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A NEW ANT OF THE GENUS *PHEIDOLE* FROM COLORADO

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The species herein described is related to the *pilifera* complex, and in Creighton's key (1950) it runs either to *Pheidole pilifera coloradensis* or to *P. p. artemisia*. In neither case, however, does it fit well the characters called for in the key, and, further, when compared to types of both of the above species it is definitely distinct from each. Though the amount of material available of the new ant is not large, there is no indication of intergradation with these other forms, as the diagnostic traits appear to be quite constant.

***Pheidole senex*, new species**

SOLDIER: Length, 5.5 mm.; head index, 0.87; head length, 2.0 mm.

Head longer than broad, with its greatest width approximately at the middle; occipital margin deeply excised and leading into a frontal groove that extends almost to the frontal area. Anterior margin of the clypeus straight except for a shallow, median emargination; clypeal carina weak. Frontal area depressed and with a minute carina in the center. Frontal carinae moderate in length, straight, and strongly divergent. Eyes lateral, located about one-third of the length of the head behind its anterior border; composed of about 70 facets. Antennal scape noticeably thickened towards the tip; its length equal to about one-third of the length of the head from the clypeal margin to the occipital lobe. Mandibles thick, blunt, curved, and virtually devoid of teeth.

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Prothorax with prominent humeral angles. In profile, the promesonotum convex, with an abrupt angle where it joins the epinotum so that the latter is definitely at a lower level. Mesoe-pinotal suture distinctly impressed. Epinotum with basal face and declivity virtually equal; epinotal spines short, stout, and sharply pointed, directed upward. The petiole possesses a short peduncle, and the node has a gradual anterior slope, abrupt posterior slope, with a rather sharp superior border, notched in the center. Postpetiole low and from above has a pronounced lenticular shape resulting from well-developed lateral conules; fully twice as wide as the petiole. Gaster distinctly truncate at the base and of the usual myrmicine shape.

Sculpture of the head consists of coarse, longitudinal striae or rugae on the anterior half, spreading slightly fan-wise from the clypeus onto the genae and between the frontal carinae onto the frons. Strong transverse rugae, with interrugal sculpture, on the occiput, converging towards, and continuing into, the occipito-frontal groove. In some specimens there is a tendency for this occipital sculpture to become reticulate. Vertex, and genae in part, smooth and shining, devoid of all sculpture except small punctures from which hairs arise. Mandibles smooth and shining, and gula smooth except for rugae along its anterior border bounding the mouth. Anterior and middle of pronotum smooth; the rest, together with the mesonotum, granular and transversely rugose. Basal and declivious faces of the epinotum, petiole, and postpetiole granular; pleurae and sides of the epinotum granular and rugose. Abdomen smooth and shining.

Erect hairs present on all surfaces of the head, on the mandibles, scapes, dorsum of thorax, petiolar node, postpetiole, coxae, femora, tibiae, dorsum and venter of gaster, and a few on the pleurae. Hairs for the most part are long, slender, and pointed. Pubescence very dilute to absent on all parts, so that surfaces are shining except where dulled by sculpture.

Color of the head reddish brown; thorax, petiole, postpetiole, and gaster dark brown; mandibles and anterior border of the head dark brown to black; antennae and legs yellowish brown.

WORKER: Length, 2.6 mm.

Head subquadrate, occipital margin faintly concave; clypeus evenly rounded in front and elevated in the middle. Antennal scapes slightly surpassing the posterior angles of the head, the distance hardly as large as the greatest diameter of the scape.

Eyes prominent. Thorax evenly convex; meso-epinotal suture distinct and impressed. Epinotal base slightly longer than the declivity; spines well developed and moderately sharp. Petiole as in the soldier, but with superior border entire. Postpetiole trapezoidal, without lateral conules.

Sculpture punctate or granular on head, thorax, petiole, and postpetiole, except for the anterior portion of the gula and the center of the pronotum which are smooth. Gaster glabrous. Longitudinal striae on the frons and vertex. Hairs slender and present on head, thorax, petiole, postpetiole, gaster, and legs. Color dark brown, legs and antennae lighter.

HOLOTYPE: Soldier, in the American Museum of Natural History.

PARATYPES: Fifteen soldiers and numerous workers in the collection of R. E. Gregg and W. S. Creighton.

All specimens were collected from two nests a few feet apart among rocky outcrops in the short grass prairie along the Colorado-Oklahoma border, 9 miles south of Campo, Colorado, March 21, 1949, at an elevation of approximately 4150 feet.

Pheidole senex can be distinguished from *P. p. coloradensis*, after examination of specimens in the type series, by the overall larger size of its soldier, with a distinctly longer head (2.0 mm., and an average head index of 16 soldiers of 0.89), very glabrous vertex (devoid of granules and foveolae), coarse transverse occipital rugae, smooth mandibles with only hair punctures, rather shining anterior face of the pronotum, and the greater abundance of hairs which are longer and sharper on the head and gaster. From the subspecies *artemisia* (paratypes examined), it is separated by much larger body size and longer head, transverse occipital sculpture (very reticulate on *artemisia*), and the prominent, almost spine-like lateral conules, of the postpetiole. The typical *pilifera* differs from *senex* by its smaller size, by the very coarse sculpture which covers the entire head, becoming reticulate on the occiput, and by the fact that the lateral conules, like those of *artemisia*, are small and blunt, giving the postpetiole a trapezoidal shape.

The range of *coloradensis* is given by Creighton as northern New Mexico through Colorado to the Dakotas. It is more abundant on the east slope of the mountains and along their base, and as a Rocky Mountain subspecies replaces the typical *pilifera* which extends from the Atlantic coast to Nebraska. Intergrades

are known between these two forms and, to judge from specimens in my collection from Savanna, Illinois, are to be found as far east as the Mississippi River. Also, *coloradensis* appears to intergrade with *artemisia*, the Great Basin subspecies described from Provo, Utah, by Cole. Specimens that I have collected from Grand Mesa and Grand Junction, Colorado, show an approach towards *artemisia* in their reduced size, somewhat shining vertex, and loss or near loss of the granulated surface and foveolae so characteristic of the head of *coloradensis* east of the divide.

Though the ranges of *coloradensis* and *senex* overlap, the ants are morphologically distinct, and while examples of the new form have been taken as yet only from the type locality, they show no tendency to intergrade with *coloradensis*. *Senex* can be expected to turn up later in more southern stations. It cannot be confused with Wheeler's supposed variety *neomexicana* from Las Vegas, New Mexico, for Creighton has shown the latter to be a synonym of *coloradensis*. I have seen a cotype of *neomexicana* and agree with Creighton's treatment of this ant. Cole's *artemisia* approaches *senex* more than any other member of the *pilifera* complex and might be regarded as the same insect population, taxonomically and genetically, especially if the two showed intergradation, if it were not for the topographic barrier and hundreds of miles which lie between them. The stations for these ants are located at relatively low altitudes (viz., about 4000 feet), in north central Utah and southeastern Colorado. *Pheidole* as a genus does not go high into the Rockies, and even the subspecies *coloradensis* is confined to the plains and to rather low elevations in the foothills and along the base of the mountains. It does not seem likely, therefore, that these forms are conspecific.

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