

**A REMARKABLE NEW SPECIES OF LASIUS
(CHTHONOLASIUS) FROM CALIFORNIA
(HYMENOPTERA: FORMICIDAE)¹**

A. C. COLE

*Department of Zoology and Entomology
University of Tennessee, Knoxville*

During his studies of western *Pogonomyrmex* the writer collected, in the summer of 1957, workers of an ant which, in the field, appeared unquestionably to represent a species of *Myrmecocystus* (and was entered as such in his field notes) but which, when observed under the microscope, proved conclusively to be a species of *Lasius* (*Chthonolasius*). Further study showed the species not to be represented among the known North American forms in the writer's collection. Specimens were sent to Dr. Smith, at the U. S. National Museum, and Dr. Wilson, at Harvard. Each of these specialists has independently pronounced the ants to represent a very unique new species of *Lasius*. Dr. Wilson reported (*in litt.*) that he had been unable to relate the ants closely to any known Nearctic or Palaearctic species. The description which follows is patterned after the treatment given by Wilson (1955) in his monograph of *Lasius*.

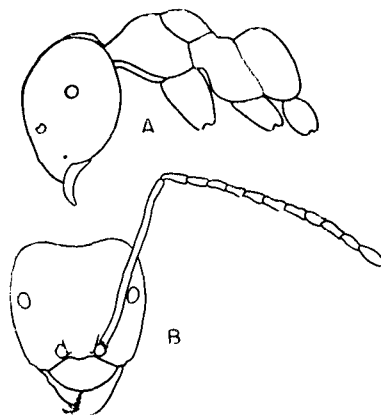


Fig. 1. *Lasius* (*Chthonolasius*) *atopus* n. sp.; A, lateral view of head and alitrunk to show contours; B, frontal view of head.
(Drawings by M. E. Pryor).

Lasius (*Chthonolasius*) *atopus* n. sp.

Holotype, worker (Cole Coll. No. Cal-314). (Fig. 1).

Head length, measured from mid-anterior border of median clypeal lobe to midpoint of a plane projected across occipital corners, 1.19 mm.; maximum head width, excluding eyes, 1.07 mm.; scape length, 1.48 mm.; maxillary palp length, 0.77 mm.; total length of alitrunk, 1.72 mm.; pronotal width, 0.76 mm.; maximum diameter of eye, 0.12 mm.

¹ This study has been aided materially by a research grant from the National Science Foundation.

Head notably longer than broad, widest through the region between the eyes, narrowed perceptibly toward mandibular articulations, posterior corners well rounded, median occipital border rather deeply, broadly, and evenly emarginate; median lobe of clypeus strongly convex, sharply longitudinally carinate mesally, anterior border entire and evenly rounded; eyes small, consisting of more than 35 facets; scapes very long, in repose passing occipital corners by a distance of greater than one-third their length; mandibles with eight teeth; maxillary palpi very long, extending in repose to a plane passing from anterior margin of eye to gula.

Alitrunk comparatively slender, with a rather deep and very broad impression between mesonotum and propodeum when viewed in profile; propodeum in profile as high as mesonotum, its basal surface short, nearly straight, and meeting the long, broadly convex declivity at a well rounded angle. Legs very long. Petiolar scale spatulate, and anterior face nearly perpendicular, its posterior face with a gradual declivity from apex to base; apical border broadly and evenly convex, entire, rather blunt; viewed in profile, not greatly thicker basally (0.15 mm.) than apically (0.13 mm.).

Entire body, with exception of the eyes, the pronotal collar, and the anterior and posterior surfaces of petiolar scale, densely pilose. Hairs chiefly erect but some suberect, golden, slender, pointed; maximum length on head (where they are longest mainly on vertex, occiput, and clypeus), 0.14 mm.; maximum length on scapes, 0.05 mm.; maximum length on pronotum (where hairs are longer than elsewhere on alitrunk, 0.19 mm.; maximum length on first gastric tergite, 0.19 mm., considerably exceeding four-fifths of maximum width of hind tibia at its midlength.

Entire body surface highly shining and shagreened, except for the longitudinally striate and subopaque mandibles and the subopaque antennae. Pubescence moderately long, fully appressed, and rather dilute on head and alitrunk; long and somewhat more dense on gaster where it at no place conceals the shining integument.

Thorax, legs, and petiolar scale a light tan, the head slightly darker; mandibles reddish brown; gaster a slightly infuscated light tan.

Type locality. The series of 15 workers was collected by the writer, on August 8, 1957, in a very arid semidesert area 3 mi. S. of Leggett, Mendocino Co., Calif., at an elevation of approximately 1,500 feet. The nest was in very dry soil under a stone in an unshaded area. There was no evidence of foraging activity during the midmorning period when the collection was made. The small series was obtained with difficulty, one specimen at a time, by digging into the nest galleries to a depth of about two feet. Nest chambers were not found and the queen was not observed.

Disposition of types. The holotype and a series of paratypes are in the writer's collection. Paratypes have been deposited in the Museum of Comparative Zoology and the U. S. National Museum as well as in the collection of Dr. W. S. Creighton.

Variation in the paratype series. The following measurements are extremes, the minimal figures applying to the smallest worker. Head length, 1.11-1.22 mm.; head width, 0.90-1.09 mm.; scape length, 1.36-1.48 mm.; pronotal width, 0.65-0.76 mm.; alitrunk length, 1.53-1.72 mm. Greatest length of cephalic hairs, 0.14-0.14 mm.; of pronotal hairs, 0.17-0.19 mm.; of gastric hairs on first tergite, 0.15-0.19 mm. Two of the workers have the posterior margin of the head less strongly emarginated than do the others. Some specimens show a considerable degree of infestation by the fungus, *Laboulbenia formicarum* Thaxter.

Affinities. It has already been pointed out that the new species is apparently not closely related to any known form of *Lasius*. In its profuse pilosity it is somewhat reminiscent of *vestitus* Wheeler, but it bears little resemblance otherwise. Its large size, slender body, emarginated head, long appendages, and the small many-faceted eyes, set the ant apart strikingly. There is much in its structure and appearances to remind one of *Myrmecocyc-*

stus. Perhaps the two genera are more closely related than we have supposed. The new species may represent a good example of convergent evolution. Some of its characteristics would seem to associate the species well with an arid habitat. I suspect that the ant may prove to be a nocturnal forager. An ant common to the general area from which the new species was taken, but not represented at the same station, is *Veromessor andrei* (Mayr), a xeric species. One could wish that the queen of the new form had been found for she must certainly be a most aberrant individual.

Literature Cited

- Wilson, E. O. 1955. A monographic revision of the ant genus *Lasius*. *Bull. Mus. Comp. Zool.*, 113: 1-199; 17 figs., 2 pls.