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TWO NEW SPECIES OF THE FAMILY PHYTOSEIIDAE
(PARASITIFORMES) FROM LEBANON

BY A. BAYAN *

ABSTRACT: *Typhlodromus elmassri* n. sp. and *T. elhariri* n. sp. of the family Phytoseiidae are described and illustrated. The former species was found in galleries formed by the caterpillars of a lepidopteran insect in olive leaves in several olive growing regions of Lebanon, and the second one on cedar trees in the Barouk forest.

INTRODUCTION

Ten species of the family Phytoseiidae were reported from Lebanon [CHANT, 1959; DOSSE and MUSA, 1967; BAYAN, 1985]. The present paper describes two new additional species in the family.

Collected mite specimens were cleared in lactic acid and mounted in a polyvinyl medium.

Setal nomenclature following ROWELL et al. (1978); sigillotaxy and adenotaxy following ATHIAS-HENRIOT, 1969, 1970 *sensu* RAGUSA and SWIRSKI (1976); structures of insemination apparatus given by SCHUSTER and SMITH, 1960 *sensu* APONTE and McMurtry (1987) and terminology of several morphological structures adopted by MUMA and DENMARK (1970) were followed. Measurements are in micrometres and represent averages when more than one specimen is available.

*Typhlodromus elmassri* n. sp.

(Figs. 1-9)

**FEMALE** (8 females):

Dorsal scutum (Fig. 1) imbricate throughout, except the area between setae S4, S5 and Z5 which is reticulated; 384 long and 179 wide at level of waist, with 18 pairs of setae: one vertical; 10 laterals; 2 medians and one clinal. Sublateral setae on lateral integument. Three pairs of solenostomes (s), 11 pairs of poroides (p) and the muscle marks (mm) are illustrated in fig. 1. Dorsal and sublateral setae except Z4 and Z5 smooth and thickened. Setae Z4 and Z5 serrated, the latter is knobbed and inserted on tubercles. Measurements of dorsal and sublateral setae: \( j_1 = 22; j_3 = 26; j_4 = 16; j_5 = 16; j_6 = 18; j_2 = 21; j_5 = 10; \)

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Fig. 1-6: *Typhlodromus elmassri* n. sp., female.

1. — Dorsal surface. 2. — Ventral surface. 3. — Peritremal scutum. 4. — Insemination apparatus. 5. — Chelicera. 6. — Genu, tibia and basitarsus of leg IV.
z2 = 18; z3 = 21; z4 = 21; z5 = 16; Z4 = 35;
z5 = 53; s4 = 23; s6 = 27; S2 = 28; S4 = 32;
S5 = 18; r3 = 24; R1 = 19.

On the ventral surface (Fig. 2) there are three pairs of sternal setae (Sst). Metasternal setae on scuta (Ms). Width of genital scutum (Gs) at level of genital setae 70. Ventrianal scutum (VA) pentagonal and smooth, with four pairs of preanal setae (JV1, JV2, JV3, ZV2); 109 long, 88 wide at anterior margin and 77 at level of anus. Ventrolateral setae (JV4, ZV1, ZV3) and caudal seta (ZV5) on integument surrounding ventrianal scutum. Caudal seta hamate; 19 long. Primary metapodal platelet 19 long and 4 wide; secondary metapodal platelet 9 long (Fig. 2, Mp). Peritreme (pe) extending anteriorly to level of j3. Peritremal scutum as shown in Fig. 3.

Insemination apparatus (Fig. 4) with tubular cervix (ce); 14 long, pear-like vesicle (ve) and spermatophore (sp), atrium (at) cup-shaped, major duct (ma) twice as cervix. Fixed finger (Fj) of chelicera (Fig. 5) with four denticules (dn) and pilus dentilis (pd); movable finger (Mj) with three denticules; 26 long. Chaetotactic formula of genu II:

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Measurements of legs and palp as follows: leg I = 256; leg II = 243; leg III = 237; leg IV = 307; palp = 141. Length of macrosetae on genu IV and tibia IV 14 each; on basitarsus IV 29.

REMARKS: The new species belongs to rhenanus species group (CHANT, 1959). It differs from Typhlodromus ndibu (PRITCHARD and BAKER, 1962) in the shape of caudal seta which is tapered in the former and knobbed in the second one, the shape of insemination apparatus and the absence of poroids on ventrianal scutum and its surrounding integument; in T. ndibu there are one pair of poroids on ventrianal scutum and four pairs on the surrounding integument. T. elmassri n. sp. differs from T. athenas Swirski and Ragusa (RAGUSA and SWIRSKI, 1976) in the shape of seta Z5 which is tapered in T. athenas and knobbed in the new species; the number of macrosetae on leg IV (in the new species there is a knobbed macrosetae both on genu IV, tibia IV and basitarsus IV in T. athenas); setae on dorsal scutum are thicker in the new species than in T. athenas.

TYPE MATERIAL: Holotype (♂), allotype (♂), 1 ♀, 2♂♂, 1 teleiochrysalis and 1 nymph, Niha, El-Shouf, 16 April 1985; and 2♂♂, Danié (North Lebanon), 18 Nov., 1985; 1 ♀, Shhour (South Lebanon), 26 May, 1986 and 1 ♀, Aramoun (near Beirut), 22 July, 1986 deposited in the Collection of the Lebanese National Council for Scientific Research, Beirut, Lebanon. One ♀ and 1 ♂ (slide), Shhour, 26 May, 1986 (c/o Dr. D. A. CHANT, Canadian National Collection), one ♀, Danié, 18 Nov., 1985 and 1 ♂, Niha, El-Shouf, 16 April, 1985 (c/o Dr. Y. COINEAU, Muséum National d'Histoire Naturelle, Paris).

The new species is named in honour of Dr. TALIH EL-MASSRI (National Council for scientific Re-
Figs. 7-9: *Typhlodromus elmasri* n. sp., male.

search, Beirut, Lebanon) who collected the first specimen of this mite.

Typhlodromus elhariri n. sp.
(Figs. 10-18)

**FEMALE (5 females):**

Dorsal scutum (Fig. 10) reticulated; 410 long and 230 wide at level of waist, with 19 pairs of setae; one vertical; 10 laterals; 3 medians; 4 dorsals and one clunal. Sublateral setae on lateral integument. Two pairs of solenostomes and 7 pairs of poroides present on dorsal scutum. Dorsal and sublateral setae short and smooth; their measurements are: $j_1 = 19$; $j_3$, $z_2$, $z_3$, $z_4$, $s_4$, $s_6$, $S_2$, $S_4$, $S_5$, $Z_4$, $r_3$, $R_1 = 16$; $j_4$, $j_5$, $z_5$, $z_6 = 11$; $J_2 = 14$; $J_5 = 8$; $Z_5 = 21$.

On the ventral surface (Fig. 11) there are three pairs of setae. Metasternal setae on scutum. Genital scutum 51 wide at level of genital setae. Ventrianal scutum elongate, with distinct waist and three pairs of ventrianal setae. Length of ventrianal scutum 115, width 49 at level of waist; with four pairs of setae on its surrounding integument. Caudal seta 18 long. Metapodal platelet bacillate; primary metapodal platelet 32 long and 2 wide. Secondary metapodal platelet 9 long. Peritreme extending anteriorly to level of $j_1$. Peritremal scutum as illustrated in Fig. 12.

Cervix of insemination apparatus (Fig. 13) fundibuliform, 20 long. Fixed finger of chelicera (Fig. 14) bidentate with pilus dentilis; movable finger unidentate, 22 long. Measurements of legs and palp: leg I = 333; leg II = 269; leg III = 275; leg IV = 353; palp = 160. Length of macroseta on basitarsus IV 26.

**REMARKS:** Typhlodromus elhariri belongs to ecclesiasticus species group (CHANT and YOSHIDA-SHAUL, 1986). It is similar to species such as T. loricatus (Wainstein), T. bregetovae (Wainstein and Beglyarov), T. neosoleiger Gupta and T. ignavus (Chaudhri). It differs from these species mainly in the absence of JV3 on ventrianal scutum, the presence of macroseta on basitarsus IV and the unidentate movable finger of chelicera.

**TYPE MATERIAL:** Holotype (♀), allotype (♂) and 1 ♀, Barouk forest, 10 July, 1986; and 1 ♀ and 1 nymph from the same locations, 26 August, 1986 deposited in the Collection of the Lebanese National Council for Scientific Research, Beirut, Lebanon; 1 ♀ (c/o Dr. D. A. CHANT, Canadian National Collection), Barouk forest, 10 July, 1986; and 1 ♀ (c/o Dr. Y. COINEAU, Musée National d'Histoire Naturelle, Paris, France), Barouk forest, 10 July, 1986.

The new species is named in honour of Mr. RAIFIC EL-HARIRI for his valuable contribution in helping the Lebanese people.

**MALE (one male):**

Dorsal scutum ovate; 308 long and 193 wide at level of $R_1$, with 21 pairs of setae, two pairs of solenostomes, 10 pairs of poroides and the muscle marks illustrated in Fig. 16. Sublateral setae on dorsal scutum. Measurements of dorsal and sublateral setae: $j_1 = 14$; $j_3$, $z_2$, $z_3$, $z_4$, $s_4$, $s_6$, $S_2$, $S_4$, $S_5$, $Z_4$, $r_3$, $R_1 = 13$; $j_4$, $j_5$, $j_6$, $z_5$, $z_6 = 10$; $J_2 = 11$; $J_5 = 6$; $Z_5 = 16$.

Ventrianal scutum (Fig. 17) with three pairs of ventrianal setae; 112 long, 152 wide at anterior margin and 64 at level of anus. Ventrianal scutum is fused with peritremal scutum. Caudal seta on integument surrounding ventrianal scutum; 11 long.

Spermatodactyl as in Fig. 18. Fixed finger of chelicera bidentate with pilus dentilis; movable finger unidentate, 22 long. Measurements of legs and palp: leg I = 333; leg II = 269; leg III = 275; leg IV = 353; palp = 160. Length of macroseta on basitarsus IV 26.
Figs. 10-15: *Typhlodromus elhariri* n. sp., female.
ACKNOWLEDGEMENTS

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