

Four noctuid (Lepidoptera: Noctuidae) taxa new for the fauna of Iran

Mehdi Esfandiari, Mohammad Saeed Mossadegh, Parviz Shishehbor, Kauri Mikkola and Seyed Hosein Hodjat

Abstract. Three species, *Grammodes boisdeffrii* (Oberthür, 1876), *Dysmilichia flavonigra* (Swinhoe, 1884), *Mythimna congrua* (Hübner, [1817]), and the nominate subspecies *Drasteria kabylaria kabylaria* (Bang-Haas, 1906), are reported for the first time from Iran. These species were collected in sugarcane fields' areas of Khuzestan province, south-west Iran. Adults and genitalia of each species are illustrated, with notes on their identification, bionomy and distribution.

Samenvatting. Vier Noctuidae-soorten (Lepidoptera) nieuw voor de fauna van Iran. Drie soorten, *Grammodes boisdeffrii* (Oberthür, 1876), *Dysmilichia flavonigra* (Swinhoe, 1884) en *Mythimna congrua* (Hübner, [1817]), en de nominale subspecies *Drasteria kabylaria kabylaria* (Bang-Haas, 1906), worden hier voor het eerst uit Iran vermeld. Deze soorten werden verzameld in suikerrietvelden in de provincie Khuzestan (Zuidwest-Iran). De adulten en genitalia van elke soort worden afgebeeld, en info over hun identificatie, bionomie en verspreiding worden gegeven.

Résumé. Quatre espèces de noctuelles (Lepidoptera: Noctuidae) nouvelles pour la faune d'Iran

Trois espèces, *Grammodes boisdeffrii* (Oberthür, 1876), *Dysmilichia flavonigra* (Swinhoe, 1884) et *Mythimna congrua* (Hübner, [1817]), et la sous-espèce nominale *Drasteria kabylaria kabylaria* (Bang-Haas, 1906), sont mentionnées ici pour la première fois d'Iran. Ces espèces ont été capturées dans des champs de canne à sucre dans la province de Khuzestan (Sud-ouest de l'Iran). Les adultes et les genitalia sont figurés et des informations sur leur identification, bionomie et distribution sont données.

Key words: Noctuidae – faunistics – Khuzestan – Iran.

Esfandiari, M. (apameini@yahoo.com); Mossadegh, M.S.; Shishehbor, P., and Hodjat, S.H.: Department of Plant Protection, College of Agriculture, Shahid Chamran University, Ahvaz, Iran

Mikkola, K.: Finnish Museum of Natural History, University of Helsinki, Finland.

Introduction

Many studies on Noctuidae of Iran have been worked out and, hence, the number of recorded noctuid species from Iran exceeds 1150 (see e.g. Brandt 1941, Hacker 1990, Ebert & Hacker 2002, Ronkay & Gyulai 2006). Nevertheless, until now, no comprehensive checklist of the Noctuidae of Iran has been published.

Wiltshire (1949) collected the first noctuids of Khuzestan province in 1938. This region has been less explored than most of the other provinces of Iran; e.g. Ebert & Hacker (2002) listed 734 species of Noctuidae of Iran, but only one species (*Heterographa* sp.) from Khuzestan. However, the checklist of identified species of arthropods of Khuzestan (Mossadegh & Kocheili 2003), includes 41 species of Noctuidae. This province has an area of 67,000 km², consisting of mountains and plains. Sugarcane farms are situated in the semi-desert lowland parts, which are excessively hot and dry in the summer. The annual average rainfall does not exceed 260 mm.

The present paper reports three species and one subspecies of Noctuidae, new for the fauna of Iran, which were collected during a faunistic survey in the sugarcane fields of Khuzestan, south-west Iran.

Material and methods

Collections were made using a 250 W MV light against a white sheet during 2007 and 2008. The specimens were deposited in Insect and Mite Collection of Ahvaz (IMCA), Plant Protection Department, Shadid Chamran University of Ahvaz, Iran. The materials have been collected in 4 sugarcane agro-industries in Khuzestan province.

Abbreviations used in this paper are as follows, with the elevations and areas included:

	Locality	Coordinates	Elevation (m)	Area (ha)
AK	Amir Kabir agro-industry	31°03'N 48°14'E	7	10000
KR	Karun agro-industry	32°10'N 48°36'E	68	20000
FA	Farabi agro-industry	30°06'N 48°36'E	6	6000
IK	Imam Khomeini (Shoeibieh) agro-industry	31°46'N 48°44'E	23	10000

Results

Subfamily Catocalinae Boisduval, [1828]

Drasteria kabylaria kabylaria (Bang-Haas, 1906) (Fig. 1)

Identification: Forewing red-brown, the costal and inner areas fuscous mixed with grey-white, the terminal area grey-white irrorated with brown, subbasal line indistinct, black, sinuous, slightly defined by ochreous; antemedial line black-brown, oblique from costa to submedian fold where it is met by the postmedial line, the antemedial line on outer side and the postmedial line on inner side defined by ochreous white; subterminal line ochreous white: inner side black streaks, outer a reddish band; a fine waved blackish terminal line. Hindwing with the basal half white, the terminal half fuscous brown with sinuous inner edge; white patches on termen at apex, and an oblique patch at vein 2. *Drasteria kabylaria columbina* Brandt, 1941, which was described from SE Iran, differs from the typical subspecies by having more gray bluish background colour, entirely without brown reddish hue.

Bionomics: Bivoltine, flying March to May and October to November. The larva probably feeds on *Tamarix* (Hacker, 2001).

Distribution: Saharo-Sindian. The eremic nominate subspecies occurs from Morocco in North Africa to the Arabian Peninsula, Oman (Hacker, 2001) and SW Iran. Subspecies *D. kabyalaria columbina* occurs in south (Hormozgan) and southeast (Sistan va Balouchestan) Iran (Brandt, 1941; Ebert & Hacker, 2002).

Material examined: 1♀, IK, 6.IV.2008.

Grammodes boisdeffrii (Oberthür, 1876) (Fig. 2)

Identification: Head, thorax and abdomen ochreous white; forewing pale ochreous irrorated with red-brown; antemedial line black, slightly sinuous; a medial whitish band from subcostal vein to inner margin; the outer part of medial area red-brown, narrowing to a point at inner margin, defined on outer side by the black postmedial line, subterminal line whitish defined on inner side by red-brown, and by a slight black streak above vein 6; a small black spot on termen just below apex; cilia white with a brown line at middle. Hindwing ochreous white; a dark medial line with some brown suffusion before it, followed by a white band; the terminal area suffused with dark-brown leaving pale patches before termen at apex.

Bionomics: Probably bivoltine or multivoltine, halophilous. It was collected at light in the early May in the lowland sugarcane fields of SW Iran. The early stages and bionomics are unknown.

Distribution: Afro-Eremic. The species was described from Algeria, Biskara (Hacker, 2001). It occurs in the North Africa, the Levante, Arabian Peninsula and SW Iran.

Material examined: 1♂, FA, 4.V.2008.

Subfamily Acontiinae Guenée, 1841

Dysmilichia flavonigra (Swinhoe, 1884) (Fig. 3)
(*sensu* Hacker *et al.* 2008)

Identification: Head, antenna, fore part of the thorax, and outer three fourths of the forewing black; remainder of the thorax, abdomen, and basal portion of the forewing (except costa) dull yellow; forewing with three spots on the costa near the apex, many minute yellow atoms all over the black portion of the wing; hindwing white, pale brownish towards the border, marginal line brown, fringe white. Similar *Dysmilichia erastrioides* Brandt, 1938, which occurs in southern Iran, has a white patch on the postmedial area from costa to the cell; its head, thorax and the basal area of forewing brown shiny black.



Figs. 1–4. Noctuid moths new for the fauna of Iran: **1.**– *Drasteria kabylaria kabylaria* (Bang-Haas, 1906); **2.**– *Grammodes boisdeffrii* (Oberthür, 1876); **3.**– *Dysmilichia flavonigra* (Swinhoe, 1884); **4.**– *Mythimna congrua* (Hübner, [1817]).

Bionomics: Probably bivoltine. Wiltshire (1990) caught it in February, June, August and December. It flies in May and September in Khuzestan. The early stages and food plants are unknown.

Distribution: Irano-Eremic. This rare species occurs in Karachi, N India and western Arabia (Hacker 1990, Wiltshire 1990). Our sampling area is an intermediate locality.

Material examined: 1 ♀, along Dez river (West KR), 11.IX. 2008; 1 ex., IK, 8.V.2008.

Subfamily Hadeninae Guenée, 1837

Mythimna congrua (Hübner, [1817]) (Fig. 4)

Identification: Forewing pale brown irrorated with whitish scales; black abdominal coremata present. Postmedial line sometimes represented by 1-2 blackish spots on veins. Veins paler, usually whitish, intervenal areas brownish; a small visible whitish spot on medial trunk at cross vein of cell. Hindwing whitish, marginal area broad, dark, except its costal part. It differs from the closely related *Mythimna ferrago* (Fabricius, 1787), which occurs in south western Iran (Hacker 1990), by its shortened, medially recurved vesica and the rather short appendix bursae.

Bionomics: Bivoltine. The species flies in March-June and August-October. It inhabits hot xeric, rather low biotopes of the wider Mediterranean area and also in the xerothermic steppe habitats of the Near East, Asia Minor and the southern Caucasus (Hacker *et al.* 2002). Larvae feed on various grasses, potentially as a pest of corn, and overwinters as pupa. The species may inhabit sugarcane fields' drains with reed beds in SW Iran.

Distribution: Mediterranean. It occurs around the Mediterranean Sea in southern Europe, Morocco, Turkey, Iraq, Azerbaijan (Hacker *et al.* 2002) and SW Iran.

Material examined: 7 ex., KR, 25.IV.2007; 10 ex., KR, 8.V.2007; 2 ♂, KR, 7.X.2007; 1 ex., KR, 6.XI.2007; 5 ex., KR, 5.IV.2008; 1 ex., IK, 6.IV.2008, 1 ♂, AK: 2.IV.2008; 2 ♂, Prov. Fars, 20 km E of Firuzabad, Mahkooyeh, 1600 m, 30.VIII.2008.

Acknowledgments

Financial support provided by the research deputy of Shahid Chamran University of Ahvaz and the Ministry of Science, Research and Technology of Iran, is greatly acknowledged. We are grateful to Dr. Laszlo Ronkay, Hungarian Natural History Museum, Budapest and Mr. Michael Fibiger, Sorø, Denmark, for their help in identification of some materials. We would like to express our cordial thanks to the staff of Zoological Museum of the University of Helsinki, Finland, for their kind help during a study tour of the first author. We also thank all sugarcane agro-industries authorities who supplied the collecting permits.

References

- Brandt, W. 1941. Beitrag zur Lepidopteren-Fauna von Iran (3). Neue Agrotiden, nebst Faunenverzeichnissen. — *Mitteilungen der Münchner Entomologische Gesellschaft* **31**: 835–863.
- Ebert, G. & Hacker, H. H. 2002. Beitrag zur Fauna der Noctuidae des Iran: Verzeichnis der Bestände im Staatlichen Museum für Naturkunde Karlsruhe, taxonomische Bemerkungen und Beschreibung neuer Taxa (Noctuidae, Lepidoptera). — *Esperiana* **9**: 237–409.
- Hacker, H. H. 1990. Die Noctuidae Vorderasiens (Lepidoptera). Systematische List mit einer Übersicht über die Verbreitung unter besondere Berücksichtigung der fauna der Türkei (einschließlich der Nachbargebiete Balkan, Südrußland, Westturkestan, Arabische Halbinsel, Ägypten). — *Neue Entomologische Nachrichten* **27**: 1–707.
- Hacker, H. H. 2001. Fauna of the Nolidae and Noctuidae of the Levante with descriptions and taxonomic notes. — *Esperiana* **8**: 7–398.
- Hacker, H. H., L. Ronkay & Hreblay, M. 2002. *Hadeninae I. Noctuidae Europaeae*, Vol. 4. — Entomological Press, Sorø, Denmark, 419 pp.
- Hacker, H. H., Legrain A. & Fibiger M. 2008. Revision of the genus *Acontia* Ochsenheimer, 1816 and the tribus Acontiini Guenée, 1841 (Old World) (Lepidoptera: Noctuidae: Acontiinae). — *Esperiana* **14**: 1–686.
- Mossadegh, M. S. & Kocheili, F. 2003. A semi descriptive checklist of identified species of Arthropods (Agricultural, medical, ...) and other agricultural pests from Khuzestan, Iran. — Shahid Chamran University Press, Ahvaz, Iran, 475 pp.
- Ronkay, L. & Gyulai, P. 2006. New Noctuidae (Lepidoptera) species from Iran and Tibet. — *Esperiana* **12**: 211–241.
- Wiltshire, E. P. 1949. Middle East Lepidoptera, IX: new species and forms from Arabia and Persia, with a description of the genus *Tamsola* from Iraq. — *Bulletin de la Société Fouad Ier d'Entomologie* **33**: 353–372.
- Wiltshire, E. P. 1990. An illustrated, annotated catalogue of the Macro-Heterocera of Saudi Arabia. — *Fauna of Saudi Arabia* **11**: 91–250.
-