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Monomorium boltoni n. sp. from São Nicolau (Cape Verde Islands) (Hymenoptera, Formicidae)

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Monomorium boltoni, n. sp. from Cape Verde Islands is described. The species belongs in the *salomonis*-group and is characterised by the absolute absence of thoracic pilosity and sculpture in the worker caste and by the propodeal spoon-shaped projections of the pilose ergatoid female.

INTRODUCTION

The genus *Monomorium* MAYR, 1855 is distributed worldwide (BROWN, 1973) but most species are found in the Old World; DU BOIS (1986) summarizes the present knowledge of the taxonomy and reviews the native New World species (*minimum*-group); palearctic species, in spite of the works of EMERY (1908), SANTSCHI (1936), MENOZZI (1933) and COLLINGWOOD (1985) still lack a comprehensive review; afrotropical species have been recently revised by BOLTON (1987) in a broader study of the *Solenopsis* genus-group. As a result of comparison of the information offered in two papers (ESPADALER & AGOSTI, 1985; BOLTON, 1986) an undescribed species from Cape Verde Islands was discovered; two other species are known from there: M. *destructor* (JERDON) and *M. subopacum* (SMITH) (BOLTON, 1987), both very different from the new one. Its description follows.

DESCRIPTION

Monomorium boltoni n. sp.

Monomorium hesperium EMERY sensu BOLTON, 1986: 270 (misidentification)

Worker (figs. 1A–D)

Length 2.85–2.87 mm; colour brown with funicule and tarsi clearer (mounted dry specimens for some 30 years).

Sculpture absent except 2–3 minute striae at the mandibular base, the scattered hair pits and a very superficial, difficult to see, alutaceous propodeal microsculpture.

Head longer than broad; HL (head length) 0.65–0.70 mm; HW (head width) 0.52–0.55 mm; CI (cephalic index: HW × 100/HL) 78–82. Anterior clypeal margin feebly concave between the apices of the very weakly developed clypeal carinae, that diverge anteriorly; clypeus without projecting denticles at the junction of its anterior and lateral margins. Maximum diameter of eye 0.18–19 × HW with 40–45 ommatidia, 6–7 ommatidia in the longest row; in full face view, the posterior margin of the eyes behind the midlength of the sides of the head; occipital margin shallowly concave; scape long, surpassing the occipital

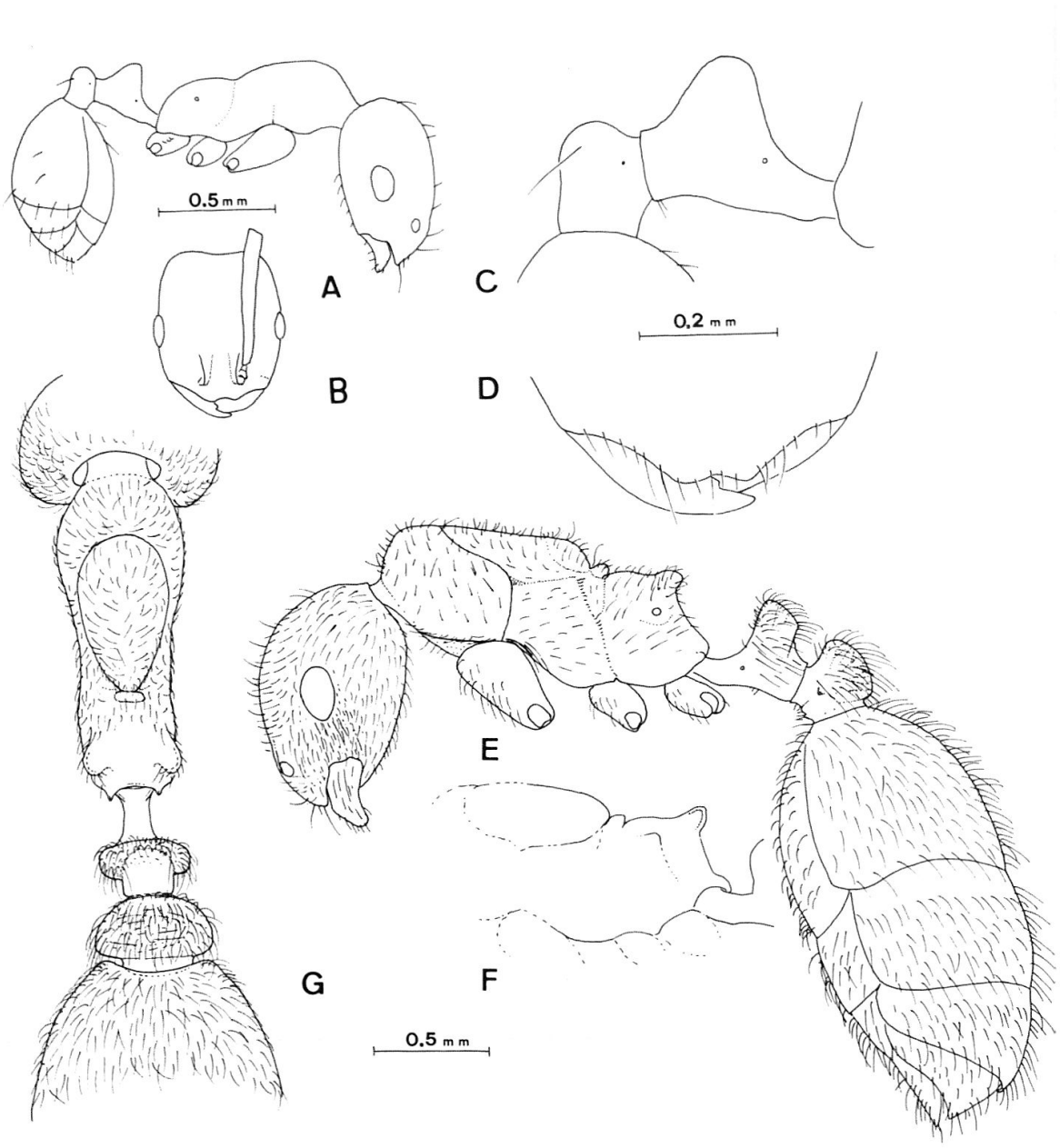

Fig. 1. *Monomorium boltoni* n. sp. A, worker, side view, pubescence omitted. B, worker head, dorsal view, pilosity and pubescence omitted. C, worker, petiole and postpetiole, side view. D, worker, clypeus, dorsal view, pubescence omitted. E, female side view. F, female, inclined to show inside of propodeal protuberances, pilosity omitted. G, female, dorsal view.

margin; SL (scape length) 0.61–0.62 mm; SI (scape index: SL × 100/HW) 113–119; sides of the head shallowly convex in full face view; antennal club of three segments; dorsum of head with two rows of 6–7 hairs, close to the midline and directed posteriad: one pair at the middle of clypeal carinae, one pair at the anterior margin of frontal lobes; three or four pairs between the end of frontal laminae and occiput; two hairs near the rounded occipital corners; head with very sparse and apressed pubescence; eyes with micropilosity; gula with 4–8 short setae.

Viewed from behind and slightly above the pronotum is evenly shallowly convex, with humeri broadly rounded. PW(pronotum width 0.33–0.36 mm; with

alitrunk in profile, pronotal dorsal outline convex, mesonotum more or less flat; metanotal groove weakly impressed, without metanotal cross-ribs; propodeum in dorsal view flat to feeble transversely concave where dorsum meets declivity; dorsal alitrunk without standing hairs, with fine and apressed pubescence; AL (alitrunk length, Weber's) 0.85 mm.

Petiole and postpetiole of equal width in dorsal view; in profile, the petiole node higher than the postpetiole; postpetiole with one pair of backward directed hairs. First gastric tergite with 0–4 standing hairs apart from apical row.

Female (figs. 1 E–G)

Length 4.85–4.95 mm; head, propodeum, petioles and gaster reddish brown; promesonotum brownish red; sculpture absent except for the hair pits, the striated mandibles, sides of head in front of and surrounding the eyes with superficial striae and frontal lobes and front with very superficial striae; posterior dorsal face of petiole with 1–2 superficial transverse striae and dorsal face of postpetiole with more developed transverse striae; in one female the first gastral tergite is weakly shagreened. Clypeus as in workers; head broader; HL 0.95 mm, HW 0.80–0.85 mm, CI 84–89; maximum diameter of eye 0.23–0.25 × HW, with 80–86 ommatidia; ocelli distinct but poorly developed; scape just reaching occiput; SL 0.78–0.80 mm, SI 94–98; SL × 100/HL 82–84; antennal club of three segments; frontal lobes short but well developed. Head very pilose, as compared with workers, with appressed pilosity and two rows of 9 hairs, diverging posteriorly, from the middle of clypeus to occipital corners; mandibles with 4 teeth; palp formula 2 : 2. Eyes with micropilosity.

Alitrunk apterous, with reduced flight sclerites; pronotum very developed, forming part of dorsal alitrunk when viewed in profile; mesoscutellum completely fused with mesoscutum, forming a flat sclerite in side view; metanotum present; propodeum with two rounded, spoon-shaped protuberances; whole alitrunk except dorsum of propodeum covered with appressed to suberect pilosity of different length. AL 1.42–1.45 mm; PW 0.55 mm.

Petiole and postpetiole very developed, with long pilosity directed backwards; petiole scale-like, with a concavity in the posterior face devoided of pilosity; petiole width 0.38 mm; postpetiole somewhat trapezoidal in dorsal view; postpetiole width 0.49 mm, whole gaster, underside also, covered with long pilosity.

Holotype: Worker, TL 2.8, HL 0.70, HW 0.55, CI 78, SL 0.62, SI 113, PW 0.35, AL 0.85; Cape Verde Islands: São Nicolau, Monte Gordo, 9.15.12.1953, LINDBERG leg. Deposited in the British Museum (Natural History).

Paratypes: 4 workers and 4 females (two of them lack head) with same data as holotype; deposited 2 workers and 2 females in the British Museum; the rest in author's collections.

The species is named after BARRY BOLTON (BMNH) – after the superb revision of afrotropical *Monomorium* he deserves it.

SYSTEMATIC POSITION

The species is a member of the *salomonis*-group as defined by BOLTON (1987) and would not key to any similar species in the afrotropical region; several *Monomorium* species of the *salomonis*-group have apterous or ergatoid females,

though in different degrees of thoracic sclerites reduction; we cannot but agree with BOLTON (1986) when considering this group a polyphyletic lineage, aptery not being an apomorphic character. Females of *M. boltoni* are very conspicuous and easily recognisable: the two propodeal projections are unique among known *Monomorium* females; from the known species with apterous or ergatoid females (BOLTON, 1987: 329), the workers differ mainly by the thoracic pilosity and body sculpture; closest worker relatives seem to be *M. medinae* FOREL, *M. hesperium* EMERY and an unidentified species from Fuerteventura (Canary Islands), all with different ergatoid females and workers with alitrunk devoid of pilosity and shiny appearance; *M. boltoni* differs from all three by its absolute absence of thoracic sculpture; *M. hesperium* has a pair of hairs on the petiole, a more pronounced mesopropodeal impression, different propodeal profile and superficially reticulated, but brilliant, mesopleuron; *M. medinae* has a reticulated, nearly opaque, mesopleuron and different propodeal profile (similar to *M. hesperium);* the species from Fuerteventura is darker in colour and has the mesopleuron reticulated as in *M. medinae;* in summary, *M. boltoni* is characterized in the workers by the absence of thoracic pilosity, absence of thoracic sculpture and for the single pair of hairs on the postpetiole.

The western Atlantic archipelagoes (Azores, Madeira, Canaries, Cape Verde) appear to have developed its own *Monomorium* fauna and, due to female aptery, some species offer a beautiful image of restricted populations; this loss of dispersal power is the most conspicuous characteristic of adaptation to insular environments (MAC ARTHUR & WILSON, 1967); careful collections in many smaller and unexplored islands and the revision of the extensive Lindberg collections (WELLENIUS, 1955) and the identifications of DONISTHORPE (1936) could provide more examples of this interesting adaptive radiation.

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