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CHINESE ANTS COLLECTED BY PROFESSOR S. F. LIGHT AND PROFESSOR A. P. JACOT¹

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Professor S. F. Light of the University of Amoy and Professor A. P. Jacot of the Shantung Christian University have recently sent me for identification two small collections of Chinese ants. Professor Light's collection comprises well-known tropical species but is valuable because it is in great part from the Island of Hainan, from which, to my knowledge, no Formicidæ have previously been recorded. This collection yields no evidence that the ant-fauna of Hainan differs from that of the adjacent mainland. Professor Jacot's collection, from Shantung and the neighborhood of Peking, comprises palearctic forms, several of which are undescribed and of considerable interest in connection with the northern Eurasian fauna. As in my two previous papers on Chinese ants,² I list the various localities for future reference in determining the geographical range of the species.

Ponerinæ

Odontoponera transversa (F. Smith), ♀.—Five specimens from Tungan, Hainan Island (S. F. Light).

Diacamma rugosum (Le Guill.) subsp. **geometricum** (F. Smith) var. **anceps** Emery, ♀.—Four specimens from Kachek, Hainan Island (S. F. Light).

Euponera (Trachymesopus) darwini (Forel) var. **indica** Emery, ♀.—One specimen from Kachek, Hainan Island (S. F. Light).

Pseudomyrmicinæ

Tetraponera rufonigra (Jerdon), ♀.—One specimen from Kachek, Hainan Island (S. F. Light).

Myrmiciniæ

Messor lobulifer Emery, ♀.—Eight specimens from Tsinan, Shantung, taken in a garden outside the city (A. P. Jacot).

¹Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University. No. 221.
²'Chinese Ants,' 1922, Bull. Mus. Comp. Zool., XLIV, pp. 529-547, and 'Chinese Ants Collected by Prof. C. W. Howard,' 1922, Psyche, XXVIII, pp. 110-115, 2 figs.

Creinatogaster artifex Mayr, ♀.—Fifteen specimens from Kachek, Hainan Island (S. F. Light).

Pheidole rhombinoda Mayr, ♂, ♀.—Six specimens from Tsinan, Shantung, under large stone in field (A. P. Jacot).

Pheidologeton diversus (Jerdon), ♂, ♀, ♂.—Many specimens from Kachek, Hainan Island and Amoy, Fukien Province (S. F. Light).

Solenopsis jacoti, new species

WORKER.—Length, 1.6–1.7 mm.

Allied to *S. fugax* Latreille but smaller. Head oblong, about one-fourth longer than broad, with straight, parallel sides and the posterior border distinctly emarginate in the middle. Mandibles with very oblique, 4-toothed apical borders. Clypeus projecting in the middle, with very slender, acute median teeth and strong carinæ; the lateral teeth very short but acute. Eyes very small, flat, consisting of only 5 or 6 facets, situated at about twice their length from the insertions of the mandibles. Antennal scapes scarcely reaching beyond the middle of the distance between the eyes and posterior corners of the head. Antennal club very large, swollen, much longer than the remainder of the funiculus, the basal joint less than one-third as long as the apical, but longer than broad; first funicular joint as long as joints 2–5 together; joints 2–7 very small, distinctly broader than long but much narrower than the club and first joint. Thorax and pedicel similar to those of *fugax* but the pronotum is more convex in profile, the epinotum is distinctly shorter, more rounded and sloping and the mesoepinotal impression is distinctly more pronounced. Though the petiolar and postpetiolar nodes when seen from above are subequal as in *fugax*, the petiolar node is distinctly lower.

♂ Sculpture and pilosity similar to those of *fugax*, but the coarse piligerous punctures on the head are somewhat larger and more conspicuous and the pale, uneven, erect pilosity on the body is decidedly shorter, especially on the head and thorax.

Brownish yellow, with black eyes, clypeal and mandibular teeth and a broad, darker brown band across the dorsal surface of the first gastric segment.

Described from five specimens taken by Prof. Jacot at Tsingtao, Shantung, "from the under surface of a stone in woodlands."

This ant is certainly very closely related to the common *S. fugax* of Europe, but the antennal scapes and epinotum are shorter, the antennal clubs larger, the apical border of the mandibles and their teeth more oblique, the petiolar node lower, the pilosity shorter and the first gastric segment is in great part infuscated. Perhaps the form here described is the unknown worker of *S. soochowensis* Wheeler, which is based on female and male specimens.

Solenopsis jacoti subspecies pekingensis, new subspecies

WORKER.—Length, 1.4–1.5 mm.

♂ Differing from the preceding in its smaller size, in the smaller eyes, which consist of only 3 or 4 facets, and in the color of the body, which is throughout whitish yellow,

without infuscated first gastric segment. The pilosity is also paler and more whitish. The nodes of the petiole and postpetiole, though subequal, are less transverse, the former being more conical and less compressed anteroposteriorly.

Six workers taken by Professor Jacot at Cháo Yang An, hills west of Peking, "from lower surface of stones."

Ruzsky has described a form of *S. fugax* as var. *kasaliensis* from the Aral Sea, with only two facets in the eyes and a shorter and more sloping epinotum than that of the typical *fugax*, but the variety measures 2 mm. and is therefore considerably larger than *pekingensis*.

Monomorium minutum Mayr.—Seven males from Tsinan, Shantung, under stones in arroyo and many workers from Cháo Yang An, hills west of Peking, "rotten log in burial ground" (A. P. Jacot). These specimens evidently belong to the typical south European form of the species and not to the subsp. *carbonarium* F. Smith. The epinotum of the worker is rounded, without distinct base and declivity and the petiolar node is low. The color is black.

Monomorium (Parholccmyrmex) gracillimum (F. Smith) var. **mayri** Forel, ♀, ♂.—Nine specimens from Hainan Island (S. F. Light).

Tetramorium cæspitum (Linnaeus) subspecies **simileve** Ern. André variety **jacoti**, new variety

WORKER.—Length, 2-2.3 mm.

Whole body shining, except the head above and especially the mandibles, which are merely lustrous. Upper surface of head with numerous fine, sharp and rather uniform longitudinal rugæ, the punctuation between which is very indistinct. Occiput and posterior corners of head smoother and very shining. Thorax more coarsely longitudinally rugose than the head and with punctate-reticulate interrugal spaces. Epinotal spines small, slender and acute. Petiole and postpetiole in great part very smooth and shining above, the latter very distinctly broader than the former. Gaster very smooth and shining.

Black or deep piceous, the thorax sometimes slightly paler than the head and gaster; mandibles, clypeus, cheeks, antennæ, legs and neck reddish brown, the femora, except their ends and in some specimens the scapes, darker, castaneous brown.

Described from numerous specimens taken by Professor Jacot in the Tartar City, Peking "from a paved court-yard."

I have not seen specimens of the typical *semileve* Ern. André, but it seems to be the only one of the numerous forms of *cæspitum* recognized by Emery (1909, Deutsch. Ent. Zeitschr., pp. 697-705) to which the Chinese form can be attached.

Meranoplus bicolor (Guérin), ♀.—Two specimens from Kachek, Hainan Island (S. F. Light).

Cataulacus granulatus (Latreille), ♂.—A single specimen from Kachek, Hainan Island (S. F. Light).

Strumigenys godeffroyi Mayr var. **lewisii** Cameron, ♂.—Eight specimens from Tsingtao, Shantung, from "leaf-mould, mostly pine-needles" (A. P. Jacot).

Dolichoderinæ

Tapinoma melanocephalum (Fabricius), ♀.—Two specimens from Kachek, Hainan Island (S. F. Light).

Technomyrmex albipes (F. Smith), ♂, ♀.—Tsingtao, Shantung, "from sweepings in low grass under pines," and Tsinan, Shantung, "under stone in field" (A. P. Jacot).

Formicinæ

Plagiolepis longipes (Jerdon), ♂.—Numerous specimens from Kachek, Hainan Island (S. F. Light).

Plagiolepis wroughtoni Forel, ♂.—Numerous specimens from Tsinan, Shantung, "under stones in field"; Tsingtao, Shantung, "in sweepings from low grass under pines"; Cháo Yang An, hills west of Peking, "attending Coccids on apricot-trees" (A. P. Jacot).

Paratrechina (Nylanderia) bourbonica (Forel) subsp. **bengalensis** (Forel), ♂.—Three specimens from Kachek, Hainan Island (S. F. Light).

Formica rufibarbis Fabricius variety **orientalis**, new variety

WORKER.—Length, 5–5.5 mm.

Differing from the typical European form of the species in the smaller size and in the following characters: the pubescence, especially on the gaster is distinctly longer, denser and more silky, the erect hairs on the front, pro- and mesonotum are more numerous, stouter and less acute, and the infuscated areas on the pro- and mesonotum are more extensive.

Nine workers taken by Professor Jacot on the sand-flats west of Nu Ku Kow, Kiaichou Bay, Tsingtao, Shantung.

This variety is close to the variety *glauca* Ruzsky of Southern Russia and Western Siberia, but Emery states that this form has the same pilosity as the typical *rufibarbis*. The variety *subpilosa* Ruzsky, with the same distribution as *glauca*, is more pilose than *orientalis* and the coloration of the head and thorax is much paler.

Formica (Proformica) jacoti, new species

WORKER.—Length, 3–5 mm.

Head, even of the largest workers, longer than broad, subrectangular, nearly as broad in front as behind, with straight, subparallel cheeks, rounded posterior corners

and feebly convex posterior border. Cheeks about one and one-half times as long as the eyes. Clypeus moderately convex, carinate, its anterior border entire, broadly rounded. Mandibles apparently 6-toothed, the apical teeth much larger than the basal. Frontal carinae very short, parallel; frontal area indistinct. Antennal scapes extending nearly half their length beyond the posterior corners of the head in the smaller and about two-fifths their length in the larger workers; first funicular joint as long as the two succeeding, subequal joints together. Thorax rather robust, in profile with shallow mesoepinotal constriction, the outline of the mesonotum straight, gently sloping, continuing the straight outline of the posterior portion of the pronotum; epinotum somewhat longer than broad, the base somewhat longer than the declivity with which it forms a rounded obtuse angle. Petiole rather narrow, with straight, subparallel sides and distinctly emarginate, blunt superior border; in profile nearly as thick above as below, flattened behind, more convex above anteriorly. Gaster rather large; legs moderately long.

Mandibles opaque, evenly, finely and sharply longitudinally striated. Surface of body shining, densely and distinctly shagreened, the head finely and densely punctate.

Hairs and pubescence silvery, whitish; the pubescence rather long and dense but not completely concealing the sculpture, giving the whole surface a pruinose appearance. Erect hairs sparse, almost absent, except on the clypeus and terminal gastric segments. Flexor surfaces of femora and tibiae with a few short, widely separated bristles. Gula without erect hairs.

Dark piceous brown, with bright bronzy reflections. Anterior portion of head, posterior portion of pronotum, mesonotum and pleurae somewhat reddish brown. Mandibles, antennae, except the last funicular joints, legs, except the coxae and middle portions of the femora, brownish yellow. Palpi fuscous.

Described from three large and six smaller workers taken by Professor Jacot at Cháo Yang An, western hills of Peking, "from a nest under a stone in a field."

The only other *Proformica* known from Eastern Asia is *mongolica* Emery, described from a few specimens taken at Chara-Gol, Mongolia. This form, however, judging from Emery's description and figure (1909, Deutsch. Ent. Zeitschr., p. 202, fig. 12), has a broader head and much shorter antennal scapes, and the pubescence is described as "sparse," like that of *nasuta* Nylander. *P. jacoti* is certainly quite distinct from *nasuta* and the other known species of the subgenus.

Camponotus herculeanus (Linnæus) subsp. **japonicus** Mayr var. **aterrimus** Emery, ♀.—Thirteen specimens from Cháo Yang An, hills west of Peking (A. P. Jacot).

Camponotus (Dinomyrmex) dorycus (F. Smith) subsp. **carinatus** Emery, ♀.—A single specimen from Kachek, Hainan Island (S. F. Light).

Camponotus (Myrmothrix) nicobarensis Mayr var. **exiguo-guttatus** Emery, ♀, ♂.—Several specimens from Tungan and Kachek, Hainan Island (S. F. Light).

Camponotus (Myrmosericus) rufoglaucus (Jerdon) subsp. **paria** Emery, ♀.—One major and one minor worker from Kachek, Hainan Island (S. F. Light).

Polyrhachis (Myrmhopla) dives F. Smith, ♀, ♂.—Two males and several workers from Kachek, Hainan Island and Amoy, Fukien Province (S. F. Light).

Polyrhachis (Myrma) mayri Roger, ♀.—Two specimens from Kachek, Hainan Island (S. F. Light).

Polyrhachis (Cyrtomyrma) rastellata F. Smith subsp. **lævior** Roger var. **debilis** Emery, ♀.—A single specimen from Tungan, Hainan Island (S. F. Light).