

Short communication

## First description of the male *Solter iranensis* (Neuroptera: Myrmeleontidae) from Iran

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### اولین توصیف جنس نر گونه *Solter iranensis* (Neuroptera: Myrmeleontidae) از ایران

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#### چکیده

در طی مطالعه شیره‌مورچه‌های نگهداری شده در موزه حشرات هایک میرزایانس، نمونه‌هایی از جنس *Solter* مورد بررسی و به نام *Solter iranensis* شناسایی شد. توصیف اولیه گونه، بر پایه تک نمونه ماده‌ای که از منطقه دربند استان تهران جمع‌آوری شده بود، انجام شد. ویژگی تشخیصی جنس ماده این گونه بر اساس شکل استرنیت هفتم شکم می‌باشد. در اینجا برای اولین بار جنس نر این گونه از ایران توصیف شده است.

واژه‌های کلیدی: بال‌توری، *Solter*، Myrmeleontidae، فون، ایران

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The genus *Solter*, which has been originally described by Navás (1912), consists of 29 species worldwide (Badano *et al.*, 2014). The members of the genus mostly occur in the Middle East region and Saudi Arabia (Stange, 2004; Mansell, 2013; Michel, 2014). The species of *Solter* are mostly medium sized and recognized by the following characters: Short clavate antennae; Cup (posterior of cubital vein) like a short longitudinal vein on forewing, arising near the base of crossvein, connected to 1A (first anal vein); 2A (second anal vein) basally parallel with 1A curved towards 3A (third anal vein); presectoral area of hind wings with three or more crossveins; pilula axillaris present on male hind wing; tarsomere 5 longer than tarsomere 1-4 combined; spur of tibia curved and longer than first tarsomere (Mansell, 2013).

Up to now 8 species in the genus including: *Solter vartianae* Hölzel, *S. iranensis* Hölzel (Hölzel, 1967), *S. hardei* Hölzel (Hölzel, 1968), *S. felderi* Navás (Hölzel, 1969; Krivokhatsky *et al.*, 2015), *S. gaudryi* Navás (Hölzel, 1972), *S. resslis* Hölzel, *S. robustus* Hölzel (Hölzel, 1972) as well as *S. ledereri* Navás (Hölzel, 1972; Mirmoayedi *et al.*, 2015) have been reported from Iran. *S. iranensis* which is also known from Turkmenistan (Krivokhatsky, 1994) was described based on a single female specimen from Iran (Hölzel, 1967). During the study of the family Myrmeleontidae housed in the Hayk Mirzayans Insect Museum, Tehran,

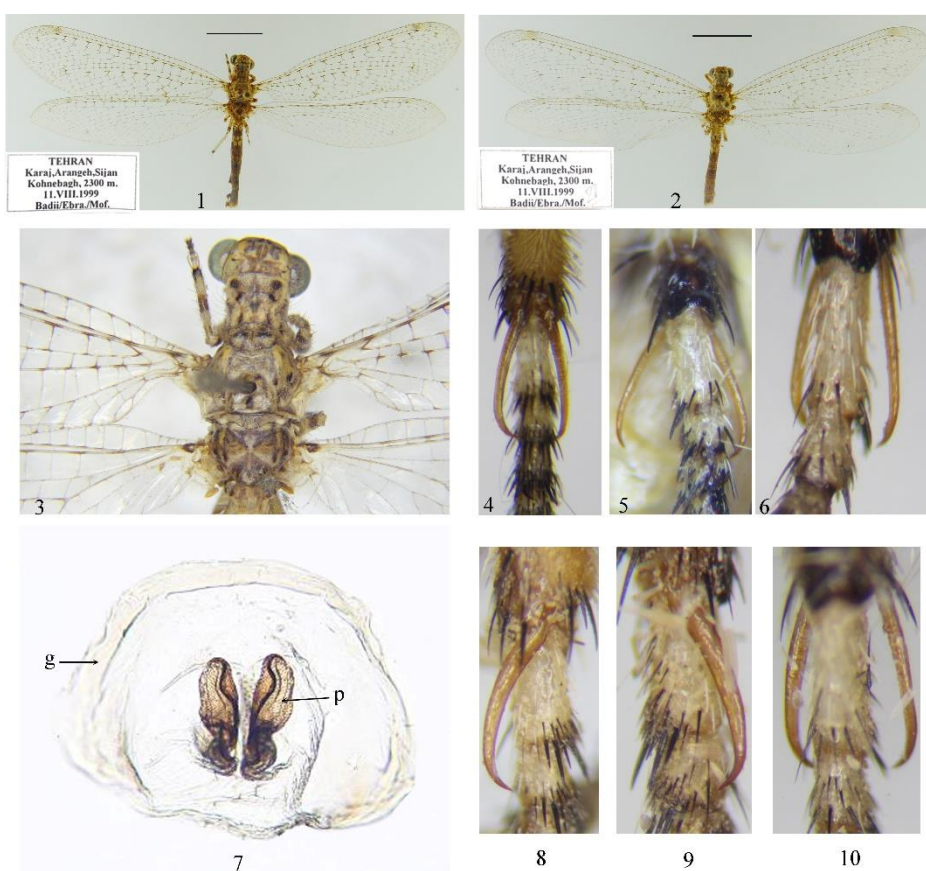
the specimens of both sexes of *S. iranensis* were identified, and as a result, the male of this species is described for the first time.

***Solter iranensis* Hölzel (Figs 1-7, 11-13)**

***Solter iranensis* Hölzel, 1967:106.**

Material examined: 2♂ 1♀ Khorasan-e Razavi province, Mashhad, Akhlohad, 36°15'38"N, 59°37'01"E, 1400m, 14VII.1971, leg. Pazuki, Ayatolahi; 1♂ 1♀ Tehran (Alborz) province, Karaj, Arangeh, Sijan Kohnebagh, 2300m, 11. VIII.1999. leg. Badii, Ebrahimi, Mofidi-Neyestanak.

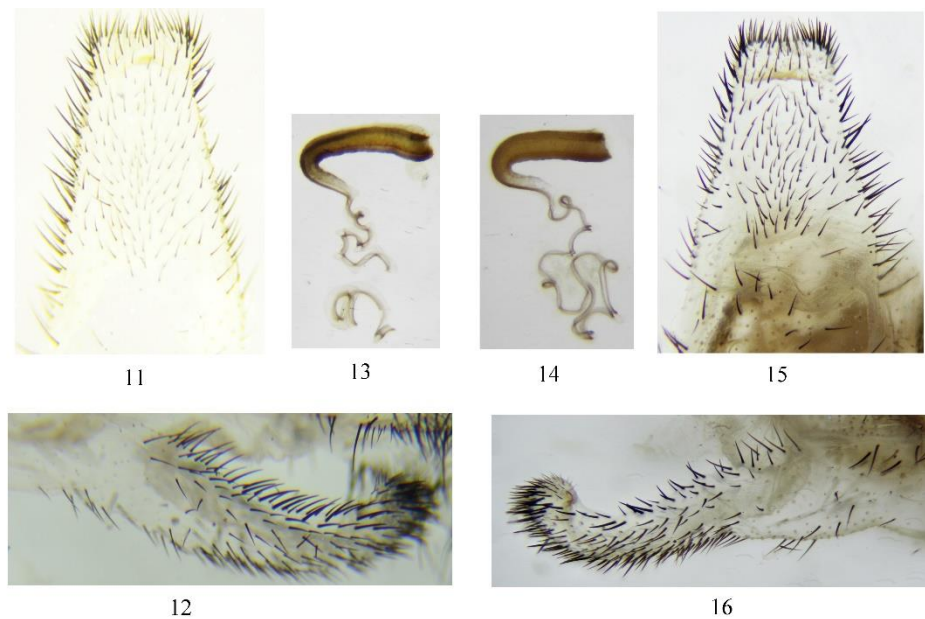
Description of the male (Based on 3 specimens): Forewing 37-39 mm, Hind wing 32-34 mm. Medium sized. Body light brown with dark marks (Fig. 1). Labrum, clypeus and frons yellow. Vertex raised, with dark transverse markings, covered with short black hairs (Fig. 3). Antennae clavate, relatively short and almost equal to the compound length of head and pronotum, inner area between antennae and inner and outer of scape dark brown. Prothorax yellow brownish, clearly narrower than other parts of thorax, longer than wide, with longitudinal brown marks on central and posterior margins, with long white setae on posterior margin (Fig. 3). Mesonotum: raised with brown marks. Metanotum: normal with brown marks (Fig. 3). Leg yellow brownish. Femora and tibiae of the fore and middle legs with black and white erect setae, black erect setae on hind femora and tibiae. Fore femora with dark brown marks medially and apically. Middle and hind femora only with apically mark. Fore and middle tibiae with dark brown marks basally, medially and apically. Hind tibiae without middle mark. All spurs brown and slightly curve, length of fore and middle tibia spur equal tarsomere 1+2 (Figs 4, 5), Hind spur slightly longer of first tarsomere (Fig. 6). Length of first tarsomere in front and middle tarsus equal tarsomere 2+3 and longer in hind tarsus, length of tarsomeres 2, 3 and 4 equal in all tarsus, tarsomere 5 as long as tarsomeres 1-4 combined. Wings: apices sub-acute, membrane hyaline, venation light with dark line marks. Forewings: with a pale shadow mark near the end of Cua1 and Cua2, outer and inner of Cubital area respectively and another one end of hypostigmatic cell. Pterostigma pale basally and indistinct distally. Apex area with Stair crossveins. Presectoral area with 7-8 crossvein. Hind wing: shorter than forewing. pilula axillaris present. Pterostigma pale basally. Apex area without stair crossveins. Presectoral area with 4-5 crossvein. Abdomen: brown, first and third segments yellow. Beside of first and second segments with long white hairs, others segments covered with short black hairs. Gonarcus horseshoe-shaped and parameres central (Fig. 7).



**Figs 1-10.** *Solter iranensis* (1-7): **1.** Male, habitus in dorsal view; **2.** Female, habitus in dorsal view; **3.** Male, Head, thorax and base of wings in dorsal view; **4.** Male, front tibia spur in ventral view; **5.** Male, middle tibia spur in dorsal view; **6.** Male, hind tibia spur in dorsal view; **7.** Male, gonarcus (g) and parameres (p) in caudal view. *S. ledereri* (8-10): **8.** Male, front tibia spur in lateral view; **9.** Male, middle tibia spur in lateral view; **10.** Male, hind tibia spur in dorsal view. (Scale: 1 cm).

Female specimens: Forewing 36-37 mm, Hind wing 32-34 mm. The external morphological characters similar with the male specimens. Seventh sternite of abdomen long and distinct from other segments (Figs 11, 12). The angle of curvature of the spermathecal tube almost open (Fig. 13).

**Diagnosis:** *Solter iranensis* is strikingly similar to *S. ledereri*, however both species are separated by the length of tibiae spurs and shape of sternite VII of female abdomen (Hölzel, 1972), the length of front and middle tibia spurs in examined specimens of *S. iranensis* are equal to two first tarsomeres combined, and spur of hind tibia is slightly longer than first tarsomere (Figs 4, 5, 6), while slightly shorter in *S. ledereri* (Figs 8, 9, 10). The shape of sternite VII of female *S. iranensis* (Figs 11, 12) and *S. ledereri* (Figs 15, 16) are remarkably different. The angle of curvature of spermathecal tube in *S. iranensis* (Fig. 13) is relatively wider than *S. ledereri* (Fig. 14).



**Figs. 11-16.** *S. iranensis* (11-13): 11. Female, sternite VII in ventral view; 12. Female, sternite VII in lateral view; 13. Female, spermathecal tube in lateral view. *S. ledereri* (14-16): 14. Female, spermathecal tube in lateral view; 15. Female, sternite VII in ventral view; 16. Female, sternite VII in lateral view.

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