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ANTS FROM THE SOCIETY ISLANDS *

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INTRODUCTION

The ants collected by the Pacific Entomological Survey in the Marquesas Islands and Society Islands were submitted to me for study. A report on the collection from the Marquesas has already been published.¹

Previous records of ants from Society Islands are limited to a few which I published in 1908,² to some scattered references in the myrmecological literature, and to the recent and much more extensive account³ based on material collected by Cheesman in 1925.

Of 38 different forms of ants now known from Society Islands and the Marquesas, 19 are common to the two archipelagoes, 15 are recorded from Society Islands and not from the Marquesas, and 4 from the Marquesas and not from Society Islands. With the single exception of *Odontomachus haematoda* Linnaeus, all the forms cited in the following list are small or very small ants, capable of dispersal among the islands by natural agencies, such as violent winds or in native canoes.

Some of Miss Cheesman's observations⁴ on the abundance of ants and their distribution on the islands which she visited are worth quoting:

Ants were extremely abundant upon all the above islands, especially in the inhabited areas. One species would be usually preponderant, but not always the same species; in some cases the dominant species would differ in different localities of the same island. Upon all of those of the Society Islands *Pheidole oceanica nigriscapa* variety *tahitiana*, new species, and *Monomorium floricola* swarmed on the coasts, firmly established as house-ants in all the villages visited. *Pheidole megacephala* Fabricius held a like position on the Marquesas Islands. On the atoll Fakarava, *Solenopsis geminata* variety *rufa* Jerdon was the most abundant about the huts; *Paratrechina bourbonica* subspecies *bengalensis* Forel, although also abundant, was not seen near habitations. On the shores of Tahiti and Bora Bora very large and vigorous colonies of *Solenopsis geminata* variety *rufa* Jerdon, *Anoplolepis longipes* and *Pheidole oceanica nigriscapa* variety *tahitiana* Santschi, were in close proximity—the last always predominant. In other parts of the world the two former species have a name for displacing one another (Wheeler, "Ants," p. 155, 1910). Of those species occurring in the interior of the islands, *Cardiocondyla emeryi* Forel and *Plagiolepis augusti* Emery were taken only on the northern coast-hills

¹ Wheeler, W. M., Ants from the Marquesas Islands: B. P. Bishop Mus., Bull. 98, Pacific Ent. Survey Pub. 1, art. 16, 1932.

² Wheeler, W. M., The ants of Moorea, Society Islands: Am. Mus. Nat. Hist., Bull. 24, pp. 165-167, 1908.

³ Cheesman, L. E., and Crawley, W. C., A contribution towards the insect fauna of French Oceania: Ann. Mag. Nat. Hist., 10th ser., vol. 2, pt. 3—Formicoidea, pp. 514-525, 1928.

⁴ Op. cit., pp. 514-515.

* Pacific Entomological Survey Publication 6, article 3. Issued December 23, 1932.

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of Tahiti, about 2 to 3 miles inland. *Tetramorium pacificum* Mayr was taken only on the borders of Lake Vaihiria on the same islands 8 miles inland, and *Rogeria stigmatica* variety *sublaevimodis* Emery was taken only at the head of a valley in the center of northwest Raiatea. Although the coast-belts of Tahiti literally swarmed with predaceous species of ants, there was no evidence that they were destroying the local insect-fauna, as one might have supposed to be the case. One can only surmise that while ants can exploit human habitations, which yield unlimited supplies of concentrated food, they will systematically scour these in preference to hunting for insects.

I have included in this paper some records of ants which I took in Tahiti early in August, 1914, together with a few which have since found their way into my collection from other sources.

FAMILY FORMICIDAE

SUBFAMILY PONERINAE

Platythyrea pusilla Emery.

Recorded by Cheesman and Crawley from two localities, Patutua and Tautira, Tahiti.

Ponera perkinsi Forel.

Tahiti: Vallée de la Reine, altitude 450 feet, female, Mumford and Adamson.

Moorea: female, MacTavish.

I recorded this Hawaiian species many years ago from Moorea. It is cited also by Cheesman and Crawley from Tahiti.

Ponera trigona Mayr subspecies *convexiuscula* Forel variety.

Tahiti: Papara Valley, altitude 750 feet, 1 female, Mumford and Adamson.

This single specimen seems to belong to the variety *nautarum* described by Santschi from Samoa. However, some specimens from Apia which I refer to this variety have the pterostigma smaller and less conspicuously dark brown. Until the very difficult genus *Ponera* has been revised, I refrain from describing a new variety from a single female specimen.

Odontomachus haematoda (Linnaeus).

Tahiti: Fautaua Valley, altitude 75 feet, 1 worker, Adamson.

A single specimen.

SUBFAMILY MYRMICINAE

Pheidole megacephala (Fabricius).

Raiatea: H. E. Crampton.

This important tropicopolitan ant seems to be rare in Society Islands; it is not recorded by Cheesman and Crawley. It is, however, abundant and widely distributed in the Marquesas.

Pheidole species (near *umbonata* Mayr).

Recorded by Cheesman and Crawley from localities in Tahiti, but, as only workers were obtained, the form was not further identifiable.

Pheidole oceanica Mayr.

Tahiti: soldier, worker, H. M. Smith.

Morea: Opunohu Valley, altitude 500 feet, soldier, worker, Adamson.

Pheidole oceanica subspecies *nigriscapa* Santschi variety *tahitiana* Santschi.

Soldier

Length, about 3.3 mm. Sculpture of the head is finer and denser, with more distinctly punctate interrugal spaces, than variety *pattersoni* Mann from Solomon Islands, the rugae only feebly diverging on each side of the occipital groove and the occipital lobes also with large, sparse, oblique punctures. Castaneous brown; the mandibles, cheeks, and antennal funiculi yellowish red; femora slightly darker, scapes blackish, except at the tip; tarsi yellow.

Female

Length (deälated), 5 mm. Head decidedly broader than long, trapezoidal, with straight posterior border and anteriorly converging sides. Scrobes and antennal scapes reaching nearly to the posterior corners. Mesonotum as broad as long, flattened; epinotum short, concave, and sloping, without base and declivity, the spines stout and acute. Border of petiolar node blunt and transverse, postpetiole twice as broad as the petiole, with prolonged, blunt lateral conules. Gaster scarcely longer than broad. Sculpture and color much as in the soldier; mesonotum and scutellum smooth and shining, the former posteriorly with fine medially converging striae; epinotal declivity transversely striated, nodes of petiole and post-petiole finely and densely punctate, the latter also with a transverse row of coarse, elongate punctures above.

Tahiti: Fautaua Valley, soldier, worker, Adamson.

Moorea: soldier, worker, H. M. Smith.

Cheesman and Crawley record this ant from several Tahitian localities with notes on its behavior.

Santschi described a variety from Samoa, but recorded its occurrence also in Tahiti (W. C. Crawley). The soldiers collected by Adamson in Tahiti resemble the variety *pattersoni* Mann from Solomon Islands, but are smaller, and, as Santschi has noticed, have a shallow occipital excision.

Pheidole oceanica variety *boraborensis*, new variety.

Soldier

Length, 3.6 mm. Head with decidedly narrower and less pronounced scrobes than in the other forms of *oceanica*, with decidedly longer antennal scapes and broader and shallower occipital excision. Sculpture of head pronounced, much as in the variety *pattersoni* Mann, the rugae diverging on each side of the occipital groove and curving through a distinctly and rather coarsely reticulate area on the occipital lobes into the straight rugae on the sides of the head. Transverse rugosity on pronotum and base of epinotum less distinct than in typical *oceanica*, epinotal declivity striate; petiole and postpetiole smooth but subopaque. Color paler, the head, mandibles, and thorax being

yellowish ferruginous, the epinotum, petiole, and postpetiole paler, the clypeus, antennae, gaster, and legs pale yellow.

Worker

Length, 2.5 mm. Very similar in shape and structure to the worker of the typical *oceanica*, but the occipital border of the head slightly more rounded and the antennal scapes longer. Color paler, the head, thorax, femora, and tibiae reddish yellow, the pedicel, gaster, and legs whitish.

Described from three soldiers and a dozen workers taken by H. E. Crampton on Borabora Island, Society Islands. Cheesman and Crawley's citation of the variety *tahitiana* occurring on the reef-islet Motu Moute, off Borabora, may refer to the form here described.

Pheidole (Pheidolacanthinus) sexspinosa Mayr subspecies **adamsoni** Wheeler.

This subspecies was described⁵ from specimens from Fatuhiva, Marquesas Islands. Several workers were taken by Adamson at Papeari, Tahiti.

Cardiocondyla nuda subspecies **neréis** Wheeler.

Tahiti: Vallée de la Reine, worker, female, Mumford and Adamson; Mataiea, on sugar cane, worker, female, Mumford and Adamson; Faa, sweeping on grass, worker, Adamson.

Cardiocondyla emeryi Forel.

Cited by Cheesman and Crawley as occurring in two localities near Papeete, Tahiti.

Monomorium pharaonis (Linnaeus).

Moorea: worker, female, G. A. MacTavish.

Monomorium minutum Mayr variety **liliuokalani** Forel.

Tahiti: Tuauru Valley, worker, Adamson; Vallée de la Reine, in dead banana leaves, worker, Mumford and Adamson; Mataiea, on sugar cane, worker, Mumford and Adamson; Papeari, male, Adamson.

Tapinoma (Micromyrmex) melanocephalum (Fabricius).

Moorea: Faaroa Valley, altitude 1,000 feet, female, Adamson.

Monomorium floricola (Jerdon).

Recorded by Cheesman and Crawley as "abundant near habitations on the coast; on food, sugar, etc.," in Tahiti and Raiatea.

Solenopsis geminata (Fabricius) subspecies **rufa** (Jerdon).

Tahiti: Vallée de la Reine, female, Mumford and Adamson; Hitiaa, altitude 1,000 feet, worker, Adamson; Faraura Valley, worker, Adamson; Fautau Valley, worker, Adamson.

⁵ Wheeler, W. M., Ants from the Marquesas Islands: B. P. Bishop Mus., Bull. 98, Pacific Ent. Survey, Pub. I, art. 16, 1932.

Moorea: Faaroa Valley, altitude 1,000 feet, worker, Adamson.

Miss Cheesman gives a number of observations on the habits of this "fire ant," which she found to be abundant on Tahiti and Raiatea, Society Islands, and at Fakarava in the Tuamotus.

Rogeria stigmatica Emery subspecies **sublaevinodis** Emery.

Taken by Cheesman on Raiatea. It seems to be widely distributed among the islands in the Pacific, having been previously recorded from New Caledonia, Fiji, Loyalty Islands, and Samoa.

Tetramorium guineense (Fabricius).

Recorded by Cheesman and Crawley from Tahiti and Raiatea.

Tetramorium pacificum Mayr.

Tahiti: Vallée de la Reine, in dead leaves of banana, worker, Mumford and Adamson; Papeari, on *Pandanus*, male, Adamson; Papenoo Valley, altitude 150 and 350 feet, worker, Adamson; Faraura Valley, worker, Adamson; Hitiaa, on *Frecycinetia*, worker, Adamson; Fautaua Valley, altitude 1,500 feet, worker, Adamson.

Moorea: Faaroa Valley, altitude 1,000 feet, worker, Adamson; Opunohu Valley, altitude 100 feet, worker, Adamson.

Recorded also by Cheesman and Crawley from Tahiti.

Tetramorium simillimum (F. Smith).

Tahiti: Teohu Valley, worker, female, Wheeler.

This tropicopolitan ant was taken by Cheesman on Tahiti and Borabora. She describes and figures the workers ⁶ as completely encircling their food,

. . . and protecting it by discharging fluid at ants of other species, while workers of their own species were passing between them and fetching the food. *Phcidole* workers and *Paratrechina fijiensis* on their approach would receive a volley, at once turn and make off at full speed, stopping to cleanse their antennae, legs and face of the obnoxious fluid, which was presumably formic acid, although I could not detect any odour.

Tetramorium tonganum Mayr.

Moorea: Faaroa Valley, altitude 1,000 feet, worker, female, Adamson.

Strumigenys godeffroyi Mayr.

Tahiti: Papenoo Valley, altitude 350 and 1,000 feet, in dead leaves of *opue*, worker, female, Adamson.

SUBFAMILY DOLICHODERINAE

Tapinoma (Micromyrmex) melanocephalum (Fabricius).

The typical form of this species is cited by Cheesman and Crawley from Tahiti and Raiatea.

⁶ Cheesman, L. E., loc. cit., pp. 519-521.

Tapinoma (Micromyrma) melanocephalum (Fabricius) variety **australe** Santschi.

Tahiti: Tuauru, worker, Adamson; Fautaua Valley, altitude 750 feet, under stones, worker, female, Adamson.

Moorea: worker, male, G. A. MacTavish.

Technomyrmex albipes (F. Smith).

Tahiti: Tuauru, altitude 20 feet, worker, Adamson; Fautaua Valley, worker, male, Adamson; Faraura Valley, Hitiaa, altitude 500 feet, worker, male, Adamson; Papeari, worker, Adamson.

Moorea: Faaroa, altitude 1,000 feet, in dead banana leaves, worker, Adamson.

Technomyrmex albipes variety **vitiensis** Mann.

Cheesman and Crawley identify some of their specimens from Tahiti and from the Marquesas as belonging to this Fijian and Samoan variety. All the specimens taken by Mumford and Adamson are very constant and seem to me to be referable to the typical form of the species.

SUBFAMILY FORMICINAE

Anoplolepis longipes (Jerdon).

Tahiti: Tuauru Valley, altitude 20 feet, worker, Adamson; Fautaua Valley, worker, female, male, Adamson.

Cheesman and Crawley mention this ant as abundant on all the islands visited in the Marquesas, the Tuamotus, and Society Islands.

Plagiolepis mactavishi Wheeler.

Tahiti: Papenoo Valley, altitude 350 feet, worker, female, Adamson.

Moorea: Faaroa Valley, altitude 1,000 feet, worker, female, Adamson.

This ant was originally described from Moorea; it occurs also in Hawaii and the Marquesas.

Plagiolepis augusti Emery.

Cheesman and Crawley record this Fijian species from the Vallée de Sainte Amélie in Tahiti.

Paratrechina longicornis (Latreille).

Tahiti: Teohu Valley, worker, Wheeler.

Moorea: MacTavish.

Recorded also by Cheesman and Crawley from Tahiti and Borabora.

Paratrechina (Nylanderia) vaga (Forel) variety **crassipilis** Santschi.

Tahiti: Tuauru, worker, Adamson; Vallée de la Reine, worker, male, Mumford and Adamson; Faraura Valley, worker, female, Adamson; Fautaua Valley, altitude 750 and 1,500 feet, under stone, worker, female, Adam-

son; Paea, on *Hibiscus tiliaceus*, worker, Adamson; Hitiaa, on *Freycinetia*, worker, Adamson; Papeari, worker, Adamson; Papenoo Valley, altitude 500 feet, worker, Adamson.

Paratrechina (Nylanderia) bourbonica (Forel) subspecies bengalensis (Forel).

Tahiti: Tuauru Valley, altitude 20 feet, worker, Adamson.

Cheesman and Crawley record this ant from Tahiti and Raiatea.

Paratrechina (Nylanderia) vitiensis Mann.

Worker specimens from Tahiti and Raiatea are referred to this Fijian species with some doubts by Cheesman and Crawley. They were perhaps specimens of *vaga* variety *crassipilis*, which is not mentioned in their paper.

Lasius (Acanthomyops) claviger Roger.

I recorded specimens of this common North American ant from Papeete, Tahiti, in 1911. They were in all probability introduced by commerce and have failed to establish themselves. At any rate, the species has not since been seen on the island.