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A NEW SPECIES OF *LINOTHELE* FROM COLOMBIA (ARANEAE, MYGALOMORPHAE, DIPLURIDAE)

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ABSTRACT

Linothele megatheloides is newly described from Colombia. It differs from other species of *Linothele* by the larger size, very long posterior lateral spinnerets and scopulate tarsi of females.

INTRODUCTION

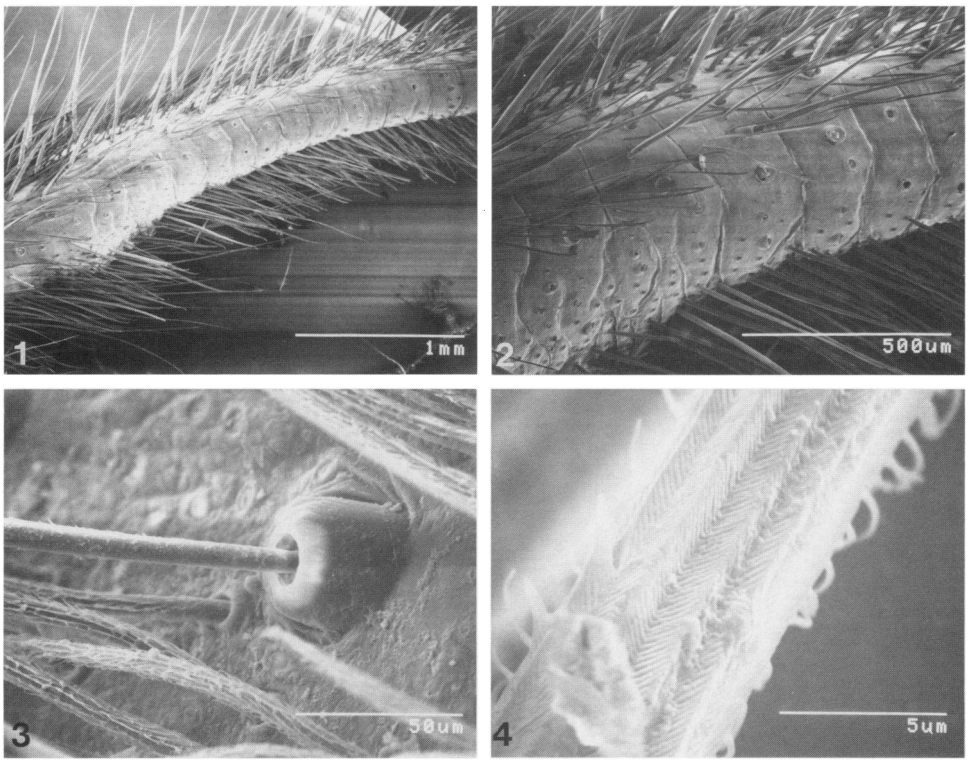
Linothele is one of three diplurid genera that build conspicuous webs in South and Central America (see Paz S. 1988); the others are *Diplura*, with which it was long confused (see Raven 1985), and *Ischnothele*. Spiders of these genera build expansive sheet webs leading to a funnel in overhangs of banks and shelters formed by tree buttresses (Coyle 1986). The web includes numerous large corridors through which the spider runs while holding the very long spinnerets high above the abdomen. Paz S. (1988) has discussed the behavior and ecological aspects of this new species. All measurements are in millimeters and abbreviations are standard for the Araneae.

Linothele megatheloides, new species
Figs. 1-12

Types.—Holotype male, paratype female from Tutunendo, Choco, Colombia, (27 July 1983; N. Paz S.), deposited in the American Museum of Natural History.

Etymology.—The specific epithet refers to the very long posterior lateral spinnerets.

Diagnosis.—*L. megatheloides* differs from *L. macrothelifera* Strand, 1908 (type in Senckenberg Museum, Frankfurt, examined), which also has long spinnerets, in the much larger size, very long spinnerets (Fig. 9), pseudosegmented apical article of posterior lateral spinnerets, and the presence of some scopulae on tarsi of females.



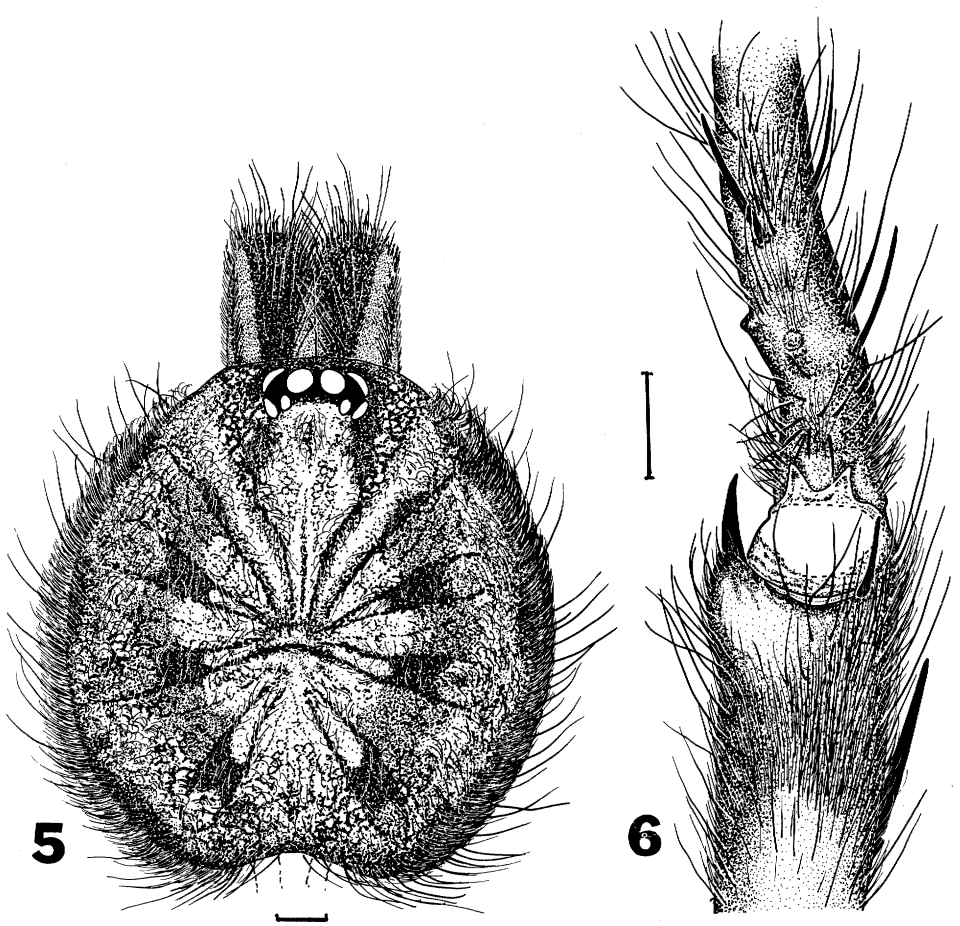
Figures 1-4.—*Linothele megatheloides*, female. Scanning electron micrographs: 1, 2, tarsus I (shaved) showing pseudosegmentations; 3, cuticle and trichobothrial base with shallow corrugations; 4, ventral "scopula" hair.

Description.—*Holotype male:* (Figs. 5-8, 12). Total length, including chelicerae, 33. Carapace red brown, striae marked by black reticulations along edges; caput brown with donut-shaped darkened ring medially; chelicerae, and legs red brown. Dorsum of abdomen brown with two lighter colored longitudinal bands, venter brown.

Carapace 10.83 long, 9.83 wide; with fine black hairs and bushy band of black hairs on margins. Foveal bristles absent; one long bristle between PME, four long on clypeal edge; 4 long between PME; no anteromedial bristles; few in striae; striae distinct. Fovea short, recurved; clypeus absent.

Eight eyes on tubercle occupying about 0.50 of front width. Ratio of eyes, anterior lateral: anterior median: posterior lateral: posterior median, 34:33:25:18. Anterior row slightly procurved; medians separated by 0.2 of their diameter, 0.2 from laterals. Posterior row recurved, medians separated by 1.6 times AME diameter, 0.2 from laterals. Median ocular quadrangle wider than long (74/46), narrower in front (61/74). Lateral eyes of each side separated by 0.2 of AME diameter.

Sternum 4.08 long, 4.06 wide; covered with long erect black bristles mixed with fine hairs; sigilla oval to subcircular, marginal. Labium 1.44 long, 2.00 wide, with no cuspules. Palpal coxae 3.20 long behind, 2.96 long in front, 1.36 wide, with 28-30 cuspules (not on mound) on inner angle; anterior lobe indistinct. Chelicerae small, slender, with dorsal band of fine brown hair and few black bristles;



Figures 5, 6.—*Linothele megatheloides*, holotype male: 5, carapace and chelicerae, dorsal view; 6, tibia and metatarsus I, proventral view. Scale lines = 1 mm.

promargin with about 5 large and 6 small and 2 very small teeth, basomesally with 2 small teeth.

Leg formula 4123. Spination (no spines on tarsi): leg I, femur p3d4r3, patella p1, tibia p2r2v3 + megaspine, metatarsus p1v5; leg II, femur p3d3r3, patella p1, tibia p1r1v4, metatarsus p1v8; leg III, femur p3d3r4, patella p1r1, tibia p3r3v6, metatarsus p5r4v8; leg IV, femur p3d4r5, patella p1, tibia p2r3v6, metatarsus p5d1r3v9. Scopulae: tarsi I, II, thin for distal three quarters; tarsi III scopulate for distal half, entire; tarsi IV scopulate, divided by setae for distal one-fifth. All leg tarsi curved, pseudosegmented. Tibia I distally with retrolateral mound bearing megaspine (Fig. 6), ventral metatarsus I with rounded thumb proximally with conical process above it on mid-lateral face. Paired tarsal claws with two rows of teeth, one short distal of about 4 teeth on inner edges, about 7 proximally on outer edges; third claw bare. Trichobothria: 20-30 in slightly irregular row on tarsi; 30-40 in curving line on metatarsi,; about 11 for half of tibial length in each of two rows.

	I	II	III	IV	Palp
Femur	12.85	12.54	11.00	14.05	7.40
Patella	4.95	4.75	4.15	4.63	3.40
Tibia	11.11	10.63	9.86	12.82	6.96
Metatarsus	12.96	13.05	14.15	18.80	—
Tarsus	8.76	9.30	8.35	9.60	2.40
Total	50.63	50.27	47.51	59.90	20.16

Palp (Fig. 8) with long slender tibia,; cymbium short rounded; bulb pyriform with small subtegulum; embolus broad with scooped tip. Spines, femur p1d4r1, patella 0, tibia p2v2.

Abdomen 13.30 long, 5.35 wide. Three-segmented posterior lateral spinnerets with basal, median, apical segments 6.83, 7.33, 12.83 long, respectively. Posterior median spinnerets 2.56 long, 0.24 wide, 0.96 apart.

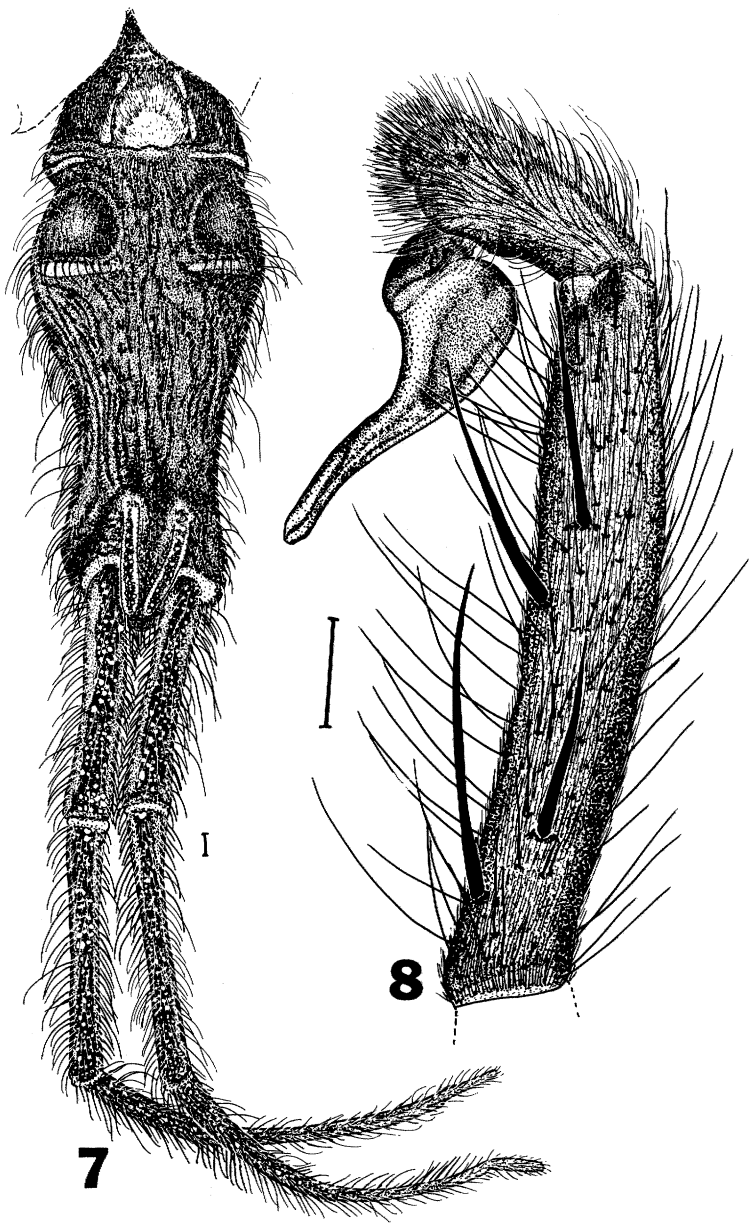
Paratype female: (Figs. 9-11). Total length, including chelicerae, 43. Carapace orange brown with brown mottling on caput and interstrial ridges; chelicerae and legs red brown. Dorsum of abdomen brown with medial pallid area, venter brown.

Carapace 13.17 long, 12.33 wide; with golden brown hairs forming bush on lateral margins and along strial edges; setation less dense centrally. Foveal bristles absent. Fovea short recurved open; clypeus narrow, distinct; caput low; striae deep, distinct; seven thick bristles on clypeal edge.

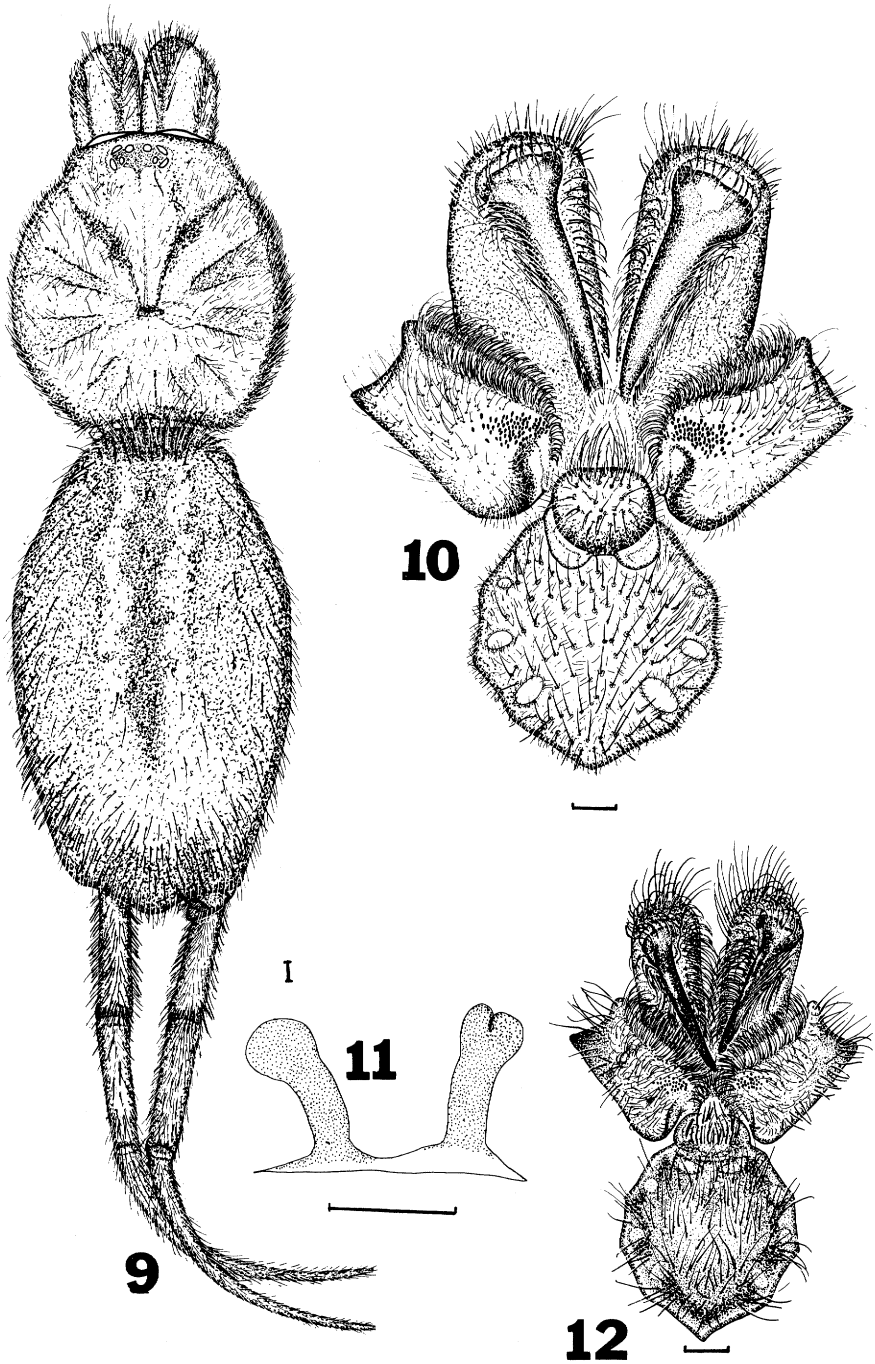
Eight eyes on tubercle occupying about 0.39 of front width. Ratio of eyes, anterior lateral: anterior median: posterior lateral: posterior median, 18:15:16:12. Anterior row straight; medians separated by 0.6 of their diameter, 0.2 from laterals. Posterior row recurved, medians separated by twice their diameter, 0.1 from laterals. Median ocular quadrangle wider than long (47/25), narrower in front (35/47). Lateral eyes of each side separated by 0.2 of AME diameter.

Sternum 6.08 long, 5.60 wide; length of posterior, 1.00, middle, 0.64, sigilla, respectively, all oval to sub-oval, marginal. Labium 1.92 long, 2.40 wide, with no cuspules. Palpal coxae 5.04 long behind, 4.24 long in front, 2.40 wide, with about 60 cuspules (not on mound) on inner angle; anterior lobe indistinct with well-developed serrula. Chelicerae short, rounded, geniculate, with long brown bristles between golden brown pile; promargin with about 5 large and 7 smaller teeth, basomesally with 30-40 granules and 7 small teeth.

Leg formula 4123. Numerous bushy hairs on pro- and retrolateral femora; peacock blue hairs on all femora, patellae, and tibiae. Spination (no spines on tarsi): leg I, femur p3d2r1, patella p1, tibia p2v4, metatarsus v6,; leg II, femur p4d3r1, patella p1, tibia p2v4, metatarsus p1v7; leg III, femur p3d3r3, patella p1r1, tibia p2r2v6, metatarsus p5r3v8; leg IV, femur p3d3r4, patella p1r1, tibia p2r1v6, metatarsus p5r5v8. Scopulae: tarsus I, thin for full length, divided by two almost straight lines of setae; tarsus II, as for I but distally setal lines becoming irregular forming about 4 rows; tarsus III and IV, as for II, but divided by 2-3 rows on III, and by 8-10 rows of setae with scopula reduced to two narrow bands on IV. Scopula hairs with longitudinal grooves with common herring-bone corrugations (Fig. 4); few fimbriations present. All tarsi pseudosegmented (Figs. 1, 2), with transverse fissures almost circling segment; ventrally fissures divide forming separate diamond-shaped plates. Paired tarsal claws with two rows, one short distal of about 4 teeth on inner edges, about 7 proximally on outer edges;



Figures 7, 8.—*Linothele megatheloides*, holotype male: 7, holotype male, abdomen and spinnerets, ventral view; 8, palpal tibia, cymbium and bulb, retrolateral view. Scale lines = 1 mm.



Figures 9-12.—*Linothele megatheloides:* 9-11, female paratype; 9, carapace, chelicerae, abdomen, and spinnerets, dorsal view; 10, sternum, maxillae, labium, and chelicerae, ventral view; 11, spermathecae, ventral view; 12, holotype male, sternum, maxillae, labium, and chelicerae, ventral view. All scale lines = 1 mm.

third claw bare. Trichobothria similar to male; base of bothrium with shallow indistinct corrugations near aperture (Fig. 3). Cuticle almost smooth.

	I	II	III	IV	Palp
Femur	13.94	14.15	12.76	16.35	9.01
Patella	6.95	6.10	5.50	6.00	4.98
Tibia	12.50	11.35	10.45	13.62	7.76
Metatarsus	11.90	12.10	13.24	17.78	—
Tarsus	7.05	7.17	7.40	8.80	6.91
Total	52.34	50.87	49.35	62.55	28.66

Palpal spines, femur p1d4r1, patella p3, tibia p2v6, tarsus v2. Claw with six very short teeth on short diagonal row.

Abdomen 22.17 long, 12.50 wide. Three-segmented posterior lateral spinnerets with basal, median, and apical segments 7.83, 7.50, 15.00 long, respectively. Posterior median spinnerets represented only by scars. Spermathecae two, each with long lobe apically enlarged with a shallow apical invagination.

Material Examined.—The holotype plus 1 male, 2 females, 2 penultimate males, between kilometers 178-134, via Quibdo, Medellin, at an altitude of 85 m, N. Paz S., 20 Feb. 1983, deposited in the American Museum of Natural History, New York.

Remarks.—The pseudosegmented tarsi (Figs. 1, 2; see Raven 1985 for explanation of wider occurrence) are extremely flexible. They are considered the most apomorphic state of leg tarsi in mygalomorphs; other states being cracked tarsi (usually only one or few transverse fissures), pallid cuticle that is indicative of a weakness, and normal tarsi. In *L. megatheloides*, closer study of the pseudosegmentation (Fig. 2) shows that the "cracking clay" affect may be quite regular laterally.

Associated with the pseudosegmented tarsi (and diagnostic of the Diplurinae) are what appear to be scopulae. The hairs resemble a scopula because they are short, straight, erect, and on the ventral surface of the tarsi. The hairs show the same canaliculi or fluting as that seen on the leg setae (dorsal) and spines of many mygalomorphs, and have very few fimbriations which would increase surface area. In contrast, leg scopulae of theraphosids are dense pads of highly fimbriated setae. It is thus likely that the term "scopula" needs to be redefined. Further study is needed to test the hypothesis that the leg scopulae of the Crassitarsae (Raven 1985) are homologous.

In most Tuberculotae, the bothrial bases are corrugiform. In some cases, the corrugations cover the base (e.g., the six-eyed diplurid *Masteria*; Raven 1979, fig. 21). However, in *Linothele megatheloides*, the corrugations are very shallow and confined to the upper portion of the base.

ACKNOWLEDGMENTS

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