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A NEW SPECIES OF THE ANT GENUS *LEPTOTHORAX* FROM FLORIDA, WITH A KEY TO THE *LEPTOTHORAX* OF THE SOUTHEAST (HYMENOPTERA: FORMICIDAE)

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ABSTRACT

A new species of myrmicine ant is described from Florida: *Leptothorax palustris* is known from workers and associated queens and males collected in a marsh and in frequently flooded pinelands in the Apalachicola National Forest in northwestern Florida. Nests are near the surface in root mats that extend into small open sandy hummocks. The species resembles *Leptothorax texanus* Wheeler, a species of adjacent well-drained sandy sites, differing primarily in the structure of the petiole and postpetiole and color. *Leptothorax davisi* Wheeler is synonymized with *Leptothorax texanus* Wheeler (new synonymy); this is based on extensive and previously unknown variability in *L. texanus*, even in single sites and within nest series. An illustrated key is presented for the identification of the eleven species of *Leptothorax* known from the Atlantic Coastal states north through North Carolina, with the addition of Alabama.

Key Words: southeastern ants, Apalachicola National Forest, Osceola National Forest

RESUMEN

Se describe una nueva especie de hormiga Myrmicinae de Florida. *Leptothorax palustris* se conoce con base en obreras, reinas y machos asociadas, colectados en ciénegas y bosques húmedos de pino en el Apalachicola National Forest del noreste de Florida. Los nidos son superficiales en pequeños promomontorios de arena. Este especie se parece a *Leptothorax texanus* Wheeler, una especie de de áreas cercanas pero más arenosas y con mejor drenaje. *Leptothorax texanus* se distingue de *L. palustris* por la estructure del peciolo y postpeciolo, y su color. *Leptothorax davisi* Wheeler se convierte en sinónimo de *Leptothorax texanus* Wheeler (*nuevo sinónimo*); ésta cambio se establece con base en la extrema variación, hasta ahora desconocida, de *L. texanus* al interior de sitios y nidos particulares. Se incluye una clave ilustrada de las once especies de *Leptothorax* conocidas de los estados de la costa atlántica hasta North Carolina, incluyendo Alabama.

Translation provided by author.

Members of the genus *Leptothorax* are generally timid and retiring ants that do not recruit strongly to baits and are often specialized in their choice of nesting places. It is not remarkable, therefore, that species of *Leptothorax* may be overlooked, even in relatively well-known countries such as the United States, with its long history of assiduous myrmecologists. The species described below seems to have escaped detection up to now because it occurs in an unusual habitat (frequently flooded and burned pine forests), where it probably conducts most of its foraging hidden under a loose layer of pine needles and leaves. The first known specimens were collected in pitfalls by David Lubertazzi in a study of ant associations in selected vegetation types in the Apalachicola National Forest, near Tallahassee, Florida.

For a diagnosis of the genus *Leptothorax*, see the character states in the various couplets of the keys provided by Bolton (1994). A rough diagnosis of the genus as it appears in the U.S. is as follows: petiole with two segments; antennal scrobes lacking; petiole not quadrate in lateral view; head and body with some erect hairs; antennae with three conspicuously enlarged terminal segments; propodeal spines or teeth present; postpetiole attached normally, not affixed to the dorsal surface of the gaster.

The species described below would belong to the former subgenus *Myrafant*, which was recently revived by MacKay (2000). We hesitate to use this subgenus until it has been reviewed in a wider context. The Florida species *Leptothorax torrei* (Aguayo), for example, seems to fit comfortably into the revived *Myrafant* as currently de-

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fined, but is not included in the *Myrafant* revision, presumably because its resemblance to species traditionally included in *Myrafant* is likely to be due to convergence. It is possible that *Myrafant* will eventually be recognized as a valid subgenus, or even as a genus (Hölldobler & Wilson 1990), but it would be best if this occurred in a more general review of the subgroups presently combined in *Leptothorax*.

Leptothorax palustris Cover and Deyrup, **new species**
(Figs. 1-2)

Diagnosis of Worker

Distinguished from all other Nearctic *Leptothorax* by the following combination of character states: head with fine, longitudinal, well-separated dorsal carinae, otherwise shining; mesosoma with fine, longitudinal, well-separated dorsal carinae, anastomosing dorsally; propodeal spines slender, acute, projecting distinctly upward from the smoothly convex dorsum of the mesosoma; postpetiole in dorsal view almost twice as wide as petiole, and almost as long as wide, shining; color yellowish, head yellowish brown. Most similar to *L. texanus* Wheeler (Fig. 3), but postpetiole relatively longer, color lighter.

Description of Holotype Worker

Features visible in lateral view described from left side. Measurements in mm: Total length (length of head excluding mandibles, + length of mesosoma, excluding propodeal spines, + length of petiole, postpetiole, gaster): 2.90; head length 0.65; head width 0.50; length of mesosoma: 0.93; length of petiole: 0.25; length of postpetiole: 0.27; length of gaster: 0.80. Head: dorsum with fine, well-separated, longitudinal, irregular carinae, with scattered, short cross-carinae; interstices weakly shining; clypeus with a strong median carina, separated by a distance equal to about half its length from the sublateral longitudinal carinae, a lateral carina also present on each side; malar space slightly more than 1.5 times maximum length of eye; antennae with 12 joints. Mesosoma: evenly convex in profile; dorsum with a few coarse carinae forming a rough network, interstices weakly shining; pronotum and mesopleuron each with several irregular, indistinct longitudinal carinae, interstices weakly shining; metapleuron with five distinct longitudinal carinae, interstices shining; propodeal spines long, slender, in lateral view spine making a 135 degree angle with the dorsum of the mesosoma; petiole in profile concave ventrally, with a small, sharp an-

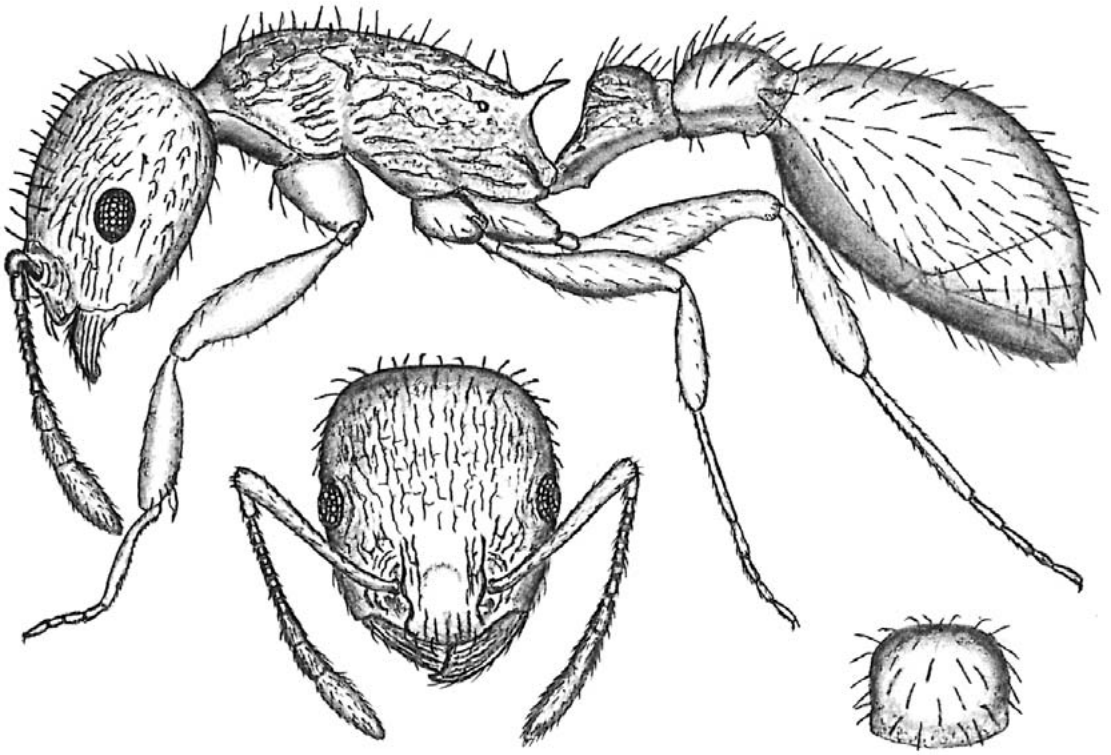


Fig. 1. Worker of *Leptothorax palustris* n. sp.: lateral habitus view; frontal view of head; dorsal view of postpetiole. Length of ant: 2.9 mm.

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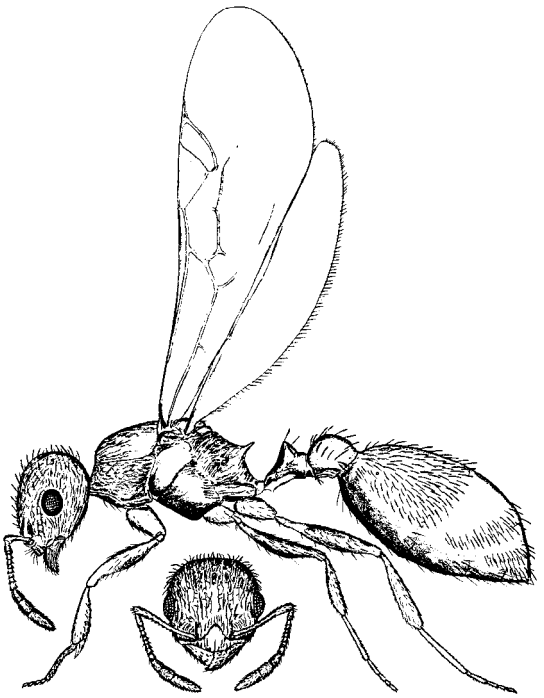


Fig. 2. Alate queen of *Leptothorax palustris* n. sp.: lateral habitus view; frontal view of head. Length of ant: 5.0 mm

gle at anterior border; node of petiole with a blunt anterior angle, no posterior angle; postpetiole in dorsal view shining anteriorly, minutely roughened posteriorly; 1.8 times as wide as petiole; postpetiole as long as wide when measured from side to side at midlength, and along midline from convex anterior to convex posterior borders. Gaster: shining, without sculpture. Dorsum of head and body with sparse, flattened, parallel-sided hairs, erect on head and mesosoma; slightly retrorse on petiole, postpetiole, and gaster. Color: translucent dark yellow, dorsum of head brown, middle and hind femora with wide postmedian bands of brownish yellow.

Diagnosis of Queen

Queens of some North American *Leptothorax* are unknown or undescribed; this diagnosis includes only species from southeastern North America. Distinguished from these by the following combination of character states (Fig. 2): mesopleuron shining, with only a few fine carinae near edges (unlike *L. smithi* Baroni Urbani, *schaumii* Roger; *bradleyi* Wheeler); propodeal spines long, slender (unlike *pergandei* Emery, *bradleyi*); propleuron with conspicuous irregular carinae (unlike *tuscaloosae* Wilson, *torrei* (Aguayo), *pergandei*); petiole in profile triangular with a single conspicuous dorsal angle, not rounded dorsally (as in *allardycei* (Mann)), or truncate and biangulate (as in *longispinosus* Roger and *texanus* Wheeler); maximum length of eye slightly shorter than malar space (unlike *curvispinosus* Mayr).

Description of Paratype Dealate Queen from Nest of Holotype

Methods as for holotype. Measurements in mm: total length: 4.96; head length: 0.82; head width: 0.77; length of mesosoma: 1.25; length of petiole: 0.37; length of postpetiole: 0.35; length of gaster (segments except first strongly retracted): 1.40. Head: dorsally with well-separated longitudinal irregular carinae with scattered cross-carinae, interstices shining; clypeus shining, with longitudinal carinae: one median carina, a sublateral and lateral on each side, right side with a submedian carina, absent on the left side; malar space 1.2 times maximum length of eye; antennae with 12 joints. Mesosoma: pronotum with a few strong carinae forming an irregular network anteriorly, becoming weak and longitudinal posteriorly, interstices shining; mesonotum with dense, longitudinal, slightly irregular carinae, interspaces shining; mesopleuron shining, smooth, with small irregular carinae along dorsal, ventral, posterior borders, transverse mesopleural suture strongly developed, slightly foveolate; propodeum with strong longitudinal carinae, propodeal spines elongate, slender, acute. Petiole in profile with a single, strong, dorsal angle, not truncate, ventrally concave, with a small, sharp angle at anterior border. Postpetiole dorsally minutely roughened, 1.50 times as wide as long. Gaster shining, without sculpture. Pilosity of head and body as in worker. Color: translucent dark yellow, dorsum of head and apex of gaster brown.

Diagnosis of Male

Males of some North American *Leptothorax* are unknown or undescribed. Even in the Southeast there are two species, *smithi* and *tuscaloosae*, whose males are unknown, at least to us. Male *palustris* are distinguished from other known southeastern species by the following character states: node of petiole low and rounded, hardly more declivitous posteriorly than anteriorly (unlike *texanus*, whose declivity is high and abruptly declivitous posteriorly); color black (unlike *torrei*, *curvispinosus*, *allardycei*); mesonotum not conspicuously bulbous anteriorly and overhanging posterior edge of pronotum (as in *pergandei*); antennae with a four-segmented antennal club (unlike *bradleyi*, which has no antennal club; we suspect that *smithi*, whose workers resemble those of *bradleyi* in many ways, has similar males); mesonotum lacking the conspicuous parapsidal furrows found in *longispinosus*.

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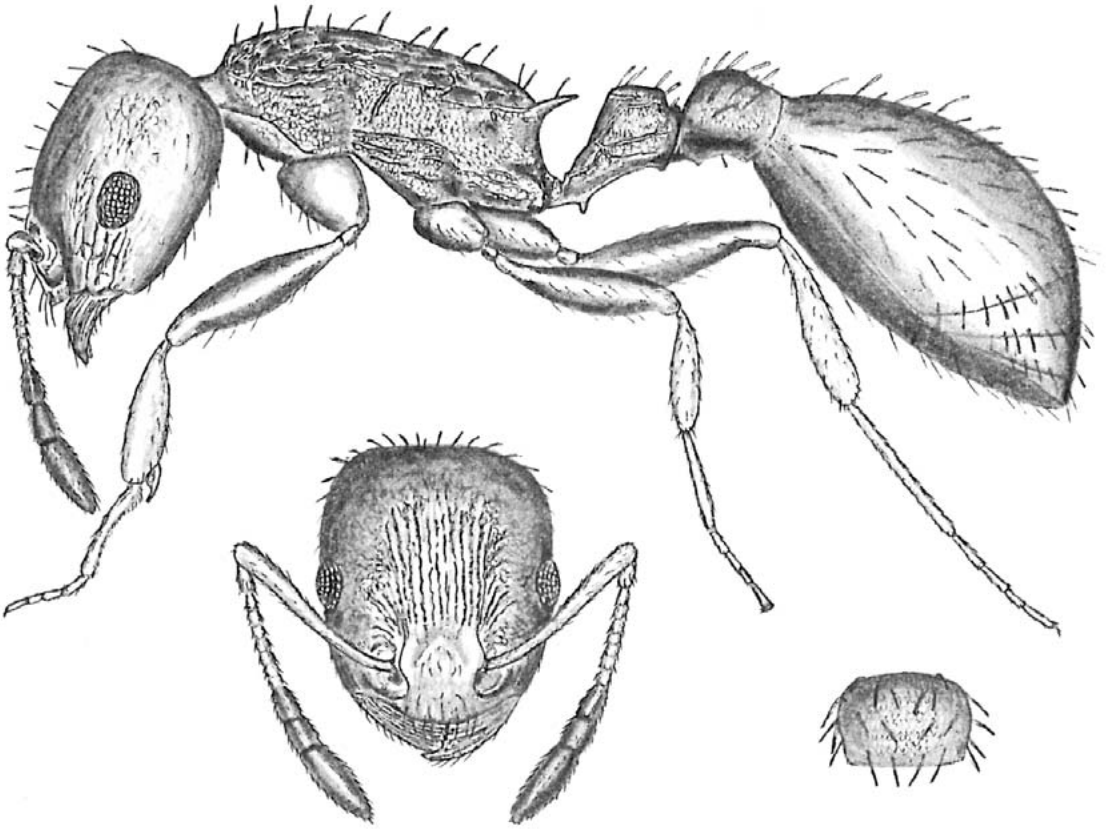


Fig. 3. Worker of *Leptothorax texanus*: lateral habitus view; frontal view of head; dorsal view of postpetiole. Length of ant: 3.2 mm.

Description of Paratype Male from Nest of Holotype

Methods as for holotype. Measurements in mm: total length: 3.27; head length: 0.52; head width: 0.60; length of mesosoma: 0.93; length of petiole: 0.25; length of postpetiole: 0.20; length of gaster: 0.77; length of forewing: 2.20. Head: minutely reticulate dorsally, smooth below middle ocellus; faintly sculptured behind ocelli; length of eye 1.10 times the distance between edge of eye and lateral ocellus; antennae with 13 joints, last four conspicuously enlarged to make an elongate club. Mesosoma: pronotum minutely, faintly reticulate, weakly shining; mesonotum without parapsical furrows, roughened with irregular, shallow, longitudinal depressions, irregularly minutely reticulate; midline near anterior border impunctate; mesopleuron shining, smooth except for irregular shallow depressions usually associated with insertions of hairs; metapleuron and propodeum faintly, minutely reticulate, weakly shining. Petiolar node smooth, shining, in profile low and rounded, posterior declivity only slightly steeper than anterior declivity. Postpetiole shining, with a conspicuous submarginal band of irregular shallow depressions and minute reticulations. Gaster smooth, shining. Color: blackish brown; tarsi yellowish white; antennae, mandibles, trochanters, apices of femora light brown; wings, including veins, whitish.

Type localities, as Appear on Specimen Labels

Holotype: Florida: Liberty Co., Apalachicola Nat'l. For., 14-V-2000, S. Cover & M. Deyrup. 0.4 mi. S. jct. For. Serv. Rds. 107 & 126, 30°12.38'N, 84°45.88'W., elev. under 200', seasonally flooded shrub marsh. Nest in open, a tiny open hole. Nest chambers less than 2" deep, in root mat on fine white sand. Found by cookie bait. Same data for 71 paratype workers, 1 dealate paratype queen associated with holotype, 3 paratype dealate queens associated with paratype workers, 3 alate paratype queens associated with paratype workers, 1 paratype male associated with holotype, 3 paratype males associated with paratype workers.

Additional Material Examined

Two workers: Florida: Columbia Co., Osceola National Forest, 5 km. east of Lake City on Route 90, 30°11.516N, 82°31'977W, 28-VIII-2001, pine

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flatwoods, J. R. King, collector; 1 worker: same locality, habitat, collector as previous, site: 30°17.100'N, 82°28.813W, 27-30-VIII-2001; 1 worker: same locality, habitat, collector as previous site: 30°17.077'N, 82E28.770W.

Deposition of Type Material

Holotype, 2 paratype workers from nest of holotype, dealate queen and male from nest of holotype, 9 paratype workers: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts; 8 workers, one queen, one male: National Museum of Natural History, Smithsonian Institution, Washington, D.C.; 3 workers, one queen, 1 male: Los Angeles County Museum, Los Angeles, California; 7 workers, one queen: Florida State Collection of Arthropods, Gainesville, Florida; 4 workers, one queen: The Natural History Museum, London; remaining type material temporarily in the arthropod collection of the Archbold Biological Station, Lake Placid, Florida.

Etymology

palustris, Latin, from *palus* (feminine) = marsh, and the suffix *-tris*, = belonging to, or a place where; feminine ending in apposition to *palus*, not *Leptothorax* (masculine).

Position in Taxonomic Guides

In Creighton (1950) workers key to *texanus davisi*, couplet 17 of *Leptothorax* key. In Mackay (2000) workers dead-end at couplet 43, as the dorsum of the postpetiole is neither "reticulo-rugose" nor "punctate or granulose."

Discussion

The collections of this species are from a marsh or from low flatwoods. We believe it is a wet-site species from the same lineage as the dry-site species *Leptothorax texanus*, which it strongly resembles in size, pilosity, and general morphology (Fig. 3). The two species differ in the shape of the profile of the petiole (in workers, queens, males), in the relative length and width of the postpetiole of the worker (Figs. 1 and 3), and in color.

Leptothorax palustris is presently known from the Apalachicola and Osceola National Forests. In these preserves it probably benefits from the management practices of low stocking and occasional fires. Its populations would probably suffer from attempts to promote dense stocking of trees or heavy site preparation, as occur in many privately managed pine stands. We appreciate the enlightened, multi-use management of the forests that provides a rich diversity of species, including native ants. It is probable that the species occurs in marshes and flatwoods in Georgia and Alabama.

The first known specimens were collected in pitfall traps, and this seems a good way to sample for the species. In a site where the species is known to occur, it can be baited with cookie crumbs. Our experience is that members of this species accept shortbread cookie crumbs with an enthusiasm not always seen in *Leptothorax* species, and immediately return to the nest. This may be the only practical way to find a nest, because the nest entrances that we have seen are completely unmarked holes about 2 mm in diameter.

Synonymy of *Leptothorax texanus* Wheeler and *L. davisi* Wheeler

Preparation of a diagnosis for *L. palustris* lead to an examination of *L. texanus* and *L. davisi*, which are the species most similar, and probably most closely related to *palustris.* In Mackay's useful recent revision of a large portion of North American *Leptothorax* (2000), the former subspecies *L. texanus davisi* is raised to species level, on the basis of several character states. These include differences in the sculpture of the head (*texanus* is described as having the central region "nearly smooth and shining," *davisi* "punctate, with the central region covered with longitudinal striae"); the postpetiole of *davisi* is covered "with poorly defined punctures," while that of *texanus* is "coarsely reticulo-rugose or punctate." The term "punctate" as used in MacKay's descriptions of these species and other *Leptothorax* in his revision refers to sculpture that would traditionally be considered granulate, or inscribed with fine reticulations. There are no actual punctures, except for those from which hairs emerge. The "striae" involved are not impressed lines, but fine, irregular carinae, often superimposed on the reticulate background. Allowing for these variances in terminology, the differences in surface sculpture used by Mackay to define *texanus* and *davisi* can be found within populations and within nest series in Florida. The postpetiole of *davisi* is described as "wider." This is not upheld by examination of specimens from the non-overlapping supposed ranges of the species. The difficulty surrounding this feature is shown in Mackay's diagnostic line drawings: the supposedly narrower postpetiole of *texanus* is actually shown as wider in relation to its length and wider in relation to the petiole, than that of *davisi*. The shape of the petiole in profile is described as "definitely truncate" in *davisi*, "not really truncate" in *texanus*. Although all specimens we have seen show some evidence of a "truncate" petiolar node, the sharpness of the anterior and posterior angles is highly and continuously variable within sites (such as the Archbold Biological Station) and through the ranges of *texanus* and *davisi*. For all these charac-

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ter states, the variation seen in the 173 specimens (ABS collection) from throughout Florida is particularly convincing, with every permutation of the *texanus* and *davisi* diagnostic character states represented in this one set of specimens. We think that the problem in understanding the relationship between *davisi* and *texanus* is the understandable result of insufficient specimens when these taxa were first established, and insufficient specimens on hand for the subsequent reviews by Creighton (1950) and Mackay (2000).

We therefore propose the synonymy of *Leptothorax texanus* Wheeler and *Leptothorax davisi* Wheeler under the senior name *Leptothorax texanus* (**new synonymy**). We do not retain *davisi* as a subspecies because it seems that the features used to define that subspecies are not clearly confined to a region, as is normally required for a geographic subspecies. There is, however, some apparent geographic variation within *L. texanus*. The type series from Texas does show unusually strong rugose carinae on the mesosoma, while the types of *davisi*, from New Jersey, have unusually weak mesosomal carinae. The zone of intergradation, however, seems to occupy most of the range of the species. This analysis may not be the final word on the *texana-davisi* question. *Leptothorax texanus*, as presently understood, has one of the largest ranges of any North American *Leptothorax*. It is still possible that it is a complex of two or more species; at present, however, we have no evidence of this.

Identification of *Leptothorax* of Southeastern North America

The *Leptothorax* fauna of the Southeast has not been reviewed in its entirety since Creighton's *Ants of North America* (1950). Seven of the southeastern species appear in Mackay's revision (2000), with species accounts that include a small literature review for each species. Our aim is to make it easy to identify known southeastern species, and to facilitate the recognition of any unreported or undescribed species that may occur in the Southeast. For this purpose we define the area as the Atlantic Coastal states from Florida through North Carolina, with the addition of Alabama. North of this area there are several additional species of *Leptothorax*, including the unresolved *L. muscorum* complex. Following the key is a brief summary of the natural history of each species. Included are suggestions for finding colonies of these species in the hope of encouraging further collections from the Southeast. The known distribution of several species includes significant (and improbable) gaps in the Southeast.

The surface sculpture on *Leptothorax* is best viewed with a diffused light source, such as a fluorescent light.

Key to *Leptothorax* Workers of Southeastern North America

1a. Mesosoma in lateral profile with a conspicuous impression between the mesonotum and the propodeum (Fig. 4, A:1a) (throughout Southeast) . . . . . *pergandei* Emery

1b. Mesosoma not conspicuously impressed between the mesonotum and propodeum 2

2a. Head and body, except gaster, covered with coarse, raised reticulations (Fig. 4, B: 2a) (tropical FL) *allardycei* (Mann) 2b. Head and body not covered with coarse, raised reticulations 3

3a. Propodeal spines in lateral view short and triangular, no longer than the width of an eye, as in Fig.4, C: 3a . . 4

3b. Propodeal spines in lateral view slender, usually longer than the width of an eye, as in Fig. 4, E: 3b 5

4a. Head in frontal and lateral views with conspicuous, irregular, longitudinal carinae (Fig. 4, C: 4a) (probably throughout Southeast, except tropical FL) . . . . . *bradleyi* Wheeler

4b. Head in frontal and lateral views largely shining and lacking sculpture, with only a few delicate carinae around the eye and frontal ridges Fig. 4, D: 4b), or, in larger specimens, head mostly granulate, not shining, with delicate carinae almost hidden in granulate background (throughout Southeast, except tropical FL). . . . . *schaumii* Roger

5a. Head and mesosoma not shining and without conspicuous sculpture; only a few hairs on head and body, these hairs short and broadened; postpetiole unusually large (Fig. 4, E: 5a) (tropical FL) . *torrei* (Aguayo)

5b. Head and mesosoma partially shining or strongly sculptured; hairs various (occasional specimens of *L. curvispinosus* lack conspicuous sculpture; this species more northern, without enlarged postpetiole). 6

6a. Dorsum of mesosoma mostly smooth shining; color usually dark brown, legs and antennae pale yellow (Fig. 4, F) (AL, NC) . . . . . *tuscaloosae* Wilson

6b. Dorsum of mesosoma either with obvious fine carinae, or not shining, or both 7

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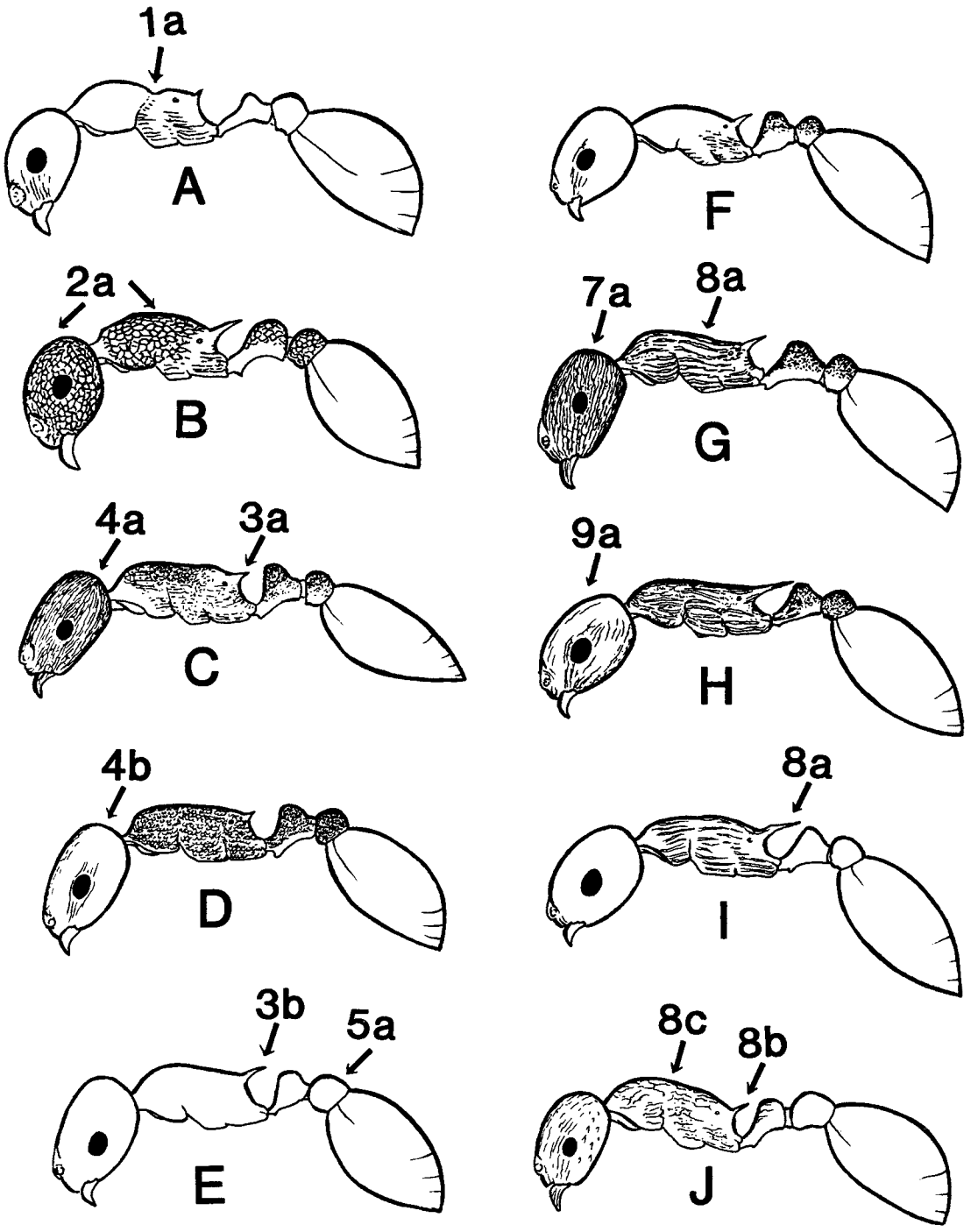


Fig. 4. Southeastern species of *Leptothorax*. Number-letter combinations, such as "1a", refer to character states used in the key to species. Species: A: *pergandei*, B: *allardycei*, C: *bradleyi*, D: *schaumii*, E: *torrei*, F: *tuscaloosae*, G: *smithi*, H: *longispinosus*, I: *curvispinosus*, J: *palustris*. Drawings not to scale.

7a. Head and body dark reddish brown; sides of head with conspicuous, irregular, closely spaced carinae (Fig. 4, G: 7a) (throughout Southeast, except tropical FL) . . . . . *smithi* Baroni Urbani

7b. Head and body not dark reddish brown; sides of head without closely spaced carinae 8

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8a. Propodeal spines in lateral view about as long as basal face of petiole (as in Fig. 4, I: 8a); sides of mesosoma with strong, subparallel carinae (as in Fig 4, H: 8a) 9

8b. Propodeal spines in lateral view shorter than basal face of petiole (Fig. 4, J: 8b); sides of mesosoma with fine, irregular carinae that are not parallel (Fig. 4, J: 8c) 10

9a. Blackish; head in frontal view with delicate, longitudinal ridges, but otherwise shining (Fig. 4, H: 9a) (southern Appalachians) . . . . . *longispinosus* Roger

9b. Yellowish or yellowish brown; head in frontal view not shining (Fig. 4, I) (Southeast, into north FL) . . . . . .*curvispinosus* Mayr

10a. Blackish, sometimes with dark red on the mesosoma; postpetiole in dorsal view much wider than long (Fig.3) (throughout Southeast) . . . . . *texanus* Wheeler

10b. Yellowish, head usually darker than body; postpetiole in dorsal view about as long as wide (Fig.1; Fig. 4, J) (north FL) . . . . . *palustris*, n. sp.

Abbreviated Notes on Species (Alphabetical)

L. allardycei. Tropical Florida, Caribbean. Nests are usually in hollow twigs or vines on living trees, occasionally in sawgrass culms at edges of marshes; in Bahamas sometimes in fallen twigs. Often in poisonwood (*Metopium toxiferum*). Nocturnal. Usually pale yellow, occasionally brownish yellow.

L. bradleyi. Central Florida north into Georgia and Alabama; probably in the Carolinas as well. Similar in color and morphology to *L. smithi*, but propodeal spines shorter and few conspicuous carinae on side of mesosoma. Nests are usually in large, living pines, especially *Pinus elliottii* and *P. palustris* in open areas. A member of the longleaf pine ecosystem. Sometimes attracted to peanut butter or jelly baits on tree trunks, but the nest is seldom accessible.

L. curvispinosus. North Florida, throughout remainder of Southeast, but often rare in southern part of range. In mature hardwood forests in southern edge of range, often in brushy areas and open forest farther north. Nests are usually in hollow twigs or weed stems on ground, but may be in dead twigs or branches up to about 1 m above ground. Yellowish color and non-shining head distinguish this species from all sympatric southeastern *Leptothorax*, but similar to *L. ambiguus* Emery, which occurs to the north and can be distinguished by shorter and wider propodeal spines (see Creighton 1950). The latter species might possibly occur at higher elevations in the southern Appalachians. Attracted to sweet baits.

L. longispinosus. A northern species extending south at mid elevations in the southern Appalachians. Usually found in mesic forest or forest edges. Nests are in hollow twigs or nuts on the ground or buried in leaf litter, occasionally under bark of dead trees. Dark color combined with long, straight propodeal spines are diagnostic in the Southeast. Attracted to sweet baits; individuals of this species and some other *Leptothorax* spend a long time licking solid baits, but quickly fill up at liquid baits such as jelly, making them easier to trail back to the nest.

L. palustris. See comments, under discussion of the species.

L. pergandei. New Jersey through Florida, west into Nebraska and Arizona. The strongly impressed suture between the mesonotum and propodeum is diagnostic throughout its range. Usually found in open forests or forest edges, including both well-drained and poorly drained sites; has been found in salt marshes. Nests are usually in hollow twigs or nuts, usually buried in leaf litter; occasionally nests in soil. May be deep yellow, brown or black; occasionally bicolored. Readily carries shortbread crumbs back to nest.

L. schaumii. Central Florida north into southern Maine, west into Texas. An arboreal species with short spines and the head shining, the latter character state visible at low magnification in the field. Nests are usually in dead branches or under loose bark on live hardwoods or conifers, usually the former. Can be either blackish brown or yellow, sometimes bicolored. Somewhat attracted to peanut butter or jelly baits.

L. smithi. Central Florida north into the mid-Atlantic states and west into Ohio. Nests are usually in standing dead trees in open areas. In Florida usually found in pine snags. A dark reddish brown species similar in color and morphology to *bradleyi*, distinguished by long propodeal spines and conspicuous carinae on the sides of the mesosoma. This is the same species as *L. wheeleri* M. R. Smith, a name that became preoccupied when the genus *Macromischa* was synonymized with *Leptothorax* (Baroni Urbani 1978). Somewhat attracted to peanut butter or jelly baits, but the nest is seldom accessible.

L. texanus. Central Florida west to Texas, north to New Jersey. In the Southeast this species and the larger *L. pergandei* are the only dark, shining *Leptothorax* found foraging on the ground in open areas. Some southeastern queens are blackish, others a striking brick red. Nests are in soil, usually only a few inches below the surface.

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Often forages under a thin surface layer of litter. Can be baited with shortbread crumbs.

L. torrei. Tropical Florida and the Caribbean. This tiny yellow species with short scale-like hairs cannot be mistaken for other southeastern *Leptothorax*. Somewhat similar in appearance to *Cardiocondyla wroughtonii* (Forel), which is also yellowish with an expanded postpetiole, but the latter species has no scale-like hairs. *Leptothorax torrei* is usually obtained by sifting or extracting litter.

L. tuscaloosae. Known from Alabama and North Carolina; presumably occurs in the intervening states. Nests have been found at the bases of large trees in mesic hardwood forest areas (Wilson 1950). A dark brown, shiny species with pale legs and antennae, *L. tuscaloosae* is not likely to be confused with other southeastern *Leptothorax*.

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Literature Cited

Baroni Urbani, C. 1978. Materiali per una revisione dei *Leptothorax* neotropicali al sottogenere *Macromischa* Roger. Entomologica Basiliensia 3: 395-618.

Bolton, B. 1994. Identification guide to the ant genera of the world. Harvard University Press, Cambridge, MA. 222 pp.

Creighton, W. S. 1950. The ants of North America. Bull. Mus. Comp. Zool. Harvard 104: 1-585.

Hölldobler, B., and E. O. Wilson. 1990. The ants. Harvard University Press, Cambridge, MA. 732 pp.

MacKay, W. P. 2000. A review of the New World ants of the subgenus *Myrafant* (Genus *Leptothorax*). Hymenoptera: Formicidae. Sociobiology 36: 265-444.

Wilson, E. O. 1950. A new *Leptothorax* from Alabama (Hymenoptera: Formicidae). Psyche 57: 128-130.

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