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A NEW ANT FROM IDAHO'S SEMIDESERT

A. C. COLE, JR.



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A New Ant from Idaho's Semidesert

A. C. Cole, Jr.

Myrmecocystus hammettensis sp. nov.

Holotype, worker major. (Cole collection No. C. I. 1000)

Total length, 4.0 mm.

Head, excluding mandibles, slightly longer than broad, somewhat broader behind than in front, with broadly rounded lateral borders and posterior corners but almost straight median occipital border. Eyes moderately convex, ovoid, more than half as long as the genae. Ocelli distinct. Mandibles broad, stout, 7-toothed, with the apical tooth longest and somewhat curved. Gula slightly concave. Clypeus convex, ecarinate, flattened and depressed on the sides, its anterior border produced outward in the middle. Frontal area distinct, only slightly depressed, not sharply angular at the apex. Frontal furrow distinct and extending back to median ocellus, but more pronounced near frontal area. Antennae slender; scapes extending about $2/5$ their length beyond posterior border of the head, slightly curved and gradually thickened from base to apex; funicular joints long and narrow, first nearly as long as next two taken together, second shorter than any other and more constricted at the base, terminal joint shorter than the two preceding joints taken together and tapered at the tip.

Pronotum as broad as long; promesonotal suture broadly but only slightly impressed. Mesoepinotal constriction broad and very shallow. Epinotum about as long as high, with subequal dorsal surface and declivity; bluntly angular. Scale of petiole low, half as broad as epinotum; base but little broader than apex; inclined forward; in lateral profile cuneate; posterior surface faintly concave, anterior surface feebly convex; blunt superior border, which when seen from behind is entire. Ventral surface of peduncle produced rather sharply upward at about two-thirds the distance between the epinotum and the gaster. Thus it appears as a large, rounded lobe, with a long anterior declivity and a sharp posterior ascent. Legs long; femora stout, tibiae and tarsi slender. Gaster small, rather slender and somewhat pointed behind.

Mandibles subopaque, densely and rather coarsely striated. Clypeus and head very smoothly shining. Thorax, (except epinotum) petiole and gaster sub-opaque; epinotum smooth and shining. Entire body finely shagreened.

Hairs yellow, short, erect, delicate and pointed; abundant on scapes, head, terminal segments of maxillary palpi, thoracic dorsum, legs and gaster; more delicate on gaster; very sparse on petiole. Eyes hairy. Pubescence silvery, long and dense on thorax (except epinotum), coxae and basal segments of gaster; short, indistinct and very sparse on head. Gular ammochaetae long and conspicuous.

Blackish brown No. 1;* mandibles, eyes, lateral margins of clypeus, antennae, tibiae and tarsi pale brown; palpi dusky yellow. Basal segments of gaster with a silvery appearance because of the dense pubescence.

Paratype, worker minor. (Cole collection No. C. I. 1000.)

Total length, 2.2 mm.

Essentially like the worker major except: Eyes, antennal funiculi and tarsi lighter in color; and pubescence on thorax, femora and gaster more dense, completely covering the surface so that the parts appear very opaque.

Paratype, female (Cole collection No. C. I. 1000.)

Total length, 8.0 mm. (excluding wings. Length of wings, 10.0 mm.)

Body broad and rather stout. Head, excluding mandibles, rectangular; broader than long, slightly narrower in front than behind, with almost straight lateral borders and feebly convex posterior border. Eyes slightly larger and rounder than those of worker. Ocelli prominent. Mandibles very broad, with four prominent teeth; apical tooth extremely long and sharply pointed, other teeth much shorter and blunter, basal teeth small. Length of frontal furrow less than two-thirds the distance from frontal area to median ocellus. Frontal area very indistinct. Funicular joints 8-10 of antennae shorter and thicker than preceding joints; terminal joint tapered but with a rather blunt tip.

Thorax much broader than the head. Scutum broader than long; anterior border of scutellum slightly arcuate, posterior border strongly convex; lateral projections blunt and rather broad. Metanotum narrow and extending across thoracic dorsum. Declivity of epinotum long, flat and rather steep, forming a rather abrupt curve with the short dorsal surface. Petiole low, sharply inclined forward, much thicker at base than at apex when viewed in lateral profile, its superior border rather sharp, deeply and broadly excised in the middle; lateral margins produced outward to form at the center of each a rather sharp point; scale when viewed from behind is a four-pointed figure with a rounded base. Legs shorter and stouter than those of the holotype. Gaster large, elliptical, somewhat flattened dorso-ventrally.

Entire body shining, especially the scutum because of the absence of pubescence. Clypeus faintly striatopunctate; mandibles rather coarsely and longitudinally striate.

Hair longer and finer than in worker. Eyes and petiole more hairy than those of worker, thoracic dorsum and gaster much less so. Pubescence shorter and sparser than in worker; absent from scutum. Gaster finely shagreened.

Head and thorax black; mandibles, palpi, ocelli, lateral margins of clypeus, antennae and legs pale brown; mandibular teeth dark brown. Gaster blackish-brown No. 1.

* Colors were compared with the plates in, "Color Standards and Color Nomenclature," by Robert Ridgway. Comparisons were made without magnification. Colors designated for the smaller structures (mandibles, palpi, etc.) are the author's conception and were determined under a magnification of 30 diameters.

Paratype, male. (Cole collection No. C. I. 1000.)

Total length, 3.1 mm.

Head small, excluding mandibles and eyes a little longer than broad; narrower below than above; posterior border broadly convex, with rounded posterior corners; genae slightly concave. Eyes very convex, protruding from the sides of the head a distance equal to that between the antennal fossae. Ocelli large, set high on the occiput so that the lateral ocelli break the contour of the upper border of the head when viewed from in front. Mandibles less than twice as broad at the apex as at the base, outer borders convex, inner borders almost straight; with a rather small and sharp apical tooth and two small, blunt, basal teeth. Clypeus convex, impressed laterally, its anterior border almost straight. Frontal area broadly angular, only slightly impressed. Frontal groove faint except at apex of frontal area and just below the median ocellus where it is impressed to form a shallow but rather broad pit. Antennal grooves distinct and broad, extending posteriorly about half the distance between the antennal fossae and the median ocellus. Antennae slender; length of scapes slightly less than the distance between the outer lateral margins of the eyes; first funicular joint short, enlarged distally; remaining joints narrower, subequal and cylindrical; terminal joint longer and tapered.

Thorax only slightly broader than head, including eyes; robust, shaped somewhat like that of the female. Scutum of mesonotum very convex anteriorly, with a gradual declivous surface posteriorly, forming a broad but distinct impression at juncture with mesonotum. Sides of scutellum greatly impressed, so that the apical surface, when viewed from above, is broadly triangular; its anterior border rather straight, posterior border strongly convex; lateral projections broad and rather blunt. Metanotum and epinotum similar to those of female. Petiole as in worker, but superior border of scale sharper and with a shallow impression, and without the prominent lobe on the ventral surface. Legs long and rather slender, with large claws and pulvilli. Wings large; cell M 4 absent. Gaster small and narrow.

Pubescence and pilosity as in major worker, except pubescence much less abundant on thorax and gaster, giving this sex a more shining appearance throughout. Pubescence dense on the legs. Basal segments of gaster lack the silvery appearance of the major worker, but are more pubescent than the other segments. Scutellum and mesothoracic parapteron glossy because of absence of pubescence and presence of only very few hairs. Hairs longer and more slender than those of worker. Antennae with very dense subappressed hairs; some on scapes are erect.

Head, scutum of mesonotum and scutellum glossy chaetura black; mandibles, antennae, lateral margins of clypeus, maxillary palpi, pronotum, legs and everything posterior to scutellum blackish-brown No. 1. Eyes, ocelli and genitalia much lighter. With a magnification of 30 diameters, the blackish-brown structures appear dark reddish brown.

Paratype, replete (Cole collection No. C. I. 1000.)

Differing from the major worker only in the enormous distention of the gaster which is about the size of a pea.

Types were selected from a large series of specimens collected by the author from minute crater mounds of sand, 8-15 cm. in diameter, on a plain of mixed *Artemisia tridentata* Nutt. and *Bromus tectorum* L. at Hammett, Idaho, May 30, 1932. Hammett is a very small village just south of Mountain Home, on the federal highway between Twin Falls and Boise. The mounds were just opposite the store and on the north side of a road leading westward to Indian Cove. The colonies were populous, but not numerous, and were aggregated in an "open" area of only a few square yards. Brood chambers and those containing males and females were two to three feet below the soil surface. Repletes were found in the nests. Topotypes were collected during the summers of 1933 and 1934.

Variation in paratype material.—The workers vary from 2.2 to 5.0 mm. in length. The minor workers show the same characteristics as the one selected to represent the series. The major workers vary from the holotype only slightly. In a few the color has more of a reddish cast, and some specimens have the tips of the antennal funiculi infuscated. In the paratype series of four females one of the specimens has a reddish cast to the scutellum, and the gaster is a lighter brown. In this specimen, also, the hairs on the head are reddish while those on the rest of the body are yellow. The males also show little variation. A few specimens have a lesser quantity of pubescence on the epinotum, so that the declivity is more shining; others have a shallower impression in the superior border of the petiolar node than does the paratype used for the description. Several males have only a broad apical mandibular tooth without other teeth, while a few show vestiges of basal teeth.

Affinities.—*M. hammettensis* is undoubtedly a species distinct from *M. yuma* Wheeler. The worker is similar to that of *yuma* especially in size, color, general shape of the head and structure of the petiole. It differs from it, however, and from the variety *flaviceps* Wheeler, in the following respects: (1) Gula slightly concave; (2) ocelli distinct; (3) mandibles coarsely striated; (4) erect hairs on antennal scapes very abundant; and (5) pubescence long and dense on thorax. It is similar to *M. lugubris* Wheeler, from California, in size, contour of the gula and the coarsely striated mandibles; but differs from it by the presence of erect hairs on the antennal scapes and by the shape of the petiole which, in *hammettensis*, is more blunt and lacks an impression in its superior border. No comparisons of the sexes can be made with those of *yuma* and its var. *flavipes* or with *lugubris*, since to my knowledge, those of the latter have not been described.

The holotype and a long series of paratypes are in the author's collection. Paratypes and topotypes are to be deposited in the U. S. National Museum, the American Museum of Natural History, and in the collections of C. H. Kennedy (Ohio), W. S. Creighton (N. Y.), Neal A. Weber (S.D.), and Arnold Mallis (California). Metatypes are in the collection of the U. S. Bureau of Entomology and Plant Quarantine, Twin Falls, Idaho.