

POGONOMYRMEX



HARVESTER ANTS

*A Study of the Genus
in North America*

BY ARTHUR C. COLE, JR.

KNOXVILLE  THE UNIVERSITY OF TENNESSEE PRESS

cluding the apical one; scutum longitudinally striate; terminal lobe of paramere without a deep, broad excision, not fringed with a wide band of dense, long, curved, fine, slender, golden hairs; apex of paramere convex; inner longitudinal margin of base of paramere deeply and broadly concave
 *bicolor* n. sp.

THE SPECIES

Pogonomyrmex (P.) anergismus Cole

P. (P.) anergismus Cole, J. Tenn. Acad. Sci., 29 (1954) 115-6, ♀, ♂; Smith, U.S.D.A. Agr. Monog. No. 2, First Suppl. (1958) 114.

Type locality: Fifteen miles east of Silver City, New Mexico, 6,900 feet.

Location of types: Cole Coll., M.C.Z., U.S.N.M., A.M.N.H., Creighton Coll., Gregg Coll.

Range: Known only from the type locality.

The following redescriptions have been adapted from the original descriptions (Cole, 1954a, pp. 115-6):

FEMALE. HL 1.52-1.56 mm, HW 1.67-1.71 mm, CI 109.6-109.9, SL 1.18-1.22 mm, SI 70.7-71.3, EL 0.38-0.38 mm, EW 0.27-0.27 mm, OI 24.4-25.0, WL 2.20-2.28 mm, PNL 0.38-0.38 mm, PNW 0.38-0.38 mm, PPL 0.46-0.46 mm, PPW 0.72-0.72 mm.

Mandible with 6 teeth arranged along a strongly oblique masticatory margin; subapical tooth about one-half length of apical, tightly appressed to it; first and second basals subequal in length, well separated from each other; penultimate basal tooth a little shorter than first and second basals, subequal in length to the broader ultimate basal which makes a straight angle with the basal mandibular margin; all teeth except ultimate basal moderately sharp.

Basal enlargement of antennal scape well flared, declivity of superior lobe meeting the shaft at a broadly rounded angle; basal flange thin, extending to apex of superior lobe; lip weak, only slightly curved distad; point weak; longitudinal peripheral carina distinct.

Entire head with fine longitudinal rugulae which tend to fade out on occipital corners, the rugulae somewhat coarser just above mandibular articulations and on postgenae; interrugular spaces very faintly and finely punctulate; occipital corners with a few, shallow, elongate foveae.

Pogonomyrmex anergismus

Contours, in lateral view, of thorax, petiole, and postpetiole as portrayed in Pl. IX, Fig. 3; epinotal spines short, stubby, broad at the base, rather blunt; petiolar node in the shape of a weakly truncated cone, length of anterior and posterior declivities subequal, dorsum flattened; ventral process of petiolar peduncle weak to strong and subtriangular; ventral process of postpetiole weak. Conformation of petiole and postpetiole, viewed from above, as shown in Pl. XII, Fig. 14; petiolar node rather square, lateral margins subparallel, midregion with a distinct, broad, shallow impression, apex and apical corners truncate; postpetiole subglobose.

Pronotum with moderately fine transverse rugae; scutum finely, longitudinally rugulose; scutellum smooth, highly polished; sides of thorax with fine, longitudinal rugae; base of epinotum with coarser, subparallel, transverse rugae; declivous surface of epinotum smooth. Lateral and posterior surfaces of petiolar node with a few, fine, transverse rugulae or striae. Dorsum of postpetiole with a few, fine, irregular, transverse rugulae or striae. Interrugal spaces of thorax, petiole, and postpetiole free of sculpture. Gaster smooth, without shagreening. Entire body shining.

Body with rather abundant, moderately long, mostly stiff and coarse, golden hairs; those on clypeus long and pointed as are also those comprising the well-developed psammophore; most of those elsewhere on head blunt, shortest on frontal region, longest on vertex and occipital border where they are largely clavate; sparse around compound eyes and in area between median ocellus and clypeus; long, fine, reclinate, and subappressed on antennal scapes, suberect on pedicel and first four flagellar segments, mostly subappressed and appressed on remaining segments. Hairs on thorax of variable length; longer and more pointed on pronotum; shorter and more clavate on scutum and scutellum; very short, blunt, and clavate on sides of thorax; long, slender, and pointed on fore coxae; very sparse and short on epinotum and on ventral process of petiolar peduncle; short and blunt on petiolar node; long and blunt on postpetiole. Hairs on gastric dorsum rather long, blunt, and evenly distributed.

Body color a rather uniform light ferruginous red.

MALE. HL 1.18-1.22 mm, HW 1.41-1.42 mm, CI 116.4-119.5, SL 0.80-0.84 mm, SI 56.7-59.2, EL 0.42-0.42 mm, EW 0.42-0.42 mm, OI 24.6-25.4, WL

2.01-2.05 mm, PNL 0.42-0.47 mm, PNW 0.42-0.47 mm, PPL 0.42-0.47 mm, PPW 0.76-0.76 mm.

Closely resembling the female in size, color, and general habitus. Conformation of mandible as shown in Pl. VIII, Fig. 15; blade narrow, apical margin straight for about two-thirds its length from the base, then curved evenly dorsad to meet the long, broad, apical tooth; masticatory margin subparallel with basal portion of apical margin, bearing 2 very broad, irregular, truncate teeth followed proximad by 2 much smaller, irregular teeth, then meeting imperceptibly the nearly straight, short, basal margin which is constricted proximally. Base of antennal scape trumpet-shaped. Cephalic rugulae absent except within and above ocellar triangle, beneath and immediately around compound eyes, and on postgenae.

Conformation, in lateral view, of thorax, petiole, and postpetiole as illustrated in Pl. IX, Fig. 2; epinotal spines angulate, short, very broad basally, blunt; apex of petiolar node less acute than that of the female; venter of petiolar peduncle with a prominent, broadly triangular process; ventral process of postpetiole moderately strong. Conformation of petiolar and postpetiolar nodes, viewed from above, as shown in Pl. XII, Fig. 13; petiolar node with a very broad and very distinct impression, apex evenly rounded, sides subparallel. Thoracic sculpture notably finer and sparser than that of the female, sometimes absent from dorsum.

In general, body hairs more abundant, more pointed, and more slender than in the female; rather evenly distributed; not flexuous; some have a tendency to curve near the tip; shorter than those of other *Pogonomyrmex* males; not silky; cephalic hairs long, slender, pointed, abundant, longest on ventral and occipital surfaces, mandibles, and clypeal border; hairs on petiole and postpetiole more robust than those on head and thorax; dorsum of petiolar peduncle without hairs or pubescence; ventral process of petiolar peduncle with a few rather long, straight, ventrally directed hairs; hairs on gaster long, slender, abundant, rather uniformly distributed, of approximately equal length. Gaster highly polished, without shagreening.

Head, thoracic dorsum, legs (except coxae), petiole, postpetiole, and gaster very shining; coxae and lateral portions of thorax glossy subopaque. Body color as in the female.

Pogonomyrmex apache

DISCUSSION.

P. anergismus is known only from the type series. The type nest, marked by a large, flat, gravel disc, contained large numbers of *P. rugosus* workers and an estimated 200 males and alate females of *anergismus*. Nearly as fast as the latter were exposed, *rugosus* workers carried them back into the nest galleries. There were no sexual forms of *rugosus* in the nest. It seems probable, therefore, that *anergismus* is a social parasite of *rugosus*. Although I have returned to the type locality several times since *anergismus* was discovered, I have been unable to find the species again. This proves nothing, however, for the collection was made on September 13, 1951, and my subsequent visits to the type locality occurred in June, July, and August. The site should be reexamined between early and mid-September.

Although *anergismus* is without a doubt a member of the *barbatus* complex, its affinities within the complex are virtually unfathomable. On an ethologic basis, perhaps its nearest relatives are *rugosus* and *barbatus*, but morphologically it bears no close alliance with them. Its several highly distinctive characters in both castes make *anergismus* easily identifiable. The male is unique among all known *Pogonomyrmex* s. s. males in that its pilosity is not flexuous and silky but erect and stiff. Superficially the sexes of *anergismus* are remarkably alike. Moreover, morphologic variation within the series of each sex is amazingly slight. This is well portrayed, in part, by the total lack of deviation in some of the measurements prefacing the descriptions of the sexes. *P. anergismus* is indeed a strange member of its genus.

Pogonomyrmex (P.) apache Wheeler

- P. apache* Wheeler, Psyche, 9 (1902) 392, ♀; Olsen, Bull. Mus. Comp. Zool., 77 (1934) 498, Pl. 2, Fig. 1, ♀; Creighton, *ibid.*, 104 (1950) 115; Smith, U.S.D.A. Agr. Monog. No. 2 (1951) 792; Cole, J. Tenn. Acad. Sci., 29 (1954) 266, ♀, ♂; Smith, U.S.D.A. Agr. Monog. No. 2, First Suppl. (1958) 114.
- P. sancti-hyacinthi* Wheeler, Psyche, 9 (1902) 388, ♀; Olsen, Bull. Mus. Comp. Zool., 77 (1934) 498, Pl. 5, Fig. 1, ♀; Creighton, *ibid.*, 104 (1950) 131; Smith, U.S.D.A. Agr. Monog. No. 2 (1951) 794.

Type locality: Ft. Davis, Texas.

Location of types: A.M.N.H., M.C.Z., Creighton Coll.