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THE ANTS OF THE PHILLIPS EXPEDITION TO
PALESTINE DURING 1914.

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THE junior author, while accompanying Dr. John C. Phillips on a recent zoölogical expedition to Palestine and the adjacent countries for the Museum of Comparative Zoölogy, succeeded in amassing quite a collection of ants. As many collections of these insects have been made from time to time in Egypt and Asia Minor and have been carefully described in numerous papers by Ern. André, Emery, Forel, Mayr, and Ruzsky, it seemed improbable that another collection would contain anything new. After the specimens were mounted and examined, however, we were surprised to find among them a new and peculiar species of *Deromyrma* and a few undescribed varieties and subspecies of well-known Mediterranean species. We decided, therefore, to publish a list of all the forms collected, together with such field-notes as seemed interesting.

FORMICIDÆ.

1. *Ponera eduardi* Forel. ♂ ♀ (ergatoid).— Baniyas, Syria.
2. *Sima bifoveolata* Mayr var. *syriaca*, var. nov.

Worker. Agreeing very closely with the typical form described from Delagoa Bay and Zanzibar, except in the following characters: — the tibiæ have no suberect hairs, the mandibles have only three instead of four or five teeth, and the petiolar node is semicircular in profile. The tip of the gaster is not brown. The peculiar paired granular pits on the occiput seem to be quite as distinctly developed as in the type.

Several workers found running on plants at Wady Gazelle, Sinai Peninsula. The typical form has been recorded by Mayr only as far north as the White Nile where it was taken by Trägårdh.

3. *Aphaenogaster splendida* Roger. ♂ — Rasheya, Syria; in damp, shady places.

4. *Aphaenogaster (Deromyrma) phillipsi*, sp. nov. (Fig. 1).

Worker. Length 6-6.8 mm.

Very slender. Head twice as long as broad, with the rather small but convex eyes well in front of the middle of its sides; cheeks subparallel, distinctly convex, postocular borders of head straight and gradually converging to the occipital border, which has a strongly reflexed margin and is only about half as broad as the distance between the eyes. In profile the upper surface of the head is convex anteriorly, the gular surface flat. Mandibles with slightly concave external borders, three stout apical teeth and several basal denticles. Clypeus flat and subcarinate, the middle of its anterior border broadly and

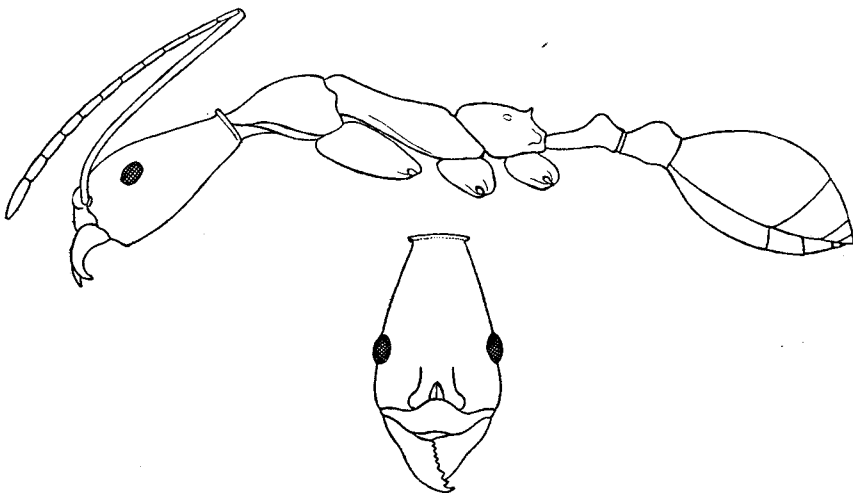


Fig. 1. *Aphaenogaster (Deromyrma) phillipsi*, sp. nov. Body of worker in profile; head of same from above.

sinuately excised. Frontal area impressed, distinct, with a median carinula. Frontal carinae approximated and parallel behind. Antennae very slender, the scapes surpassing the occipital margin by about $\frac{2}{3}$ their length; funiculus without a club, its joints very slender, the second, third, and terminal longest. Thorax slender, pro- and mesonotum subequal, the former in profile feebly convex, the latter sloping, slightly concave in the middle and with a small but distinct convexity in front just behind the promesonotal suture. Mesoepinotal constriction abrupt, short and moderately deep. Epinotum in profile about $1\frac{1}{2}$ times as long as high, its base convex in profile and twice as

long as the concave declivity, armed with two small, rather acute teeth, which are directed upward and slightly backward and outward. Petiole more than twice as long as broad, in profile with a rather low, rounded node. Postpetiole about $1\frac{1}{3}$ times as long as broad, less than half again as broad as the petiole, in profile with a similar but somewhat larger node. Gaster elongate elliptical, narrowed in front. Legs very long and slender; spurs of the posterior tibiae short but distinct.

Gaster very smooth and shining, remainder of body more feebly shining. Mandibles subopaque, finely and densely striate; head, thorax, petiole, and postpetiole shagreened, the meso- and epinotum opaque, rugulose-punctate; the anterior portion of the head above, including the antennal foveae and excluding the clypeus, longitudinally rugose, becoming reticulately rugulose and punctate posteriorly; pronotum and upper surfaces of petiolar and postpetiolar nodes smoother and more shining. Epinotal declivity shining, feebly and transversely rugose.

Hairs yellow, very short, blunt, sparse on the body, entirely lacking on the legs; very short, but distinct and oblique on the antennal scapes, especially towards their tips. Pubescence absent.

Head, thorax, petiole, postpetiole, and antennae pale ferruginous; legs brownish yellow; gaster clear, pale yellow, with the posterior $\frac{3}{5}$ of the first segment dark brown.

Described from eleven workers from Petra, Palestine. These were found in the early morning eating portions of the bait with which small mammal traps had been baited.

This species differs considerably from either of the two previously described Palaearctic species of *Deromyrma*, *cecconii* Emery from Crete and *rhapsidiiceps* Mayr from Turkestan. The Cretan species is smaller (5.7 mm.), has the body black, the tibiae with oblique hairs, the petiolar node is angular in profile, the epinotal teeth are longer, the head is shorter and of a different shape behind and the antennal funiculi have an indistinct, 4-jointed clava. In coloration and the shape of the head *phillipsi* resembles *rhapsidiiceps*, but the latter is smaller, the occipital margin of the head has no reflected margin, the clypeal border is entire, the first funicular joint is longer than the second and the tibiae are hairy.

5. *Messor rufotestaceus* Foerster. ♂.—Wady Gharandel, Sinai Peninsula and Petra, Palestine; in the former locality living in crater nests, in the latter under stones and more abundant.

6. *Messor barbarus* Linné subsp. *structor* Latr. var. *orientalis* Emery. ♀.—Rasheya, Ammik, and Baruk, Syria; Ain Gleidat and Wady Hisa,[†] Palestine.
7. *Messor barbarus* Linné subsp. *semirufus* Ern. André. ♀.—Ammik, Hasbeiya, Zahleh, and Baniyas, Syria; Wady Hisa, Palestine. One of the commonest ants in Syria, in crater nests.
8. *Messor barbarus* Linné subsp. *semirufus* Ern. André var. *concolor* Emery. ♀.—Shiba, Syria; Fuweila, Arabia; Wady Feran, Sinai Peninsula; Wady Hisa, Palestine.
9. *Messor barbarus* Linné subsp. *meridionalis* Ern. André. ♀.—Petra and Wady Mojob, Palestine; Shiba and Wady El Katana, Syria.
10. *Messor barbarus* Linné subsp. *aegyptiacus* Emery. ♀ ♀ ♂.—Wady Feran, Wady Gazelle and Mt. Sinai, Sinai Peninsula; Cairo (Mann) and Fayum (Wm. Granger), Egypt.
11. *Pheidole pallidula* Nyl. 2 ♀.—Petra and Wady Kerak, Palestine; Ammik, Syria; Wady Feran and Wady Gazelle, Sinai Peninsula.
12. *Pheidole megacephala* Fabr. 2 ♀.—Baruk, Syria.
13. *Pheidole sinaitica* Mayr. 2 ♀.—Cairo, Egypt.
14. *Crematogaster scutellaris* Oliv. subsp. *schmitti* Mayr var. *ionia* Forel. ♀.—Rasheya, Syria; Petra, Palestine. We refer these specimens to Forel's variety on account of the distinct infuscation of the head and thorax.
15. *Crematogaster auberti* Emery subsp. *jehovae* Forel. ♀.—Wady Kerak and Ain Gleidat, Palestine; Shiba, Syria.
16. *Crematogaster auberti* Emery subsp. *antaris* Emery. ♀.—Mt. Sinai, Sinai Peninsula; Fuweila, Arabia.
17. *Crematogaster inermis* Mayr. ♀.—Mt. Sinai, Wady Gazelle, and Wady Feran, Sinai Peninsula; Wady Mojob, Palestine. This is the commonest species of the genus in the Sinaitic Peninsula.
18. *Crematogaster lorteti* Forel. ♀.—Ain Gleidat, Palestine. Many colonies, nesting under stones in moist localities.
19. *Monomorium venustum* F. Smith subsp. *niloticum* Emery. ♀.—Wady Gazelle, Sinai Peninsula.
20. *Monomorium solomonis* Linné. ♀.—Fuweila, Arabia; Wady Gharandel, Sinai Peninsula; Wady Mojob, Palestine.
21. *Monomorium solomonis* Linné subsp. *subopacum* F. Smith var. *phoenicia* Emery. ♀ ♀ ♂.—Akaba, Arabia; Petra, Palestine.
22. *Monomorium bicolor* Emery subsp. *nitidiventre* Emery. ♀ ♀.—Cairo, Egypt.

The female (deälated) measures 3.8-4 mm. and resembles the worker in color and sculpture, except that the base of the gaster above is yellowish red like the head, thorax, and pedicel and more opaque. Head longer than broad, with straight, subparallel sides, distinctly excised posterior border and rather angular posterior corners. Thorax elongate elliptical, fully $2\frac{1}{2}$ times as long as broad; in profile the dorsal surface of the mesonotum, praescutellum and scutellum form a straight line; epinotum with a pronounced median longitudinal impression. Postpetiole not broader than the petiole, distinctly broader than long.

23. *Monomorium abeillei* Ern. André. ♀.—Wady Feran and Wady Gazelle, Sinai Peninsula; Petra, Palestine.
24. *Monomorium (Holcomyrme) dentigerum* Roger. ♀.—Petra, Palestine.
25. *Monomorium (Holcomyrme) dentigerum* Roger var. *baal*, var. nov.

Worker. Differing from the typical form in its decidedly darker color, the body and antennal scapes being castaneous or blackish brown; the discs of the mandibles, the clypeus, front, cheeks, mesonotum, pleurae, and lower portions of the petiole and postpetiole deep red; the legs and tips of antennal scapes yellowish brown.

Numerous specimens from Shiba, Syria and Wady Kerak, Palestine.

26. *Leptothorax tuberum* Fabr. var. *luteus* Forel.

Three workers from Ain Gleidat, Palestine agree closely with the description of this form except that they have the posterior half of the first gastric segment and the whole of the remaining segments pale brown instead of yellow, like the remainder of the body. We deem it inadvisable to describe this form as a new variety on the basis of so little material.

27. *Tetramorium striativentre* Mayr. ♀.—Wady El Katana, Syria; Wady Mojeb, Palestine.
28. *Tetramorium caespitum* Linné. ♀.—Petra, Palestine.
29. *Tetramorium caespitum* Linné var. *forte* Forel. ♀.—Baruk, Syria.
30. *Tetramorium caespitum* Linné var. *schmitti* Forel. ♀.—Baruk and Ammik, Syria; Wady Mojeb, Palestine; Mt. Sinai, Sinai Peninsula.

31. *Tetramorium caespitum* Linné subsp. *punicum* F. Smith var. *lucidulum* Emery. ♀.—Petra, Palestine; Ammik and Baniyas, Syria; Mt. Sinai, Sinai Peninsula. The colonies at Petra were very populous and were nesting under stones.
32. *Tetramorium caespitum* Linné subsp. *judas*, subsp. nov.

Worker. Length 2.3–3.5 mm.

Allied to the subspecies *semilaeve* Ern. André but the whole body, except the mandibles and clypeus, shining and the sculpture very feeble. Head much as in *semilaeve*, with the sides, posterior corners and a streak between the front and the posterior corners smooth and shining, the rugae on the front delicate and numerous, continued nearly or quite to the occiput. Pro- and mesonotum smooth and shining, with only traces of rugae at the sides, epinotum subopaque and rugose; pleurae more or less rugose as are also the sides of the petiole and postpetiole, the summits of the nodes of the latter shining, nearly smooth, or merely indistinctly punctate-rugulose. Gaster smooth and shining throughout. Color dark brown; mandibles, clypeus, cheeks, antennae, and legs testaceous.

Nine specimens from Wady Mojeb, Palestine.

This form seems to be near the var. *splendens* Ruzsky of the subsp. *semilaeve*, but we infer that the thorax is more strongly sculptured than the head in this form.

33. *Bothriomyrmex meridionalis* Roger var. *syria* Forel. ♀.—Ain Gleidat, Palestine; Rasheya and Wady El Katana, Syria; Wady Gazelle, Sinai Peninsula.
34. *Tapinoma erraticum* Latr. ♀.—Petra, Palestine; Baruk, Syria.
35. *Tapinoma erraticum* Latr. subsp. *nigerrimum* Nyl. ♀.—Petra, Palestine; Fuweila, Arabia.
37. *Acantholepis frauenfeldi* Mayr. ♀ ♀.—Wady Hisa, Palestine.
38. *Acantholepis frauenfeldi* Mayr var. *bipartita* F. Smith. ♀ ♀.—Rasheya and Wady El Katana, Syria.
39. *Acantholepis carbonaria* Emery. ♀.—Wady Gazelle, Sinai Peninsula.
40. *Acantholepis capensis* Mayr var. *canescens* Emery. ♀.—Two workers from Fuweila, Arabia agree very closely with a single specimen of this ant from Erythraea in the senior author's collection. This variety is also recorded from Kaka on the White Nile and from Bogosland and Somaliland.

41. *Plagiolepis pygmaea* Latr. ♀ ♀.—Ain Gleidat and Petra, Palestine; Ammik, Syria; Wady Feran, Sinai Peninsula.
42. *Prenolepis (Nylanderia) jaegerskjoeldi* Mayr. ♀.—Cairo, Egypt; Wady Kerak, Palestine.
43. *Formica rufibarbis* Fabr. var. *clarorufibarbis* Ruzsky. ♀.—Baruk, Syria. The specimens have the base of the gaster red as in the var. *clara* Forel, but the top of the head is infuscated as in the typical *rufibarbis*.
44. *Cataglyphis bombycina* Roger. ♂ ♀.—Lake Fayum, Egypt (Wm. Granger).
45. *Cataglyphis bombycina* Roger var. *sinaitica*, var. nov.

Soldier and Worker. Differing from the typical form in the much darker coloration, the occiput, thorax, petiole, gaster, and femora being deep castaneous brown or even blackish, the knees, tibiae, head, antennal scapes, and first funicular joint and in some specimens also the thoracic dorsum, paler brown; the mandibles in the worker yellowish red. Antennal funiculi beyond the first joint and the teeth of the mandibles black. The hairs on the tibiae are distinctly longer than in the typical form and the silver pubescence, especially on the gaster, is even denser.

A single soldier and numerous workers from Wady Gazelle, Sinai Peninsula.

46. *Cataglyphis albicans* Roger subsp. *livida* Ern. André. ♀ ♀.—Petra, Palestine; Wady Gharandel, Sinai.
47. *Cataglyphis viatica* Fabr. subsp. *bicolor* Ern. André. ♀.—Baruk and Ammik, Syria; Wady Mojeb, Palestine.
48. *Cataglyphis viatica* Fabr. subsp. *bicolor* Ern. André var. *nigra* Ern. André. ♀.—Cairo, Egypt; Lake Fayum, Egypt (Wm. Granger).
49. *Cataglyphis viatica* Fabr. subsp. *bicolor* Emery var. *orientalis* Forel. ♀.—Wady Mojeb and Wady Hisa, Palestine; El Katana, Syria; Wady Feran and Wady Gharandel, Sinai Peninsula.
50. *Cataglyphis cursor* Fonsc. subsp. *aenescens* Nyl. ♀.—Shiba, Syria.
51. *Camponotus (Myrmoturba) maculatus* Fabr. subsp. *thoracicus* Fabr. var. *oasium* Forel. ♀.—Ammik, Syria; Wady Feran, Sinai Peninsula.
52. *Camponotus (Myrmoturba) maculatus* Fabr. subsp. *thoracicus* Fabr. var. *cypriacus* Forel. ♀ ♀.—Wady Gharandel, Sinai Peninsula.

53. *Camponotus (Myrmoturba) maculatus* Fabr. subsp. *thoracicus* Fabr. var. *xerxes* Forel. ♀.—Zahleh, Syria.
54. *Camponotus (Myrmoturba) maculatus* Fabr. subsp. *thoracicus* Fabr. var. *sanctoides* Forel. ♀.—Wady Feran and Mt. Sinai, Sinai Peninsula.
55. *Camponotus (Myrmoturba) maculatus* Fabr. subsp. *thoracicus* Fabr. var. *mortis* Forel. ♀.—Wady Feran, Sinai Peninsula.
56. *Camponotus (Myrmoturba) maculatus* Fabr. subsp. *sanctus* Forel. ♀.—Shiba, Bakeyas, El Katana, and Rasheya, Syria; Petra, Palestine.
57. *Camponotus (Myrmoturba) maculatus* Fabr. subsp. *turkestanicus* Ern. André. ♀.—Wady Hisa, Palestine.
58. *Camponotus (Myrmoturba) maculatus* Fabr. subsp. *baldaccii* Emery. ♀.—Baniyas, Syria.
59. *Camponotus (Myrmoturba) maculatus* Fabr. subsp. *aethiops* Fabr. var. *concaus* Forel. ♀.—Shiba, Syria; Mt. Hermon, Palestine.
60. *Camponotus (Orthonotomyrmex) lateralis* Oliv. var. *atricolor* Nyl. ♀.—Rasheya and Ammik, Syria.
61. *Camponotus (Orthonotomyrmex) interjectus* Mayr. ♀.—Wady Kerak, Palestine.
62. *Polyrhachis (Myrmhopla) simplex* Mayr. ♀ ♀ ♂.—Wady Kerak, Palestine; Wady Feran, Sinai Peninsula.

This species was very abundant in both of these localities, always in damp places and always associated with a certain tree. In Wady Feran several nests were seen on plants. These were made of portions of leaves and twigs fastened together with films of silk. In Wady El Katana, near the Dead Sea, the only nest found was beneath a stone at the base of a tree. It contained many larvae, some of which were lying on the ground, and others on a sheet of silk. On nearly every tree in the vicinity of this nest there were many Membracidae which were constantly attended by the *Polyrhachis* workers and in most cases even sheltered in sheds constructed by the ants. The workers were observed while carrying the larvae up the trees and using them to spin the silk of the sheds.