FORMICA DUSMETI EMERY, 1909, AN IBERIAN ENDEMIC ANT SPECIES: DESCRIPTION OF THE MALE AND DISTRIBUTION (HYMENOPTERA: FORMICIDAE)

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Abstract.—The male of the iberian endemic ant Formica dusmeti Emery, 1909 is described. The shorter scape and hairless appendices differentiate those males from those of the closest species F. frontalis Santschi and F. truncorum Fabricius. The distribution of F. dusmeti is updated.

Key words.—Hymenoptera, Formicidae, Formica dusmeti, Iberian, male, morphology.

INTRODUCTION

F. dusmeti is a wood ant, constructing dome nests with plant debris or pine needles. Nests may be found under stones though sometimes they use old stumps, always with plant remains accumulated near the nest entrance or covering more or less the stump. Its biology is probably similar to the well known “rufa-group”, “Le mâle diffère peu de celui de truncorum” (Santschi 1932). This is the short and uninformative description of the male of Formica dusmeti Emery, 1909. Santschi was right. This species, whose biology is virtually unknown, has had a rather confusing history. Tintin and Martinez (1998) when describing the male of F. frontalis Santschi, 1919, also an Iberian species, have correctly disentangled the puzzling of those two Iberian endemics. F. frontalis had never been before formally recognised as a good species. Both taxa have been variously related to F. truncorum Fabricius, 1804. The three species F. truncorum Fabricius, F. dusmeti Emery and F. frontalis Santschi have a similar coloration because of the reddish head with a dark spot of the workers and queens and are probably a monophyletic group. The history of taxonomical changes concerning both species has been summarised by Tintin and Martinez (1998).

The finding of a huge population of F. dusmeti in the Pyrenees allowed us to find sufficient males, that elosed from cocoons belonging to two nests from two localities. Here we describe those males and offer the distribution for the species, as is presently known. Cephalic measures on 20 males, mm (minimum–mean–maximum); other measurements based on 10 males. The morphology (25 males studied) follows Francoeur (1973):

SI – scape index (SL*100/HW)
ED – maximum eye diameter
EI – eye index (ED*100/HW)
AW – alitrunk width; maximum trunk width, at the level of tegulae
AL – alitrunk length
AI – alitrunk index (AW*100/TL)
PH – petiole height; maximum petiole height in side view.

Formica dusmeti Emery, 1909

Material examined. Description based on material from Besencarán, Lleida, 1750 m, 4 July 1991, leg. X. Espadaler, and Aránser, Lleida, 1800 m, 12 July 1997, leg. X. Espadaler.

Description. Male (Figs. 1, 2). HL 1.40–1.52–1.64; HW 1.72–1.88–2.08; SL 1.44–1.58–1.68; CI 116.2–123.6–129.7; SL 79.1–83.9–88.8; ED 0.72–0.75–0.80; EI 37.5–40.3–41.6; AL 3.20–3.57–3.72; AW 2.00–2.17–2.240; AI 53.7–60.9–60.2; PH 0.92–1.02–1.24.

Body entirely black. Tip of mandibles and legs, except for the blackened coxae, reddish yellow. In a few males one or two terminal tarsomeres are darkened. External genitalia yellowish. Wings infuscated.

Head broader than long. Occipital margin variable, from slightly convex to slightly concave. Ocelli 0.16. Frontal furrow as a very fine shining line, sometimes nearly obsolete, not reaching the median ocellus. Clypeus with or without a carina; if present it runs from the middle to the anterior margin. In a half of the males there is a transverse depression, visible in profile, running near the anterior margin. Mandibles usually with a single apical tooth; in a few males the basal margin is not rounded but produced in a sharp corner as a second poorly developed tooth. Palp formula 6:4. Head surface with subdued shine. Frontal triangle shining.
ACKNOWLEDGMENTS

To the staff of the Museu de História Natural de Coimbra for comments on the original material of Sant weichia and C. Barrei Urbani (then at the Naturhistorisches Museum Basel) for the loan of type material of F. frontalis and to E. Yamazaki (Gifu, Japan) for the loan of samples of F. truncorum. We also thank Cedric A. Collingwood for the kindness and patience in his distribution of field diaries.

REFERENCES


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Table 1. Comparison of biometric measurements of males of F. truncorum (Cerina, Lleida; 12 July 1987; Espadaler leg.) and F. truncorum (Sant Llorenç de Morunys, Lleida; 10 July 1985; Espadaler leg.). Measurements in mm. *P* for independent samples, with sequential Bonferroni's correction. Not tested for abbreviations.

<table>
<thead>
<tr>
<th>Character</th>
<th>Sant Llorenç de Morunys (Lleida)</th>
<th>Cerina, Lleida (12 July 1987)</th>
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<tbody>
<tr>
<td>E</td>
<td>1.87 ± 0.64</td>
<td>1.93 ± 0.46</td>
</tr>
<tr>
<td>W</td>
<td>1.64 ± 0.43</td>
<td>1.80 ± 0.54</td>
</tr>
<tr>
<td>A</td>
<td>0.77 ± 0.50</td>
<td>0.75 ± 0.42</td>
</tr>
<tr>
<td>PH</td>
<td>0.97 ± 0.46</td>
<td>1.02 ± 0.46</td>
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</tbody>
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Table 2. Morphological differences of males of F. truncorum (Cerina, Lleida) and F. truncorum (Sant Llorenç de Morunys, Lleida).

<table>
<thead>
<tr>
<th>Character</th>
<th>Sant Llorenç de Morunys (Lleida)</th>
<th>Cerina, Lleida (12 July 1987)</th>
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</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>&gt;25 long hairs</td>
<td>&gt;25 short hairs</td>
</tr>
<tr>
<td>Scape</td>
<td>hair</td>
<td>hair</td>
</tr>
<tr>
<td>Tarsus</td>
<td>subect hair</td>
<td>subect hair</td>
</tr>
<tr>
<td>Genae</td>
<td>subectsubcumbent hairs</td>
<td>subectsubcumbent hairs</td>
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</tbody>
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The male of F. truncorum, as compared with those of F. frontalis, has a shorter scape for a given head width and, accordingly, a different scape index (Table 1). None of the other measured variables do show a statistical difference between these two species. A summary of morphological differences we have found to differentiate the males of F. truncorum and F. frontalis are in Table 2; see also Figs 1-4. F. truncorum males (Figs 5 and 6) are also very distinct from both Iberian endemic species, with a shorter and hairier scape of F. truncorum, its hairless tibiae and merely pubescent genae allow for a differentiation of both species. Sant and Martines (1986) describe the eyes and scape of the males of F. truncorum as hairless. In a series of > 500 males of F. truncorum we have collected from Sant Llorenç de Morunys (Lleida), eyes have some minute hairs and scapes have many short, subcumbent hairs on dorsal and ventral surfaces. There is probably intraspecific variability of the males F. truncorum in eye microscopically and scape pubescence.