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REMARKS ON THE ANT GENUS "IROGERA" EMERY, WITH  
THE DESCRIPTION OF A NEW SPECIES (Hymenoptera,  
Formicidae)<sup>1</sup>

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(With 4 text-figures)

*Irogera* was proposed by EMERY in 1915 as a subgenus of *Rogeria* for two New World species: *procera* Emery, 1896 and *tonduzi* Forel, 1899. MANN (1921) added to this group several Oriental-Pacific species which, however, according to BROWN (1953) should be shifted to *Lordomyrma*. SANTSCHI (1930, 1936), moreover, included into *Irogera* several ill-differentiated species from Cuba (*brunnea*, *caraiba*, *cubensis*), which to my mind are really members of *Rogeria* s. str. On the other hand, *Macromischa scandens* Mann, 1922 is not a *Macromischa* at all, but doubtless a member of *Irogera*. Hence *Irogera* is taken here as a group-name for a small complex of rather rare and exclusively Neotropical ants.

BROWN (1953), suspecting that *Irogera* was something very close to if not synonymous with *Hylomyrma* Forel, proposed to raise *Irogera* to full generic rank, at least as a provisional measure. It is now known that this suspicion was unfounded. Nevertheless, I intend to follow BROWN in treating *Irogera* as a full genus, but for different reasons. In spite of the close relationship to *Rogeria*, *Irogera* workers possess a few distinctive traits which may eventually prove good and reliable. The sexual formes of *Irogera*, except for an undiagnosed female from the Argentine mentioned by EMERY (1896), and the larvae are still unknown.

The scope of the present study does not reach beyond a preliminary investigation; it contains a discussion of the characters and relationships of *Irogera*, the proposition of a new synonym for *Irogera procera* (Emery) and of a new combination, *Irogera scandens* (Mann, 1922), and the description of a new species from southeastern Brazil. All specimens actually seen during

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this inquiry are deposited in my collection (WWK), which also contains the Borgmeier collection of ants (CTB).

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### *Irogera* Emery

*Rogeria (Irogera)* Emery, 1915: 191.

*Irogera* Brown, 1953: 4.

Type of the genus: *Rogeria procera* Emery, 1896, by original designation (EMERY, 1915).

*Worker* — Monomorphic. Mandibles triangular, smooth and shining, with striae only laterally at base; chewing border not strongly oblique, with 4-5 well-defined teeth, besides several more or less obsolete basal teeth. Palpi 3:2 (in *subarmata* sp. n.). Clypeus short, lateral parts not raised posteriorly in a crest-like fashion in front of the antennal socket; median lobe vaulted to truncate in front, its posterior portion deeply and narrowly wedged in between the short, subparallel, laterally not lobate frontal carinae. Antennal scrobe absent. Scape, when laid back over the head as much as possible, not reaching the occipital border. Funiculus with 11 segments: I elongate, II-VIII transverse, IX-XI longer than I-VIII combined, forming a well-defined 3-segmented apical club; segment XI longer than IX and X combined. Eyes relatively small, very little convex. Antero-inferior corner of pronotum angulate. Metanotal groove feeble, not interrupting the sculpture. Epinotum armed with a pair of spines or teeth. Metasternal lobes prominent, sharply angulate or dentate above. Bulla of metasternal gland large and bulging. Tibiae II and III without apical spurs. Petiole elongate, pedunculate and clavate with low and ill-differentiated node; subpetiolar tooth very small but pointed. Postpetiole not campaniform, distinctly constricted behind at gastric insertion. First tergite covering at least  $\frac{2}{3}$  of length of gaster. Sting feeble. Head more finely, thorax more coarsely rugose, mostly longitudinally. Gaster smooth and shining. Hairs simple.

*Component species* — *Irogera procera* (Emery, 1896), Brazil, State of Pará; *Irogera scandens* (Mann, 1922), Honduras: Lombardia; *Irogera subarmata* sp. n., Brazil, State of Guanabara; *Irogera tonduzi* (Forel, 1899), Costa Rica; *Irogera* sp. (Emery, 1896), an undescribed female from Argentina.

I am in doubt whether *tonduzi* really belongs to the present group. Its small size and compact body suggests affinity with *Rogeria* s. str. FOREL mentions in the original description that the posterior border of the lateral parts of the clypeus is elevated in the form of a carinule in front of the antennal groove, much as in *Tetramorium*.

*Discussion* — *Irogera* is closest to *Rogeria*, the workers differing in the clavate shape of the petiole, the more strongly angulate or dentate upper corner of the metasternal lobe, the more elongate habitus of the body. The less inflated segments of the apical club of funiculus, another distinctive character given by EMERY, does not seem to be very helpful, because a similar condition also occurs in larger species of *Rogeria* s. str. Perhaps the number of palpal segments, known only of *I. subarmata* sp. n. (3:2) and of *Rogeria minima* Kusnezov, 1958 (2:1) and the sexual forms will furnish additional characters.

As said before, BROWN (1953) believes that *Irogera* "is either very close to or synonymous with *Hylomyrma*." Whereas the original characterizations of both *Irogera procera* and *tonduzi*, the only evidence at BROWN'S disposal, could easily lead to such a conclusion, the examination of true *Irogera* specimens disproves this surmise. *Hylomyrma* workers and females are distinct from *Irogera* by the elongate and striate mandibles with strongly oblique chewing border, the bidentate anterior apron of clypeus, the lateral portions of the latter forming a sharp crest posteriorly in front of the antennal groove, the 4-segmented funicular club, the palpal formula (4:3), the prominent anterior lobe of mesopleura, the barbulate apical spurs on tibiae II and III, the basidorsal costulae on gastric tergite I, to mention just the most obvious features (Cf. KEMPF, 1960).

#### *Irogera procera* (Emery)

*Rogeria procera* Emery, 1896: 92-93, fig. 19 (Worker; Brazil, Pará: Belém).

*Rogeria (Irogera) procera* Emery, 1915: 191.

*Macromischa brasiliensis* Borgmeier, 1951 (1953): 107-108, figs. 1-4 (Worker;

Brazil, Pará: Rio Cumina, Cachocira do Breu). *New Synonymy*.

A comparison between the original description and figure of *Irogera procera* and the holotype of *Macromischa brasiliensis* (CTB) showed at once that both are not only congeneric but also conspecific. A very slight yet not significant discrepancy consists in the dimensions of the compound eyes; they seem to be a bit larger in *procera* than in *brasiliensis*, if this detail in EMERY'S diagnosis and figure is to be trusted.

There is no doubt that *brasiliensis* does not belong to *Macromischa* because it does not have the rounded infero-anterior corner of the pronotum, the slender and indistinct apical funicular club, the distinctive campaniform postpetiole of the latter genus. This case of synonymy eliminates the presence of *Macromischa* in continental South America and, of course, in Brazil, where this genus is hardly to be expected.

The original description of *procera* is not sufficiently clear as regards the proportions of the funicular segments, but the doubt is implicitly removed by the subsequent characterization of the subgenus *Irogera* (Emery, 1922), based

precisely upon the same species and specimens. BORGMEIER (1951) denies the presence of a subpetiolar tooth in *brasiliensis*, but the holotype of this species possesses the same type of tooth as described for *subarmata* further below. The measurements of the *brasiliensis* holotype are as follows: Total length 5 mm; maximum length of head capsule 1.12 mm; maximum width of head behind eyes 0.99 mm; length of scape 0.67 mm; length of eye 0.19 mm; Weber's length of thorax 1.41 mm.

***Irogera scandens* (Mann) comb. n.**

*Macromischa scandens* Mann, 1922: 30-31, fig. 14 (Worker; Honduras: Lombardia).

The description and figure of this species, proposed by MANN as a highly aberrant *Macromischa*, are sufficiently detailed to show at once that *scandens* is indeed a *Irogera*. The shape and proportions of the antennal segments, the infero-anteriorly angulate pronotal corner, the pointed metasternal lobe, the clavate petiole, the posteriorly constricted postpetiole, are characters which disagree with *Macromischa* and are indicative of a true *Irogera*.

The present species resembles rather closely *procera*, the chief distinguishing features being the following: Somewhat smaller in size; epinotal spines thinner and pointing obliquely upward; upper corner of metasternal lobe drawn out into an acute tooth; postpetiole dorsally rugose; scape and legs lacking erect hairs.

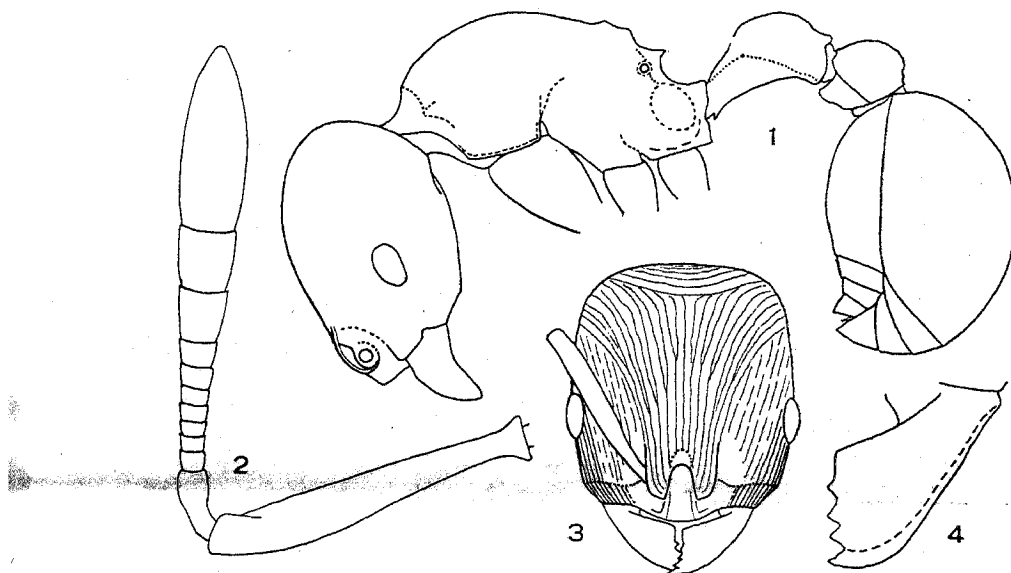
***Irogera subarmata* sp. n.**

(Figs. 1-4)

*Worker* (holotype) — Total length 3.4 mm; maximum length of head capsule 0.80 mm; maximum width of head behind eyes 0.69 mm; length of eyes 0.16 mm; length of scape 0.51 mm; Weber's length of thorax 0.93 mm. Reddish-brown; mandibles, antennae, legs, base and apex of gaster yellowish brown; rest of gaster strongly infuscated.

Head as shown in Figs. 1 and 3. Mandibles (Fig. 4) smooth and shining with sparse and fine piligerous punctures; laterally at base with short costulae; chewing border with 4 prominent triangular teeth on apical  $\frac{3}{4}$  of its length, basal fourth straight and practically toothless. Palpal formula 3:2. Clypeus with strongly elevated anteriorly truncate median lobe; upper face laterally marginate and subcarinate; smooth and shining; lateral portions of clypeus opaque, finely punctate and costulate, posterior border level with antennal groove. Frontal carinae convex in front, subparallel behind, rather short, terminating at level of anterior orbit of eye, concealing antennal socket in full-face view. Frontal area vestigial, impressed. Antennal scape (Figs. 2, 3)

gently curved at base, slightly incrassate toward apex, failing to attain the occipital border by a distance which exceeds its maximum width when laid back over the head as much as possible. Funicular segments: I elongate; II-VIII shorter than broad; IX-XI together longer than rest of funiculus, forming a 3-segmented apical club; XI longer than IX and X combined. Compound eyes relatively small and little protruding, with about 9 facets across the greatest diameter, which is slightly shorter than the distance between the anterior orbit of eye and the mandibular insertion. Dorsum and sides of head



*Irogera subarmata* sp. n. — Fig. 1: Worker in profile; fig. 2: antenna of worker; fig. 3: head of worker; fig. 4: mandible of worker. Kempf del.

subopaque, finely reticulate-punctate and more coarsely and rather regularly costate-rugose; pattern of rugae shown in Fig. 3; note the transverse rugae on occiput. Depressed area around antennal socket lacking rugae and costae. Gular face with obsolescent microsculpture, quite shining, sparsely and more superficially rugulose. Inferior occipital corner marginate and slightly prominent in side-view. A patch of rather smooth and shining integument just in front and above the occipital corner.

Thorax as shown in Fig. 1, finely reticulate-punctate, subopaque. "Neck" differentiated from pronotum proper by lacking coarse rugosities and separated from it by a more or less complete transverse ruga. Scapular angles marked by a somewhat prominent tubercle. Promesonotal suture absent. Promesonotum trapezoidal, longer than broad (9:8), trapezoidal, sides converging caudad, continuously and gently convex in both directions, lateral borders of dorsum immarginate, with longitudinal and regular to feebly vermiculate rugae, 15 on pronotum and 7-8 on mesonotum. Antero-inferior corner of

pronotum angulate. Metanotal groove gently impressed. Basal face of epinotum elevated, subquadrate, less than half as broad as pronotum, sides immarginate, coarsely and irregularly rugose, anterior corners tuberculate, posterior corners armed with a short spine, each being half as long as their distance at base; in profile, there is another short tubercle between the anterior corner and the epinotal spine on each side. Sides of thorax horizontally rugose. Declivous face of epinotum lacking coarse sculpture, margined at each side by the low infradental lamella. Bulla of metasternal gland bulging and large. Metasternal lobes well developed, superior corner subdentate, inferior corner rectangular. Fore coxae with vestigially reticulate microsculpture and not quite shining; otherwise the legs are smooth and shining. Tibiae II and III lacking an apical spur.

Petiole (Fig. 1) elongate and clavate (30:7), with long peduncle and scarcely differentiated low node, which is longer than broad. Upper face of peduncle opaque, finely reticulate-punctate. Subpetiolar tooth small but pointed. Node proper with coarse and more or less longitudinal rugae. Postpetiole slightly broader than long (21:19), sides and dorsum convex, reticulate-punctate and rugose, summit somewhat shining with faint and obsolete sculpture, constricted behind at insertion of gaster. The latter smooth and shining.

Erect and suberect hairs rather long, sparsely distributed over clypeus, front, occiput (lacking on sides of head), dorsum of thorax, dorsum of petiolar node, dorsum and venter of postpetiole and gaster. Short appressed hairs rather dense, present on scapes and legs. A few oblique and somewhat longer hairs on flexor face of femora and tibiae.

*Types* — Holotype, one of a series of 38 workers (probably from the same colony) taken by Dr. A. Ronna from stomach contents of an ant-eater, *Tamandua tetradactyla* (L.), killed in May 1936 at Deodoro, a suburb of Rio de Janeiro, Guanabara State, Brazil. Paratypes: 37 workers (WWK).

*Discussion* — The present species is quite distinct from both the preceding forms, differing in smaller size, conspicuously truncate median lobe of clypeus, presence of transverse rugae on occiput, well-developed scapular tubercle, more deeply impressed metanotal groove, raised basal face of epinotum with tuberculate anterior corners and feebly developed posterior armature, more gently convex dorsum of postpetiole. The measurements of the paratype worker series vary as follows: Total length 3.4-3.6 mm; maximum length of head capsule 0.80-0.85 mm; maximum width of head behind eyes 0.69-0.75 mm; Weber's length of thorax 0.91-0.99 mm. Other variable features consist in minute details of sculpture patterns and insignificant deviations as regards the shape of the epinotal armature and the metasternal lobes, which need no special description.

## RESUMO

No presente trabalho discutem-se os caracteres e as afinidades das formigas do gênero *Irogera* Emery. Propõe-se um novo sinônimo para *Irogera procera* Emery (= *Macromischa brasiliensis* Borgmeier), transfere-se *Macromischa scandens* Mann para *Irogera* e descreve-se uma nova espécie, *Irogera subarmata* sp. n., encontrada em estômago de um Tamanduá-mirim, em Deodoro, Estado da Guanabara, Brasil.

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