

RARE PONERINE GENERA IN PANAMA AND
BRITISH GUIANA (HYM.: FORMICIDÆ)

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The genus *Probolomyrmex* was erected by Mayr in 1901 (*Ann. k. naturhist. Hofmus. Wien*, 16:2) for a specimen of a strange ponerine ant from South Africa which had the clypeus fused with the frontal carinæ and produced as a peculiar lobe over the mandibles. He described this as *P. filiformis*. No other specimens were known until the report by Santschi in 1914 (*Bull. Lab. Zool. Gen. Agrar. Portici*, 8:312) of a second specimen of the species from French Guinea. In 1923 Dr. Mann (*Psyche*, 30: 16-18, Fig. 2) described a third specimen, a dealate female from Bolivia, as a new species, *P. boliviensis*, which was "the first case in its subfamily of a South African and South American relationship." In 1928 Dr. Wheeler (*Psyche*, 35: 7-9, Fig. 1) described a third species (*P. dammermani*) from Java. Described below is a fourth species, *P. petiolatus*, based on a worker that I took on Barro Colorado Island, Panama Canal Zone which adds Central America to the distribution of this rare genus.

The genus *Discothyrea* is another example of a rare and odd genus of minute ponerine ants but with a more extensive distribution which has been recently summarized and the New World species have been keyed (Weber, 1939). *D. isthmica*, described below, is an additional species from Barro Colorado Island taken by Mr. E. C. Williams, Jr. Two species are now known from this remarkably rich island since I found another species (*D. humilis*) in the month preceding Mr. Williams' discovery. In no other country in the New World is more than one species known.

The genus *Sysphincta* includes a few species of sluggish and seldom seen ants found in the Mediterranean region and Japan; one species occurs in South America, two in

the United States and *S. cavernicola* Borgmeier is found in Panama. Mr. E. C. Williams, Jr., collected in Panama a worker of this species which has been known only by the female.

Alfaria so far is a strictly Neotropical genus of ponerine ants. Five species have been described from Colombia, Bolivia, Panama, Mexico and Costa Rica. Two new species are described below, one (*A. panamensis*) taken by Mr. E. C. Williams, Jr., on Barro Colorado Island and one (*A. carinata*) taken by myself in 1935 in British Guiana. The first biological notes on the genus, though very brief, were made on the Guiana species and are included below.

All specimens are in the author's collection.

***Probolomyrmex petiolatus*, sp. nov. (Fig. 1)**

Worker. Length 1.6 mm. (thorax 0.61 mm.). Head in front view 1.4 times as long as broad, mandibles completely hidden from above, sides of head evenly convex, occipital margin feebly concave with angles evenly rounded; the

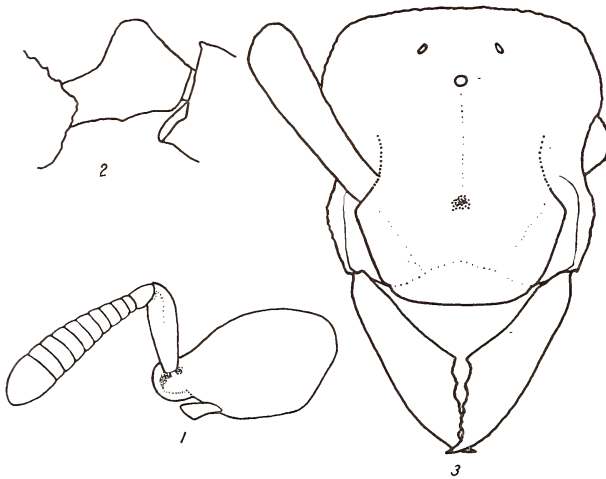


Fig. 1. *Probolomyrmex petiolatus* sp. nov., head of worker in lateral view.

Fig. 2. *Sysphincta cavernicola* Borgm., petiole of worker in lateral view.

Fig. 3. *Alfaria carinata* sp. nov., head of female in frontal view.

maximum breadth of head is slightly posterior to middle; eyeless; in side view the antennal insertions are above the mandibles; antennal scapes curved, separated at their bases by a low lamina 0.27 mm. long, joints 2-10 of the funiculus strongly transverse, terminal joint conic, nearly as long as the preceding four joints taken together; mandibles very small, strongly curved, apical tooth much the longest and acute with a series of about six irregular, acute denticles on the cutting surface. Thorax in profile with pronotum convex anteriorly, with the entire dorsum of thorax plane and without trace of sutures, posterior epinotal border forming a distinct angle with the dorsum and on the declivity produced as a distinct but rounded obtuse angle. Thorax from above broadest at pronotum, with a short collar, pronotum rounded anteriorly and sides feebly impressed in meso-epinotal region. Petiole with a short anterior peduncle, high node and much longer and sub-cylindrical posterior peduncle, from above rectangular, $1\frac{3}{4}$ times longer than broad; the node convex anteriorly and feebly excavated behind; ventral lamina in side view well-developed, the anterior margin convex, the ventral margin plane and forming with the oblique posterior margin a slight hook. Anterior margin of first gastric segment impressed at petiolar junction, feebly convex dorsally, more sharply impressed but shorter ventrally; second gastric segment much longer than the first; remaining segments largely retracted; sting long and exerted. Legs moderately long and slender.

Sub-lucid, finely, evenly and shallowly punctate, the punctations partly large, partly small.

Pubescence a very fine, whitish appressed pubescence. Color an even ferruginous of moderate density.

Holotype: One worker taken by myself June 29, 1938 on Barro Colorado Island, Panama Canal Zone. The ant was among leaves and humus on the forest floor.

This species, first to be found in Central America, is easily distinguished from the single other New World species, *P. boliviensis* Mann of Bolivia, by the convex anterior margin of the head which is also broader, the greater number of teeth on the mandibles, the much more abruptly rising node of the petiole and its less excavated posterior surface, as well as the distinct peduncle behind. Though *boliviensis*

is known only from the unique female the characters given above are probably common to both female and worker castes. The *boliviensis* female measured 2.8 mm. which may be longer than the unknown female of the Panamanian species. This species also differs from the two Old World species, *P. filiformis* Mayr of West and South Africa and *P. dammermani* Wheeler of Java, in having the petiole pedunculate behind. *P. filiformis* is much larger (3 mm.), has a much more massive node, longer antennal joints, etc. *P. dammermani* has a much more angulate epinotum and lacks a distinct petiolar node.

***Discothyrea isthmica*, sp. nov.**

Female (Deälate). Length 1.2 mm. (of thorax 0.57 mm.) Head, excluding mandibles, about $1 \frac{1}{6}$ times as long as broad back of eyes, evenly rounded behind, anterior margin produced as a convex lobe, slightly emarginate medially, which covers the mandibular bases, eyes large, convex, situated a distance of about one-half their diameters from the mandibular insertions, the three ocelli large and prominent; lamina between the antennal insertions large, rectangular with rounded angles, the anterior margin very slightly produced; antennæ 9-jointed, antennal scapes, bent, clavate, extending to a level with the posterior margin of the eyes and distinctly not reaching a level with the anterior ocellus; funicular joints 2-7 transverse, gradually increasing in length distally, terminal joint ovate, as long as all preceding joints; mandibles trigonal, strongly convex, edentate except for a long, acute apical tooth, the cutting surface concave. Pronotum produced anteriorly as a slight collar, inferior humeral angles obtuse, thorax evenly rounded at margins, epinotal angles marked as distinct, rounded tubercles. Node of petiole in side view an acute angle rounded apically, from above nearly twice as broad as long with feebly concave anterior margin and feebly convex lateral margins, petiole ventrally with a lamina projecting anteriorly between the hind coxæ and with a rounded, obtuse angle posteriorly. First gastric segment in side view with gently convex dorsum, anterior margin straight and forming an acute angle with the dorsum and an obtuse angle with the straight

ventrum; second gastric segment more massive than first; terminal segments retracted, directed forward and downward; sting fine, exerted. Legs of moderate proportions, slender.

Integument opaque, even, covered with fine punctations between which are microscopic punctulations; punctations much shallower on the sub-lucid gaster.

Pilosity of a fine, whitish appressed pubescence. Color light reddish-brown.

Holotype: one dealate female taken July 25, 1938 by Mr. E. C. Williams, Jr., on Barro Colorado Island, Panama Canal Zone (No. 139 (447)).

This species runs to couplet 2 (*D. horni*) in my recent key (Weber, 1939) to the neotropical members of the genus. It is separated from *horni* by the distinctly tuberculate epinotum and in having the node not sharply angulate above. The other 9-jointed neotropical species, *D. testacea*, is much larger. It is interesting that this species should occur on the same island of six square miles as *D. humilis* which I found in the previous month. Aside from having 9- instead of 7-jointed antennæ this species is appreciably more massive, has a differently shaped petiole and is distinctly darker.

Sysphincta cavernicola Borgmeier (Fig. 2)

Worker (Undescribed). Length 2.4 mm. (thorax 0.78 mm.). Head in front view (excluding mandibles) less than one-tenth longer than wide, occipital border faintly emarginate medially, sides convex, anterior clypeal margin produced as a small pair of lobes with a minute tooth between; eyes very small, seemingly of one facet, situated in front of middle; insertions of antennal scapes projecting in front of frontal carinæ to anterior margin of clypeus, frontal carinæ small and short, almost vertical, fused together into a lobe over half as thick as high; antennal scapes short, stout and curved, extending barely a third their length beyond the eye level; funicular joints 2-10 strongly transverse, terminal joint slightly longer than the preceding four taken together; mandibles trigonal with four coarse teeth of which the apical is distinctly the largest. Thorax in profile without trace of sutures, the pronotum forming an

evenly rounded right angle, the epinotum descending in an even convexity without teeth or tubercles; from above the thorax is seven-tenths longer than wide, being widest at the pronotum. Petiole distinctly pedunculate, the node in profile rounded-conic and from above transversely elliptical, being slightly wider than long, ventral surface of petiole with a feeble angular lamina medially, first gastric segment higher and broader than long, the anterior margin truncate, the sides convex, second segment longer than high, remaining gastric segments directed anteriorly. Legs of moderate proportions.

Sculpturing largely hidden by pilosity so that the ant seems dull except under intense light and moderately high magnification. Head, thorax, petiole and first gastric segment densely and deeply punctate. Pronotum, petiole and first gastric segment slightly punctate-vermiculate. Epinotal declivity on either side with a row of tiny tubercles. Second gastric segment sub-lucid, nearly smooth. Mandibles coarsely striate.

Pilosity of abundant short, fine, yellowish hairs, partly upright, mostly reclinate.

Dull brownish-red.

Allotype (Ergatotype): One worker taken by Mr. E. C. Williams, Jr., July 31, 1938 (No. 1410) on Barro Colorado Island, Panama Canal Zone. This worker agrees well with Borgmeier's recent (1937) description of a winged female from the Chilibrillo Caves in Panama except for the usual sexual differences. The female is 3 mm. long, has much larger eyes and the clypeal lamina is seemingly more projecting.

This species differs from the South American *S. micromata*, according to Roger's original description, in smaller size, appendages being concolorous with the body, much denser pilosity, and in coarser sculpturing. It differs markedly from *S. pergandei* Emery of the United States especially in having the petiole clearly pedunculate.

***Alfaria panamensis*, sp. nov.**

Female (Deälate). Length 3.2 mm. (thorax, including collar, 1.34 mm.) Head, excluding mandibles, distinctly longer

than broad, broadest back of eyes, occipital margin straight or faintly concave, occipital corners rounded, head in side view with the posterior ventral angle of occiput produced as a distinct carinate lobe on each side of a short thoracic neck; anterior clypeal margin truncate, eyes moderately large, convex; frontal lobes large and convex, feebly angulate behind, extending to anterior clypeal margin when viewed from in front, and to a level posteriorly with the anterior one-fifth of the eyes; between the lobes is a deep, roughly circular impression; antennal scrobes laterally with a low but acute carina; antennal scapes slightly surpassing occipital margin, terminal funicular joint slightly longer than the preceding three taken together; mandibles coarsely striate, with six or seven acute teeth and a long, acute apical tooth. Thorax in profile flat, with evenly convex anterior pronotal margin descending to a sharply delimited collar mostly hidden by the posterior occipital tubercles; inferior humeral angles acute but rounded apically; epinotal declivity faintly concave, interrupted above the middle by a large, protuberant spiracle on each side. Petiole in side view convex above, concave below, distinctly higher than long, from above a little longer than broad with posterior margin convex. First gastric segment from above broader than long; second segment much larger, with remaining segments directed anteriorly. Legs of moderate proportions.

Opaque, body coarsely sculptured, head reticulate—vermiculate with depressions finely punctate, thorax irregularly vermiculate with the vermiculations above tending to run longitudinally; petiole coarsely reticulate, finely punctate in impressions, gaster reticulate, the reticulations becoming feeble posteriorly; appendages finely punctate, tibiae finely striate.

Pilosity of moderately abundant, upright yellowish hairs. Dark, reddish-brown, appendages paler.

Worker. Length 2.8 mm. (thorax, including a slight collar, 1.2 mm.). Similar to the female with the usual sexual differences. The mandibles are as completely, though less coarsely, striate, the antennal scapes surpass the occiput. The thorax is without trace of sutures dorsally and the epinotal declivity bears two protuberant spiracles much higher than in *A. simulans*. The petiole is convex above,

concave below with an anteriorly projecting ventral tubercle; from above the petiole is longer than broad while the first gastric segment is broader than long. The sting is massive and protuberant. Sculpturing similar except for a greater tendency towards longitudinal vermiculations instead of reticulations. Color a darker brown without a reddish cast except on the appendages.

Described from one deälate female and one worker, taken August 4 (No. 534) and July 29 (No. 358) 1938, respectively, on Barro Colorado Island, Panama Canal Zone by Mr. E. C. Williams, Jr.

This species appears close to *A. mus* Santschi also from Panama but comparing with Santschi's original description the following differences are marked: the groove extending back from the impression between the frontal lobes is entirely lacking in *panamensis*, the scapes surpass the occiput, the mandibles are entirely striate except on the cutting margin instead of striate only at the base, the petiole is distinctly longer than broad instead of as broad as long, the postpetiole is distinctly broader than long and the size is smaller. It is much smaller than *A. bufonis* Mann of Mexico and lacks a meso-epinotal impression. Both *simulans* Emery of Costa Rica and *emeryi* Forel of Colombia have the occiput concave and *simulans* has also a clypeus convex in profile, the mandibles more massive, the epinotal spiracles lower and less protuberant, the petiole dorso-posteriorly not produced, the eyes smaller; *simulans* is also much larger. *A. minuta* Emery of Bolivia is larger, has shorter antennal scapes, and the frontal impression is not noted in the original description.

***Alfaria carinata*, sp. nov. (Fig. 3)**

Female (Deälate). Length 3.5 mm. (thorax, including a short collar, 1.4 mm.). Head, excluding mandibles, in front view broadest back of eyes, slightly longer than broad; occipital margin straight, corners slightly rounded, ventral angles produced as distinct carinate lobes on each side of the thoracic neck; anterior clypeal margin truncate; antennal scrobes in the form of a smooth, broad impression which is delimited laterally by a distinct, acute carina that curves medially in front of eyes; frontal lobes extending to the

anterior clypeal margin in front view, with sinuate lateral margin which is obtusely angulate posteriorly and extends to a level with the anterior margin of the eyes; between the lobes is a distinct circular impression somewhat divided by a continuation of a median carina; antennal scapes stout, distinctly exceeding occipital margin, terminal funicular joint longer than the three preceding joints taken together but shorter than the preceding four; mandibles finely and completely striate, with a long, acute apical tooth and a cutting edge bearing 3-7 irregular feeble denticles of which only the basal tooth is constantly developed. Thorax with a short, reflexed collar from which the pronotum rises as an even convexity to the plane thoracic dorsum when viewed laterally; inferior humeral angle in the form of an acute tooth; epinotal declivity rounded with a large spiracle on each side only feebly projecting. Petiole longer than high, with evenly convex dorsum and concave ventrum terminating anteriorly as a distinct, rounded tooth, from above squarish with feebly convex posterior margin and sides and as broad as long. First gastric segment from above appreciably broader than long, sides convex, anterior and posterior margins truncate, antero-ventrally produced as a large lobe; second gastric segment longer than the first and much more massive; remaining segments capable of being entirely retracted except for a massive sting. Legs of moderate length and slender.

Opaque, coarsely sculptured; head vermiculate with a tendency of the sculpturing to become reticulate on the occipital region and back of eyes; pronotum reticulate, thorax above longitudinally vermiculate, petiole and gaster reticulate—vermiculate, becoming feebler on the second gastric segment; legs finely punctate, tibiae lucid, finely striate.

Pilosity of moderately abundant, upright yellowish hairs.

Color dull reddish-brown, appendages lighter and richer in color.

Described from two dealate females which I took August 20, 1935 back of the Forest Settlement, Mazaruni River, British Guiana.

This species differs from *A. simulans*, *bufonis* and *emeryi* in having the occipital margin straight and not concave,

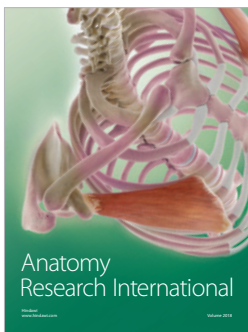
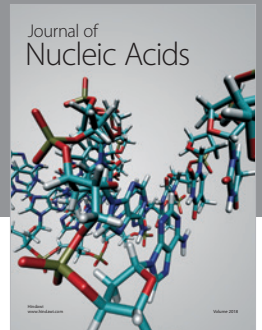
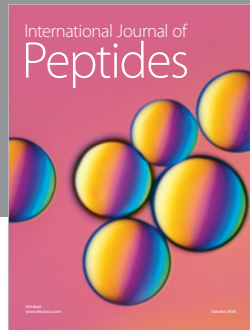
from *minuta* in having longer antennal scapes, and from *mus* in having the mandibles entirely striate, the antennal scapes longer, and the first gastric segment broader. The female of *bufonis* is probably much larger. The *panamensis* female is smaller, has the mandibles more coarsely striate and more distinctly dentate, the lateral carina of the antennal scrobes less distinct, the epinotal tubercles much more protuberant, and the petiole longer than broad. *A. carinata* is named from the very distinct lateral carinæ of the antennal scrobes.

These ants were found in swamp rain forest back of the settlement. On a huge fallen log supported by its branches and buttress roots these two females, dealate females of *Myrmicocrypta spinosa* Weber and *Cyphomyrmex rimosus* Spinola, and a nest of *C. bigibbosus* ssp. *faunulus* Wheeler occurred in a small area of a few square centimeters. The *Alfaria* were under the harder shell of the log among debris left by wood-boring beetles and other insects in the softer internal wood. They moved about slowly as do dacetone ants and were not discommoded by the strongly reflexed gaster, whose terminal segments were carried beneath the body. When I handled the ants they turned the terminal gastric segments from side to side, the large two basal segments remaining rigid, and protruded the long sting in exactly the fashion of wasps. The sting of these small ants could not penetrate the skin. One was kept for a time in a small container and by August 27 had laid a white egg which was elliptical in shape but impressed on one side so as to be somewhat kidney-shaped. On a following day the egg was eaten. Unfortunately no other biological observations have been made on these archaic ants.

LITERATURE CITED

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