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Article III.— ADDITIONS TO THE ANT-FAUNA OF JAMAICA.¹

BY WILLIAM MORTON WHEELER.

On the basis of a collection made during the winter of 1905-'06 by Mr. Alexander E. Wight of Wellesley Hills, Mass., I published in 1908 a list of the ants of Jamaica.² In this list, in which I included all the species previously described from the island, only forty forms were enumerated. Mr. Wight has now sent me a second and even larger collection which he made during 1909 in a different part of Jamaica, and Dr. Michael Grabham and Prof. E. A. Andrews have recently supplied me with a number of specimens from Kingston. These collections, now belonging to the American Museum, contain twenty-one additional forms, indicated by asterisks prefixed to their respective names in the following pages. The total number of Jamaican ants known at the present time is therefore sixty-one, which is almost as many as are known to occur in Porto Rico and the Virgin Islands. These additions to the Jamaican fauna, however, contain only two new species, both belonging to the genus *Pheidole*, but one of these must be referred to the very interesting subgenus *Ceratopheidole*, of which only two species have been described: *C. granulata* Pergande, of Mexico, and *C. smythiesi* Forel, of India. The remaining nineteen forms are, with few exceptions, widely distributed over tropical America.

Family FORMICIDÆ.

Subfamily Ponerinæ.

1. ***Ectatomma (Holcoponera) strigatum*** (*Norton*).— Several workers and two poorly preserved males from two colonies from Balaclava (Wight).
2. ****Ectatomma (Gnamptogenys) interruptum*** *Mayr*.— Numerous workers from a single colony "nesting under bark of a log where some soil had accumulated"; Mandeville (Wight).
3. ***Platythyrea punctata*** (*F. Smith*).— Several workers from Balaclava and Mandeville (Wight).
4. ****Pachycondyla harpax*** (*Fabr.*).— Four workers of the typical form from Balaclava (Wight).

¹ Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University. No. 35.

² The Ants of Jamaica. Bull. Amer. Mus. Nat. Hist. XXIV, 1908, pp. 159-170.

5. ***Anochetus mayri** Emery subsp. **læviusculus** subsp. nov.

Differing from the typical *mayri* in the less deeply sculptured surface of the body in both female and worker, the pronotum and head, except the vertex, being smoother and distinctly shining. The petiole is clearly bicuspidate; the transverse impression of the epinotum as in the typical form and not feeble as in the Brazilian subsp. *neglectus* Emery. The color of the body of the worker is somewhat paler and more yellowish than in the typical *mayri*; the size averages a little less (female 3.5 mm.; worker 3 mm.). Described from ten workers and one female taken near Troy (Wight).

6. **Odontomachus hæmatodes** (L.).—Workers, males and winged females from several colonies taken near Troy and at Balaclava (Wight).

7. ***Odontomachus hæmatodes** var. **hirsutiusculus** F. Smith.—Workers and males from Balaclava, Mandeville and Kingston (Wight) and workers and a winged female from Moneague (F. C. Paulmier) are smaller than the corresponding phases of *O. hæmatodes in. sp.* and the workers and females are more hairy and pubescent. This form is certainly very closely related to the subsp. *insularis* Guérin.

8. ***Ponera fœda** Forel.—Two workers taken from rotten wood near Troy (Wight).

9. ***Ponera opaciceps** Mayr.—Several workers “nesting in refuse from sugar-cane mill near Troy” (Wight).

Subfamily MYRMICINÆ.

10. **Pseudomyrma delicatula** Forel.—Workers from several colonies taken at Troy, Mandeville and Balaclava (Wight). This form is scarcely distinct from *Ps. flavidula* F. Smith.

11. **Pseudomyrma elongata** Mayr.—Workers from Troy and Balaclava (Wight) and Kingston (Grabham).

12. ***Pseudomyrma gracilis** (Fabr.).—Numerous workers from Balaclava (Wight), all representing the same color variety, being black with the thorax, petiole, clypeus and mandibles clear reddish yellow, the tarsi brown.

13. **Monomorium destructor** (Jerdon).—Several workers from Kingston (Grabham).

14. **Monomorium floricola** (Jerdon).—Numerous workers from Kingston (Grabham) and Bowden (Wight).

15. **Monomorium carbonarium ebeninum** Forel.—Workers from

Kingston (Grabham); workers and females from Mandeville and Balaclava (Wight).

16. **Cardiocondyla emeryi** Forel.—Several workers from Balaclava and Troy (Wight).

17. **Solenopsis geminata** (Fabr.).—Numerous specimens of all three phases of the typical dark form of the species from Troy and Balaclava (Wight), and Kingston (Grabham and Andrews).

18. ***Solenopsis azteca** Forel.—Several workers from Mandeville (Wight) agree closely with a type specimen of this species from St. Vincent in my collection.

19. **Solenopsis azteca** var. **pallida** Wheeler.—Numerous workers from Mandeville and Balaclava (Wight).

20. ***Solenopsis hammari** Mayr?—A few workers from Mandeville (Wight) agree very closely with Emery's figure of this species (Bull. Soc. Ent. Ital., XXXVII, 1905, fig. 11) and probably belong either to it or to a dark subspecies of *S. decipiens* Emery. The antennal scapes are rather short and the clypeal teeth stout as in *hammari*, but the shape of the epinotum in profile is more like that of *S. decipiens* subsp. *abjecta* Emery, *i. e.*, with a more pronounced mesoepinotal constriction than in *hammari*. The specimens measure about 1.5 mm. and are dark brown, with the mandibles, legs and gaster, except the first segment, yellow.

21. **Pheidole fallax** Mayr.—Soldiers and workers from several colonies; Balaclava (Wight); Kingston (Wight and Grabham).

22. **Pheidole megacephala** (Fabr.)—Soldiers and workers from Mandeville (Wight) and Kingston (Grabham).

23. **Pheidole subarmata** Mayr.—Soldiers and workers from several colonies; Balaclava (Wight).

24. **Pheidole radoszkowskii** Mayr var. **opacissima** Forel.—A few workers from Kingston (Grabham) agreeing very closely with topotypes received from Prof. Forel.

25. ***Pheidole caribbæa** sp. nov.

Soldier. Length 3.5–4.3 mm.

Head rather small, without the mandibles a little longer than broad, as broad in front as behind, convex above and below, with rounded sides and posterior corners and rather deep, angular occipital excision, which is continued forward over the vertex as a well-defined median groove to the frontal area. Eyes moderately large, convex, in front of the middle of the sides of the head. Mandibles convex, with two stout apical and no basal teeth. Clypeus short, flattened and ecarinate in the middle, its anterior border with a median excision. Frontal area subtriangular, rounded behind, as long as broad, impressed, without a median carinula. Frontal

carinæ short. Antennæ slender; scapes curved but not flattened at the base, reaching nearly to the posterior corners of the head; club as long as the remainder of the funiculus, its terminal joint a little longer than either of its subequal basal joints; all the remaining funicular joints distinctly longer than broad. Thorax rather slender, as long as the head and half as broad, a little broader in front than behind, with rounded humeri, lacking the tubercles. In profile the pronotum is convex and rounded and separated by a narrow transverse constriction from the mesonotum which is transversely convex and separated by a still deeper and broader constriction from the epinotum. Base of epinotum longer than the declivity, the former horizontal and feebly convex, the latter sloping and somewhat concave; spines small, slender, subparallel, rather blunt, longer than broad at their bases, further apart than long and directed upward at right angles with the base of the epinotum. Petiole slender, seen from above a little broader behind than in front, about three times as long as broad, its sides feebly concave; in profile the node is very low and angular, with long and somewhat angularly concave anterior and very short and rather straight posterior surface. Postpetiole small, nearly as long as broad, about half again as broad as the petiole, subrectangular, somewhat broader in front where it is obtusely angular on each side. Gaster elliptical, distinctly smaller than the head. Legs long and slender.

Mandibles, clypeus, frontal area and occipital groove shining; the mandibles finely and very sparsely punctate, the clypeus longitudinally rugulose. Remainder of head opaque, except the extreme posterior corners which are shining in some specimens; upper surface and sides rather densely longitudinally rugose, with finely and densely punctate interrugal spaces. Antennal foveæ concentrically rugose. Thorax, petiole, postpetiole and basal half of first gastric segment opaque, finely and densely punctate, the pronotum also with a number of transverse rugæ. Legs and remaining portions of gaster smooth and shining. Antennal scapes subopaque.

Hairs gray, moderately long, abundant on the head and thorax, sparser on the gaster; suberect or more or less appressed on the body and scapes; on the legs shorter and oblique.

Black or dark piceous brown; mandibles and clypeus ferruginous, bordered with black; head often ferruginous above but in most specimens concolorous with the thorax; scapes dark brown; funiculi, tarsi and articulations of the legs yellowish.

Worker. Length 2-2.5 mm.

Head elliptical, without the mandibles a little longer than broad, distinctly narrowed and constricted at the occiput which is marginate. Eyes near the middle of the sides. Mandibles slender, with two small, acute apical and a few minute and indistinct basal teeth. Clypeus convex, with rounded, entire anterior border. Antennal scapes slender, reaching half their length beyond the occipital border of the head. Thorax and petiole similar to those of the soldier, but the epinotal spines are shorter and the promesonotal constriction feebler. Postpetiole nearly spherical, but little broader than the petiole. Gaster about the same size as the head. Legs long and slender.

Mandibles, frontal area and front smooth and shining; remainder of head, thorax, petiole, postpetiole and base of first gastric segment opaque, finely and densely punctate; legs, antennæ and tip of gaster shining.

Hairs similar to those of the soldier but much less abundant and conspicuous and less appressed on the head and thorax.

Black or deep piceous brown; mandibles, tarsi and antennal funiculi yellow or reddish; mandibular teeth blackish; legs and antennæ, especially the funiculi, often brown or reddish.

Female. Length 5.5–6 mm.

Head resembling that of the soldier but with nearly straight posterior border and more angular posterior corners. Antennal scapes reaching a little beyond the posterior corners. Eyes large. Thorax robust, with flattened mesonotum and scutellum. Epinotum with short, stout spines; its base and declivity subequal and forming together a single abruptly inclined surface. Petiole and postpetiole robust, the former in profile with a high, acute node near its posterior end, the latter from above transverse, nearly twice as broad as long, with pointed sides and rounded anterior border. Gaster suboblong.

Sculpture of head similar to that of the soldier. Thorax opaque, very finely punctate, with longitudinally rugose mesonotum and pleuræ, a smooth, shining anteromedian mesonotal spot and parapsidal furrows. In one specimen the mesopleuræ are also rather smooth and shining. Scutellum coarsely punctate, shining. Epinotum coarsely rugose; petiole, postpetiole and nearly the whole of the first gastric segment opaque and densely punctate; postpetiole above transversely rugose; posterior border of first gastric and whole of remaining segments smooth and shining.

Pilosity similar to that of the soldier but proportionally shorter and on the gaster more abundant.

Black; mandibles and clypeus, except their borders, front of head, cheeks, antennal scapes and femorotibial articulations ferruginous. Tarsi yellow. Wings grayish hyaline, with pale yellowish veins and stigma.

Male. Length 3–3.5 mm.

Integument very soft and pliable. Head small, through the eyes as broad as long, produced and narrowed behind; cheeks lacking. Eyes and ocelli large and convex. Mandibles bidentate. Antennæ filiform, scape but little longer than the first funicular joint, which is swollen and distinctly longer than broad. Clypeus convex in the middle, with entire, broadly rounded anterior border. Thorax robust, much broader than the head. Epinotum sloping, unarmed, without distinct base and declivity. Petiole and postpetiole similar to those of the worker, but the former with lower, more rounded node. Gaster and legs slender.

Head opaque, very finely and densely punctate, remainder of body smooth and shining.

Hairs pale yellow, short, suberect, rather abundant both on the body and appendages.

Head black above; thorax and gaster brown, except the sutures and articulations, which together with the mouthparts, antennæ and legs are pale, sordid yellow. Wings colored as in the female.

Described from numerous soldiers, workers and males and two females taken by Mr. Wight from several nests at Mandeville, Balaclava and Troy. According to notes accompanying the specimens the colonies of this species are "very populous, active and aggressive and nest in moist black soil under stones or in rotten logs."

Ph. caribbæa evidently belongs to the group of *Ph. radoszkowskii* Mayr and *biconstricta* Mayr. In the proportions and shape of the head of the soldier it resembles *radoszkowskii* but the thorax is less thickset and more like that of *biconstricta*. From both species the Jamaican form differs in its pilosity and sculpture and in the shape of the head of the worker which is elliptical in outline, constricted and marginate behind and neither subrectangular, nor with a transverse occipital border and distinct posterior corners.

26. ***Pheidole flavens** Roger var. near **thomensis** Emery.—Several soldiers and workers taken from a single colony nesting in the ground under a stone at Mandeville (Wight) are intermediate between the var. *vincentensis* Forel and the var. *thomensis* Emery, the color and the form of the pronotum and mesonotum of the soldier being more as in the former, the shape of the epinotum and its spines as in the latter variety.

27. **Pheidole punctatissima jamaicensis** Wheeler.—Soldiers and workers from several colonies taken near Troy (Wight).

28. ***Pheidole (Ceratopheidole) hecate** sp. nov.

Soldier. Length 3.5–4 mm.

Head rather small, subrectangular, without the mandibles very nearly as broad as long, as broad in front as behind, with feebly convex sides, feebly excavated posterior border and rounded posterior corners. Vertical groove shallow and indistinct. Eyes moderately large, convex, situated about $\frac{1}{3}$ the distance from the anterior to the posterior corners. Mandibles convex, with two large apical and two minute basal teeth. Clypeus short, convex in the middle, with a broad but shallow median excision in its anterior border. Frontal carinae short. Frontal area rather feebly impressed, subtriangular, rounded behind, as long as broad. Antennæ 12-jointed, rather slender, scapes reaching nearly to the posterior corners of the head, curved and a little flattened at the base. Funiculus with a 4-jointed club, the three basal joints of which are subequal and each half as long as the terminal joint; first funicular joint as long as the three succeeding joints together, joints 2–7 subequal, but little longer than broad. Thorax rather robust, especially in front; as long as the head excluding the mandibles and half as broad. Humeri distinctly tuberculate. Pro- and mesonotum fused and somewhat flattened above, not separated by a transverse suture or constriction; mesoepinotal constriction narrow and rather deep. Epinotum with subequal base and declivity, the former straight and horizontal in profile, the latter sloping and concave; spines very large, decidedly longer than the base of the epinotum, curved a little downward towards their slender, pointed tips and directed upward, outward and backward. Petiole from above a little more than twice as long as broad, broader behind than in front, with feebly concave sides; in profile the node is low and angular, with long, concave anterior and short, concave posterior declivity. Postpetiole about twice as broad as the petiole, a little broader than long, with straight, parallel sides and rounded anterior border. Gaster regularly elliptical, smaller than the head.

Body shining throughout; mandibles glabrous; clypeus delicately rugulose on

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

laterally, so that the smooth lateral and posterior surfaces extend much further forward and medially. The rugæ reach the posterior border only in the middleline and are distinctly less numerous and the interrugal punctures are much less distinct than in the typical *hecate*. This is especially true of the rugæ lateral to the frontal carinæ, which are very short, feeble and sparse. Head, thorax, petiole, postpetiole and appendages deep blackish red; gaster black; mandibles ferruginous with broad black borders.

Worker. Differing from the worker of the typical form in having the whole upper surface of the head smooth and shining, except for a few feeble indications of the sharp longitudinal rugæ anteriorly between the frontal carinæ and on the cheeks. In workers from one colony the interrugal punctures on the thorax are very distinct, in another set they are almost imperceptible. Both lots are black like the workers of the typical form, with deep red mandibles, legs and funiculi.

Described from a series of soldiers and workers taken by Mr. Wight at Kingston and several workers taken by Dr. Grabham at Newcastle (3500 ft.). It is this latter set of workers that has the cephalic sculpture of *malevola* combined with the indistinct thoracic punctation of the typical *hecate*.

30. ***Cremastogaster brevispinosa** *Mayr.*— Many workers from Troy and Mandeville (Wight) and Kingston (Grabham) agree very well with specimens of the typical form from other parts of tropical America.

31. ***Cremastogaster brevispinosa** var. **minutior** *Forel.*— Workers from several colonies taken at Balaclava (Wight) and Kingston (Grabham and Andrews).

32. **Cremastogaster victima** *F. Smith* var. **steinheili** *Forel.* A few workers from Kingston (Grabham) and some males and females without precise locality (Wight).

33. **Tetramorium guineense** (*Fabr.*).— A few workers from Troy and Balaclava (Wight).

34. ***Tetramorium (Tetrogmus) simillimum** *Roger.*— Workers and numerous females, both winged and dealated, from Troy and Balaclava (Wight).

35. **Wasmannia auropunctata** (*Roger.*).— Workers, males and females from several colonies; Balaclava (Wight).

36. ***Strumigenys alberti** *Forel* var. **nigrescens** var. nov.

A single worker from Mandeville (Wight) differs from the typical form of this species from St. Vincent in coloration. The clypeus, head, thorax, petiole and first gastric segment are black or very dark brown, the mandibles, postpetiole and tarsi ferruginous, the tibiæ and femora nearly as dark as the head.

37. **Rhopalothrix simoni** *Emery* var. **wighti** *Wheeler.*— Five workers from Troy (Wight).

38. **Atta (Trachymyrmex) jamaicensis** *Ern. André.*— Nine workers from Kingston (Grabham).

39. **Cyphomyrmex foxi** *Ern. André.*— Twenty workers from Kingston (Grabham) agreeing perfectly with André's description of this form which is known only from Jamaica.

40. **Cyphomyrmex rimosus minutus** *Mayr.*— Numerous workers and a few winged females from Balaclava, Troy and Mandeville (Wight).

Subfamily DOLICHODERINÆ.

41. ***Dorymyrmex pyramicus** *Roger* var. **niger** *Pergande.*— Workers from Balaclava (Wight) and Kingston (Grabham).

42. ***Iridomyrmex iniquus** *Mayr.*— Numerous workers from Troy and Mandeville (Wight) and Kingston. This species, as Forel has observed, nests in the ground.

43. **Tapinoma melanocephalum** (*Fabr.*)— Numerous workers from Kingston (Grabham).

Subfamily CAMPONOTINÆ.

44. ***Brachymyrmex heeri** *Forel.*— Workers from Kingston and Mandeville (Wight) belonging to the pale, typical form of the species.

45. **Brachymyrmex heeri** *Forel* var. **obscurior** *Forel.*— Workers from Troy, Balaclava and Mandeville (Wight) and Kingston (Grabham).

46. **Prenolepis (Nylanderia) fulva** *Mayr.*— Workers, males and dealated females from several colonies from Troy and Mandeville (Wight) and Kingston (Grabham).

47. **Prenolepis (Nylanderia) longicornis** (*Fabr.*)— Several workers from Kingston (Grabham).

48. **Camponotus capperi** *Forel.*— Many workers from several colonies taken at Troy, Mandeville and Balaclava (Wight).

49. **Camponotus capperi corticalis** *Forel* var. **subdepilis** *Wheeler.*— Several workers from Troy (Wight).

50. ***Camponotus maculatus picipes** (*Oliv.*)— A few workers from Mandeville (Wight) come very close to the var. *pilosulus* *Forel* of this subspecies, but they have the thorax a little more coarsely punctate and opaque.

51. **Camponotus hannani** *Forel.*— Numerous major and minor workers and a dealated female from Balaclava, Mandeville and Troy (Wight).

52. **Camponotus hannani willardi** *Forel.*— Both major and minor workers from Kingston (Grabham).