

the sides, smoother in the middle. Frontal area longitudinally rugulose. Head, with the exception of its smooth lower surface, cheeks and extreme posterior corners, traversed by sharp and rather numerous longitudinal rugæ, separated by fine, shallow, and therefore rather indistinct punctures. Thorax covered with very similar, sharp rugæ with intervening punctures, but the former run transversely on the dorsal surface and are continued down vertically on the pleural surface. Declivity of epinotum, petiole, postpetiole, gaster, legs and antennæ smooth and glabrous except for very fine, scattered piligerous punctures.

Hairs short, grayish, suberect and rather sparse, covering the legs and scapes as well as the whole body.

Black; mandibles, except their borders, lower surfaces and articulations of thorax, petiole, postpetiole, funiculi, and legs tinged with deep red. In some specimens the head too may be reddish.

Worker. Length 2.5–3 mm.

Head a little longer than broad and a little broader behind than in front, with convex sides, rather straight posterior border and broadly rounded posterior corners. Eyes convex, at the middle of the sides of the head. Mandibles with two larger apical and several minute basal teeth. Clypeus convex in the middle, with entire, broadly rounded anterior border. Antennal scapes reaching nearly $\frac{1}{3}$ their length beyond the posterior corners of the head. Shape of thorax, petiole, and postpetiole much as in the soldier, the postpetiole, however, being as long as broad and more campanulate. The epinotal spines are fully as long as in the soldier, though perhaps a little more slender and a little more curved.

Like the soldier also in sculpture, pilosity and color, except that the fine punctures between the sharp rugæ on the head and thorax are more numerous and deeper so that these parts seem to be more opaque.

Described from several soldiers and workers taken from a single "populous and aggressive colony, nesting in a rotting log, near Troy" (Wight).

This species, owing to the 4-jointed antennal club, must be placed in Pergande's subgenus *Ceratopheidole*, although it differs considerably in habitus from the two species hitherto assigned to this group. The type (*C. granulata*) was described from two Mexican specimens which Pergande doubtfully regarded as soldiers. They had 4-jointed antennal clubs, much smaller epinotal spines than *C. hecate*, measured 5.6 mm. and were reddish yellow. Forel in Biol. Centr. Amer. Hymen., III, 1899–1900, p. 77–78, was inclined to criticise Pergande for establishing a subgenus on two specimens, but he later accepted it for an Indian *Pheidole* (*Ph. smythiesii* Forel). This species, however, like certain American forms of *Pheidole sensu stricto* (*Ph. vasliti*, *arizonica*, *instabilis*, etc.) is not dimorphic but polymorphic in the worker caste, since it presents a series of intermediates between the soldier and worker proper.

29. ****Pheidole* (*Ceratopheidole*) *hecate malevola* subsp. nov.**

Soldier. Differing from the soldier of the typical form in the sculpture of the head, the sharp longitudinal rugæ being abbreviated at their posterior ends and