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NEW GENERA AND SPECIES OF NORTH AMERICAN SPIDERS

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In the following pages three new genera and a number of species of American spiders are described and figured, all pertaining to two families, the Thomisidae and Lycosidae. Of especial interest is the new genus *Tibellomimus*, which, though paralleling to a degree *Tibellus* in its elongate carapace and abdomen and in the characteristic dorsal longitudinal stripes, is more closely related to *Philodromus* than to any of the other genera from the United States. Two other philodromid genera from the southwest are described, *Horodromoides* and *Titanebo*, the latter heretofore included in *Ebo*.

With the exception of four of the new species described below, the types are in the collection of The American Museum of Natural History.

***Thanatus coloradensis* Keyserling**

Figure 5

Thanatus coloradensis KEYSERLING, 1880, 'Die Spinnen Amerikas,' Laterigradae, p. 206, Pl. v, fig. 113.

MALE.—Cephalothorax clothed with a thin coat of dark hairs closely appressed to the surface, with only a few short spines on the clypeal margin. Carapace a rich reddish-brown, medially with a rather faintly marked, broad, longitudinal, lighter band, scarcely evident at the eye region but more sharply defined caudally and ending before attaining the margin. Sides of the carapace dark brown. Eyes, appearing white by reflected light, on small black tubercles that are well separated. Sternum, coxae, labium, and maxillae light brown, often tinged with bright red. Femora of legs concolorous with the margins of the carapace, the distal joints light reddish-brown, all the members with a sparse coating of gray hairs. The metatarsi and tarsi thickly scopulate beneath. Palpal joints brown, somewhat streaked with black.

Abdomen furnished with a thick coat of flattened hairs, brown or black in color, the chromatism agreeing with the pattern, also with a number of spines distributed at intervals over the surface. Dorsum with a median dark longitudinal maculation that is rather narrow at the base of the abdomen but gradually expands at its mid point to practically the width of the anterior eye row, then again narrows to its end point just caudad of the middle of the dorsum. Sides of the dorsum brownish, flecked and marked with yellow. Venter light brown, with a darker streak on each side.

Total length, 5.80 mm.

Carapace, 2.70 mm. long, 2.46 mm. wide, 1.00 mm. in front. Abdomen, 3.23 mm. long, 1.77 mm. wide.

Carapace convex, moderately high throughout, the highest point being on a line between the third and fourth coxae, the cephalic sutures poorly indicated, the sides flatly sloping to the margins. Carapace suborbicular, a little longer than broad, truncate behind, the sides evenly rounded, anteriorly constricted at the second row of eyes and broadly truncate in front.

Eyes in two strongly recurved rows, the first row much broader (27/17) than the second. Anterior median eyes smaller and less than a diameter from the laterals, about one and one-half diameters from each other (2.5/4). Posterior median eyes slightly nearer to each other (6/7.5) than to the laterals which are somewhat larger. Median ocular quadrangle very slightly longer than broad (12/11), narrower in front, the eyes about equal. Anterior median eye over three times as far from the posterior median as the anterior lateral eye. Clypeus slightly sloping, as high as the median ocular quadrangle.

Legs rather slender, strongly spined, the first and third femora about equal to the length of the carapace. Spines under the tibiae 2-2-2. Leg formula 4213.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.74	1.16	2.27	1.96	1.50	9.63 mm.
II	3.20	1.23	2.56	2.13	1.60	10.72 mm.
III	2.80	1.06	2.33	2.00	1.43	9.62 mm.
IV	3.13	1.16	2.76	2.63	1.66	11.34 mm.
Palp	.90	.33	.33		1.16	2.72 mm.

Width of patella I, 0.43 mm. Tibial Index, 12.2.

Width of patella IV, 0.37 mm. Tibial Index, 9.4.

MALE PALPUS.—Femur longer than the tarsus or both the patella and tibia taken together. Tibial apophysis a strong short spur directed obliquely from the base of the tibia, eight-elevenths as long as the tibia from the ventral aspect, only three-elevenths as long as that joint when seen from the lateral view. Bulb much expanded, exceeding the cymbial margin on the retrolateral side, the distal embolic portion a fine spur a little longer than the tibia, curved ventrally and to the outer side. Conductor a short, colorless appendage beneath the tip of the embolus.

FEMALE.—Agreeing in detail with the male in pattern, but, as usual, a little lighter in color. Legs with two poorly defined streaks on the upper surface.

Total length, 7.50 mm. Carapace, 3.33 mm. long, 2.93 mm. wide, 1.40 mm. in front. Abdomen, 4.70 mm. long, 2.60 mm. wide.

Eyes in two strongly recurved rows, the first much broader (35/22) than the second. Anterior median eyes somewhat smaller than the laterals. Posterior row of eyes spaced equidistantly. Other eye characters as in the male.

Legs proportionately stouter than in the male, as indicated in the tibial indices. Spines beneath the tibiae 2-2-2. Leg formula 4213.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.80	1.33	2.26	1.66	1.40	9.45 mm.
II	3.16	1.33	2.66	2.00	1.50	10.65 mm.
III	2.73	1.26	2.23	1.76	1.16	9.14 mm.
IV	3.33	1.26	2.60	2.22	1.40	10.85 mm.
Palp	.76	.46	.60		.93	2.75 mm.

Width of patella I, 0.50 mm. Tibial Index, 13.9.

Width of patella IV, 0.43 mm. Tibial Index, 11.1.

LOCALITY.—The above description is based on a male and female from Fish Lake, Sevier County, Utah, taken June 22, 1930 (Gertsch). The species has a wide distribution in the Rocky Mountains of the United States.

***Thanatus canadensis*, new species**

Figures 7 and 49

Although this species is considerably lighter in color than the specimens of *Thanatus coloradensis* described above, it agrees closely in pattern and structure of all parts, the copulatory organs excepted. The bands on the carapace and the elongate marking on the dorsum of the abdomen contrast strikingly with the light bright brown integument. Spines are few and small, confined more or less to the anterior cephalic part of the carapace, and even shorter and more sparse on the abdomen. The median longitudinal band on the carapace is distinct in the female and invaded by few markings, but in the male it does not extend posteriorly beyond the second coxa.

MALE.—Total length, 5.85 mm. Carapace, 3.20 mm. long, 2.90 mm. wide, 1.16 mm. in front. Abdomen, 2.66 mm. long, 2.13 mm. wide.

Eyes in two strongly recurved rows, the first much broader (33/21) than the second. Anterior median eyes smaller, little over a diameter apart and much nearer to the laterals. Posterior row of eyes about equidistantly spaced, the laterals somewhat larger. Median ocular quadrangle scarcely longer (14/13) than broad (apparently much longer), the anteriors closer together. Anterior median eyes over three times as far from the posterior medians as the anterior lateral eyes. Clypeus slightly sloping, as high (14/14) as the median ocular quadrangle.

Spines under the anterior tibiae 2-2, under the anterior metatarsi 2-2. Leg formula 4213.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	3.00	1.33	2.40	2.06	1.66	10.45 mm.
II	3.33	1.33	2.70	2.43	1.73	11.52 mm.
III	2.93	1.23	2.33	2.16	1.56	10.21 mm.
IV	3.16	1.26	2.70	2.70	1.76	11.58 mm.
Palp	1.00	.40	.40		1.13	2.93 mm.

Width of patella, I, 0.46 mm. Tibial Index, 12.3.

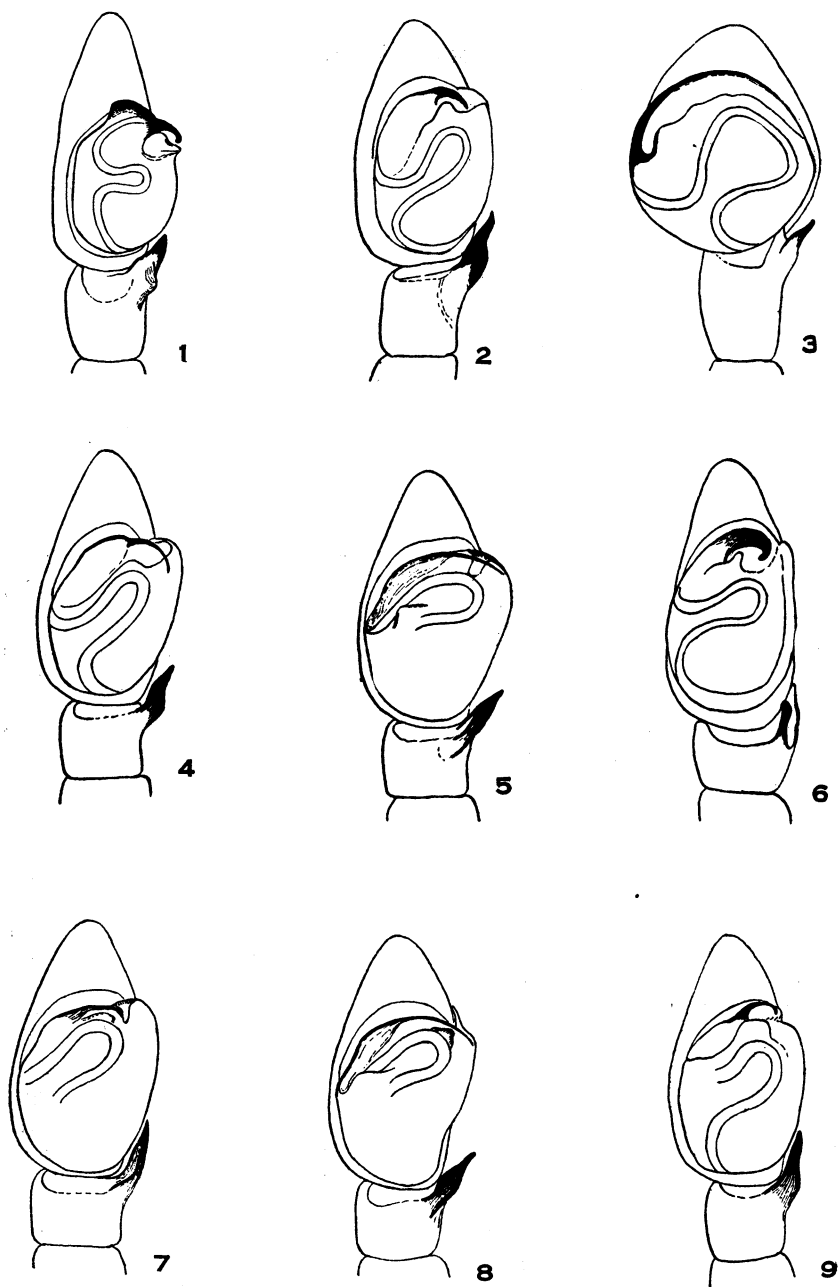
Width of patella IV, 0.40 mm. Tibial Index, 10.1.

MALE PALPUS.—Femur a little shorter than the tarsus, about equal to the patella and tibia taken together. Tibial apophysis a strong spine, with a very slightly oblique placement, nearly parallel to the tibial joint, as long as the tibia from the ventral aspect, seven-twelfths as long as that joint when seen from the lateral view. Bulb expanded, but not so much as in *coloradensis*, the distal embolic portion a fine, long spur.

FEMALE.—Total length, 7.33 mm. Carapace, 3.26 mm. long, 2.90 mm. wide, 1.26 mm. in front. Abdomen, 4.16 mm. long, 2.66 mm. wide.

Agreeing in structural and color characteristics with the male, and only with difficulty separable from the female of *coloradensis*.

TYPE LOCALITY.—Male holotype, female allotype, and several female and immature paratypes from Fawcett, Alberta, May 15-June



MALE PALPI

- Fig. 1. *Thanatus retentus* Chamberlin. Fig. 6. *Thanatus walteri*, new species.
 Fig. 2. *Thanatus altimontis*, new species. Fig. 7. *Thanatus canadensis*, new species.
 Fig. 3. *Horodromoides validus*, new species. Fig. 8. *Thanatus coloradensis* Keyserling,
 Fig. 4. *Thanatus lycosoides* Emerton. variety.
 Fig. 5. *Thanatus coloradensis* Keyserling. Fig. 9. *Thanatus rowani*, new species

3, 1930, sent to this Museum by Dr. William Rowan of the University of Alberta.

***Thanatus lycosoides* Emerton**

Figure 4

This spider is clearly distinct from *Thanatus coloradensis* Keyserling, with which species Emerton has synonymized it. Neither of these can be identified with *Thanatus rubicellus* (Mello Leitao) (*T. rubicundus* Keyserling), which is a much smaller species, characteristically marked, and with only two pairs of spines beneath the anterior tibiae in the female. The only specimens of this species that I have seen came from Oklahoma.

***Thanatus rowani*, new species**

Figure 9

MALE.—Integument of carapace dark reddish-brown, with two lateral black bands that do not reach the margins, the intervals between forming a broad longitudinal central band that runs the whole length of the carapace. Sternum, endites, labium, and basal leg joints reddish brown. Femora of legs brown, the distal joints lighter, with a very few black markings. Abdomen very dark, the characteristic longitudinal maculation scarcely visible. Femur of palpus with a linelike streak above.

Total length, 5.00 mm. Carapace, 2.23 mm. long, 2.10 mm. wide, 0.82 mm. in front. Abdomen, 2.66 mm. long, 1.83 mm. wide.

Eyes in two strongly recurved rows, the posterior much broader (24/34) than the anterior. Anterior median eyes only about half the size of the laterals, a diameter and a half apart, about their diameter from the laterals. Posterior median eyes very slightly nearer to each other than to the larger laterals. Median ocular quadrangle longer than wide (16/14), narrowed in front. Anterior median eye about three times as far from the posterior median as the anterior lateral eye. Clypeus slightly sloping, as high as the median ocular quadrangle.

Legs slender, with 2-2-2 spines under the anterior tibiae, 2-2 under the anterior metatarsi. Leg formula 4213.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.06	.76	1.76	1.36	1.10	7.04 mm.
II	2.12	.76	1.86	1.60	1.13	7.47 mm.
III	2.06	.78	1.80	1.43	1.10	7.17 mm.
IV	2.33	.80	2.00	1.83	1.20	8.16 mm.
Palp	.73	.33	.33		.93	2.32 mm.

Width of patella I, 0.33 mm. Tibial Index, 13.0.

Width of patella IV, 0.28 mm. Tibial Index, 10.0.

MALE PALPUS.—Femur somewhat shorter than the tarsus, about equal to the patella and tibia taken together. Tibial apophysis a strong spur that is half as long as the tarsus when seen from the lateral aspect. Bulb much expanded but, when viewed ventrally, not much exceeding the cymbial margin at any point. Embolus evenly curved, rather short, lying above a transparent, finger-like conductor.

TYPE LOCALITY.—Male holotype from near Fitzgerald, Alberta, 1930, sent to this Museum by Dr. William Rowan of the University of Alberta.

***Thanatus altimontis*, new species**

Figures 2 and 48

Coloration and pattern as in the other species, the median longitudinal band on the carapace more marked in the female, invaded by a central darker stripe. Abdominal maculation outlined in gray, the lighter color forming a band that continues to the end of the abdomen. Legs distally much lighter, the basal joints streaked.

MALE.—Total length, 4.00 mm. Carapace, 1.90 mm. long, 1.76 mm. wide, 0.73 mm. in front. Abdomen, 3.00 mm. long, 1.26 mm. wide.

Eyes in two strongly recurved rows, the second much wider (31/21) than the first. Anterior median eyes about two-thirds as large as the laterals, less than a diameter from them, little more than a diameter apart. Posterior eyes subequal, equidistantly spaced. Median ocular quadrangle only slightly longer than broad (29/28), the eyes practically equal in size. Anterior median eye nearly three times as far from the posterior median as the posterior lateral eye. Clypeus slightly sloping, as high as the median ocular quadrangle.

Legs slender, the anterior tibiae with 2-2-2 spines beneath, the metatarsi with 2-2 spines. Leg formula 4231.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.83	.76	1.66	1.33	.93	6.51 mm.
II	2.13	.93	1.83	1.63	1.10	7.62 mm.
III	2.03	.76	1.73	1.50	.93	6.95 mm.
IV	2.26	.76	2.00	1.86	1.20	8.08 mm.
Palp	.50	.30	.30		.53	1.63 mm.

Width of patella I, 0.26 mm. Tibial Index, 10.7.

Width of patella IV, 0.25 mm. Tibial Index, 9.0.

MALE PALPUS.—Femur about as long as the tarsus, nearly equal to the patella and tibia taken together. Tibial apophysis a strong spur, rather acutely ended, four-sevenths as long as the tarsus when seen from below. Bulb little expanded, but exceeding the lateral cymbial margin distally, the embolus a short, pointed spur.

FEMALE.—Total length, 4.30 mm. Carapace, 3.20 mm. long, 3.00 mm. wide, 0.93 mm. in front. Abdomen, 2.43 mm. long, 1.50 mm. wide.

Eyes as in the male, but the posterior medians more widely separated (12/8) than their distance from the slightly larger laterals. Median ocular quadrangle as broad as long, the eyes subequal.

TYPE LOCALITY.—Male holotype and female allotype from Smith's Fork Canyon, Cokeville, Wyoming, August 21, 1931 (Gertsch).

***Thanatus walteri*, new species**

Figures 6 and 47

Carapace brown in the male, very much streaked with darker markings, completely lacking the characteristic median lighter band of the other species. Femora

and patellae concolorous with the carapace, with lighter streaks above, the distal leg joints light brown. Abdomen grayish brown above, the median maculation faintly indicated, the venter dark gray. Female lighter in color, lacking the median lighter band on the carapace, legs little lighter in color than the carapace, the basal joints with black streaks above.

MALE.—Total length, 2.90 mm. Carapace, 1.40 mm. long, 1.26 mm. wide, 0.60 mm. in front. Abdomen, 1.66 mm. long, 1.00 mm. wide.

Both rows of eyes recurved but not so much as in the other members of the genus, the anterior row much narrower (17/27) than the posterior. Anterior median eyes smaller, about one and one-half diameters apart, no more than half their diameter from the laterals. Posterior eyes subequal and equidistant. Median ocular quadrangle as broad as long, the eyes about equal. Anterior median eye about three times as far from the posterior median as the anterior lateral. Clypeus slightly sloping, only about eight-elevenths as high as the median ocular quadrangle.

Legs moderately slender, the spines under the anterior tibiae 2-2-2, under the metatarsi 2-2. Leg formula 2413.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.10	.50	.93	.80	.56	3.89 mm.
II	1.26	.56	1.03	.86	.60	4.31 mm.
III	1.10	.50	.90	.80	.53	3.83 mm.
IV	1.23	.50	.93	.93	.56	4.15 mm.
Palp	.46	.16	.16		.50	1.28 mm.

Width of patella I, 0.20 mm. Tibial Index, 14.0.

Width of patella IV, 0.20 mm. Tibial Index, 14.0.

MALE PALPUS.—Femur about as long as the tarsus, somewhat longer than the patella and tibia taken together. Tibial apophysis a very short spur on the outer side, subventral in position. Bulb somewhat expanded, the embolus a heavy spur twisted at the end.

FEMALE.—Total length, 3.66 mm. Carapace, 1.53 mm. long, 1.40 mm. wide, 0.66 mm. in front. Abdomen, 2.16 mm. long, 1.50 mm. wide.

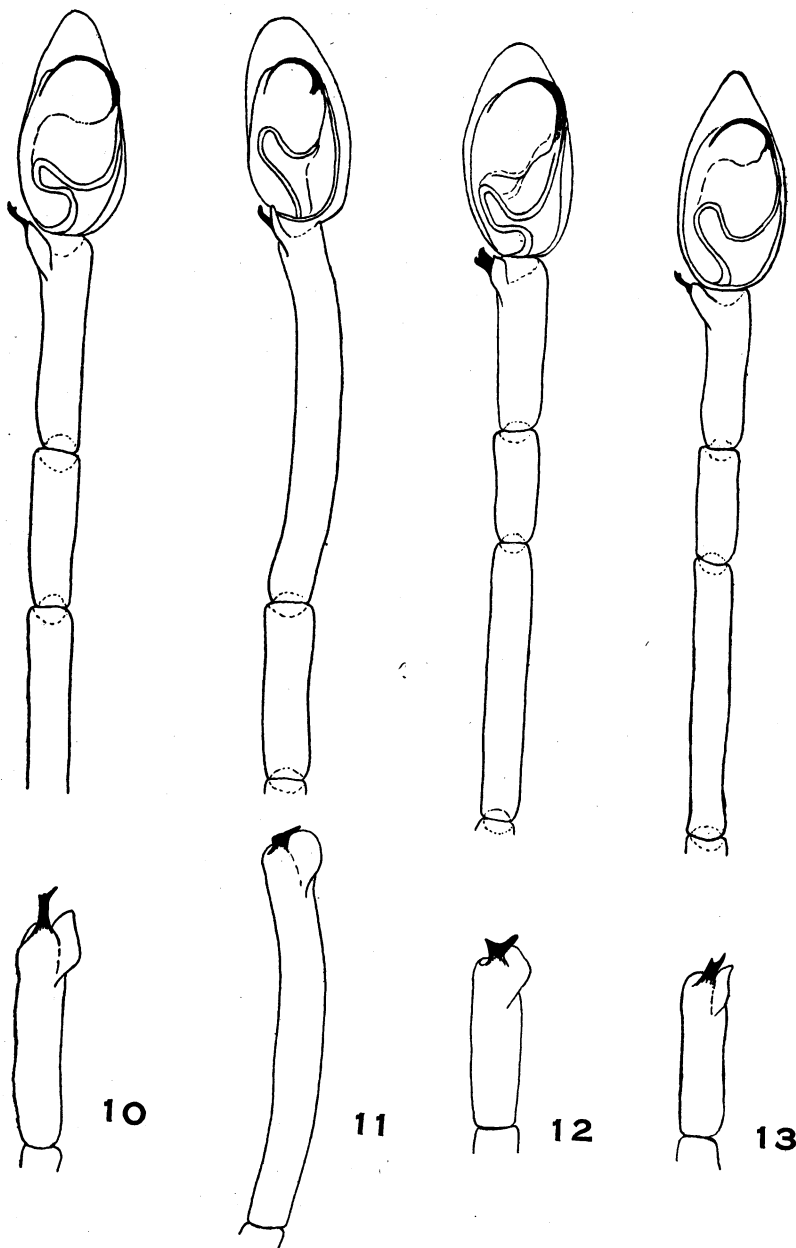
The female agrees structurally with the male and is easily separated from all other species of *Thanatus* by the much narrower clypeus.

TYPE LOCALITY.—Male holotype and female allotype from Montpelier, Bear Lake County, Idaho, taken August 18, 1931, by Walter E. Gertsch, for whom the species is named. A male paratype from Salt Lake City, Utah, July 28, 1931 (Gertsch) is somewhat larger than the type.

TIBELLOMIMUS, new genus

A philodromid genus allied to *Philodromus* and *Philodromoides*.

Carapace much longer than broad (36/29), depressed throughout, the sides subparallel, the front abruptly constricted to half the greatest width. Sternum longer than broad, weakly truncate behind. Labium longer than broad, gradually narrowed distally, subtriangular. Area of eyes very broad, the posterior row nearly as wide as the carapace. Anterior row of eyes shorter than the posterior (28/33), moderately recurved, the eyes subequal, the medians only slightly nearer the laterals



MALE PALPI

Fig. 10. *Titanebo texanus*, new species.
 Fig. 11. *Titanebo macyi*, new species.

Fig. 12. *Titanebo californicus*, new species.
 Fig. 13. *Titanebo cockerelli* (Bryant).

(6.5/8) than their distance from each other. Posterior row of eyes slightly recurved, the medians three diameters from the much larger laterals, three times as far from each other. Posterior lateral eyes on conspicuous tubercles, much larger than the others. Clypeus about one and one-half times (2.5/4) as high as the diameter of an anterior median eye. Median ocular quadrangle much broader than long (21/8), the anterior eyes, much nearer together, half as far apart as the slightly smaller posterior eyes. Legs scopulate, 2413, the first tibia with 2-2-2, the second with 2-1-2-2 spines beneath, the metatarsi with 2-2-2 spines beneath (the apical pair considered as ventral).

GENOTYPE.—*Tibellomimus lineatus*, new species.

The narrow clypeus, the flat carapace, which is considerably longer than broad, and the great separation of the posterior median eyes are characters which will easily serve to separate this interesting genus from *Philodromus*. It further differs from *Philodromoides* in having three rather than five pairs of spines under the anterior tibiae.

***Tibellomimus lineatus*, new species**

FEMALE.—Total length, 3.70 mm. Carapace, 1.16 mm. long, 0.93 mm. wide, 0.46 mm. in front. Abdomen, 2.50 mm. long, 0.95 mm. wide.

Cephalothorax clothed with few hairs, the region of the lateral eyes with a few strong spines. Carapace pale yellow, the sides with a brown submarginal band, the interval between forming a broad, light longitudinal band as wide as the first eye row. Eye tubercles white. Sternum, labium, and endites nearly white in color, immaculate. Legs concolorous with the carapace, the prolateral and retrolateral surfaces with a narrow band that is distinct on the femora but fades out completely on the metatarsal and tarsal joints. Abdomen provided with a sparse covering of inconspicuous appressed hairs and a few spines on the dorsum. Dorsum of abdomen dull yellow, with the broad median longitudinal band and the lateral darker bands continuous with those on the carapace, the sides white below the brown bands, the venter gray.

Eyes as in the generic description.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.16	.50	.93	.83	.53	3.95 mm.
II	1.36	.56	1.06	1.00	.60	4.58 mm.
III	1.16	.46	.90	.80	.50	3.82 mm.
IV	1.46	.53	.93	.86	.53	4.31 mm.

TYPE LOCALITY.—Female holotype and paratype from Dunedin, Florida, December 15–January 8, 1925–1926 (W. S. Blatchley, collector), the holotype to be deposited in the Cornell Collection.

***Horodromoides*, new genus**

A philodromid genus allied to *Horodromus* and *Gephyra*.

Carapace broader than long (35/28), flattened, about equal in height throughout, the front truncate, narrowed rather abruptly to four-elevenths of the greatest width. Sternum much broader than long (33/27), broadly truncate in front, the sides weakly rounded, caudally truncate between the fourth coxa, the separation at that point

being equal to the length of the last coxa. Anterior row of eyes strongly recurved, the medians smaller, more than a diameter apart ($2.5/4$), about a diameter from the laterals. Posterior row of eyes slightly recurved, the medians smaller, over two diameters apart ($3/7$), scarcely two diameters from the laterals. Median ocular quadrangle much narrowed in front, as broad as long, the posterior median eyes slightly larger. Posterior lateral eyes larger than the anterior lateral. Clypeus about twice as high as the diameter of an anterior median eye, less than half as high as the median ocular quadrangle ($5/12$). Legs 2314, without scopulae, the anterior tibiae with five pairs of spines beneath, the metatarsi with three pairs.

GENOTYPE.—*Horodromoides validus*, new species.

The presence of five pairs of spines beneath the tibiae and the much narrower clypeus separates this genus from *Horodromus* and allied genera.

Horodromoides validus, new species

Figure 3

MALE.—Total length, 2.65 mm. Carapace, 1.46 mm. long, 1.26 mm. wide, 0.53 mm. in front. Abdomen, 1.50 mm. long, 1.00 mm. wide.

Cephalothorax in the poorly preserved specimen showing few hairs and spines above, though they were present on the clypeal margin, the lateral margins with both spines and strong hairs. Carapace brown, the well-defined cephalic and thoracic sutures outlined in black. Eyes on conspicuous black tubercles. Sternum, coxae, and femora yellow, immaculate, the distal leg joints slightly darker. Legs clothed with fine hairs and strong spines, showing indistinct basal, middle, and distal annulae on the femora, the distal joints lacking the medial band. Abdomen imperfect, nearly black, showing no signs of a pattern.

Eyes as in the generic description above.

Legs 2314, the first three tibiae with five pairs of spines beneath.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	1.50	.60	1.33	1.10	.76	5.29 mm.
II	2.00	.70	1.66	1.43	.90	6.69 mm.
III	1.83	.63	1.53	1.26	.76	6.01 mm.
IV	1.53	.46	1.16	1.03	.66	4.84 mm.

PALPUS.—Femur as long as the tibia and metatarsus taken together. Tibia with a short, sharp spur on the retrolateral side. Tarsus rather heavy, rounded, about as long as broad, the organ approximating that of some species of *Philodromus*, the details of the embolus and bulb best shown in a figure.

TYPE LOCALITY.—Male holotype from Scottsdale, Arizona (Britcher Collection).

TITANEBO, new genus

A philodromid genus allied to *Ebo* and *Philodromus*.

Carapace as broad as long, rather low. Anterior row of eyes slightly recurved, the medians much larger, less than a diameter apart, about one-third of a diameter from the laterals. Posterior row of eyes wider, very slightly recurved, nearly straight, the eyes subequal, the medians farther apart than their distance from the laterals.

Median quadrangle as long as wide, narrower in front, the anteriors considerably larger than the posteriors. Clypeus near vertical, less than the height of the median ocular quadrangle, scarcely twice the diameter of an anterior median eye. Legs with 2-2 spines under the tibiae, rather long; legs I, III, and IV subequal, the second (II) pair greatly elongated, about twice as long as the first pair, over eight times the length of the carapace in the male.

GENOTYPE.—*Titanebo macyi*, new species.

The spiders of this interesting genus are considerably larger than the known species of *Ebo*, but they agree with that genus in having the second legs greatly elongate, in the details of the eye relations, and in the similar palpi. They may be separated from *Ebo* by the much higher clypeus, which is coincident with a much higher carapace. *Ebo mexicana* Banks is congeneric with the species described below.

Titanebo macyi, new species

Figure 11

MALE.—Total length, 4.50 mm. Carapace, 2.06 mm. long, 1.83 mm. wide, 0.83 mm. in front. Abdomen, 2.43 mm. long, 1.66 mm. wide.

Cephalothorax slightly longer than broad, the cephalic suture conspicuous, the cephalic portion rather high and clearly defined, the dorsum provided evenly with a covering of short fine hairs and sparsely set with short spines. Carapace with an indistinct median lighter band as wide as the second eye row, medially with a V-shaped creamy-white maculation, the apex of which is pointed caudally. Sides of the carapace brown, evenly covered with reticulate black veining. Clypeus only light medially. Eyes black, on conspicuous white-flecked tubercles. Sternum, labium, endites, and basal leg joints dirty yellow in color. Legs yellow, minutely pointed with numerous small brown flecks. Abdomen with a medial dark basal maculation on the dorsum that runs two-thirds its length, is widest near the end and margined in white. Sides of the abdomen brown and white, the venter dirty white and with a narrow black band on each side.

First row of eyes narrower than the second (24/29), recurved, the medians very much larger (6/4) and separated from each other by two-thirds of a diameter, from the laterals, by less than a third. Second row of eyes very slightly recurved, the eyes subequal, the medians about twice as far apart as their distance from the laterals. Median ocular quadrangle very slightly longer than broad, about as wide in front as behind. Clypeus scarcely twice as high as the diameter of an anterior median eye.

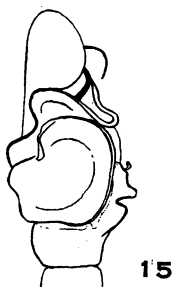
Legs 2413, the tibiae armed beneath with two pairs of spines.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	4.13	1.20	3.80	3.63	2.03	14.79 mm.
II	6.06	1.53	6.13	6.20	3.73	23.65 mm.
III	3.50	1.06	3.10	2.93	1.60	12.19 mm.
IV	4.30	1.06	3.73	4.00	1.93	15.02 mm.
Palp	2.33	.80	1.53		.76	5.42 mm.

MALE PALPUS.—Femur as long as the tibia and patella taken together, over three times as long as the tarsus, somewhat longer than the length of the carapace. The



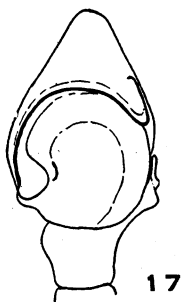
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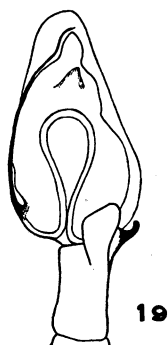
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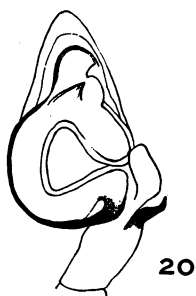
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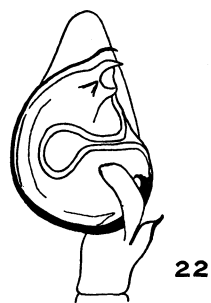
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MALE PALPI

Fig. 14. *Misumenops asperatus ulanus*, new variety.

Fig. 15. *Misumenops coloradensis*, new species.

Fig. 16. *Misumenops viridans* (Banks).

Fig. 17. *Misumenops celer* (Hentz).

Fig. 18. *Philodromus rufus*, Walckenaer.

Fig. 19. *Philodromus placidus* Banks.

Fig. 20. *Philodromus pacificus* Banks.

Fig. 21. *Philodromus mineri*, new species.

Fig. 22. *Philodromus lineatus* Emerton.

whole palpus over twice as long as the carapace. Tibia with two spurs, a ventral colorless rounded lobe and a black spur as in the other species of the genus. Bulbal parts little expanded, the embolus a distal spinelike spur.

FEMALE.—Total length, 5.80 mm. Carapace, 2.30 mm. long, 2.13 mm. wide, 1.00 mm. in front. Abdomen, 3.43 mm. long, 2.20 mm. wide.

Median longitudinal band of the carapace more clearly defined than in the male. The dorsum of the abdomen with the basal maculation well indicated, the sides with brown bands, and a caudal V-shaped brown marking, the apex of which is directed posteriorly. Eyes as in the male but the anterior medians a little smaller and separated by about a diameter. Clypeus two and one-half times as high as diameter of an anterior median eye. Spines beneath the tibiae and other structural characters as in the male. Legs 2413.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	3.13	1.06	2.66	2.16	1.46	10.47 mm.
II	4.76	1.46	4.36	3.73	2.46	16.77 mm.
III	3.03	.93	2.33	1.86	1.16	9.31 mm.
IV	3.73	1.00	2.83	2.60	1.33	11.49 mm.

TYPE LOCALITY.—Male holotype and female allotype from Tillamook County, Oregon (Cape Mearns), August 20, 1931 (R. W. Macy, collector).

***Titanebo texanus*, new species**

Figure 10

MALE.—Total length, 4.00 mm. Carapace, 1.80 mm. long, 1.76 mm. wide, 0.76 mm. in front. Abdomen, 2.25 mm. long, 1.33 mm. wide.

Coloration equivalent to that of the species described above but showing distinct broad bands on the joints of the last two pairs of legs. The clypeus white only on the margin.

First row of eyes recurved, narrower than the second (22/27), the medians much larger than the laterals (4/3), separated from each other by a diameter, a third as far from the laterals. Eyes of the second row slightly recurved, subequal, the medians nearly twice as far apart as their distance from the laterals. Median ocular quadrangle slightly broader than long (16/14), decidedly narrower in front (13/16). Posterior median eyes about equal in size to the anterior laterals. Clypeus twice as high as the diameter of an anterior median eye.

Legs 2143, the tibiae armed beneath with two pairs of spines.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	3.60	1.10	3.56	3.13	1.70	13.09 mm.
II	5.90	1.46	6.30	6.26	3.75	23.67 mm.
III	3.10	.83	2.76	2.46	1.16	10.31 mm.
IV	3.73	.90	3.33	3.26	1.56	12.78 mm.
Palp	1.73	.60	.93		.93	4.19 mm.

MALE PALPUS.—Femur about as long as the tibia and patella taken together, nearly twice as long as the tarsus, nearly equal to the length of the carapace. Tibial spur much longer than in the other species. Bulbal parts as figured.

TYPE LOCALITY.—Austin, Texas. Male holotype and female allotype, the latter in a very poor state of preservation.

***Titanebo californicus*, new species**

Figure 12

MALE.—Total length, 3.66 mm. Carapace, 1.60 mm. long, 1.53 mm. wide, 0.63 mm. in front. Abdomen, 2.10 mm. long, 1.33 mm. wide.

Carapace with a median longitudinal white band as wide as and enclosing the eye area in front, narrowing considerably at the cephalic suture and back to the margin. Sides of carapace brown, reticulately veined in black, the margins with a few lighter markings. Clypeus light. Sternum, labium, endites, and legs thickly irrorate with small black spots, the color of the integument of these parts varying from white to yellow. Abdomen with the median basal brown maculation as in the other species, broadly margined in white, the remainder of the dorsum brown, the sides and venter marmorate in black and white.

Eyes of the first row recurved, the medians much larger ($4/3$), separated from each other by fully a diameter, scarcely half a diameter from the laterals. Second row of eyes broader ($27/22$), slightly recurved, the medians twice as far apart as their distance from the laterals. The median ocular quadrangle broader behind ($14/12$), as long as broad, the anterior medians larger. Clypeus equal in height to twice the diameter of an anterior median eye.

Legs 2413, the tibiae armed beneath with two pairs of spines.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	2.23	.73	2.13	1.76	.93	7.78 mm.
II	3.53	1.00	3.40	3.16	1.76	12.85 mm.
III	2.00	.66	1.76	1.43	.80	6.65 mm.
IV	2.50	.66	2.06	1.93	.90	8.05 mm.
Palp	1.13	.43	.60		.73	2.89 mm.

MALE PALPUS.—Femur as long as the patella and tibia taken together, considerably shorter than the length of the carapace. The whole palpus less than twice the length of the carapace. Tibia with the customary spurs, the ventral a colorless, rounded lobe, the retrolateral black and truncately ended. Embolus a distal curved spine proportionately longer than in the other species.

TYPE LOCALITY.—Male holotype from San Francisco, California (R. F. Sternitzky, collector).

Philodromus Walckenaer***Philodromus mineri*, new species**

Figure 21

MALE.—Total length, 3.30 mm. Carapace, 1.60 mm. long, 1.60 mm. wide, 0.60 mm. in front.

Carapace as long as broad, almost entirely devoid of spines, reddish brown in color, the margins usually a little darker. Abdomen half again as long as broad, dark brown, showing only an indistinct median longitudinal band that caudally fades out and is replaced by chevrons, the venter paler. Legs, palpi, and under side of carapace concolorous with the dorsum, the appendages with indistinct light and dark streaks.

First row of eyes much narrower than the second, moderately recurved, the laterals which are their diameter from the medians only slightly larger, the medians

separated by a diameter and a half. Second row of eyes straighter, broader (30/23), the laterals clearly larger and not half so far apart as are the medians from each other. Median ocular quadrangle much broader than long, about half as wide in front, the eyes subequal. Clypeus slightly sloping, a little higher than the median quadrangle.

Legs 2134, the last pairs about equal, all femora longer than the width of the carapace, the third and fourth metatarsi about equal to it; tibia and patella II scarcely as long as the carapace. Spines under the first tibiae 2-2-2.

TYPE LOCALITY.—Male holotype from Douglas Lake, Michigan, June 7, 1932 (E. L. Miner).

The palpi of the species thought to be *Philodromus pacificus* Banks and *P. rufus* Walckenaer are figured (Figs. 18 and 20).

MISUMENOPS, O. P. Cambridge

Several thomisid spiders originally described from Mexico are now known to extend into the southwestern United States. In this genus notable examples of such occurrence are *Misumenops dubius* Keyserling and *M. volutus* Cambridge, the first of which is common in Texas, New Mexico, Oklahoma, and Colorado. The latter species is recorded from Colorado on the basis of a single male, which agrees perfectly with specimens from Mexico. In the genus *Misumenoides* a single Mexican species is so far known to be indigenous to Colorado, *M. annulipes* (Cambridge).

Misumenops asperatus utanus, new variety

Figure 14

MALE.—Total length, 4.00 mm. Carapace, 1.76 mm. wide, 1.76 mm. long.

Carapace varying from dull to bright yellow, with two dorsal brown bands and a median lighter longitudinal band, the latter with a V-shaped creamy white marking in the middle, the sides of the carapace yellow, the margins with a fine black line. Eye tubercles and most of the area of the eyes creamy white. Legs concolorous with the carapace, bright to dull yellow, the last two pairs of legs sparsely pointed in red and unbanded, the first pairs with narrow rings distally on the femur and patella and basally on the tibia, and with broader rings distally on the tibia, metatarsus, and tarsus, the femora of the first two pairs rather thickly and evenly flecked in red. Palpus white above. Abdomen gray to white, with or without a basal reddish marking and invariably with two distal serrate red or black bands. Under side of whole animal light, immaculate, sparsely punctate, or rarely with a darker marking at the middle of the abdomen.

Eyes in two recurved rows, the anterior medians only slightly nearer together, somewhat smaller than the laterals, the posterior medians slightly nearer together than their distance from the somewhat larger laterals. Median ocular quadrangle about as broad as long, a little narrower in front, over one and one-half diameters apart, the anterior eyes clearly much larger.

Male palpus agreeing with *M. asperatus* (Hentz) in being considerably heavier than in other species of the genus, very thick and robust, the embolus a heavy, broad tube that originates distally on the inner side, curves across the ventral face near the



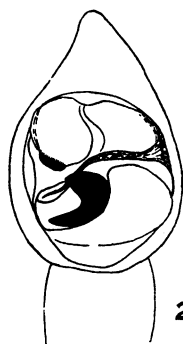
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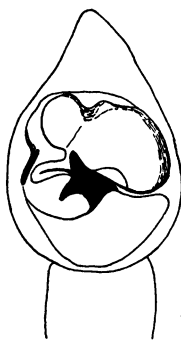
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MALE PALPI

Fig. 23. *Pardosa umanaki*, new species.

Fig. 24. *Pardosa lengi*, new species.

Fig. 25. *Pardosa furcifera* (Thorell).

Fig. 26. *Pardosa townsendi*, new species.

Fig. 27. *Pardosa ontariensis*, new species.

Fig. 28. *Pardosa tetonensis*, new species.

Fig. 29. *Pardosa varians*, new species.

Fig. 30. *Pardosa modica* (Blackwall).

Fig. 31. *Pardosa fuscula* (Thorell)

distal end, and then makes a broad spiral turn on the flattened retrolateral margin of the cymbium, the distal acuminate tip of the embolus exceeding the margin.

TYPE LOCALITY.—Male holotype, female allotype, male and female paratypes from Salt Lake City, Utah (City Creek Canyon), taken in sweeping spring composites. Paratypes of both sexes from Zion National Park, Utah.

This is clearly the western representative of the eastern species regarded as *Misumenops asperatus* (Hentz) and may only be accorded varietal rank. It is a larger spider, has the anterior median eyes more widely separated, shorter legs, and the palpus proportionately broader. Petrunkevitch, in his paper on Porto Rican spiders, was not dealing with the true *asperatus*, which probably does not occur in that locality. Emerton has given a good figure of the male palpus of this distinctive species in his paper on 'New England Spiders of the Family Thomisidae' (1892 Trans. Connecticut Academy, VIII).

***Misumenops coloradensis*, new species**

Figures 15 and 46

MALE.—Total length, 2.65 mm. Carapace, 1.30 mm. long, 1.30 mm. wide.

Pattern as in the foregoing species, the color in general much duller, only the distal broad bands on the tibiae and metatarsi of the anterior legs well marked. Structurally equivalent to any other species of the genus, a group that is so closely related that only characters of the palpi and slight differences in the eye relations seem significant. Eyes as in *M. utanus*, new variety.

Palpus of the *asperatus* type but differing in the extreme modification of the cymbium for the reception of the long curved embolus, the distal fine tip of which greatly exceeds the margin, a large black tooth present between the curved embolic portion on the retrolateral surface. The broad tibial apophysis is provided with a slenderer process that projects dorsally. Other details of the ventral surface of the palpus are shown in the figure.

TYPE LOCALITY.—Male holotype, female allotype, and paratypes of both sexes from Colorado. Female paratypes from Grand Canyon (North Rim), Arizona, and Kanab, Utah.

PARDOSA C. Koch

The species described below pertain chiefly to that interesting complex termed the Glacialis Group. The use of a single specific name to designate such a heterogeneous mixture of anomalous forms has always seemed to me to be a challenge to the validity of the criteria on which specificity in spiders has been founded,—the structure of the palpi and epigyna. In a sweeping gesture Emerton synonymized all of Thorell's species under two names, and it has been the practice of American arach-

nologists to concur in his conclusions. Some of the figures of these so-called variations by Emerton were fortunately based on the original specimens described by Thorell. With this important aid I have been able correctly to place all of Thorell's species in this group except *labradorensis*. As this name was based upon material that had previously been dried, it now would seem to be impossible ever to place it correctly. Undoubtedly it is one of the species described below and quite possibly *Pardosa lengi*, new species, which is common in Labrador, but the connection of this female with the one described by Thorell, which I regard as the type, seems too risky at the present time. Blackwall's *modica* is probably the species Emerton described as *brunnea*.

***Pardosa ontariensis*, new species**

Figure 27

MALE.—Total length, 6.70 mm. Carapace, 3.35 mm. long, 2.30 mm. wide. Abdomen, 3.35 mm. long, 1.85 mm. wide.

Carapace nearly black, with a median longitudinal lighter band that is indistinct in front where it is nearly as wide as the third eye row, clearly indicated but much narrowed behind, enclosing a median linelike streak continuous with the longitudinal thoracic sutures. Sides with a lateral lighter band that does not attain the margin, leaving a narrow black marginal band. Sternum, labium, and endites black, the coxae with lighter basal markings. Legs basally black, the terminal joints becoming lighter, these latter with black marks and streaks. Abdomen black, basally with the characteristic lighter marking, otherwise with few lighter markings. Venter lighter, medially with a broad longitudinal dull yellow band that anteriorly is invaded by brown markings, the margins with circular lighter maculations. Spinnerets black.

Eyes of the first row slightly procurved, the medians separated by nearly a diameter, more than twice as large as the small laterals and separated from them by less than a diameter of the laterals. Clypeus equal to little more than one and one-half times the diameter of an anterior median eye. Second row of eyes wider than the first (32/24), but narrower than the third eye row (32/42), separated from each other by a diameter, farther from the third eye row (17/11). Posterior eyes separated from each other by nearly four diameters (33/9), smaller than the eyes of the middle row (11/9).

Tibia and patella I, 3.33 mm. long.

Tibia and patella IV, 3.80 mm. long.

Spines under the tibiae 2-2-2.

Palpus thickly covered with strong black hairs. Femur a little longer than the tibia and patella taken together, which are subequal. Tarsus as long as the tibia and patella. Scopus a short thick process with three spurs.

TYPE LOCALITY.—Male holotype from St. Thomas, Ontario, August, 1928 (Lorne E. James); male paratype from Logan Canyon, Utah, July 2, 1927 (R. V. Chamberlin); male paratype from Medicine Hat, Alberta, July (Carr).

***Pardosa tetonensis*, new species**

Figures 28 and 38

MALE.—Total length, 5.80 mm. Carapace, 2.86 mm. long, 2.20 mm. wide.

Carapace nearly black, with the customary narrow median longitudinal lighter band and submarginal side stripes as in other species of the group. Eye region black and shining. Sternum, labium, and endites dark. Legs yellow, the basal joints darker and lined above with narrow black stripes. Abdomen concolorous with the carapace, basally with a light narrow median maculation running half its length, the venter somewhat lighter. The spines are strong and rather long. Palpus black.

Eyes of the first row slightly procurved, the medians separated by two-thirds of a diameter, slightly larger than the laterals, from which they are separated by less than a radius. Clypeus light in color, twice as high as the diameter of an anterior median eye. Second row of eyes wider than the first (30/20), narrower than the third (30/42), separated from each other by practically a diameter (18/21), a diameter and a half away from the third eye row. Posterior eyes separated by about four diameters, smaller (8/11) than the eyes of the second row.

Tibia and patella I, 2.66 mm. long.

Tibia and patella IV, 3.33 mm. long.

Spines under the tibiae 2-2-2.

Palpus thickly covered with strong black hairs, the femur slightly longer than the tarsus or the tibia and patella taken together. Scopus a short process with a basal hump and a strong spur directed toward the retrolateral margin.

A female that comes from the same locality and seems to belong with the male has the median longitudinal band on the carapace much broader and truncated anteriorly just behind the third eye row. The marginal bands are also much expanded, leaving a marginal black band no more than a third as wide, the lighter stripes continuous with the clypeus. The venter of the abdomen is light gray, the sides speckled, the dorsum with the characteristic maculation as in the male. The legs are darker than in the male and have indistinct dark annulae. The epigynum resembles that of *Pardosa modica* (Blackwall).

TYPE LOCALITY.—The male holotype and female allotype are from Slough Creek, Yellowstone National Park, Wyoming, collected by Walter E. Gertsch, August, 1930.

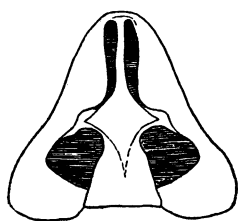
***Pardosa varians*, new species**

Figures 29 and 32

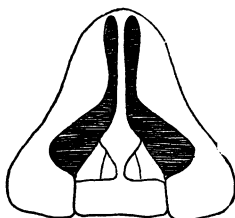
MALE.—Total length, 5.30 mm. Carapace, 2.73 mm. long, 2.06 mm. wide. Abdomen, 2.80 mm. long, 1.76 mm. wide.

The male of this species differs but little from the foregoing species in color markings. The dorsal band is indistinct, the submarginal band on the carapace is continuous with the light clypeus, and the venter of the abdomen is slightly darker.

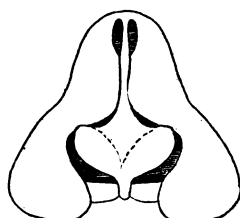
Eyes of the first row slightly procurved, the medians separated by scarcely a diameter, less than a radius from the somewhat smaller laterals. Clypeus equal to one and one-half times the diameter of an anterior median eye. Second row of eyes broader than the first row (29/20), narrower than the third (29/40), separated from each other by one diameter, about a diameter and a half from the smaller eyes of the third row, which are four diameters apart.



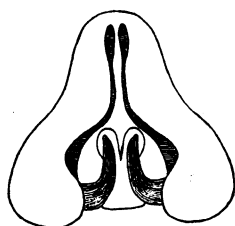
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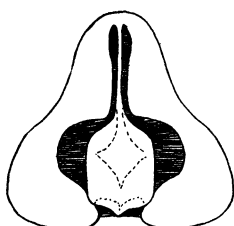
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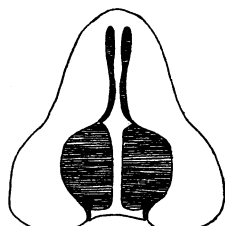
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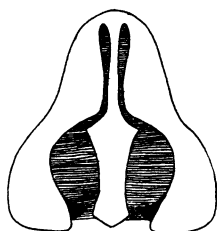
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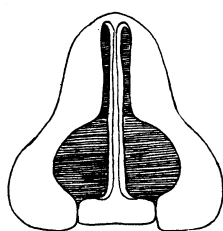
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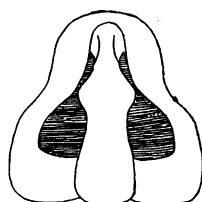
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FEMALE EPIGYNA

Fig. 32. *Pardosa varians*, new species.

Fig. 33. *Pardosa furcifera* (Thorell).

Fig. 34. *Pardosa lengi*, new species.

Fig. 35. *Pardosa ourayensis*, new species.

Fig. 36. *Pardosa anomala*, new species.

Fig. 37. *Pardosa wasatchensis*, new species.

Fig. 38. *Pardosa tetonensis*, new species.

Fig. 39. *Pardosa johanseni*, new species.

Fig. 40. *Pardosa concinna* (Thorell).

Tibia and patella I, 2.26 mm. long.

Tibia and patella IV, 3.00 mm. long.

Spines under the tibiae 2-2-2.

The palpus of this species closely approximates that of *Pardosa lengi*, new species, and can be separated only by characters that are easier to show in a figure than to illustrate satisfactorily by verbal description.

FEMALE.—Total length, 5.80 mm. Carapace, 2.73 mm. long, 2.16 mm. wide. Abdomen, 3.35 mm. long, 2.16 mm. wide.

Carapace lighter than in the male, the eye region nearly black, the median longitudinal band well defined, originating just behind the last eye row and constricted to the posterior margins. Lateral bands continuous with the clypeus, bright yellow, about double as wide as the brown marginal bands. The intervals between the light bands form two dark areas that are continuous in front with the dark eye region. Sternum dark. Labium, endites, and basal leg joints light brown, with a few lighter areas. Legs distally lighter, the femora mottled with brown, the basal joints with indistinct dorsal lineation. Basal maculation of the dorsum of the abdomen continuous with the median light stripe on the carapace, about two-fifths the length of the abdomen, the area behind with alternate dark and light areas that under low power appear as indistinct chevrons. Venter of the abdomen pale brown.

Eyes of the first row very slightly recurved, the medians separated by two-thirds of a diameter, less than a radius from the slightly smaller laterals. Clypeus equal in height to about one and one-half times the diameter of an anterior median eye. Second row of eyes wider than the first (29/33) but narrower than the posterior eyes (29/34), separated from each other by four diameters (8.5/32), smaller than the eyes of the second row (8.5/11).

Tibia and patella I, 2.46 mm. long.

Tibia and patella IV, 3.30 mm. long.

Spines on legs stout and rather long, the tibiae with 2-2-2 spines beneath.

Epigynum closely resembling that of *Pardosa furcifera* (Thorell) but differing in details best shown by a figure.

TYPE LOCALITY.—Male holotype, female allotype, and male and female paratypes from the mouth of Coppermine River, Northwest Territory, June 8-13, 1925 (Hearne). Types in the collection of the Entomological Division of the Department of Agriculture, Ottawa, Ontario, Canada; paratypes deposited in the collection of The American Museum of Natural History.

***Pardosa johanseni*, new species**

Figure 39

FEMALE.—Total length, 7.66 mm. Carapace, 3.26 mm. long, 2.56 mm. wide. Abdomen, 4.50 mm. long, 3.33 mm. wide.

Carapace light brown to black, the eye region darker than the area enclosed by the characteristic bands of the dorsum. The dorsal band distinct only near the median cephalic suture and back to the margin, the lateral bands continuous with the clypeus, somewhat dentate, twice as wide as the marginal black bands. Sternum dark. Labium, endites, and coxae concolorous with the dull yellow legs, the latter with few

markings. Basal lighter maculation on the dorsum of the abdomen running half the length of the abdomen, the remainder uniform light brown. Venter little lighter than the dorsum.

Eyes of the first row slightly procurved, the slightly larger median eyes separated by two-thirds of a diameter and less than a radius from the laterals. Clypeus over four times as high as the diameter of an anterior median eye. Second row of eyes wider than the first (34/26) but narrower than the third eye row (34/45), separated by one diameter, farther from the eyes of the last row (16/12). Posterior eyes separated from each other by nearly four diameters, smaller than the eyes of the second row (10/12).

Tibia and patella I, 3.00 mm. long.

Tibia and patella IV, 4.00 mm. long.

Spines under the tibiae 2-2-2.

TYPE LOCALITY.—Female holotype from Collinson, Alberta, June 20, 1914 (Johansen); paratypes from Bernard Harbor. Type in the collection of the Entomological Division of the Department of Agriculture, Ottawa, Ontario, Canada; paratype deposited in the collection of The American Museum of Natural History.

***Pardosa townsendi*, new species**

Figure 26

MALE.—Total length, 6.70 mm. Carapace, 3.30 mm. long, 2.50 mm. wide. Abdomen, 3.60 mm. long, 2.30 mm. wide.

A species equivalent in proportions and color to any of the above-described forms, with the median longitudinal band on the carapace nearly obliterated by the invasion of dark brown lateral markings, the submarginal lateral bands continuous with the clypeus and only as wide as the marginal darker bands. Sternum dark, the labium, endites, and coxae somewhat lighter, with a few dull yellow maculations. Legs medium brown, little lighter than the carapace. Abdomen concolorous with the carapace, the basal lighter marking poorly defined and ending near the middle of the dorsum, the venter dark.

Eyes of the first row slightly procurved, the medians separated by scarcely a diameter, less than a radius from the subequal laterals. Clypeus little more than twice as high as the diameter of an anterior eye. Second row of eyes wider than the first (33/23) but narrower than the posterior row (33/47), separated by a diameter, farther from the posterior row (16/12). Posterior eyes separated from each other by a little less than four diameters (9.5/36), smaller than the eyes of the second row (9.5/12).

Tibia and patella I, 3.06 mm. long.

Tibia and patella IV, 3.66 mm. long.

Spines under the tibiae 2-2-2.

Palpus moderately clothed with strong black hairs.

TYPE LOCALITY.—Male holotype from Blanc Sablon, southern Labrador, July, 1915 (Townsend), in the collection of the Division of Entomology, Department of Agriculture Ottawa, Ontario, Canada.

***Pardosa umanaki*, new species**

Figures 23 and 43

MALE.—Total length, 4.80 mm. Carapace, 2.68 mm. long, 2.10 mm. wide. Abdomen, 2.33 mm. long, 1.50 mm. wide.

Carapace dark brown to black, the eye region darker, the median longitudinal band poorly defined, the lateral lighter bands twice as wide as the black marginal bands, but not continuous with the clypeus, which is black. Sternum, labium, endites, and basal leg joints dark brown, the remaining leg segments a lighter brown, showing indistinct darker markings. Abdomen with a few white hairs basally, the usual lighter maculation present on the dorsum practically obliterated in the imperfect specimen.

Eyes of the first row clearly procurved, the larger medians separated by less than a diameter from each other, less than a radius from the laterals. Clypeus equal to one and one-half times the diameter of an anterior median eye. Second row of eyes wider than the first row (32/21), narrower than the third (32/41), separated by scarcely a diameter, and farther from the third row (16/11). Posterior row of eyes separated from each other by about four diameters, smaller than the middle eyes (9/11).

Tibia and patella I, 2.95 mm. long.

Tibia and patella IV, 3.30 mm. long.

Spines under the tibiae 2-2-2.

Palpus with a moderately heavy covering of strong brown hairs, characterized particularly by the distinctive scopus.

FEMALE.—Total length, 5.50 mm. Carapace, 3.16 mm. long, 2.33 mm. wide. Abdomen, 2.66 mm. long, 1.66 mm. wide.

Coloration and structure as in the male. This species is characterized by the much expanded, platelike epigynum, which, though very much like that of *glacialis*, differs in important details from that species.

TYPE LOCALITY.—Males and a single mature female from Umanak, Greenland (64°, 40' N., 50°, 40' W.), June 6, 1915 (Ekblaw and Tanquary).

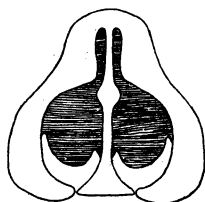
DISCUSSION.—The identity of Thorell's *glacialis* has never been very certain, in spite of the frequent use of the name for description and locality citation. Thorell's specimens came from Greenland, and most of the Canadian representatives so often referred to it (especially by Emerton) belong with other species of this difficult group. However, I have seen one specimen from Canada that seems definitely to be referable to the true *glacialis* of Thorell.

***Pardosa lengi*, new species**

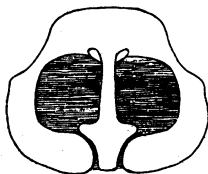
Figures 24 and 34

MALE.—Total length, 5.80 mm. Carapace, 2.86 mm. long, 2.00 mm. wide. Abdomen, 2.66 mm. long, 1.50 mm. wide.

Carapace dark brown, the lighter dorsal longitudinal band broadest just behind the eyes, rather abruptly constricted near the cephalic suture and then more gradually



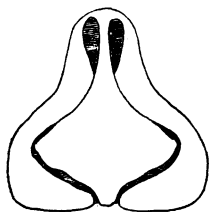
41



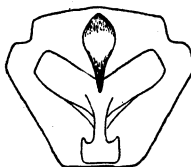
42



43



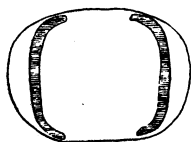
44



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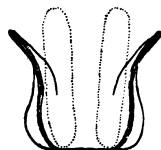
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48



49

FEMALE EPIGYNA

Fig. 41. *Pardosa modica* (Blackwall).

Fig. 42. *Pardosa fuscata* (Thorell).

Fig. 43. *Pardosa umanaki*, new species.

Fig. 44. *Pardosa glacialis* (Thorell).

Fig. 45. *Pardosa orophila*, new species.

Fig. 46. *Misumenops coloradensis*, new species.

Fig. 47. *Thanatus walteri*, new species.

Fig. 48. *Thanatus altimontis*, new species.

Fig. 49. *Thanatus canadensis*, new species.

narrowed caudally to the margin. Submarginal lighter bands continuous with the clypeus and scarcely twice as wide as the narrow marginal brown band. Sternum black. Labium, endites, coxae, and legs lighter, the legs with darker streaks dorsally on the femora. Abdomen light to dark brown, the basal maculation well defined and margined in black, with a few indistinct paired black spots behind.

First row of eyes practically straight, the medians a little larger and separated from each other by little more than half a diameter, half as far from the laterals. Clypeus about as high as one and one-half times the diameter of an anterior median eye. Second row of eyes wider than the first (29/20) but narrower than the third (39/29), separated by scarcely a diameter, half again as far from the eyes of the third row (9/14). Posterior eyes separated from each other by four diameters, smaller than the eyes of the second row (7/10).

Tibia and patella I, 2.46 mm. long.

Tibia and patella IV, 3.16 mm. long.

Spines under the tibiae 2-2-2.

FEMALE.—Total length, 6.50 mm. Carapace, 3.00 mm. long, 2.20 mm. wide. Abdomen, 3.66 mm. long, 2.33 mm. wide.

The female of this species agrees in all color details with the male, but because of its larger size it usually appears slightly lighter throughout. The bands on the carapace are distinct, and the dorsum of the abdomen has the four or five small paired spots at the sides on the caudal margin as in the male. In this sex the clypeus is twice as high as in the male, equal to over three times the diameter of an anterior median eye.

Tibia and patella I, 2.80 mm. long.

Tibia and patella IV, 3.50 mm. long.

Spines under the tibiae 2-2-2.

TYPE LOCALITY.—Male holotype and female allotype from Chateau Bay, Labrador, July, 1927 (Leng). Male and female paratypes from Battle Harbor, Labrador, July 30, 1912 (Engelhart).

***Pardosa wasatchensis*, new species**

Figure 37

FEMALE.—Total length, 6.00 mm. Carapace, 3.00 mm. long, 2.26 mm. wide. Abdomen, 3.00 mm. long, 2.00 mm. wide.

Carapace light to dark brown, with a narrow median longitudinal lighter band beginning at the middle of the carapace and ending just before the caudal margin, the customary submarginal lighter bands as wide or wider than the black margin and continuous with the light clypeus. Sternum, labium, endites, and coxae light brown, the latter basally lighter. Femora of the legs marked with black, the distal joints becoming lighter, the dorsal surfaces of the basal joints with alternate light and dark streaks above. Abdomen light brown above, the basal dash distinct, the venter light yellow.

Eyes of the first row slightly procurved, the medians separated by a diameter, less than a radius from the smaller laterals. Clypeus about twice the diameter of an anterior median eye. Second row of eyes wider than the first (33/21) but narrower than the third (33/44), separated by scarcely a diameter (11/12), farther from the

eyes of the third row (11/16). Posterior eyes separated from each other by over three diameters (10/34), smaller than the eyes of the middle row.

Tibia and patella I, 2.53 mm. long.

Tibia and patella IV, 3.00 mm. long.

Spines under the tibiae 2-2-2.

TYPE LOCALITY.—Female holotype and paratypes from Fish Lake, Sevier County, Utah, June 22, 1930 (Gertsch).

***Pardosa anomala*, new species**

Figure 36

FEMALE.—Total length, 6.40 mm. Carapace, 3.20 mm. long, 2.43 mm. wide. Abdomen, 3.30 mm. long, 2.30 mm. wide.

Carapace black to dark brown, with a median longitudinal lighter band best defined at the cephalic suture, and continuing caudad to the margin, anteriorly dividing into two tonguelike streaks that approach the third eyes. Lateral streaks continuous with the light clypeus, a little lighter than the marginal band, the light band irregularly dentate and broken at intervals by black patches. Sternum and labium dark. Endites and coxae light brown, basally streaked with yellow. Legs marked with large, irregular maculations basally, the distal joints showing distinct annulae basally, medially, and at the distal extremity, the tarsi lighter. Dorsum of abdomen concolorous with the carapace, the basal lighter marking dimly margined in black, not conspicuous, often covered with white hairs, the venter little lighter.

Eyes of the first row very slightly procurved, the medians separated by one diameter, about a radius from the smaller laterals. Clypeus equal in height to about one and one-half times the diameter of an anterior median eye. Second row of eyes wider than the first row (32/23), narrower than the third (32/43), separated from each other by a diameter, farther from the eyes of the third row (10/15). Eyes of the third row somewhat over three diameters apart, smaller than the middle eyes.

Tibia and patella I, 3.10 mm. long.

Tibia and patella IV, 3.66 mm. long.

Spines under the tibiae 2-2-2.

Epigynum closely resembling that of *Pardosa lengi*, new species, but differing in some details. The male is not known, but a large number of females have been taken in the Uintah Mountains of eastern Utah at an altitude of 10,000 feet or more, in which situation they were common in the grassy and wooded areas bordering the numerous lakes. The following species from Colorado is also closely related to *anomala*, but differences in the epigyna are so constant that, for the present at least, I regard them as specific.

TYPE LOCALITY.—Female holotype and female paratypes from the Uintah Mountains of Utah (Mirror Lake and vicinity), August 1, 1931 (Gertsch).

***Pardosa ourayensis*, new species**

Figure 35

FEMALE.—Total length, 6.30 mm. Carapace, 3.38 mm. long, 2.40 mm. wide. Abdomen, 3.00 mm. long, 2.30 mm. wide.

A species equivalent structurally to *Pardosa anomala*, new species, differing in color only in the somewhat greater anterior extension of the median lighter band on the carapace, which is nearly as wide as the third eye row in front and gradually narrowed to the caudal margin. Submarginal light bands of the carapace continuous with the clypeus, deeply dentate, not much wider than the remaining marginal dark band. Legs lacking the indistinct annulae, the basal joints darker. Abdomen with the basal maculation on the dorsum more clearly indicated than in the foregoing species.

Eyes of the first row slightly procurved, the larger medians separated by a diameter from each other, less than a radius from the laterals. Clypeus about two and one-half times as high as the diameter of an anterior median eye. Eyes of the second row broader than the first (31/22) but narrower than the third row (31/41), separated by a diameter from each other, farther from the posterior eyes (11/16). Eyes of the third row separated by scarcely four diameters, smaller than the eyes of the middle row.

Tibia and patella I, 3.00 mm. long.

Tibia and patella IV, 3.50 mm. long.

Spines under the tibiae 2-2-2.

TYPE LOCALITY.—Female holotype and paratypes from Ouray, Colorado, July 13, 1917 (Lutz).

***Pardosa uintana*, new species**

Pardosa uncatu EMERTON, 1894, Trans. Conn. Acad. Arts and Sciences, IX, (part), pp. 426-427, Plate III, figures 8c, 8d, and 8f.

MALE.—Total length, 5.10 mm. Carapace, 2.66 mm. long, 2.10 mm. wide. Abdomen, 2.50 mm. long, 1.66 mm. wide.

Carapace almost uniform black, lightened somewhat only at the cephalic suture. Sternum black. Labium, endites, and coxae light brown. Legs distally pale brown, the femora and tibiae a little darker, marked with indistinct black bands. Palpus black. Abdomen little lighter than the carapace, unmarked by any definite pattern, the venter concolorous with the dorsum.

Eyes of the first row slightly procurved, the medians separated by about a diameter, less than a radius from the somewhat smaller laterals. Clypeus twice as high as the diameter of an anterior median eye. Second row of eyes wider than the first (32/21), narrower than the third (32/44), separated by scarcely a diameter, farther from the posteriors (15/10). Eyes of the third row separated from each other by four diameters, smaller than those of the middle row.

Tibia and patella I, 2.66 mm. long.

Tibia and patella IV, 3.20 mm. long.

Spines under the tibiae 2-2-2.

Palpus sparsely covered with black hairs. Tarsus distinctly longer than the tibia (21/16) as seen from above. Details of palpus very much as in *Pardosa mackenziana* (Keyserling), with which species it has been confused, but differing in the much shorter scopus and other details of the bulb.

FEMALE.—Total length, 5.30 mm. Carapace, 2.76 mm. long, 2.06 mm. wide. Abdomen, 2.66 mm. long, 2.00 mm. wide.

What is apparently the female of this species agrees remarkably well with that of *Pardosa mackenziana* (Keyserling). Emerton in his paper on 'Canadian Spiders' (1894, Trans. Conn. Acad. Arts and Sciences, IX, pp. 425-426, Plate III, figure 8) has figured both sexes of *mackenziana* and this new species under the name of *Pardosa uncata* (Thorell), which is now considered a synonym of Keyserling's species.

TYPE LOCALITY.—Uintah Mountains, eastern Utah, August 1, 1931, male holotype, female allotype, and male and female paratypes (Gertsch). This species and *Pardosa mackenziana* (Keyserling) are common in the Rocky Mountains of the United States and Canada, ranging from six to twelve thousand feet in altitude. I have seen both from Utah, Idaho, Colorado, Wyoming, Montana, and Alberta.

***Pardosa orophila*, new species**

Figure 45

FEMALE.—Total length, 3.65 mm. Carapace, 1.90 mm. long, 1.50 mm. wide. Abdomen, 1.80 mm. long, 1.40 mm. wide.

Carapace with an irregular median band beginning squarely between the second and third eye rows, rapidly expanded at the posterior, constricted at the middle of the carapace, and continuing caudally to the margin. Sides of the carapace dark brown, with a submarginal light band continuous with the clypeus, the margins irregularly broken by dark maculations. Sternum, labium, endites, and coxae light yellow. Legs indistinctly annulate in black, lighter distally, the femur irregularly suffused with black. Dorsum of abdomen dark brown on the sides, medially with a bright yellow, longitudinal band that runs the whole length, in which area there is present a basal darker dash that ends at the middle of the dorsum. Venter gray.

First row of eyes slightly procurved, the medians larger and separated from each other by scarcely a diameter, scarcely half as far from the laterals. Clypeus as high as one and one-half times the diameter of an anterior median eye. Second row of eyes wider than the first (28/16), narrower than the third eye row (28/34), separated by a diameter, farther from the posterior eyes (15/10). Eyes of the third row separated by about three diameters, smaller than those of the middle row (8/11).

Tibia and patella I, 2.00 mm. long.

Tibia and patella IV, 2.83 mm. long.

Spines under the tibiae 2-2-0, the normal distal pair small or lacking.

TYPE LOCALITY.—Female holotype from Boulder Canyon, Colorado, July 22, 1908 (Lutz).

DISCUSSION.—This small species falls in the same group with *Pardosa distincta* (Blackwall), (synonym *pallida* Emerton, *emertoni* Chamberlin) and *Pardosa utahensis* Chamberlin (*saniuana* Chamberlin), both of which occur in Colorado, but the differences in the epigynum are clearly distinctive.