DESCRIPTIONS OF FIVE NEW NORTH AMERICAN ANTS, WITH BIOLOGICAL NOTES.*

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Recently there have come to my attention five new ants which seem worthy of description. Among them is a new Ponerine ant and four new Myrmicine ants, all of which are native to Mississippi except the species *Pogonomyrmex californicus barnesi*, an Arizona ant. Included with these descriptions is that of the heretofore undescribed male of *Ponera opaciceps* Mayr. Where possible, comments have been made on the biology of these ants.

I wish to acknowledge here my indebtedness to Dr. W. M. Wheeler, of Harvard University, for his opinion concerning the taxonomical status of these ants.

PONERINÆ.

Euponera (Trachymesopus) gilva harnedi subsp. nov.

Worker. Length: 2.9–3.1 mm.

Head, excluding mandibles, slightly longer than broad, but not quite so broad as with typical specimens of the species. Posterior border not strongly but yet clearly emarginate, sides faintly convex, converging anteriorly, thus causing the width of the head in the region of the mouth to be narrower than the width of the head measured through the posterior angles. Eyes very small and indistinct, with only 8-10 ommatidia; placed at a distance from the mandibles equivalent to at least two and a half times their greatest diameter. Mandibles well developed, triangular, moderately convex, with 6-8 distinct teeth. Clypeus short, strongly carinate medianly, especially near the posterior border. Frontal carinæ flattened, each forming a distinct lobe which covers most of the antennal insertion; between these and extending posteriorly is a narrow, impressed, frontal groove which reaches almost to the vertex of the head. Antennal scapes robust, lacking approximately twice their greatest diameter from reaching the posterior border of the head; funiculi gradually becoming broader distally, all segments except the first and last distinctly broader than long.

Pronotum narrower than the head, long as broad, flattened above and with broadly rounded humeri. Pro-mesonotal and meso-epinotal sutures distinct. Epinotum not so long or as wide as the pronotum and

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mesonotum together, laterally compressed at the base, but becoming wider posteriorly; in lateral profile its dorsal outline is almost straight, horizontal, and lower than the mesonotum, and passes into the declivity in a rather rounded angle. Petiole slightly broader than the posterior part of the epinotum, with broadly rounded dorsal surface, and prominent, rounded, plate-like tooth below. Gaster oval, truncate at base, widest at posterior border of second segment, apex with a well developed sting.

Mandibles smooth, shining, with a few sparse piligerous punctures which are largest near the apical borders, at the base with several indistinct striæ. Head opaque, finely and densely punctate, with a velvety effect. Thorax, petiole, gaster and legs less opaque, slightly shining, with very fine scattered punctures.

Hairs and pubescence golden yellow. Pubescence fine, dense, and closely appressed on the head, less so on the thorax, on the abdomen longer, coarser and less appressed. Hairs erect, moderately long, scattered over the body but most evident on the gaster.

Ferruginous, appendages scarcely paler, mandibles darker.

Described from numerous workers, the cotypes of which are in my collection, the collection of the Department of Entomology of the Mississippi A. & M. College and the collection of Dr. W. M. Wheeler.

The ants of this interesting subspecies were taken from beneath the bark of a moist, rotting pine log in a woodland strip at Columbus, Mississippi. The ants were very slow of movement and in some cases feigned death at the point of capture. The workers bore such a close resemblance to the workers of *Proceratium* or *Sysphincta* in size, color and movements, that I did not recognize them as something different until I reached the laboratory. It is interesting to remark here that from the same log came also a new Fulgorid belonging to the genus *Epiptera*, but which was apparently not associated with these ants nor the ants *Aphanogaster texana* var. *carolinensis* Wheeler.

In regard to the rarity of *E. gilva* (Roger), Wheeler and Gaige have written in Psyche, vol. 27, p. 69 (1920) as follows: "In 1863 Julius Roger described, among other North American Formicidæ, *Ponera gilva* and *Discothyrea testacea*, two species which the senior author has vainly sought for the past twenty years, both in the field and in numerous collections sent him for identification. 'Nordamerika' was the only locality appended to the descriptions, and as the other species of the two genera are tropical or subtropical, it was natural to infer

that Roger's types were taken somewhere in Mexico. The *Discothyrea* is still to be rediscovered, but recently the junior author succeeded in taking four workers of *gilva* in northwestern Tennessee." The authors also state, "but *gilva* must either be extremely local or its female would have turned up in some of the many collections made since 1863. It would seem to be in fact, an ancient relic on the verge of extinction."

The workers of this new subspecies differ in a number of respects from that of the typical *gilva* described by Wheeler and Gaige in the issue of Psyche mentioned above. The differences are as follows: (1) the body is somewhat smaller and less robust; (2) the head narrower, and with shorter antennal scapes; (3) the eyes smaller; (4) the sculpturing finer and more shining; (5) the pilosity less coarse, and also less abundant.

I take pleasure in naming this ant for Professor R. W. Harned, who has kindly aided me in every possible way in my studies on North American ants and especially those ants native to Mississippi.

Ponera opaciceps Mayr.

Male. (Alate)—Length: 2.4–2.6 mm.

Head, excluding the mandibles, scarcely longer than broad, with rounded posterior angles. Eyes large, oval, convex. Ocelli arranged in the form of a triangle, the distance between one of the lateral ocelli and that of the median ocellus less than the distance between the two lateral ocelli. Cheeks extremely narrow. Mandibles small, short, edentate. Clypeus strongly convex, the anterior border without a median emargination. Antennæ 12-segmented, filiform; scapes short and slender, not longer than the second funicular segment. Thorax short, robust. Mesonotum with distinct parapsidal sutures, but without Mayrian furrows. Wings pale, with faint yellowish veins. Anterior wings, each with a closed radial cell, two closed cubital cells and a closed discoidal cell. Legs moderately long and slender, the tibæ of each with a distinct spur at its distal end. Petiole viewed in lateral profile broad at the base and perceptibly narrowing dorsally; from behind, the superior border of the petiole is rounded and entire. Gaster from above subelliptical, with a distinct constriction between the first and second gastric segments, the apex with prominently protruding genital appendages.

Subopaque; body finely shagreened, the shagreening covered by a dense, much appressed yellowish pile. Hairs yellowish, rather short, sparse, found on the mandibles, clypeus, top of head, coxæ of the legs, top of the petiole and apex of the gaster.

Black; mouth parts, appendages, wing insertions, and apex of the gaster lighter, or pale yellow.

This description is based on 12 alate males which were taken by Mr. J. P. Kislanko on December 15, 1928, from a colony nesting in a partly decayed pine stump at Ocean Springs, Mississippi. The cotypes are in my collection and the collection of the Department of Entomology of the Mississippi A. & M. College.

Ponera opaciceps ranges throughout the southern states and as far south as Mexico and Brazil. The worker of this species bears a close resemblance to the worker of *Ponera coarctata* subsp. *pennsylvanica* Buckley, but can be distinguished from the latter by its shorter, more robust head and by the finer punctation of the head. *Ponera opaciceps* is a southern form, whereas *P. pennsylvanica* is more northern in its distribution.

MYRMICINÆ.

Pogonomyrmex californicus barnesi subsp. nov.

This form seems to be intermediate between that of the typical *californicus* and its subspecies *maricopa*, but is perhaps nearer the latter. The worker of *barnesi*, however, resembles to some extent the worker of *maricopa* not only in size (6–7.5 mm.), but also in its subopaque appearance.

It differs from the worker of *maricopa* though in many respects, namely: (1) the node of the petiole is decidedly higher and more pointed above and with a rather abruptly sloping or steep posterior slope, and the pedical bears below a distinct antero-ventral tooth; (2) the rugæ of the head and the thorax are much more pronounced and have very distinct interrugal punctures, and the petiole and post petiole are more coarsely shagreened; (3) the head, thorax, petiole and post petiole are much less shining than in the worker of *maricopa* and therefore practically opaque; (4) the color is a darker, more ferruginous red.

I am able to distinguish this form very readily from its nearest allies, *californica* and *maricopa* in that the workers of *barnesi* are more heavily sculptured and therefore more opaque, are darker in color, and possess a petiole of a very characteristic shape as described above.

This new subspecies is described from 8 specimens, all workers, which were taken by Mr. O. L. Barnes in Maricopa county, Arizona about twenty miles northwest of Phoenix.

Cotypes are in my collection and in the collection of the Department of Entomology of the Mississippi A. & M. College.

I take pleasure in naming it for Mr. Barnes who has kindly sent me a number of Arizona ants for identification.

Leptothorax wheeleri sp. nov.

Worker.—Length: 2.2–2.9 mm.

Head, rather large, subrectangular, excluding the mandibles, slightly longer than broad, with practically straight posterior border, rounded posterior angles and feebly convex, almost straight, subparallel sides. Eyes moderately large, oval, convex, placed at a distance from the mandibles equivalent to or slightly surpassing their greatest diameter. Mandibles with 5 distinct teeth. Clypeus convex, with rounded anterior border, and a rounded posterior border extending for some

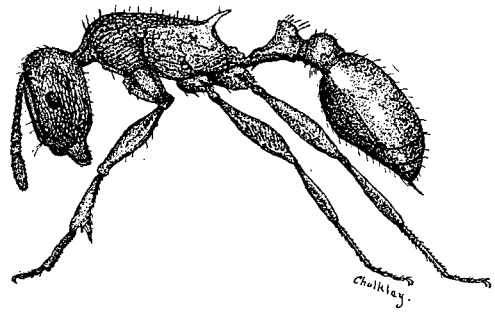

Fig. 1. Worker of *Leptothorax wheeleri.*

distance between the frontal carinæ. Frontal area obsolete. Antennæ 11-segmented; scapes fairly robust not attaining the posterior angles of the head, first segment of the funiculi almost as long as the next three taken together, the distal segment longer than the two preceding segments taken together. Thorax robust, narrower than the head, anteriorly with rounded, yet distinct humeral angles; dorsum convex, sides not laterally compressed as with *fortinodis* and related species. Epinotal spines rather robust, long and curved, slowly narrowing to their apices which are directed upward, backward, and outward. Petiole viewed in lateral profile, not strikingly larger than the postpetiole, with feebly concave anterior and faintly convex or somewhat flattened dorsal surface, below with a distinct ventral tooth. Postpetiolar node strongly convex dorsally. Gaster viewed from above oval, truncate at base, with distinct humeral angles, apex with a sting. Legs stout, with incrassated femora.

Head, thorax, petiole, postpetiole and antennæ opaque. Mandibles longitudinally striated. Clypeus coarsely, longitudinally rugulose. Head, thorax, and petiole rather coarsely rugulose-recticulate, with the interspaces finely punctate; on the head and thorax the rugulæ are

decidedly longitudinal. Postpetiole finely punctate. Gaster smooth and shining, the legs less so.

Hairs light yellowish or grayish, short and rather abundant, erect on the head, thorax, epinotal spines, petiole, postpetiole and gaster.

Color, light to dark ferruginous red; gaster except the posterior borders of the segments and legs slightly paler. Mandibular teeth black. Antennæ somewhat infuscated, especially the funiculi.

Female (dealated).—Length: 3.9–4.2 mm.

Like the worker in coloration except that the ocelli, the mesoparapteral furrows, the wing insertions, the posterior edge of the scutellum, the metanotum, and a rather broad band at the distal end of the first gastric segment and a fainter band at the tip of the second and third gastric segments are infuscated.

Sculpturing similar to that of the worker, but coarser, especially on the thorax. Epinotal spines not as proportionally large as with the worker, but shorter and blunter, the intraspinal spaces greater than the length of either epinotal spine. The petiolar node of the female is decidedly more convex dorsally and has a sharper more abrupt posterior slope than that of the worker.

Pilosity and pubescence not noticeably different from that of the worker.

Described from 5 females and numerous workers, all of which were collected at A. & M. College, Mississippi. Cotypes of the females and workers are in my collection and the collection of the Department of Entomology of the Mississippi A. & M. College. Worker cotypes only are in the collection of Dr. W. M. Wheeler.

This species is very closely allied to *fortinodis*, *schaumi*, and *bradleyi*. Like these species, the workers and female have 11-segmented antennæ. The worker differs from that of *fortinodis* and *schaumi* in several respects, the most striking of which are: (1) that it has much longer and larger epinotal spines; (2) that the thorax is not compressed laterally and dorsally as with the two species just mentioned; (3) that the sculpturing is much coarser. From the worker of *bradleyi* it differs in the shape of the thorax and petiole, and also in several other characters.

I take pleasure in naming this species for Dr. W. M. Wheeler of Harvard University, the world's foremost formicologist, and to whom I am greatly indebted for considerable aid in my work on the ants of North America.

This large and beautiful, ferruginous-red species of ant is rather common in this vicinity. It was first collected in 1921

and erroneously referred to *Leptothorax schaumi.* (See Ent. News. Vol. 35, p. 50, 1924).

One colony was found nesting in an oak tree, apparently in the hardwood where the ants could be seen entering and leaving by small holes in the wood which I believe to have been made by some small boring beetle. March 20, 1922 I found a colony nesting in a niche in a dead, but fallen cottonwood tree. In this colony were 2 dealated females, 31 workers and a number of larvæ, but no other immature forms. April 25, 1928 another colony was found nesting in a cavity beneath the bark of a well rotted pine stump. In this nest were found 3 dealated females, 40 workers, and numerous larvæ. When the nest was disturbed the workers made frantic efforts to conceal themselves by crawling in small crevices, etc. The ants have also been taken in similar habitats at Adaton, Mississippi. Nothing is known concerning their feeding habits.

Leptothorax (D.) pergandei flavus subsp. nov.

Worker.—Length: 2.6–2.8 mm.

Head subrectangular, excluding mandibles, longer than broad, posterior border straight, posterior angles rounded, sides moderately convex, subparallel in appearance. Eyes rather large, oval, convex, placed at a distance from the mandibles equivalent to their greatest diameter. Mandibles with 5 distinct teeth. Clypeus moderately convex, broadly rounded in front and extending some distance posteriorly between the frontal carinæ. Frontal area obsolete. Antennæ 12-segmented; scapes surpassing the posterior angles of the head; club 3-segmented, the distal segment longer than the two preceding segments taken together. Thorax robust, viewed in lateral profile the dorsum of the prothorax and mesothorax form a rather long, well developed arch, which terminates at the deep and broad constriction between the meso-epinotum. Epinotal spines moderately large and robust, rather blunt, directed upward and outward. Legs with incrassated femora. Petiole viewed in lateral profile with well developed, rather strongly convex node and with a distinct anteroventral tooth beneath; postpetiole considerably larger than the petiole. Viewed from behind the superior border of the petiole is straight or rounded and without an emargination, postpetiole much broader than long and easily one and a half times as broad as the petiole. Gaster oval, truncate at base, and with well developed humeral angles, apex with a sting.

Mandibles longitudinally striated. Clypeus smooth, except for a median carina on its anterior border and longitudinal rugulæ on its lateral border. Head, with the exception of the longitudinal rugulæ around the base of the antennæ and on the cheeks, prothorax, dorsum of mesothorax and epinotum, petiole, postpetiole and gaster, smooth

and shining. Neck opaque, delicately rugulose-punctate; mesoepinotal constriction, and the pleuræ of the mesothorax, metathorax and epinotum, rugulose-reticulate.

Hairs white, coarse, long and abundant, erect on all parts of the body except the appendages; almost absent from the pleuræ of the thorax.

Yellow to yellowish brown; mandibular teeth black, head, antennæ, dorsum of mesothorax, legs, and posterior border of the gastric segments infuscated. The color of the body and the amount of infuscation is highly variable with different individuals.

Female (dealated).—Length: 3.6 mm.

As a whole very similar to the worker but differing to some extent in sculpture, color, shape and size of epinotal spines, and several other characters. The sculpturing is similar to that of the worker except that it is coarser; the rugulose-reticulate sculpturing is missing from the mesopleuræ and there are distinct longitudinal rugulæ between the mesonotum and the scutellum. Ground color of the body deep reddish brown; wing insertions, posterior edge of scutellum, metanotum, and posterior borders of gastric segments deeply infuscated. Epinotal spines small, blunt and tuberculate. Petiole viewed in lateral profile not as robust, convex, or as thick antero-posteriorly as with the worker; viewed from behind subrectangular, with straight or very feebly emarginate superior border.

This new subspecies has been described from 21 workers and a dealated queen which were taken from a rotting tree branch lying on the ground at Adaton, Mississippi. Cotypes of the workers are in the collection of the Department of Entomology of the Mississippi A. & M. College, my collection, and the collection of Dr. W. M. Wheeler. The female is in my collection.

The worker of this large, yellow form is closely allied to the worker of *pergandei* as is indicated by its 12-segmented antennæ, the strong constriction between the meso-epinotum, its abundant, coarse pilosity, etc. From the worker of this species it differs however in the following respects, namely: (1) its larger size; (2) different color (yellow); (3) the less acute meso-epinotal constriction; (4) the longer, blunter and stouter epinotal spines; (5) the much larger and more convex petiole, and the distinctly broader postpetiole; (6) and lastly, in its longer, coarser, and more uneven pilosity.

I have named this new subspecies *flavus* because this is the typical ground color of the ant. Cotype specimens show considerable variation in the amount of infuscation on the body, and specimens from other nests show the color of the ant

to be highly variable, yet in spite of all this, the yellow ground color dominates—hence I have named the ant accordingly.

The ants are common at Adaton, Mississippi where they are found nesting in crevices just beneath the bark of pine stumps, near where the soil touches the stumps. Colonies appear to range in size from 50 specimens to 175 to 200 specimens. So far, only one queen has been found in a nest, though others may have been in the nest, but escaped observation. The food habits of this species are unknown.

Leptothorax (D.) pergandei floridanus spinosus var. nov.

Worker.—Length: 2.48–2.56 mm.

The worker shows its relationship to *floridanus* in that the base (dorsal surface) of the epinotum is decidedly convex and shining. The petiole when viewed laterally is very strongly convex or more node-like than with *pergandei* and lacks the central emargination on its superior border. The worker differs from the worker of *floridanus* in several characters, namely: (1) that the epinotal spines are longer and are directed upward and outward; (2) the spines are not small or tuberculate as with *pergandei* and *floridanus*, but distinctly spinose, and longer than broad at the base; (3) the pilosity is longer, coarser and more uneven; (4) the color although highly variable, is somewhat darker than that of *floridanus*. The darkest colored specimens before me, have the head, exclusive of the mandibles; the thorax, exclusive of the portion joining the head; the legs; the petiole; the postpetiole; and the gaster, exclusive of the segments from the second gastric segment to the tip, which are yellowish with dark posterior borders; black.

Described from 10 workers which were collected from a rotting pine stump at Summit, Mississippi, by Mr. L. J. Goodgame. Cotypes are in my collection, the collection of the Department of Entomology of the Mississippi A. & M. College, and the collection of Dr. W. M. Wheeler. I have named this ant *spinosus* because its epinotal spines are decidedly larger and more prominent than are the spines of the typical *pergandei* and *floridanus* and for that reason form an easy character for distinguishing it from these ants.