

POGONOMYRMEX



HARVESTER ANTS

*A Study of the Genus
in North America*

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Pogonomyrmex tenuispina

where it is replaced by *rugosus*, but there is a range extension from southern Arizona into Sonora as far south as the area of Santa Ana.

Inasmuch as my classificatory scheme is still on a rather shaky foundation, the consideration of another possible solution to the problem is inevitable—that of recognizing only a single, highly variable monotypic species. Indeed, there is much in favor of such an interpretation. Structurally the sexes of the two forms are very close. There is a lack of constant specificity in nest superstructure. Field behavior of the two forms appears to be identical; both compete for the same type of nesting sites and apparently also for the same kind of food. But in spite of these things, the sharply contrasting characters of the workers under allopatric conditions tend to refute such a contention.

Pogonomyrmex (*P.*) *tenuispina* Forel, new status

P. desertorum var. *tenuispina* Forel, Bull. Soc. Vaud. Sci. Nat., 50 (1914) 269, ♀; Olsen, Bull. Mus. Comp. Zool., 77 (1934) 507, ♀.

P. desertorum subsp. *tenuispina*: Creighton, Bull. Mus. Comp. Zool., 104 (1950) 114, ♀.

P. dentatus Olsen, Bull. Mus. Comp. Zool., 77 (1934) 505, ♀.
NEW SYNONYMY.

P. barbatus: Pergande (*nec* F. Smith), Proc. Calif. Acad. Sci., 5 (1895) 894.

Type locality: Unknown; probably Miraflores and Sierra San Lazaro, Cape Region, Baja California, Mexico.

Location of types: None in this country.

Range: MEXICO—Cape Region and offshore islands, Baja California.

When Forel (1914, p. 269) described this ant, he stated that the specimens had come "il y a longtemps déjà" (long ago) from Mr. Pergande in the United States. But there is no indication that the collections had been taken in this country. No mention is made of the size of the type series. In his brief original description Forel pointed out that it "Diffère du type de l'espèce par ses épines qui sont de même longueur, mais aussi grêles à la base qu'à l'extrémité, comme si elles étaient près d'être caduques."

The following diagnosis will delimit the species:

WORKER. HL 1.94–2.09 mm, HW 2.13–2.17 mm, CI 103.6–109.8, SL 1.37–1.44 mm, SI 64.3–66.7, EL 0.38–0.42 mm, EW 0.27–0.30 mm, OI 19.6–20.0,

WL 2.13-2.28 mm, PNL 0.44-0.47 mm, PNW 0.42-0.46 mm, PPL 0.49-0.53 mm, PPW 0.65-0.68 mm.

Mandible as illustrated in Pl. III, Fig. 18; similar to that of *bicolor* n. sp.; penultimate and ultimate basal teeth widely separated. Base of antennal scape as in Pl. IV, Fig. 14; superior lobe strongly developed; basal flange not extending beyond apex of superior lobe; lip well developed, bipartite.

Lateral lobes of clypeus with a prominent, blunt, tooth-like projection in front of each antennal fossa. Frontal area smooth and shining, without a prominent median carina. Cephalic rugulae closely spaced, very delicate. Posterior corners of head smooth, at least somewhat shining. Contour of thorax, petiole, and postpetiole, in lateral view, as shown in Pl. V, Fig. 6. Epinotal spines long, very slender, of nearly the same diameter throughout. Contour of petiole and postpetiole, in dorsal view, as illustrated in Pl. VII, Fig. 23. Venter of petiolar peduncle without a process. Postpetiole with a prominent ventral process. Pronotal pleura densely punctate, without rugae. Head, thorax, petiole, and postpetiole light to medium ferruginous red; gaster darker.

Redescribed from three workers from the collection of the Los Angeles County Museum, labeled "E. side Isla Espiritu Santo, Baja Calif., Mex., IV-17-1958, E. V. Dawson"; one worker in the Museum of Comparative Zoology labeled "*P. dentatus* Olsen, Type No. 23251, Mirafiera, Cape region, L. Cal., Mex., Pergande Coll., U.S.N.M."; two workers, in the Museum of Comparative Zoology, determined as *dentatus* Olsen by M. R. Smith, labeled "Triunfo, L. Cal., VII-7-38, Michelbacher & Ross, Collectors"; two workers, in the Museum of Comparative Zoology, identified as *tenuispina* Forel (presumably by W. M. Brown), labeled "Espiritu Santo Isl., Baja Calif., 1 Apr., Gift of Thomas Barbour"; one worker, in my collection, bearing on the label the same data as the preceding.

DISCUSSION.

In the years that have passed since Forel's (1914, p. 269) original description was published, the status of *tenuispina* has been most insecure, and very few persons, I believe, have identified correctly the scarce specimens in American collections. Olsen (1934, p. 507) reported that he was "unable to find specimens of this variety in the Wheeler collection." Creighton (1950, p. 114) keyed the taxon, but

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he (p. 125) presented no evidence that he had examined and identified specimens of the true *tenuispina*.

Until the later stages of my work on this generic revision, I believed *tenuispina* to be probably nothing more than an anomalous variant of either *barbatus* (F. Smith) or *desertorum* Wheeler. Spinal aberrations are not at all uncommon in the genus, and Forel's description presents little else than a characterization of the epinotal spines. I was forced to revise my opinion drastically, however, as the result of an interesting and illuminating chain of events.

I had found in my collection a single worker, from Isla Espiritu Santo, Baja California, Mexico, which possesses a spinal conformation like that expressed by Forel for *tenuispina*. The stature of the specimen (length 8.0 mm) is, however, more like that of *barbatus* than of *desertorum*, which is ordinarily a smaller ant. Moreover, the occipital corners of the head are not so highly polished as they are in *desertorum*. Because of these factors and because of there being only a single specimen, I regarded the ant as a *barbatus* anomaly.

In the summer of 1963, I received from Roy Snelling of the Los Angeles County Museum the museum's collections of *Pogonomyrmex*. Among them were three workers from Isla Espiritu Santo, Baja California, which have precisely the same characteristics as the unique in my collection. This discovery shed new light on the *tenuispina* problem and triggered the next stage in the sequence of events.

I had never been able to find specimens referable to Olsen's *dentatus* among the thousands of series of *Pogonomyrmex* that I had examined. Although I had not yet seen his type, I had become well acquainted with its original description and with its position in Olsen's (1934, p. 497) key. I was convinced, at this point, of the validity of *tenuispina* and of the accuracy of my identification of the Isla Espiritu Santo specimens as being representative of *tenuispina*. The length of the workers was ostensibly the same as that of the *dentatus* type and this, together with certain other similarities, rang a mental bell. I thought, could *tenuispina* and *dentatus* be conspecific?

The type of *dentatus* was reported by Olsen (p. 506) to have

come from Mirafiera in the Cape Region of Baja California and to have been obtained from the Pergande Collection at the U. S. National Museum. M. R. Smith has kindly informed me that the original series, from which Olsen's unique came, consisted of twenty-three workers collected by Eisen and Vaslit at Miraflores and Sierra San Lazaro, Cape Region, Baja California. This series was incorrectly assigned by Pergande (1895, p. 894) to *barbatus* (F. Smith). Although Pergande cited correctly the names of the two localities in his paper, he had erroneously attached to some of the pins his handwritten label "Mirafiora" instead of "Miraflores." The specimen which Olsen obtained from the Pergande Collection bore one of these misspelled labels. Olsen compounded the error by misreading Pergande's label as "Mirafiera" and incorrectly citing that name as the type locality of *dentatus*. The fate of the remaining twenty-two workers of the series is unknown.

Espiritu Santo is an offshore island northeast of the Cape Region. The climate and topography that prevail there are pretty much the same as those at Miraflores. Therefore, the specimens which I had assigned to *tenuispina* and the unique that Olsen had named *dentatus* could conceivably be elements from the same specific population. A trip to the Museum of Comparative Zoology clinched the case, for a comparison of the *dentatus* type with the specimens I had designated as *tenuispina* denoted the conspecificity beyond a shadow of doubt. Olsen had failed to describe adequately the epinotal armature of *dentatus*. The holotype bears the same type of spines as that described for *tenuispina* by Forel, and the clypeal teeth which Olsen believed to be characteristic only of "*dentatus*" prevail also in *tenuispina*. *P. dentatus* must be then, by the very best of circumstantial evidence, nothing more than a straight synonym of *tenuispina*. Moreover, I believe it is highly probable that the specimens which Pergande sent to Forel (and from which Forel drew his description of *tenuispina*) and the single worker from the Pergande collection, which Olsen described as *dentatus*, came from the same original series of twenty-three workers.

There is no evidence of hybridization of *tenuispina* with *desertorum*. The ranges of the two species are discrete and well separated. I have, therefore, elevated *tenuispina* to full specific status. I regret that I have been unable to make the "Baja run" to collect *tenuis-*

Pogonomyrmex wheeleri

pina, for the species is still poorly represented in collections and the sexes are unknown.

Pogonomyrmex (P.) wheeleri Olsen

P. wheeleri Olsen, Bull. Mus. Comp. Zool., 77 (1934) 511, Pl. 6, Fig. 1, ♀.

Type locality: Escuinapa, Sinaloa, Mexico.

Location of type: M.C.Z.

Range (Map 5): Known only from Sinaloa and northern Nayarit, Mexico.

WORKER. HL 2.32-2.47 mm, HW 2.72-2.89 mm, CI 115.2-117.0, SL 1.56-1.71 mm, SI 57.3-58.9, EL 0.49-0.53 mm, EW 0.27-0.34 mm, OI 19.9-21.0, WL 2.62-2.89 mm, PNL 0.61-0.66 mm, PNW 0.57-0.66 mm, PPL 0.53-0.61 mm, PPW 0.87-0.95 mm.

Mandible as shown in Pl. III, Fig. 16; teeth rather short, robust; apical and subapical teeth subequal in length, often fused basally; second and third basals subequal in length, a little shorter than first basal; penultimate basal small, shorter than all other teeth; ultimate basal broad, as long as subapical and apical teeth; apical tooth not much longer than first, second, and third basals; penultimate basal tooth sometimes absent, but the space it would occupy remains.

Base of antennal scape as illustrated in Pl. IV, Fig. 13; shaft moderately strongly curved in basal half, strongly constricted and somewhat flattened along the bend; basal enlargement well developed; superior lobe very strong, triangular, the apex acute; superior declivity long, rather steep, meeting the shaft evenly at a very weak, broadly rounded angle; basal flange weak, narrow, the margin thin and extending to apex of superior lobe; lip moderately large, prominent, bipartite; inferior declivity long, rather weak, interrupted by a small point, meeting the shaft smoothly at a weak, very broadly rounded angle; longitudinal peripheral carina distinct but narrow, the basal impression it borders extensive and rather deep.

Head very finely, densely rugulose, the rugulae closely spaced, parallel, producing a silky appearance; interrugal spaces shining, densely and finely punctate; posterior corners of head not smooth and shining.

Contour of thorax, petiole, and postpetiole, in lateral view, as