

STUDIES OF NEW MEXICO ANTS. V. THE GENUS
PHEIDOLE WITH SYNONYMY (HYMENOPTERA:
FORMICIDAE)¹

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Pheidole bicarinata Mayr. Nests were found only in the extreme northeastern part of the state (5 mi. S. of Raton Pass, 6,400 ft., 20 mi. W. of Raton, 6,950 ft., and Capulin Mt. Natl. Monument, 7,200 ft.). The colonies were beneath stones in dry, grassy areas, with scattered scrub oak, pine, and cedar.

Pheidole bicarinata buccalis Wheeler. The range of this subspecies is quite great in the state and colonies are rather numerous. Nests were chiefly beneath stones but a few were associated with small sand craters and domes and they were found in both dry and fairly moist, grassy, open habitats. Collections were made at the following places: Tesuque Canyon, near Santa Fe, 10,000 ft.; 12 mi. S. of Santa Fe, 6,500 ft.; Glenrio, 3,700 ft.; Tucumcari, 4,185 ft.; 22 mi. N. of Las Vegas, 6,200 ft.; Water Canyon, 16 mi. W. of Socorro, 6,550 ft.; 18 mi. SE. of Bayard, 6,000 ft.; 4 mi. N. of Las Cruces, 4,950 ft.; 2 mi. SW. of Espanola, 5,650 ft.; 3 mi. S. of Embudo, 5,900 ft.; 2 mi. S. of San Juan, 5,900 ft. Cimarron Canyon seems to be part of a region of intergradation of this subspecies with the typical *bicarinata*.

Pheidole bicarinata longula Emery. This subspecies appears to be less common than *buccalis* and it has a more restricted range in the state. It was taken at the following localities: Kit Carson Cave road, near Gallup, 6,950 ft.; Black Canyon, Black Mts., 6,600 ft.; 4 mi. N. of Magdalena, 6,600 ft.

Pheidole sp. (*crassicornis* complex?). Two colonies of what probably represents a new species were taken from sand crater nests in dry sandy desert 6 mi. NW. of Deming 4550 ft. and 9 mi. W. of Glenrio, 3,500 ft. Dr. W. L. Brown has informed me that the soldiers of these series compare favorably with a single soldier from Prescott, Arizona. Because of the scarcity of material, however, and the present status of our knowledge of the *crassicornis* group I prefer not to describe this form as new.

Pheidole ceres Wheeler. This is one of the most common members of the genus in the northern portion of the state. While *ceres* generally nests beneath stones at times it constructs small soil craters. Colonies are usually very populous. I made collections at the following places: Sapello Canyon, Beulah, 8,000 ft.; Arrott Ranch, Beulah, 6,900 ft.; Cimarron Canyon, 6,700-7,450 ft.; Bandelier Natl. Monument, 6,200 ft.; Colorado-New Mexico line on U. S. 550, 6,500 ft.; 25 mi. N. of Beaverhead, 7,250 ft.; 2 mi. N. of Ute Park, 7,450 ft.; 12 mi. E. of Taos, 7,250 ft.; 5 mi. S. Mescalera, 6,950 ft.; 13 mi. S. of Mescalera, 8,200 ft.; Little Willow Creek Ranch, Mogollon Mt., 8,300 ft.

Pheidole cockerelli Wheeler. Two nests were found beneath stones in a moist grassy open area in Cimarron Canyon, 6,700 ft.

Pheidole desertorum Wheeler. This species is restricted to the southern portion of the state where it nests, frequently in abundance, in very dry semidesert areas. It was collected at the following places: 15 mi. W. of Mountainair, 5,750 ft.; 4 mi. N. of Las Cruces, 4,950 ft.; 20 mi. N. of Bernardo, 6,550 ft.; 12 mi. W. of Hope, 5,200 ft.; 20 mi. W. of Hope, 5,150 ft.

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Pheidole hyatti Emery. A large colony was collected from beneath a stone in dry semidesert with scattered juniper 10 mi. S. of Mountainair, 6,650 ft. and another nest was found in a dry, grassy pinyon-juniper area 80 mi. N. of Silver City on state route 61 in the wilderness area, 7,250 ft.

Pheidole militica Wheeler. This interesting species was found only in the sandy semidesert between Bayard and Deming (4,525-6,000 ft.) where in some places colonies were rather numerous and in other areas absent. The nests were marked by an entrance in the sand and by a thin scattering of chaff several inches in one direction from the opening. Most colonies contained an abundance of very active workers but few of the large soldiers which occupied small chambers in the moist lower portion of the nests. The soldiers could be found only by opening the firm moist balls of sand which contained chambers. From some nests only workers were taken; soldiers were either absent or they escaped detection.

Pheidole pilifera coloradensis Emery. I found this ant only in the northern part of the state where the colonies were not uncommon at the following localities: Sapello Canyon, Beulah, 8,000 ft.; Capulin Mt. Natl. Monument, 7,750 ft.; Taos, 7,350 ft.; 25 mi. S. of Santa Fe; Ute Park, 7,400 ft.; Cimarron Canyon, 7,100 ft.; 2 mi. S. of Raton Pass, 7,700 ft.; Little Willow Creek Canyon, 16 mi. E. of Mogollon, 8,300 ft. All nests were under stones.

Pheidole senex Gregg. This species was described by Gregg in 1952 (*Novitates*, No. 1557, Amer. Mus. Nat. Hist., pp. 1-4) from specimens collected in Colorado. Before this paper had appeared in print I had in press a description of what I considered to be a new subspecies of *pilifera* and had named it *P. pilifera anfracta* (*Jour. Tenn. Acad. Sci.*, 27:278-280, 1952). The material upon which I based my subspecies had been collected in the summer of 1951 at Magdalena, 6,850 ft., New Mexico, and I had not been able to collect the ant elsewhere in the state. Because of the nature of the distribution pattern and inasmuch as the ants were very similar to *pilifera*, I felt justified in setting up the population as a new subspecies of *pilifera*. While I was studying Gregg's description of *senex* I realized that it was strikingly similar to my description of *anfracta* and after I had had an opportunity to compare types of *senex* with those of *anfracta* I was convinced that the two names represent the same population. Since *senex* was taken in Colorado and occurs within the range of *pilifera coloradensis* it is highly unlikely that *senex* can be a subspecies of *pilifera*. In view of this and because of nomenclatorial priority the name *P. senex* Gregg should stand and the name *P. pilifera anfracta* Cole should be relegated to synonymy.

During the summer of 1952 I collected this species from beneath stones in a dry, grassy area near Datil, 7,500 ft. and from nests without covering material in a dry juniper area 10 mi. S. of Mountainair, 6,650 ft. As yet apparently no collections have bridged the gap between the known New Mexico distribution and the Colorado localities.

Pheidole sitarches soritis Wheeler. With some trepidation I place all of my New Mexico collections of the *sitarches* complex under this name. Much of my material is highly variable and some specimens from several nests compare very favorably with types of *P. sitarches campestris* Wheeler while others compare equally as well with types of *soritis*.² Furthermore, at a few localities colonies with characteristics of *campestris* nested within the same general habitat as colonies with characteristics of *soritis*. Even so some of these colonies contained individuals which could be classified as belonging to *campestris* and others to *soritis*. I do not believe that such places represent areas of overlap and intergradation of two subspecific populations. Comparison of the types of *campestris* and *soritis* has convinced me that the morphological differences are too minor and inconsistent to be of any taxonomic significance. I propose therefore that the name *P. sitarches campestris* Wheeler be relegated to the synonymy of *P. sitarches soritis* Wheeler.

²Types were kindly loaned by the Museum of Comparative Zoology.

The localities where I made collections of this form in New Mexico are as follows: 10 mi. S. of Mountainair, 6,650 ft.; 9 mi. W. of Glenrio, 3,900 ft.; Galesteo, 6,000 ft.; 7 mi. W. of Magdalena, 6,850 ft.; 12 mi. W. of Hope, 5,200 ft.; 2 mi. N. of San Juan, 5,900 ft.; 18 mi. S. of Bayard, 6,000 ft.; White Sands Natl. Monument, 3,800 ft.; 10 mi. S. of Santa Fe, 6,500 ft.; 15 mi. E. of Silver City, 5,800 ft.

Pheidole xerophila tucsonica Wheeler. The range of this ant seems to be restricted to the southern portion of the state where it is a rather common dweller in some arid sections. It constructed small domed mounds or shallow craters at the following localities: 18 mi. SE. of Bayard, 6,000 ft.; 11 mi. N. of Las Cruces, 4,450 ft.; 23 mi. N. of Las Cruces, 4,300 ft.; 7 mi. W. of Deming, 4,525 ft.; 30 mi. E. of Carlsbad, 3,200 ft.

STUDIES OF NEW MEXICO ANTS. VI. THE GENERA MONOMORIUM, SOLENOPSIS, MYRMECINA, AND TRACHYMYRMEX (HYMENOPTERA): FORMICIDAE)¹

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Genus MONOMORIUM Mayr

Monomorium (Monomorium) minimum (Buckley). This well-known species, which is apparently the only member of its genus in the state, was collected from beneath stones and small craters in both moist and dry areas at the higher elevations as follows: Sapello Canyon, Beulah, 8,000 ft.; Dailey Canyon, Beulah, 8,000 ft.; 25 mi. E. of Gallup, 7,200 ft.; Albuquerque, 5,000 ft.; 10 mi. S. of Mountainair, 6,650 ft.; Water Canyon, 16 mi. W. of Socorro, 6,550 ft.; Black Canyon, Black Mts., 6,600 ft.; Bandelier Natl. Monument, 6,050 ft., 6,350 ft.; 12 mi. E. of Taos, 7,250 ft.; Tesuque Canyon, near Santa Fe, 7,600 ft.; 20 mi. E. of Alma, 6,400 ft.

Genus SOLENOPSIS Westwood

Solenopsis (Solenopsis) aurea Wheeler. I believe this species to be the most common one of its subgenus in the state. It nests in arid sections under both stones and small (frequently multiple) craters. Colonies were sampled at the following localities: 18 mi. SE. of Bayard, 6,000 ft.; 6 mi. N. of Las Cruces, 4,200 ft.; 23 mi. N. of Las Cruces, 4,500 ft.; 31 mi. N. of Las Cruces; 6 mi. W. of Deming, 5,600 ft.; 6 mi. NW. of Deming, 4,550 ft.; 17 mi. E. of Deming, 4,300 ft.; Malpais Lava Beds, near Carrizozo; 9 mi. W. of Glenrio, 3,900 ft.; 14 mi. W. of Hope, 4,800 ft.; 20 mi. W. of Hope, 5,150 ft.; 13 mi. N. of Carlsbad, 3,300 ft.; White Sands Natl. Monument, 3,800 ft.

Solenopsis (S.) geminata (Fabricius). One colony of what I believe represents this species was nesting beneath a stone in very dry, level, stony soil 13 mi. N. of Carlsbad, 3,300 ft.

Solenopsis (S.) xyloni McCook. A single nest was found under a stone in a very arid, rocky area with creosote bush, yucca, cacti, and ocotillo, at Carlsbad Caverns Natl. Park, 4,150 ft.

Solenopsis (Diplorhoptrum) krockowi Wheeler. Nests of this distinctive little yellow species were beneath stones at the following places: White Sands Nat. Monument, 3,700 ft.; 12 mi. W. of Hope, 5,200 ft.; 25 mi. W. of Hope, 5,350 ft.; 20 mi. N. of Bernardo, 6,550 ft.; Datil, 7,500 ft.

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