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A NEW SPECIES OF BOTHRIOMYRMEX EMERY (HYM. FORMICIDAE),
AND SOME NOTES ON THE GENUS

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Bothriomyrmex salsurae sp. n.

♀. Dirty pale yellowish-brown, legs and antennae lighter, tibiae, tarsi, scapes and apex of antennae pale yellow, teeth of mandibles and eyes black, shining, clothed with fine greyish pubescence, a few short outstanding hairs are present on the clypeus, mandibles, and gaster.

Head slightly longer than broad, slightly narrower in front than behind, sides almost straight, posterior angles rounded, posterior border excised; mandibles triangular, punctured, masticatory border armed with three sharp teeth at apex, the first and third (counting the apical one as the third) longer than the second, the apical one being the longest, a small tooth or denticle is present just before the first tooth and a few denticles are indicated towards and at base; clypeus large, convex, anterior border rounded; frontal area not distinctly defined; eyes rather small, round, flat, situated at about the centre of the sides of the head, near to but not touching the lateral borders when viewed from above; antennae fairly long, scape only extending slightly beyond the posterior border of the head, funiculus with first and second joints evidently longer than broad, the first being longer than the second, the third to the tenth about as broad as long, last joint about as long as the two preceding taken together. Thorax, somewhat thick, broader in front than behind,

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A new species of Bothriomyrmex Emery.

tracted behind pronotum; pronotum large, transverse, convex, sides and anterior angles rounded; prosternum forming a neck anteriorly; mesonotum circular, about as long as broad; epinotum longer than broad, narrowed behind, sloping to base, without a distinct angle between dorsal surface and declivity. Scale of petiolar not very high, longer than broad, narrowed to base, apex bluntly pointed and showing a tendency to being slightly excised; gaster short oval, broadest at base; rounded anteriorly, narrowed to apex. Legs moderately long. Long, 2.5-2.7 mm.

♀ Black, shining, legs, antennae, and mandibles brown, apex of antennae and tarsi pale brownish-yellow, clothed rather thickly with yellowish-white pubescence; whiter and thicker on checks, and some short yellow outstanding hairs, especially on mandibles and gaster.

Head slightly longer than broad, narrowed anteriorly; sides behind eyes convex and rounded, posterior angles rounded, posterior border distinctly emarginate; mandibles massive, triangular, punctured, armed with one rather long curved tooth at apex and a small tooth just before it; the rest of the masticatory border faintly serrate; clypeus large, transverse, rather flat, anterior border rounded, frontal area not indicated; eyes large, round oval, very slightly convex, situated on each side of the head before the centre, touching the lateral borders when seen from above; ocelli very small, situated on top of posterior part of head near posterior border; antennae long, scape extending a little beyond the posterior border of the head, funiculus with first two joints distinctly longer than broad, the 1st joint narrower but if anything slightly longer than the second, 3rd joint about as long as broad, 4th-10th slightly longer than broad, last joint very slightly longer than the two preceding taken together. Thorax large, massive, somewhat flat above, broadest across anterior angles, narrowed to base; pronotum, transverse, narrow, anterior border slightly raised, prosternum forming a neck; mesonotum large, transverse, flat, rounded anteriorly and posteriorly; prepectum indistinct; scutellum large, transverse, flat, narrowed to base; epinotum about as long as broad, sides straight, dorsal surface convex, shorter than the declivity, declivity rather abrupt, but angle between it and dorsal surface not marked. Scale of petiolar hexagonal, not large, anterior border emarginate, sides with slightly pointed angles, space between anterior border and angles excised, sides behind angles straight, narrowed to base. Gaster short, round oval, narrowed to apex. Legs fairly long. Wings iridescent, pterostigma and veins pale brown, one cubital cell, one discoidal cell, and rather narrow, long, not quite closed radial cell present. Long, 3.7-4 mm.

♂ Black, shining, mandibles, legs and antennae pale brown, tarsi and apex of antennae lighter, clothed with fine greyish pubescence and a few short yellow outstanding hairs.

Head transverse, narrowed before eyes, sides behind eyes rounded, posterior border truncate; mandibles long, narrow, crossed at apex when closed, armed with a sharp narrow tooth at apex, and the indication of a smaller tooth preceding it; clypeus transverse, convex, anterior border round and slightly projecting in centre, slightly sinuate on each side; vertex of head slightly concave; eyes large, oval, prominent, situated on each side of the head in front, close to posterior border of clypeus, but with an evident space between; ocelli fairly large, prominent, larger in proportion than those of the female, situated on top of posterior part of head which is slightly raised; antennae moderately long, narrow, scape extending as far as the median ocellus, all the joints of the funiculus longer than broad, first joint shorter than the rest, last joint not quite as long as the two preceding taken together. Thorax longer than broad, convex, narrowed in front and behind, broadest across middle of mesonotum; pronotum transverse, narrow anteriorly, sides extending round mesonotum to insertion of fore-wing; prosternum forming a neck; mesonotum transverse, convex, rounded in front and at sides; prepectum not indicated; scutellum convex, narrowed to base, transverse anteriorly; metanotum very narrow, transverse, lower than mesonotum and epinotum; epinotum about as broad as long, narrowed slightly to base, dorsal surface convex, about as long as declivity, declivity slightly concave, angle
between the two gradual and not marked. Scale of petiole small, not high, about as broad as long, rounded above and at sides. Caster long oval, narrowed in front and behind; cerci present. Stipites thin and curved with a hook inside half-way down; volselles thin, curved, very sharp, the point bending slightly outwards; sagittae close together, curved and sharply pointed at apex. Legs fairly long. Wings as in the ♂ but smaller in proportion. Long, 2.5 mm.

Described from 22 workers, 9 winged females and 5 males taken by Mr. W. Pickles at Soud Arras in Algeria. Type, and male and female types, in the British Museum (N.H.). Mr. Pickles writes that the ants were taken on 11 December 1943, in a corner of the practically deserted superstructure of a nest of Messor aegyptiacus subsp. canaliculatus Donis. A few Messor crawled about, when the nest was disturbed, and tapped the smaller ants, but seemed indifferent to their presence.

The genus Bothriomyrmex was erected by Emery in 1869 for the reception of a species (♀ and ♂) which he had captured in the neighbourhood of Naples, and named Bothriomyrmex costae. Roger, however, in 1863, had described the worker of a species from Montpellier and Andalusia under the name of Tapinoma meridionalis, and Mayr in 1870 pointed out that this was the ♂ of Emery's costae. Consequently the name of the species is Bothriomyrmex meridionalis (Roger). Forel in 1894 described another species B. atalantis (♀) from North Africa.

Santschi, in 1911, described a new species, B. decapitans, from Kairouan, Tunis, which he had previously recorded in 1906 as B. atalantis Forel.

In 1915 Wheeler described a species under the name of B. dimmocki from Mt. Tom, near Springfield, Massachusetts, but according to Emery (1925) this is not a Bothriomyrmex at all, but a species of Tapinoma. He further states that the genus Bothriomyrmex is exclusively palaeartic and Indo-Australian.

In 1920 Santschi enumerated 10 species of Bothriomyrmex, describing seven new ones, of which he gave figures. As all the European and North African species possess 4-jointed maxillary palpi, whereas those from India and Australia possess only 2-jointed ones, he gave the subgeneric name Chronoxenus to the latter; but he failed to cite a type. I propose Bothriomyrmex myops Forel, 1895, ♀♀, from Sikkim, as type by present designation.

Emery, in 1925, in a paper on the European and oriental species of the genus Bothriomyrmex, when referring to Santschi's 1920 monograph of the genus, suggested that the European species were not known to that authority except from specimens from collections, and often in a bad state, chiefly represented by workers, which are very polymorphic and do not offer such distinctive characters as the females and males. The male genitalia, however, exhibit considerable variation. He then gave a list, with very precise descriptions and figures of all the European and Asiatic species, subspecies, and varieties (with their synonymy), which separate naturally into an occidental group (hispano-provençal) and an oriental group (Crimea, Caucasus ?, Syria, Central Asia).

It is usually the case that the genera of parasitic ants are descendants from the genera of their hosts, but Emery considered that Bothriomyrmex is descended from Iridomyrmex and not from Tapinoma. He pointed out that the gizzard and the male genitalia resemble more closely those of the former than the latter. Furthermore, B. scissor Crawley, was taken by J. Clark in a nest of Iridomyrmex insignis Forel, in Australia. He thought that the first species of Bothriomyrmex was parasitic on species of Iridomyrmex. At the period when Iridomyrmex disappeared from the palaeartic fauna and was replaced by
Bothriomyrmex Emery.

_Tapinoma_ (the former occur in the Baltic Amber, but the latter do not), _Bothriomyrmex_ changed hosts, and became parasites on the _Tapinoma erraticum_ group. Forel (1874) was the first to discover a mixed nest of _Bothriomyrmex–Tapinoma_. On 23 June 1871 he found the two species _Bothriomyrmex meridionalis_ Forel (1894) _nec_ Roger (1863) = _B. corsicus_ Sants. subsp. _gallicus_ Emery (1925), and _Tapinoma erraticum_ Latr. living together under a stone "au dessus de Stresa (Îles Borromées)". He explained this as having been caused by an alliance of a queen of each species. The temporary social parasitic habits of certain ants had, of course, not been discovered at that date.

Santschi was the first to make known the colony-founding habits of this genus. The method employed by the Dolichoderine parasite _Bothriomyrmex decapitans_, which was first observed by Santschi at Kairouan in Tunis in January and February 1906, is as follows: The young queen after the marriage flight wanders about in search of a nest of _Tapinoma nigerrimum_, where she is seized and dragged into the nest by the workers. She is slightly attacked in the nest, but climbs on to the brood, or on the back of the queen, when she seems to be safe from attack. While on the back of the queen, she kills her by cutting off her head. After the death of the _Tapinoma_ queen the intruder is accepted in her place. Eventually the host workers die off, and a pure _Bothriomyrmex_ colony remains. The matter is facilitated by the fact that the female _Bothriomyrmex_ possesses the shape, colour, and smell of the larger _Tapinoma_ workers. This odour is most evident in the young queens, and Santschi has called it olfactory mimery.

It seems fairly clear that the palaearctic species of _Bothriomyrmex_ are temporary social parasites on forms of _Tapinoma erraticum_ and _T. nigerrimum_, and those of the Indo-Australian fauna on species of _Iridomyrmex_.

**Literature Consulted.**


