	1.35	1.15	1.40
Tibia	6.65	5.80	4.20	6.00
Metatarsus	5.80	5.65	5.00	6.65
Tarsus	2.00	1.75	1.40	1.65
Total	22.55 mm.	20.70 mm.	16.75 mm.	22.20 mm.

Leg formula, 1423, the legs long, slender, with numerous spines. First femur 10 times as long as the width. Spines of first leg: femur, six prolateral, three retrolateral, six dorsal; tibia, femur, six prolateral, four retrolateral, eight ventral in two rows of five and three; metatarsus, one prolateral, 12 ventral in two rows of six each, probably representing nine or more pairs, but some of the paired spines missing or replaced by smaller ones. Paired claws of the tarsi with 12 teeth; the unpaired claw with one curved denticle.

TYPE LOCALITY: Virgin Narrows, Littlefield, Arizona, June 11, 1934, penultimate male holotype (Wilton Ivie), from under a board in an old tunnel, in the American Museum of Natural History.

KNOWN RECORDS: *Arizona*: Tsean Cho (Cave), Grand Canyon National Park, 5000 feet, from wall of cave in total darkness (R. de Saussure), immature female. Oak Creek Canyon, male.

This very large, long-legged spider is known from three specimens, of which only one is wholly adult. The penultimate male stage has much longer legs than those of *suprenans*. The adult male far exceeds the penultimate male in size, in leg length, and in the number of spines on the legs.

***Kibramoa isolata*, new species**

Figures 64, 65

MALE: Total length, 19 mm.; carapace, 10.5 mm. long, 6.8 mm. wide, 3.4 mm. wide at second eye row; abdomen, 9 mm. long, 7 mm. wide.

Carapace and appendages dark chestnut brown, quite bright and shining, the head and front appendages darkest, the hind legs somewhat paler, the clothing consisting of fine black hairs and thin spines. Abdomen dusky yellow, evenly set with black hairs.

Structure of the carapace typical, it being quite flat and with the margins rebordered with a narrow groove. Anterior eye row straight as seen from in front, the median eyes separated by nearly the radius,

two full diameters from the lateral eyes which are larger (32/22). Posterior eye row moderately recurved, the broadly oval, obliquely set median eyes separated by slightly more than the long diameter (37/33), a little farther from the subequal lateral eyes (45/33). Median ocular quadrangle broader than long (97/65), narrowed in front (97/53), the front eyes smaller (32/22). Clypeus, 1.1 mm. high, strongly sloping. Sternum, 5.5 mm. long, 3 mm. wide.

	I	II	III	IV
Femur	14.50 mm.	12.50 mm.	9.30 mm.	11.50 mm.
Patella	4.00	3.70	3.30	3.30
Tibia	14.00	12.50	8.25	10.70
Metatarsus	11.50	11.55	9.50	11.90
Tarsus	4.20	3.60	2.75	3.10
Total	48.20 mm.	43.85 mm.	33.10 mm.	40.50 mm.

Leg formula, 1243, the legs stouter than usual and very strongly spinose. First femur quite stout, only about eight times as long as the median width. Spines of first leg: femur, about 38 prolateral, about 40 retrolateral, six dorsal; tibia, seven prolateral, six retrolateral; metatarsus, one ventral pair at apex. Second leg essentially like the first.

Male palpus as shown in figures 64 and 65. Femur about six times as long as the basal width, slightly curved, with the small but distinct black stridulating pin, tipped with a thin hair, at the base on the prolateral side. Tibia twice as long as the greatest depth. Bulb piri-form, three-fourths as wide as the tibia length, the embolus a rather short, thin spine forming a sinuous curl.

FEMALE: Total length, 18 mm.; carapace, 9 mm. long, 5.4 mm. wide, 3.3 mm. wide at second eye row; abdomen, 9 mm. long, 6.5 mm. wide.

Carapace and appendages light orange-brown. Abdomen grayish. Structure of carapace and eye relations essentially as in the male.

	I	II	III	IV
Femur	10.20 mm.	8.80 mm.	7.50 mm.	9.50 mm.
Patella	3.30	3.20	2.70	3.00
Tibia	10.00	8.50	6.25	8.50
Metatarsus	9.00	7.75	7.25	9.20
Tarsus	3.00	2.65	2.30	2.70
Total	35.50 mm.	30.90 mm.	26.00 mm.	32.90 mm.

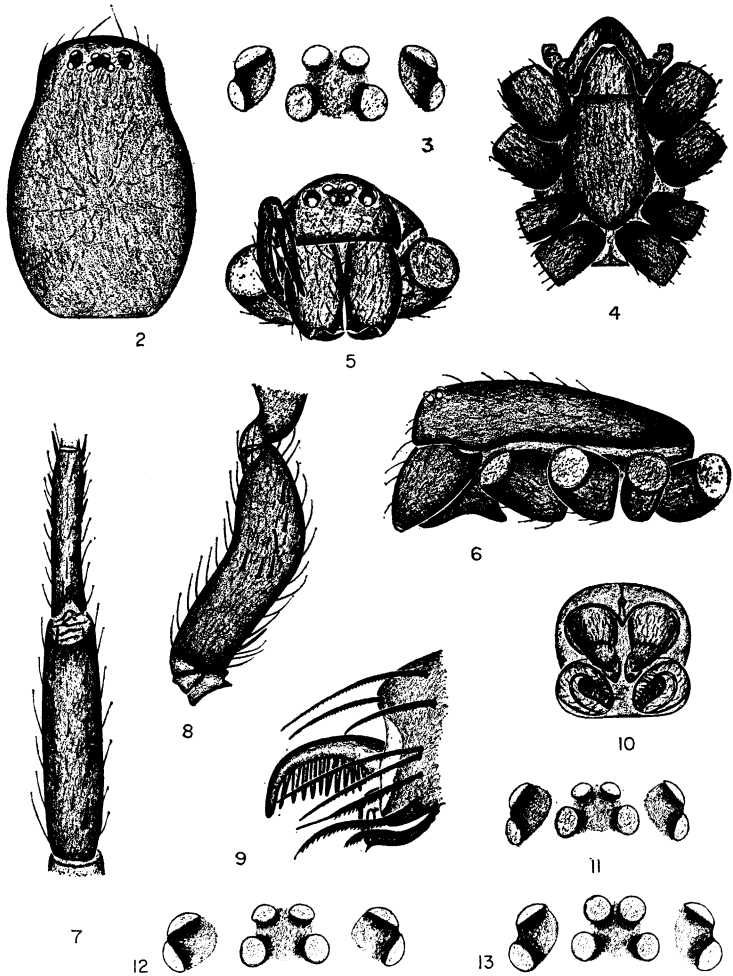
Leg formula, 1423, the legs rather short and stout as in the male. First femur six times as long as the greatest width, only slightly longer than the carapace. Spines of first leg: femur, 14 prolateral, 10 retro-

lateral, seven dorsal; tibia, four prolateral, six retrolateral, seven or eight ventral; metatarsus, one prolateral, 19 ventral, of which most are in pairs.

A subadult female and a male in the penultimate stage are about the same size and have about the same leg proportions and spination as the adult female.

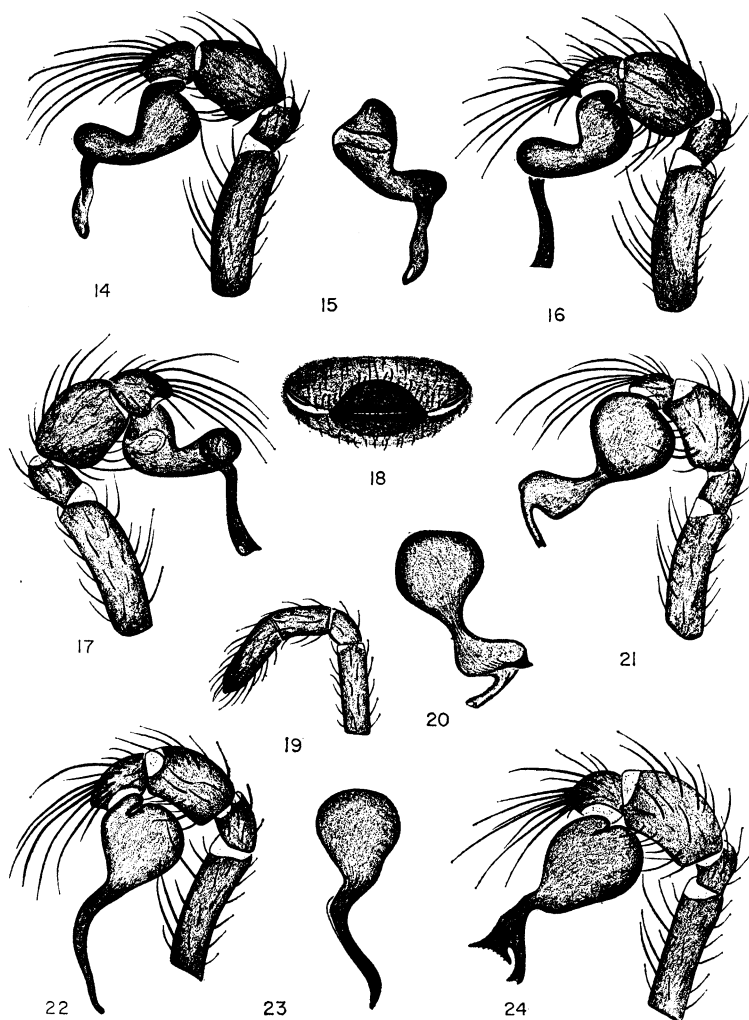
TYPE LOCALITY: "Isolote Negro," Guadalupe Island, Baja California, February 10, 1957, male holotype, female allotype, and six subadult male and female paratypes (F. W. Munz), the holotype and allotype in the American Museum of Natural History.

This is the largest species of the genus and is readily identified in adult or subadult stages by the thick, short legs and their spination. The male palpus is distinct because of the relatively small bulb and short embolus.



FIGS. 2-10. *Plectreurys castanea* Simon, female. 2. Carapace. 3. Eyes. 4. Cephalothorax, ventral view. 5. Cephalothorax, frontal view. 5. Cephalothorax, lateral view. 7. First tibia and metatarsus, ventral view. 8. Right femur, prolateral view. 9. Claws of first tarsus. 10. Spinnerets.

FIGS. 11-13. *Plectreurys tristis* Simon. 11. Eyes of female (Tucson, Arizona). 12. Eyes of female (Fredonia, Arizona). 13. Eyes of male (Tucson, Arizona).



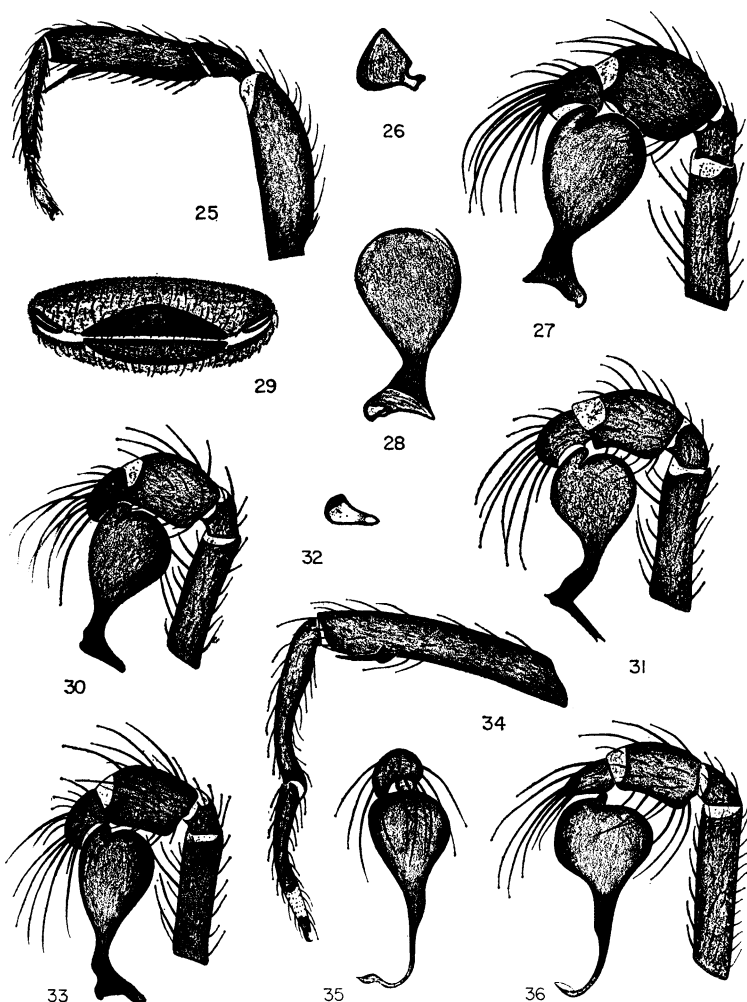
FIGS. 14, 15. *Plectreurys monterea*, new species. 14. Palpus, retrolateral view. 15. Bulb, prolateral view.

FIGS. 16-19. *Plectreurys castanea* Simon. 16. Palpus, retrolateral view. 17. Palpus, prolateral view. 18. Female genital groove. 19. Penultimate palpus, retrolateral view.

FIGS. 20, 21. *Plectreurys tecate*, new species. 20. Bulb, prolateral view. 21. Palpus, retrolateral view.

FIGS. 22, 23. *Plectreurys angela*, new species. 22. Palpus, retrolateral view. 23. Bulb, prolateral view.

FIG. 24. *Plectreurys mojavea*, new species, palpus, retrolateral view.



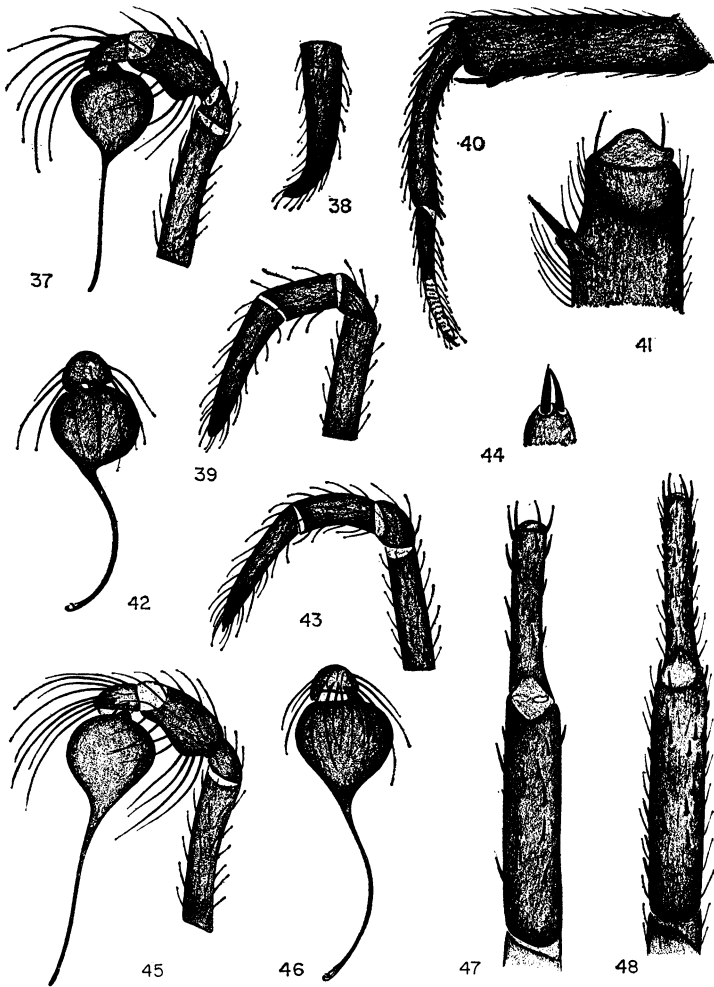
FIGS. 25-29. *Plectreurys conifera*, new species. 25. First left leg of male, retrolateral view. 26. Bulb, apical view. 27. Palpus, retrolateral view. 28. Bulb, prolateral view. 29. Female genital groove.

FIG. 30. *Plectreurys deserta*, new species, palpus, retrolateral view.

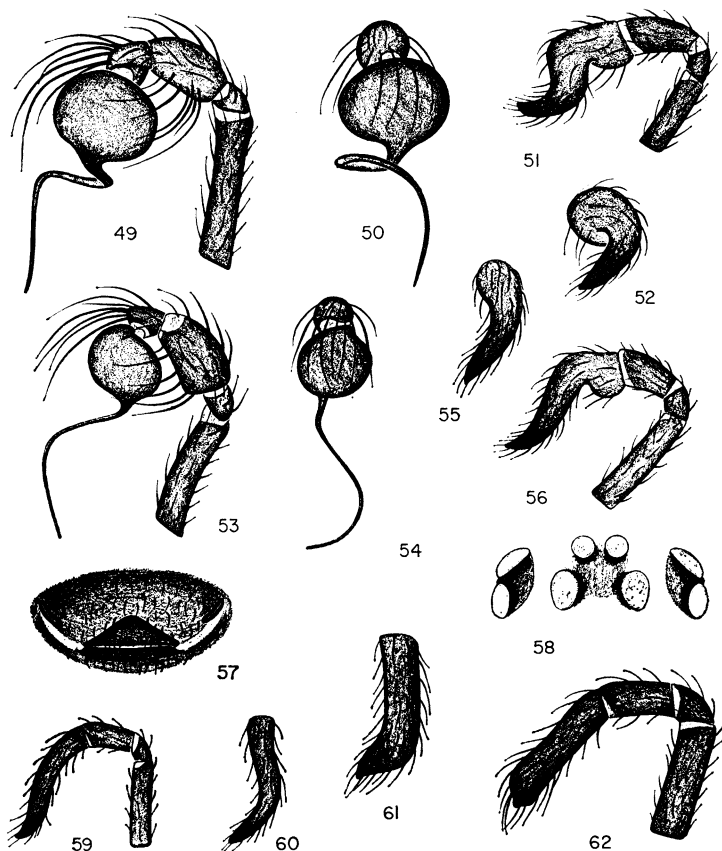
FIG. 31. *Plectreurys oasa*, new species, palpus, retrolateral view.

FIGS. 32, 33. *Plectreurys schicki*, new species. 32. Bulb, apical view. 33. Palpus, retrolateral view.

FIGS. 34-36. *Plectreurys zacateca*, new species. 34. First left leg of male, retrolateral view. 35. Bulb, frontal view. 36. Palpus, retrolateral view.



FIGS. 37-48. *Plectreurus tristis* Simon. 37. Palpus, retrolateral view (Tucson, Arizona). 38. Tarsus of penultimate palp, frontal view. 39. Penultimate male palp, retrolateral view. 40. First left leg of male, retrolateral view. 41. Coupling spur at tip of tibia. 42. Bulb, frontal view. 43. Female palp, retrolateral view. 44. Coupling spur of male type of *bispinosa*. 45. Palpus, retrolateral view (Oak Creek Canyon, Arizona). 46. Bulb, frontal view. 47. Tibia and metatarsus of first left leg of female, ventral view (Tucson, Arizona). 48. Tibia and metatarsus of first left leg of female, ventral view (Fredonia, Arizona).



FIGS. 49-52. *Plectreurys bicolor* Banks, male. 49. Palpus, retrolateral view. 50. Bulb, frontal view. 51. Penultimate palpus, retrolateral view. 52. Tarsus of penultimate palpus, subapical view.

FIGS. 53, 54. *Plectreurys paisana*, new species. 53. Palpus, retrolateral view. 54. Bulb, frontal view.

FIGS. 55, 56. *Plectreurys ardea*, new species. 55. Tarsus of penultimate palpus, frontal view. 56. Penultimate palpus, retrolateral view.

FIGS. 57, 58. *Kibramoa suprenans* Chamberlin. 57. Female genital groove. 58. Eyes of female.

FIGS. 59, 60. *Plectreurys nahuana*, new species. 59. Penultimate palpus, retrolateral view. 60. Tarsus of penultimate palpus, frontal view.

FIGS. 61, 62. *Plectreurys zacateca*, new species. 61. Tarsus of penultimate palpus, frontal view. 62. Penultimate palpus, retrolateral view.

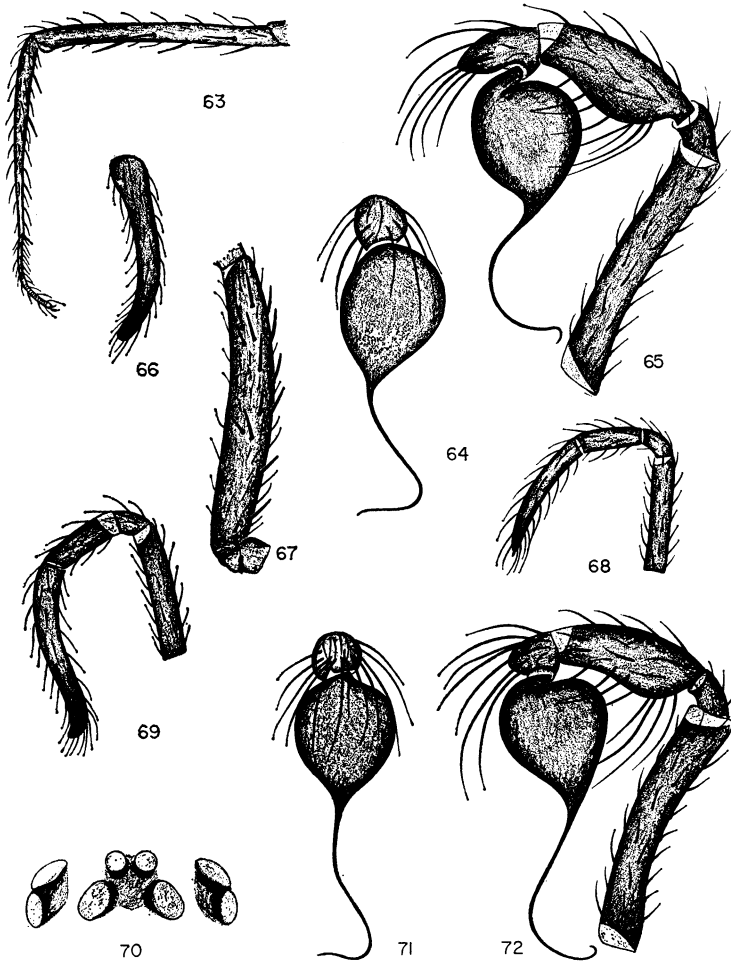
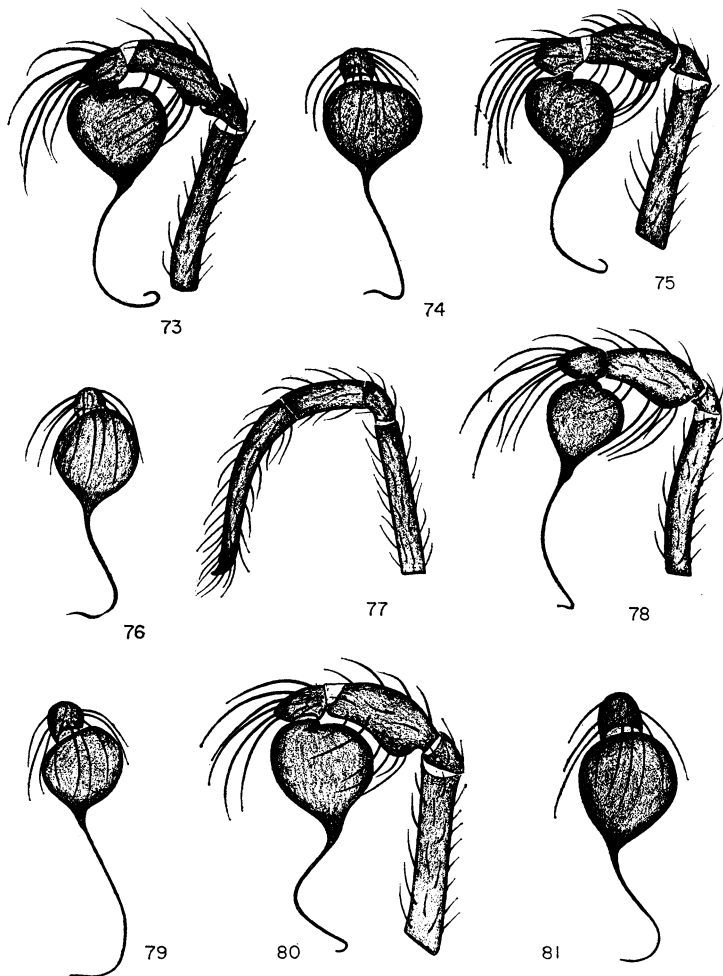


FIG. 63. *Kibramoa suprenans* Chamberlin, apical portion of first left leg of male, retrolateral view.

FIGS. 64, 65. *Kibramoa isolata*, new species. 64. Bulb, frontal view. 65. Palpus, retrolateral view.

FIGS. 66-69. *Kibramoa suprenans* Chamberlin. 66. Tarsus of penultimate male palpus, frontal view. 67. First left femur of male, retrolateral view. 68. Female palpus, retrolateral view. 69. Penultimate male palpus, retrolateral view.

FIGS. 70-72. *Kibramoa hermani* Chamberlin and Ivie. 70. Eyes of penultimate male. 71. Bulb, frontal view. 72. Palpus, retrolateral view.



FIGS. 73, 74. *Kibramoa suprenans* Chamberlin. 73. Palpus, retrolateral view. 74. Bulb, frontal view.

FIGS. 75, 76. *Kibramoa madrona*, new species. 75. Palpus, retrolateral view. 76. Bulb, frontal view.

FIG. 77. *Kibramoa hermani* Chamberlin and Ivie, palpus of penultimate male holotype.

FIGS. 78, 79. *Kibramoa yuma*, new species. 78. Palpus, retrolateral view. 79. Bulb, frontal view.

FIGS. 80, 81. *Kibramoa paiuta*, new species. 80. Palpus, retrolateral view. 81. Bulb, frontal view.

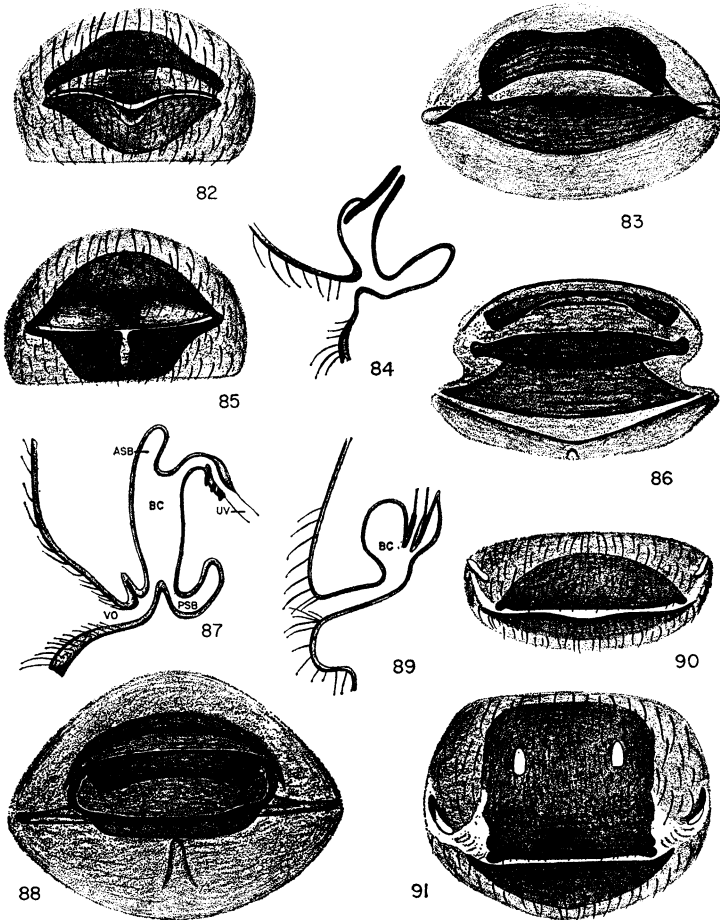


FIG. 82. *Plectreurys zacateca*, new species, female genital groove.

FIGS. 83, 84. *Plectreurys castanea* Simon. 83. Female genital organ, dorsal view. 84. Female genital organ, sagittal section.

FIGS. 85–88. *Plectreurys tristis* Simon. 85. Female genital groove. 86. Female genital organ, subcaudal view. 87. Female genital organ, sagittal section. 88. Female genital organ, dorsal view.

FIG. 89. *Diguetia canities* McCook, female genital organ, sagittal section.

FIG. 90. *Plectreurys arida*, new species, female genital groove.

FIG. 91. *Plectreurys valens* Chamberlin, female genital groove.

Abbreviations: ASB, anterior seminal bursa; BC, bursa copulatrix; PSB, posterior seminal bursa; UV, uterine valve; VO, vaginal opening.

