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Gaige, F.M.
1914

Harold Cummins
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New sub-
species

Pogono
myrmex
occidentalis
Cresson

Vol. XXVII, pp. 93-96

May 11, 1914

PROCEEDINGS
OF THE

Gaige, F.M., 1914a

BIOLOGICAL SOCIETY OF WASHINGTON

DESCRIPTION OF A NEW SUBSPECIES OF POGONOMYRMEX OCCIDENTALIS CRESSON FROM NEVADA.

BY FREDERICK M. GAIGE.

[Museum of Zoology, University of Michigan.]

During the summer of 1912 the Walker-Newcomb Expedition of the University of Michigan collected in northeastern Nevada a series of specimens of an ant which, although clearly allied to *Pogonomyrmex occidentalis* Cresson, differs from this long established form sufficiently to require subspecific recognition. The series comprises some hundreds of specimens which are in the Museum of Zoology, University of Michigan.

I am indebted to Prof. W. M. Wheeler, of the Bussey Institution, for examining specimens of this form and for the gift of specimens of *P. occidentalis* and *P. comanche* for comparison.

Pogonomyrmex occidentalis ruthveni * subsp. nov.

Worker.—Length, 6.5-8.5 mm.

Head rectangular, exclusive of the 7-toothed mandibles, nearly as broad as long, posterior border straight. Clypeus rather broader posteriorly with that margin usually straight or very slightly notched at its union with the frontal area, anterior border with a broad, arc-like excision, rather deeper than in typical *P. occidentalis*. Frontal area triangular, as broad as long, slightly depressed, with a very distinct median carinula. Eyes in middle of lateral surfaces of head. Antennal scapes hardly extending to midway between the eyes and the posterior corners of the head. Thorax of the usual shape with two slender epinotal spines which are longer by at least half than the distance between their bases and directed obliquely upward, outward and backward. Petiole lacking the ventral tooth, except that it may be very faintly indicated as a slight enlargement in some specimens. Postpetiole as in typical form. Gaster and legs of the usual configuration.

* Named for Dr. Alexander G. Ruthven, Director of the Museum of Zoology, University of Michigan, who was in charge of the field work in Nevada.

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Mandibles shining, with rather coarse parallel striae. Frontal area distinctly shining. Clypeus, sides and upper surface of head traversed by rather coarse rugae, coarsest on cheeks. Clypeal rugae parallel, those of upper head plainly diverging posteriorly but less so than in *P. occidentalis*. Interrugal spaces densely and distinctly foveolate-punctate. Thoracic sculpture intermediate between that of *P. occidentalis* and *P. comanche*, the longitudinal rugae of the mesonotum being shorter than in the former, but very evident. Infraspinal facet of epinotum distinctly shining. Petiole and postpetiole foveolate-punctate, occasionally with faint longitudinal rugae, not shining. Gaster minutely punctate, shining; legs less shining with coxae faintly rugose, the rugae most evident on anterior, least distinct and more irregular on posterior legs.

Body and appendages beset with pale bristly hairs, which are long and project forward on anterior margin of clypeus, most abundant on dorsal surface of gaster, shortest and most appressed on antennae. Abundant oblique hairs on legs. Lower surface of head and mandibles with the usual beard of long recurved hairs. Pubescence entirely lacking.

Head, thorax and pedicel deep ferruginous red, darkest on postpetiole, gaster and legs pitchbrown to light yellowish red, mandibles piceous, mandibular teeth and anterior edge of clypeal excision black to blackish. Eyes black.

Female.—Length 10 mm.

Head, excluding the 7-toothed mandibles, very slightly longer than broad, with straight posterior border. Mandibular teeth decidedly better developed than in worker. Clypeus and frontal area as in worker. Ocelli minute. Eyes about as in worker. Antennal scape reaching to less than midway between eye and posterior corner of head. Thorax distinctly narrower than head. Epinotal spines shorter and much stouter than in worker. Ventral tooth of petiole lacking.

Sculpture of head and mandibles as in worker. Pronotum with transverse rugae, mesonotum with longitudinal rugae, much finer and more even than those of head; metanotal rugae similar but transverse; infraspinal facet of epinotum as in worker, rather more shining. Gaster and legs, particularly the former, more shining than in worker.

Pilosity generally longer and finer than in worker, otherwise the same. Color that of worker. Wings hyaline with yellow-brown veins.

Male.—Length 8 mm.

Head not broader than thorax, posterior border convex, sides subparallel. Clypeus shallower than in the preceding forms, more convex, the excision much broader and shallower. Frontal area much depressed, triangular, broader than long, with feeble median carinula. Mandibles 5-toothed, small. Eyes large, protruding beyond sides of head. Ocelli large. Antennae 13-jointed, scapes short, barely reaching to posterior border of eyes. Epinotal spines reduced to mere points, four or five times as far apart as long. Ventral tooth of petiole entirely suppressed.

Mandibles shining, finely striate. Rugae of clypeus and head fine and even, those of head parallel, not diverging posteriorly. Interrugal spaces

finely but distinctly foveolate-punctate. Mesonotum still more finely rugose longitudinally, faintly shining; metanotum with even finer and more irregular transverse rugae. Petiole, post-petiole and gaster shining, the latter the most so.

Pilosity much finer than in the two preceding forms, longer and more abundant, particularly on the head, thorax and petiole. Antennal hairs erect. All hairs without bristly character.

Head and thorax piceous, appendages lighter, pedicel and gaster light yellowish red, the former the darker. Eyes dull purple. Wings as in female, but generally lighter.

Habitat.—Typical grass and sage-brush lands in Maggie Basin and the surrounding mountains in Eureka and Elko Counties, Nevada.

Type specimens.—Museum of Zoology, University of Michigan, Cat. No. 2283; James Canyon, Elko County, Nevada; August 3, 1912; Frederick M. Gaige, collector. The specimens consist of 31 cotype workers, a single aleate male and a single aleate female, all from the same colony. There are also 10 immature workers, with numerous larvae and pupae from the same nest.

Notes on paratypes.—The variations in the series examined are not great, and pertain mostly to the posterior margin of the clypeus, which is occasionally as in typical *P. occidentalis*. The ventral spine of the petiole is constantly suppressed, but in two cases approaches the development attained in the typical form. The sculpture of the head and thorax is very constant.

Remarks.—The subspecies is well defined, and as stated above is very constant throughout a considerable series. It is intermediate between the long established, widely distributed *P. occidentalis* Cresson, a very stable form described from Colorado in 1865, and *P. comanche* Wheeler first described from Texas in 1902 as a subspecies of *P. occidentalis*. The workers may readily be distinguished from those of the typical form by the absence or great reduction of the ventral tooth of the petiole, the distinctly slighter divergence posteriorly of the dorsal cephalic rugae, and the shorter longitudinal rugae of the mesonotum, and from the workers of *P. comanche* by the generally coarser sculpture, the strong carinula of the frontal area, and the longitudinal rugae of the mesonotum. In most specimens the clypeus is most like that of *P. comanche*, but it is subject to some variation as noted above.

Habits.—The habits of this subspecies are very similar to those of *P. occidentalis*. It lives in very large colonies and constructs conical mounds as high as 24 inches and sometimes 16 feet in circumference. The mounds are ordinarily covered with gravel, but an abundance of spermophile pellets is frequently found in them, although rarely to the exclusion of other materials, and along railroad tracks the black cinders are much used. The space about the nest is kept clear, often for a radius of five or six feet. The mound is usually in the centre of the clearing, and the periphery is often covered with chaff and such vegetable detritus as has been discarded by the ants. The nests have few openings, the maximum noted being six, with between two and three as an average, and they are closed with

nest material at night and perhaps during storms. The ants are very active in the morning and evening, but during the hottest part of the day they are not seen unless disturbed. The nests examined were very deep, being by no means restricted to the mounds.

Large flights were noted from August 3 to 5, and during that period it was common to find isolated, dealeated females digging in the hard, dry soil to found new colonies, or to see small holes in the ground which upon being opened revealed a female at a depth of 2 inches or less, usually in a small chamber, and very rarely with a cluster of eggs, usually less than a dozen in number. Quantities of larvae and pupae and frequently eggs were commonly found in the nests opened during the summer. The young ants are very clear, light yellow, with head and thorax inclining to light brown or dull orange, dependent apparently on the age of the individual.