

A NEW *DIADOCHIA* PÜNGELER, 1914 SPECIES FROM IRAN
(LEPIDOPTERA: NOCTUIDAE, XYLENINAE)

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A new species of the genus *Diadochia* PÜNGELER, 1914, *Diadochia sacimima* sp. n. from Iran is described. The genus and its two species, *D. sacimima* and *D. stigmatica* are first reported for the fauna of Iran. The adults and the male genitalia of both species are illustrated.

Key words: Xyleninae, *Diadochia*, *Scythocentropus*, new species, Iran

INTRODUCTION

The recent exploration of the Noctuidae fauna of Sistan va Balouchestan resulted in a number of new discoveries (e.g. SHIRVANI *et al.* 2008). One of these discoveries is a new eremic *Diadochia* PÜNGELER, 1914 species. The present paper describes this new species that was collected in November, 2009 in SE Iran. The genus *Diadochia* and its other member, *D. stigmatica* WILTSHIRE, 1984 are here reported for the first time for Iran. Both species and their male genitalia are described and illustrated.

The definition and species content of the genus *Diadochia* and its closest related genera, *Scythocentropus* SPEISER, 1902 and *Boursinia* BRANDT, 1938, has been changed during the last twenty years (see HACKER 1990, RONKAY *et al.* 1995, HACKER 1996, 1998, 2001, FIBIGER & HACKER 2007). *Diadochia* includes two species, *D. saca* PÜNGELER, 1914, and *D. stigmatica* WILTSHIRE, 1984 (HACKER 2001). *Scythocentropus* includes six species, *S. inquinata* (MABILLE, 1888), *S. mercedes* PINKER, 1974, *S. misella* (PÜNGELER, 1908), *S. poliades* (HAMPSON, 1907), *S. scripturosa* (EVERSMANN, 1854) and *S. eberti* HACKER, 2001. Species included in *Boursinia* are *B. candida* (BOURSIN, 1964), *B. deceptrix* (STAUDINGER, 1900), *B. ferdovsi* (BRANDT, 1941), *B. discordans* (BOURSIN, 1940), *B. lithoxylea* (A. BANG-HAAS, 1912), *B. malitiosa* (ALPHÉRAKY, 1892) (the taxon *esurialis* (PÜNGELER, 1914) is correctly synonymised by BOURSIN (1964) with *malitiosa*), *B. oxygramma* BRANDT, 1938 and *B. symmicta* BRANDT, 1938. The species of these three genera (some of them were temporarily placed into the genus *Ana-*

mecia BOURSIN, 1958) often display overlapping external features and the separation of the clade into genera has been generally based on certain characters of the male genitalia. The generic lineage is also related to *Pseudoligia* STAUDINGER, 1901, including the type species, *P. similitaria* (MÉNÉTRIES, 1849). Certain external and genital characters indicate a closer relationship to *Pseudohadena* ALPHÉRAKY, 1889 s. str. (see below).

The diagnostic characters of *Diadochia* are the less developed cucullus and corona, the deltoidal juxta with long and narrow dorso-apical process (like in *Pseudohadena* s. str.); the long, sclerotised ampulla with short but strong, S-shaped basal plate (“clasper” or “harpe”); the long and narrowly tubular vesica armed by a few strong but short, broad-based, drawing-pin-like or thorn-like basal and medial cornuti, and a small group of fine spinules terminally. In comparison, *Scythocentropus* has a well-developed, broad cucullus with long, regular corona, shorter, rather than trapezoidal juxta without medio-apical process; a weaker ampulla that is rather distinct from the long, almost straight clasper; the digitus is longer than the ampulla; the vesica is shorter and basally more ample; and the armature consists of longer, less broad-based cornuti, one of them is situated terminally and followed by fine, variably long spinules.

This generic complex comprises exclusively eremic species, having one brood per year with autumnal adults (flight period: October–November). The range of the clade is really large, extending from the Maghreb countries and the Canary Islands throughout the North African, Arabian and western Asiatic deserts to southern Pakistan (see HACKER 1998, FIBIGER & HACKER 2007, WILTSHIRE 1984).

The description of the third species of *Diadochia* is given below.

Abbreviations – HNHM – Hungarian Natural History Museum, Budapest, Hungary, SBUK – Shahid Bahonar University of Kerman, Iran, ZMHU – Zoological Museum of the Humboldt University, Berlin, Germany.

SYSTEMATIC PART

***Diadochia sacimima* SHIRVANI et RONKAY sp. n.**

(Figs 1, 4–5)

Type material. Holotype: male, Iran, Prov. Sistan va Balouchestan, Nosratabad, 1370 m, 29°49'37"N, 59°53'15"E, 19.11.2009, leg. E. KAZEMI, slide No. AS446m (coll. SBUK).

Paratypes: 4 males, with the same data as the holotype; 4 males, Iran, Prov. Sistan va Balouchestan, Zahedan, 1550 m, 29°21'53"N, 69°47'50"E, 17.11.2009, leg. E. KAZEMI (coll. SBUK). Slide No AS447m.

Diagnosis. The closest relative of *D. sacimima* is *D. saca*. The new species differs externally from the Turkestanian sister taxon by its more variegated (less uniformly pale grey) forewing with narrower, more lunulate and much sharper defined reniform stigma, better marked, dark grey orbicular stigma, darker, brown-grey suffused marginal area and the darker grey irrorated hindwing with well-defined discal spot (on both surfaces).

The male genitalia of *D. sacimima* are very similar to those of *D. saca*, they differ by the following characters: basal plate of the juxta is broader in *D. sacimima*; penicular lobes are broader but shorter; vinculum is considerably larger and more curved dorsad; ampulla is remarkably finer, more evenly tapered towards apex; the subbasal two small cornuti are much smaller than in *D. saca* (this feature is variable, the size of the small cornuti appear to be somewhat different in all specimens investigated), and the medial cornutus is somewhat shorter in *D. sacimima* than in *D. saca*.

The two sister-species are easily distinguished from the third member of the genus by their more elongate and apically more pointed forewings with less distinct forewing pattern and with more reduced crosslines and much smaller orbicular and reniform stigmata. The genitalia of the two species are also conspicuously different from those of *D. stigmatica* by the absence of the digitus and the thicker and straighter ampulla.

Description. External morphology (Fig. 1) – Wingspan 31–33 mm, length of forewing 15–16 mm. Male: antenna ciliate with short, dense cilia, axis dorsally covered with greyish-white scales. Head small, frons with cap-like frontal prominence; eyes large, globular; palpi small, ventrally with long hairs, third segment short. Pubescence of head, collar, tegulae and thorax ashy-grey scattered with blackish-grey hairs; collar dorsally with fine dark line; tegulae marked with black line; thorax ventrally covered with long, fine grey hairs. Forewing ground colour ochreous-grey mixed with light ashy grey-brown; narrow black basal dash present; crosslines weak, antemedial and postmedial lines obsolescent. Noctuid maculation complete, ashy-white filling of all stigmata paler than ground colour; orbicular stigma elongate, reniform stigma large, both stigmata have dark grey centres; claviform stigma elongate, outlined with dark grey scales. Subterminal line darker than ground colour, in some specimens defined by dark greyish arrowheads, terminal line present, fine, dark grey. Fringes variegated with white and grey, basal half darker. Hindwing white, finely irrorated with scattered grey scales, outer half darker greyish; discal spot present; terminal line dark, spotted along veins; fringes white, with a few ashy scales; inner margin with long, white hairs. Underside of both wings grey, that of forewing darker in costal and marginal areas; discal spots present on both wings. Male genitalia (Figs 4–5) – Uncus short, medially curved and dilated, distally tapering, tegumen medium-long, penicular lobes well-developed, hairy and apically rounded; juxta deltoidal, with apical process tapering. Vinculum V-shaped; valva slightly tapered, basal half of costal margin and sacculus heavily sclerotised; sacculus relatively short, approximately one third length of valva; editum absent, represented by with fine hairs; ampulla thick, basally slightly curved then straight; clasper relatively short, somewhat S-shaped, fused with base of ampulla; cucullus broad triangular, apically finely pointed; corona represented by row of short, fine coronal setae and some hairs. Aedeagus curved; vesica tubular, projecting ventro-laterally with complete coiling, first half with two small diverticula, each with strong apical cornutus, each cornutus



Figs 1–9. 1–3 = Adults: 1 = *Diadochia sacimima* SHIRVANI et RONKAY sp. n., holotype, male, Iran; 2 = *D. saca* PÜNGELER, holotype, male, [Uzbekistan] Syr-Darya, Baigacum; 3 = *D. stigmatica* WILTSHIRE male, Iran. 4–9. Male genitalia: 4–5 = *D. sacimima* SHIRVANI et RONKAY sp. n., holotype, Iran; 6–7 = *D. saca* PÜNGELER, holotype, Syr-Darya; 8–9 = *D. stigmatica* WILTSHIRE, Iran

located on basal sclerotized plate; small terminal field of short cornuti located at dorsal end of vesica, opposite to small, semiglobular terminal diverticulum.

Bionomy and distribution. Univoltine late autumnal species. The adults were collected in the second decade of November, in two locations in SE Iran. *Diadochia sacimima* inhabits the foothills (less than 1600 m a.s.l.) with low vegetation; this region has regularly cold and dry winters and very warm summers. Adults are strongly attracted to artificial light. Early stages and larval foodplant are unknown. The species is only known from two small areas in Balouchestan, including the type-locality.

Etymology. The scientific name indicates the close similarity of the new species to its sibling species, *D. saca*.

Diadochia saca PÜNGELER, 1914
(Figs 2, 6–7)

Diadochia saca PÜNGELER, 1914, *Deutsche Entomologische Zeitschrift Iris* **28**: 43, pl. 2, fig. 12.
L. t.: Syr-Darya, Baigacum.

Type material examined. Holotype male, “Syr-Daria, Baigacum, Koshantschikoff”, “near Centropodia (Hmps. i.l. 7. 1914)”, slide No. MB415 Ch. BOURSIN (coll. PÜNGELER, ZMHU). Paratype female, with the same data as the holotype, with an additional label referring a more proper date of collecting: “11/1913, Kosh., Püng.”.

Additional material examined. A large series of specimens (ca 250 examples) of both sexes from Turkmenistan, Kara-Kum desert, 100 m, 42 km N of Ashkhabad [= Ashgabat], 58°33'E, 38°21'N, 15.X.1991, No. L45, leg. A. PODLUSSÁNY, L. RONKAY & Z. Varga (coll. HNHM, GY. FÁBIÁN, P. GYULAI, B. HERCZIG, G. RONKAY and Z. VARGA).

Distribution. The species occurs in the arid regions of the wide sense Transcaspia which belong recently to three countries, Turkmenistan, Uzbekistan, and Kazakhstan.

Bionomics. The species prefers the sandy, rather dune-like desert habitats with very scarce vegetation and scattered *Haloxylon* and *Tamarix* shrubs. Univoltine late autumnal species, the adults are on the wing in October–November. Early stages and foodplant are unknown.

Diadochia stigmatica WILTSHIRE, 1984
(Figs 3, 8–9)

Diadochia stigmatica WILTSHIRE, 1984, *Fauna of Saudi Arabia* **6**: 390. L. t.: Saudi Arabia, Bukhara.

Material examined. 1 male, Iran, Prov. Kerman, farm of Shahid Bahonar University, 07.03.2010, leg. H. SHEYKHNEJAD (coll. SBUK); slide No. AS477m.

Distribution. The species has an expanded Levantine-Arabic distribution. It has been recorded from Saudi Arabia (WILTSHIRE 1984), Israel, Palestine, Jordan (HACKER 2001) and SE Iran.

Bionomics. Similarly to the other members of the genus, *D. stigmatica* is a late flying eremic species. It inhabits open lowlands with low vegetation consisting of mostly halophilous plants. Comparing with its previously known localities, this species was found to occur in areas of higher elevation. The specimen was collected at light. Early stages and larval foodplant are unknown.

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