

New records of Noctuidae for Iran with additional distribution data (Lepidoptera: Noctuidae)

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Abstract

Numerous expeditions have been done in Iran during more than 150 years to investigate the Noctuidae fauna. However, still white patches remain to be extensively explored. In this study, night samplings performed by light traps at different Iranian provinces to study some tribes of Noctuidae. Here, we present 43 species and subspecies, among them three species of *Dasypolia eberti* Boursin, 1967, *Episema minutoides* Ronkay, Varga & Hreblay, 1999 and *Polymixis schistochlora* Ronkay, Varga & Hreblay, 1998 are newly reported for the fauna of Iran. Twenty-six of identified taxa are new records for one or more provinces of Iran. Adults and genitalia of new records for Iran are illustrated with notes on their bionomy and identification.

KEY WORDS: Lepidoptera, Noctuidae, Noctuidae, new record, Iran.

Nuevos registros de Noctuidae para Irán con datos adicionales de distribución (Lepidoptera: Noctuidae)

Resumen

Se ha hecho numerosas expediciones en Irán durante los últimos 150 años para investigar la fauna de Noctuidae. Sin embargo, todavía quedan zonas en blanco que necesitan ser analizadas exhaustivamente. En este estudio, utilizamos trampas de luz en diferentes provincias iraníes para estudiar algunas tribus de Noctuidae. Aquí, presentamos 43 especies y subespecies, entre las que tres especies de *Dasypolia eberti* Boursin, 1967, *Episema minutoides* Ronkay, Varga & Hreblay, 1999 y *Polymixis schistochlora* Ronkay, Varga & Hreblay, 1998 son nuevos registros para la fauna de Irán. Veintiseis taxas identificadas, son nuevos registros para una o más provincias de Irán. Se ilustran los adultos y las genitalias de los nuevos registros para Irán, con notas sobre su bionomía e identificación.

PALABRAS CLAVE: Lepidoptera, Noctuidae, Noctuidae, nuevos registros, Irán.

Introduction

The general fauna of Noctuidae s. l. in Iran is almost known since numerous expeditions have been done on this area mostly by European researchers during more than 150 years (e.g. BIENERT, 1870; BRANDT, 1941; EBERT & HACKER, 2002). Recently, due to scientific interest in Noctuidae s. l. fauna by Iranian researchers, studies have been carried out to investigate such diverse fauna in different areas of Iran, resulted in reporting new taxa, new distributional records and local revisions (e.g. SHIRVANI *et al.*, 2008b; RABIEH *et al.*, 2013; ESFANDIARI *et al.*, 2015). However, still white patches remain to be extensively explored in this vast country which should be done by local experts of this mostly arid territory.

Noctuidae species are plant feeding as caterpillars and nectar feeding as adults, functioning as herbivores, pollinators and prey, as well as being one of the most destructive groups of pests to crops (REGIER *et al.*, 2009). Here we intend to deal with some species which, according to old fashion Noctuidae classification, belong to Xyleninae. However, Xyleninae is a paraphyletic group which has no derived character states to support it (YELA & ZAHIRI, 2011). According to inclusive definition of Noctuidae from POOLE (1995), Xyleninae must be integrated to Noctuidae s. s. together with Hadeninae to form the Noctuidae s. l. The monophyly of the subfamily Noctuidae s. l. is very well supported by the molecular results of MITCHELL *et al.* (2006) and ZAHIRI *et al.* (2013), and by morphology (clasper located in middle of valve, larva with dorsally-grooved spinneret) (LAFONTAINE & SCHMIDT, 2010, 2013). This clade includes the true cutworms, many of which are economically important agricultural pests.

Material and Methods

Numerous samplings were carried out to study the fauna of noctuid moths mainly in southern provinces of Khuzestan and Kerman (2015-2016). Additional materials were collected in Khorasan-e-Jonubi and Khorasan-e-Razavi in eastern parts of Iran (2015-2016) as well as Fars province in South of Iran (2011). Night samplings performed at different altitudes and vegetation types of the sampling localities by 8 watt black-light tube surrounded by 3 transparent panes, all perched over a funnel on top of a bucket. The genitalia of both sexes were examined using standard methods. Materials were deposited in the Insect and Mite Collection of Ahvaz (IMCA), Plant Protection Department, Shahid Chamran University of Ahvaz, except some duplicates which were deposited in P. Gyulai's private collection (Hungary). Genera and species were listed alphabetically. Collected species of the genus *Caradrina* were not listed here and will be presented separately.

Results and Discussion

A total of 43 species and subspecies belonging to 22 genera of Noctuidae were collected and identified. Three species of *Dasypolia eberti* Boursin, 1967, *Episema minutoides* Ronkay, Varga & Hreblay, 1999 and *Polymixis schistochlora* Ronkay, Varga & Hreblay, 1998 are newly reported for the fauna of Iran, with illustrations of their adults and genitalia and notes on their bionomy. Twenty-six species and subspecies are new provincial records which marked with an asterisk (*) in the text. Among the new provincial records, 10 taxa are new for the fauna of Kerman province, 12 for Khuzestan province, 4 for Fars province, 3 for Khorasan-e-Jonubi province and 1 for Khorasan-e-Razavi province. Collected materials are presented here, together with provincial distribution in Iran for each taxon.

Family Noctuidae Latreille, 1809
Subfamily Noctuidae Latreille, 1809

Apamea anceps (Denis & Schiffermüller, 1775)*

Distribution in Iran : Khorasan, Tehran (HACKER, 1990; KOÇAK & KEMAL, 2014), Golestan (GUTLEB & WIESER, 2002).

Material examined: 1 ♂, Kerman, Omrudoieh, 29° 05' 55" N 57° 33' 13" E, 2971 m., 15-V-2015.

Apamea maraschi (Draudt, 1934)*

Distribution in Iran: Northwest Iran (HACKER, 1990), Khuzestan (RAVAN *et al.*, 2015).

Material examined: 1 ♀, Fars, Shiraz, Nurabad, 29° 07' 25" N 52° 38' 05" E, 1000 m., 5-V-2011.

Apamea minoc Babics & Benedek, 2011*

Distribution in Iran: Mazandaran (BABICS & BENEDEK, 2011). This is second record of this species after its description in 2011.

Material examined. 1 ♂, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 27-IV-2011.

Apamea oblonga (Haworth, 1809)*

Distribution in Iran: Northwest Iran (HACKER, 1990), Sistan-va-Baluchistan (EBERT & HACKER, 2002).

Material examined: 2 ♂♂, Kerman, Omrudoieh, 29° 05' 55" N 57° 33' 13" E, 2971 m., 30-VII-2015; 1 ♂, 2 ♀♀, Kerman, Babgorgy, 29° 05' 17" N 57° 33' 33" E, 3029 m., 10-VIII-2015; 1 ♂, 1 ♀, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 13-VIII-2015.

Agrochola lychnidis (Denis & Schiffermüller, 1775)

Distribution in Iran: Tehran (EBERT & HACKER, 2002), Khuzestan (RAVAN *et al.*, 2015), Bushehr (LEHMAN *et al.*, 2009). Khorasan-e-Shomali (FEIZPOOR & SHIRVANI, 2014).

Material examined: 1 ♂, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 23-VI-2011.

Anchoscelis oropotamica archar (Ronkay, Varga & Hreblay, 1998)*

Distribution in Iran: Markazi, Mazandaran, Tehran, Alborz (EBERT & HACKER, 2002).

Material examined: 1 ♂, Khorasan-e-Jonobi, Alborz, 32° 59' 59" N 58° 44' 10" E, 1881 m., 16-VI-2015.

Aporophyla canescens (Duponchel, 1826)

Distribution in Iran: Kermanshah, Fars, Bushehr (HACKER, 2001; KOÇAK & KEMAL, 2014; RONKAY *et al.*, 2001), Khuzestan (RAVAN *et al.*, 2015).

Material examined: 3 ♂♂, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 2-VI-2011; 1 ♀, same locality, 3-VI-2015; 1 ♂, Fars, Shiraz, Nurabad, 29° 07' 25" N 52° 38' 05" E, 1000 m., 15-IV-2011.

Aporophyla nigra (Haworth, 1809)

Distribution in Iran: Northwest Iran (RONKAY *et al.*, 2001), Fars, Khuzestan (RAVAN *et al.*, 2015).

Material examined: 2 ♂♂, 1 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 14-VI-2015; 1 ♂, 2 ♀♀, same locality, 23-VI-2011; large series from different localities in Fars province in autumn 2016 were collected.

Auchmis detersa demavendi Schwingenschuss, 1955*

Distribution in Iran: Mazandaran, Azarbayegan-e-Sharghi (EBERT & HACKER, 2002; LEHMANN & ZAHIRI, 2011), Tehran, Fars, Lorestan (EBERT & HACKER, 2002), Golestan, Khorasan (GUTLEB & WIESER, 2002; WIESER & STANGELMAIER, 2005).

Material examined: 1 ♀, Kerman, Mohammdabad, 28° 59' 48.8" N 57° 43' 20" E, 2495 m., 2-VII-2015; 1 ♂, 1 ♀, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 13-VIII-2015; 2 ♂♂, same locality, 6-IX-2015.

Auchmis indica (Walker, 1865)

Distribution in Iran: Kerman (SHIRVANI *et al.*, 2008a).

Material examined. 1 ♀, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 15-IV-2016.

Brandtasia discalis (Brandt, 1941)

Distribution in Iran: Sistan-va-Balouchestan (BRANDT, 1941), Kerman (BIDAR, 2010; SHIRVANI, 2012), Fars (EBERT & HACKER, 2002).

Material examined: 1 ♂, Kerman, Khabr National Park, 28° 39' 43" N 56° 26' 50" E, 1937 m., 14-IX-2015.

Chloantha hyperici (Denis & Schiffermüller, 1775)*

Distribution in Iran: Kordestan, Azarbayejan-e-Sharghi, Guilan, Mazandaran, Tehran, Alborz, Khorassan-e-Shomali, Golestan (EBERT & HACKER, 2002; GUTLEB & WIESER, 2002; LEHMANN & ZAHIRI, 2011).

Material examined: 1 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 13-V-2011.

Conistra pseudopolitina Hacker, 1990*

Distribution in Iran: Bushehr (LEHMAN *et al.*, 2009).

Material examined: 1 ♂, 1 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 15-VII-2011.

Dasypolia eberti Boursin, 1967 (Figs. 1a-1d)

Identification: Forewing of female has a bluish grey tint but that of male has an orange brown hue. Ante- and postmedial lines are prominent zig-zag in female with a dark median shade. Postmedial line continues to hindwing which is dark brown. However, in male lines are not as strong as female. The large size is a prominent characteristic of this species. It is similar to *D. rjabovi* (Bundel, 1966) but *rjabovi* is much larger and its hindwings present a clear terminal border which does not exist in *D. eberti*.

Distribution and bionomics: It was described from the high altitudes of central Afghanistan. In Iran, it was collected from high altitude of Binaloud on the way to Shirbad peak. The area has the common vegetation of Binaloud mountain (e.g. Mountain Sainfoin, Wild almond (*Amygdalus scoparia*), Downy brome (*Bromus tectorum*), *Bromus*, *Artemisia* and *Astragalus*). This is the first record for the fauna of Iran.

Material examined: 4 ♂♂, 1 ♀, Khorasan-e-Razavi, Binalood, Shirbad way, 36° 16' 49" N 59° 05' 49" E, 2496 m., 28-IX-2016.

Dasypolia ferdinandi Rühl, 1892*

Distribution in Iran: Alborz (EBERT & HACKER, 2002), Golestan, Khorasan (WIESER & STANGELMAIER, 2005). Mazandaran (KOÇAK & KEMAL, 2014).

Material examined: 1 ♂, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 5-XI-2015.

Dasypolia templi (Thunberg, 1792)*

Distribution in Iran: Alborz (EBERT & HACKER, 2002). Golestan, Khorasan-e-Shomali (WIESER & STANGELMAIER, 2005).

Material examined: 1 ♂, 2 ♀♀, Khorasan-e-Razavi, Binaloud, Shirbad way, 36° 16' 49" N 59° 05' 49" E, 2496 m., 28-IX-2016; 1 ♂, same locality, 21-IX-2016.

Dicycla oo (Linnaeus, 1758)

Distribution in Iran: Esfahan (HACKER & KAUTT, 1999), Azarbayejan-e-Gharbi, Fars, Kohgiluyeh-va-Boyerahmad, Kordestan (EBERT & HACKER, 2002), Kermanshah (MODARRES-AWAL, 2012), Khuzestan (RAVAN *et al.*, 2015), Golestan (GUTLEB & WIESER, 2002).

Material examined. 3 ♂♂, 5 ♀♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 8-IV-2016.

Dryobotodes eremita (Fabricius, 1775)*

Distribution in Iran: Golestan (GUTLEB & WIESER, 2002; WIESER & STANGELMAIER, 2005), Fars (KOÇAK & KEMAL, 2014).

Material examined: 1 ♂, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 7-VI-2011; 2 ♀♀, same locality, 23-VI-2011.

Dryobotodes glaucus Ronkay & Gyulai, 2006*

Distribution in Iran: Kohgiluyeh-va-Boyerahmad (RONKAY & GYULAI, 2006), Esfahan (SHIRVANI, 2012).

Material examined: 1 ♂, Fars, Nurabad, Babameidan, 30° 11' 36" N 51° 31' 27" E, 920 m., 15-IV-2011; 3 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 16-V-2011 and 2-VI-2011.

Episema lederi Christoph, 1885*

Distribution in Iran: Kermanshah, Guilan, Alborz, Tehran, Azarbajejan-e-Gharbi, Fars, Golestan, Khorasan-e-Shomali, Khorasan-e-Razavi (EBERT & HACKER, 2002; GUTLEB & WIESER, 2002; WIESER & STANGELMAIER, 2005).

Material examined: 3 ♂♂, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 1-X-2015.

Episema minutoides Ronkay, Varga & Hreblay, 1999 (Figs. 2a, 2b)

Identification: It is closely related to *Episema minuta* Ebert, 1971 which was described from Afghanistan. However, it differs from *minuta* by having prominent black ante- and postmedial crosslines, stronger white cover on veins, darkened smaller reniform stigma and more grey brown hindwing. The habitus is also similar to *E. lederi* but it has smaller size and half pectination in male antenna than *lederi* (RONKAY *et al.*, 1998). There might be variation in wing colour in different populations of *minutoides*.

Distribution and bionomics: It was described from Turkmenistan and inhabits the hot and dry grasslands with sparse vegetation in Rocky Mountains of Kopet-Dagh (RONKAY *et al.*, 1998). In Iran, it was collected from the village of Doulatabad which is located in a valley on the way to Binaloud peak. The area has the common vegetation of Binaloud mountain (e.g. Mountain Sainfoin, Wild almond (*Amygdalus scoparia*), Downy brome (*Bromus tectorum*), *Bromus*, *Artemisia* and *Astragalus*) with several gardens around. This is the first record for the fauna of Iran.

Material examined: 1 ♀, Khorasan-e-Razavi, Binaloud, Doulatabad, 36° 25' 56" N 59° 09' 41" E, 1558 m., 10-X-2016.

Frivaldszkyola cf. elami (Benedek & Ronkay, 2001)

Distribution in Iran: Lorestan (BENEDEK & RONKAY, 2001).

Material examined: 1 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 23-VI-2011.

This is a female and whole type series are male.

Karmanica chosroes (Brandt, 1938)*

Distribution in Iran: Fars, Bushehr (LEHMAN *et al.*, 2009).

Material examined: 1 ♂, 1 ♀, Kerman, Hishin, 28° 38' 23" N 57° 56' 43" E, 1341 m., 24-II-2016.

Leptologia lota (Clerck, 1759)*

Distribution in Iran: Kermanshah, Markazi, Golestan, Khorasan-e-Shomali and Fars, according to distribution of the recently synonymized taxa for *lota* by RONKAY *et al.* (2017).

Material examined: 1 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 14-VI-2015.

Maraschia grisescens Osthelder, 1933

Distribution in Iran: Fars (EBERT & HACKER, 2002; RAVAN *et al.*, 2015), Kerman (BIDAR, 2010), Khuzestan (RAVAN *et al.*, 2015).

Material examined: 1 ♂, 1 ♀, Kerman, Khabr National Park, 28° 39' 43" N 56° 26' 50" E, 1920 m., 14-IX-2015; 2 ♂♂, Fars, Neyriz, 29° 13' 22" N 51° 26' 17" E, 2050 m., 28-VIII-2011.

Mormo maura (Linnaeus, 1758)*

Distribution in Iran: It has reported from southwestern and central parts of Iran (HACKER, 1990).

Material examined: 1 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 3-VI-2015.

Polymixis atossa (Wiltshire, 1941)*

Distribution in Iran: Fars (WILTSHIRE, 1941); Golestan, Khorasan-e-Shomali (WIESER &

STANGELMAIER, 2005), Bushehr (LEHMAN *et al.*, 2009), Khorasan-e-Razavi (RABIEH *et al.*, 2013).

Material examined: 1 ♂, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 5-XI-2015; 1 ♀, Khorasan-e-Jonubi, Birjand, 32° 59' 59" N 58° 44' 10" E, 1881 m., 16-VI-2015; 1 ♂, Khorasan-e-Razavi, Binaloud, 1504 m., 36° 11' 59" N 59° 29' 44" E, 21-XI-2011.

Polymixis crinomima (Wiltshire, 1946)*

Distribution in Iran: Kermanshah (WILTSHIRE, 1946), Fars (WILTSHIRE, 1946; EBERT & HACKER, 2002), Kerman (SHIRVANI, 2012), Golestan, Khorasan-e-Shomali (WIESER & STANGELMAIER, 2005), Bushehr (LEHMAN *et al.*, 2009).

Material examined: 7 ex., Fars, Nurabad, Babameidan, 30° 15' 57" N 51° 30' 14" E, 920 m., 15-IV-2011; 6 ex., Khuzestan, Baqmalek, Imamzade Abdollah, 31° 23' 03" N 50° 09' 13" E, 2030 m., 6-V-2011.

Polymixis colluta apotheina (Brandt, 1938)

Distribution in Iran: Azarbayegan-e-Gharbi, Tehran, Alborz (EBERT & HACKER, 2002), Fars, Khuzestan (RAVAN *et al.*, 2015). Lorestan, Kerman, Sistan-va-Balouchestan (FEIZPOOR & SHIRVANI, 2014), Hormozgan (LEHMAN *et al.*, 2009). Golestan, Khorasan-e-Shomali, Kohgiluyeh-va-Boyerahmad and Kordestan (checked materials at the Stuttgart State Museum of Natural History).

Material examined: 1 ♂, 1 ♀, Kerman, Dochar, 29° 04' 40" N 57° 37' 01" E, 3223 m., 10-IX-2015; 1 ♂, 1 ♀, Kerman, Dehsard, 28° 40' 39" N 56° 33' 02" E, 1811 m., 29-X-2015; 2 ♂♂, 1 ♀, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 4-IX-2015; 4 ex., same locality, 6-IX-2015 and 1-X-2015; 8 ex., Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 16-V-2011; 10 ex., same locality, 2-VI-2011; 1 ♂, Fars, Tange bolhayat, 29° 44' 02" N 51° 47' 00" E, 1300 m., 29-IV-2011; 3 ex., Fars, Nurabad, 29° 55' 56" N 51° 35' 52" E, 1100 m., 3-VI-2011.

Polymixis dubiosa (Brandt, 1938)

Distribution in Iran: Tehran, Sistan-va-Baluchestan, Hormozgan, Lorestan (EBERT & HACKER, 2002), Kerman (FEIZPOOR & SHIRVANI, 2014).

Material examined: 2 ♀♀, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 29-IX-2015 and 1-X-2015; 1 ♂, 3 ♀♀, Kerman, Dochar, 29° 04' 40" N 57° 37' 01" E, 3223 m., 10-IX-2015.

Polymixis hedygramma (Brandt, 1941)*

Distribution in Iran: Lorestan, Sistan-va-Balouchestan (BRANDT, 1941; EBERT & HACKER, 2002).

Material examined: 1 ♂, 1 ♀, Khorasan-e-Jonubui, Ark, 32° 57' 39" N 58° 17' 28" E, 1250 m., 8-XI-2015; 1 ♂, 1 ♀, same locality, 1-XI-2016.

Polymixis ivanchiki Pekarsky, 2012*

Distribution in Iran: Kermanshah (PEKARSKY, 2012).

Material examined: 1 ♂, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 2-XI-2011 and 12 ex., same locality, 15-XI-2016; 3 ex., Fars, Firuzabad, 29° 07' 25" N 52° 38' 05" E, 1900 m., 3-XI-2016.

Polymixis philippsi (Püngeler, 1911)*

Distribution in Iran: Fars (FEIZPOOR & SHIRVANI, 2014; SHIRVANI, 2012), Bushehr (LEHMAN *et al.*, 2009).

Material examined: 2 ex., Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 23-VI-2011.

Polymixis rosinae (Bohatsch, 1908)

Distribution in Iran: Tehran, Alborz (EBERT & HACKER, 2002), Kerman, Azarbayegan-e-

Sharghi, Markazi (FEIZPOOR & SHIRVANI, 2014), Golestan, Khorasan (WIESER & STANGELMAIER, 2005).

Material examined: 1 ♂, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 5-XI-2015.

Polymixis schistochlora Ronkay, Varga & Hreblay, 1998 (Figs. 3a-3c)

Identification: It is an allopatric sibling species of *P. zophodes* Boursin, 1960, according to RONKAY *et al.* (1998). Forewings of *P. schistochlora* are almost unicolorous, dark olivegreyish with dispersed inconspicuous stigmata and crosslines, whereas *P. zophodes* has more prominent wing pattern and ochreous brown grey colour. The male genitalia of both species are very similar but with a prominent difference that is divergence of projection of the right costal extension from the ventral arch of the basal plate of the harpe in *P. schistochlora* whereas they are parallel in *P. zophodes* (RONKAY *et al.*, 1998).

Distribution and bionomics: It was collected and described from semi-desert rocky grasslands in medium high altitudes of Turkmenistan (RONKAY *et al.*, 1998). In Iran, it was collected from an area in the margin of Lut desert which has high altitude with sparse vegetation.

This is the first record for the fauna of Iran.

Material examined: 1 ♀, Khorasan-e-Jonubui, Ark, 32° 57' 39" N 58° 17' 28" E, 1250 m., 8-XI-2015; 2 ♂♂, 1 ♀, same locality, 1-XI-2016.

Polymixis zagrobia (Wiltshire, 1941)*

Distribution in Iran: Lorestan, Fars (WILTSHIRE, 1941), Kerman, Sistan-va-Balouchestan, Esfahan (FEIZPOOR & SHIRVANI, 2014; SHIRVANI, 2012).

Material examined: 1 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 2-XI-2011.

Polymixis zophodes Boursin, 1960*

Distribution in Iran: Fars (FEIZPOOR & SHIRVANI, 2014).

Material examined: 1 ♀, Kerman, Sangdan, 29° 06' 06" N 57° 33' 12" E, 2966 m., 29-IX-2015.

Rhiza laciniosa (Christoph, 1887)

Distribution in Iran: Kerman (SHIRVANI *et al.*, 2008a), Khorasan (KOÇAK & KEMAL, 2014).

Material examined: 1 ♂, Khorasan-e-Jonobi, Birjand, 32° 59' 59" N 58° 44' 10" E, 1881 m., 27-V-2015.

Scotochrosta pulla (Denis & Schiffermüller, 1775)*

Distribution in Iran: Esfahan (Poorshabanan & SHIRVANI, 2012). This is the second record of this species from Iran.

Material examined: 1 ♂, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 15-VII-2011; 1 ♂, Fars, Nurabad, Babameidan, 30° 11' 36" N 51° 31' 27" E, 1000 m., 15-IV-2011; 1 ♂, Fars, Qir-va-Karzin, Imam Shahr, 28° 26' 36" N 53° 10' 11", 700 m., 6-V-2011.

Spodoptera cilium Guenée, 1852*

Distribution in Iran: Kermanshah, Hormozgan (EBERT & HACKER, 2002).

Material examined: 1 ♀, Kerman, Jiroft, 28° 39' 11" N 57° 45' 56" E, 659 m., 9-V-2015; 1 ♂, same locality, 15-VI-2015.

Spodoptera exigua (Hübner, 1808)

Distribution in Iran: Azarbajejan-e-Gharbi, Mazandaran, Golestan, Guilan, Lorestan, Tehran, Fars, Kerman, Khuzestan, Sistan-va-Baluchestan, Hormozgan, Bushehr, Kordestan, Kohgiluyeh-va-Boyerahmad (EBERT & HACKER, 2002; GUTLEB & WIESER, 2002).

Material examined: 1 ♀, Kerman, Khabr National Park, 28° 39' 19" N 56° 26' 46" E, 1920 m., 27-V-2015; 1 ♀, Kerman, Jiroft, 28° 39' 11" N 57° 45' 56" E, 659 m., 9-IX-2015; 1 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 8-IV-2016.

Spodoptera littoralis (Boisduval, 1833)

Distribution in Iran: Hormozgan, Bushehr (EBERT & HACKER, 2002), Fars, Esfahan, Golestan (MODARRES-AWAL, 2012), Khuzestan (ESFANDIARI *et al.*, 2011), Kerman (KOÇAK & KEMAL, 2014), Khorasan-e-Shomali (WIESER & STANGELMAIER, 2005).

Material examined: 1 ♂, 1 ♀, Khuzestan, Malaqa, 31° 35' 57" N 50° 00' 50" E, 1100 m., 8-IV-2016; 1 ♂, Khuzestan, Gotvand, 32° 18' 24" N 48° 45' 37" E, 112 m., 25-VI-2015; 1 ♂, Khuzestan, Ahvaz, 31° 16' 15" N 48° 36' 02" E, 17 m., 16-II-2016; 1 ♂, Kerman, Dalfard, 28° 56' 50" N 57° 39' 29" E, 1605 m., 24-VI-2015.

Xanthia gilvago (Denis & Schiffermüller, 1775)*

Distribution in Iran: Golestan (GUTLEB & WIESER, 2002; WIESER & STANGELMAIER, 2005).

Material examined: 1 ♂, Kerman, Sangdan, 29° 06' 06" N 56° 33' 12" E, 2966 m., 1-X-2015; 3 ♀♀, same locality, 10-XI-2016; 1 ♀, Kerman, Dehsard, 28° 40' 39" N 57° 33' 02" E, 1811 m., 5-XI-2016.

Conclusion

Larvae of some species which were recorded in our study such as *D. glaucus*, *D. eremita*, *D. oo* and *S. pulla* usually feed on oak as their host-plant. The collected localities of these moths in the studied areas include the oakwood forests. However, further studies are necessary for providing detailed information on the bionomics of some of our collected species.

All of our three new records for the fauna of Iran were collected in autumn which indicates the importance of investigating the autumn fauna in Iran. This period seems to be less explored than spring fauna. These results together with several new provincial records in our study point out that the Iranian fauna of Noctuidae still needs more intensive samplings to discover its unknown species. Moreover, since threats hanging over the fauna of Iranian ecosystems (JOWKAR *et al.*, 2016), we should have the chance to finish compiling the inventory of the moth fauna before it disappears. Meanwhile, the knowledge of Noctuoidea in Iran suffers from the lack of identification books which contain high quality photos, detailed diagnostic characters and provincial distribution maps.

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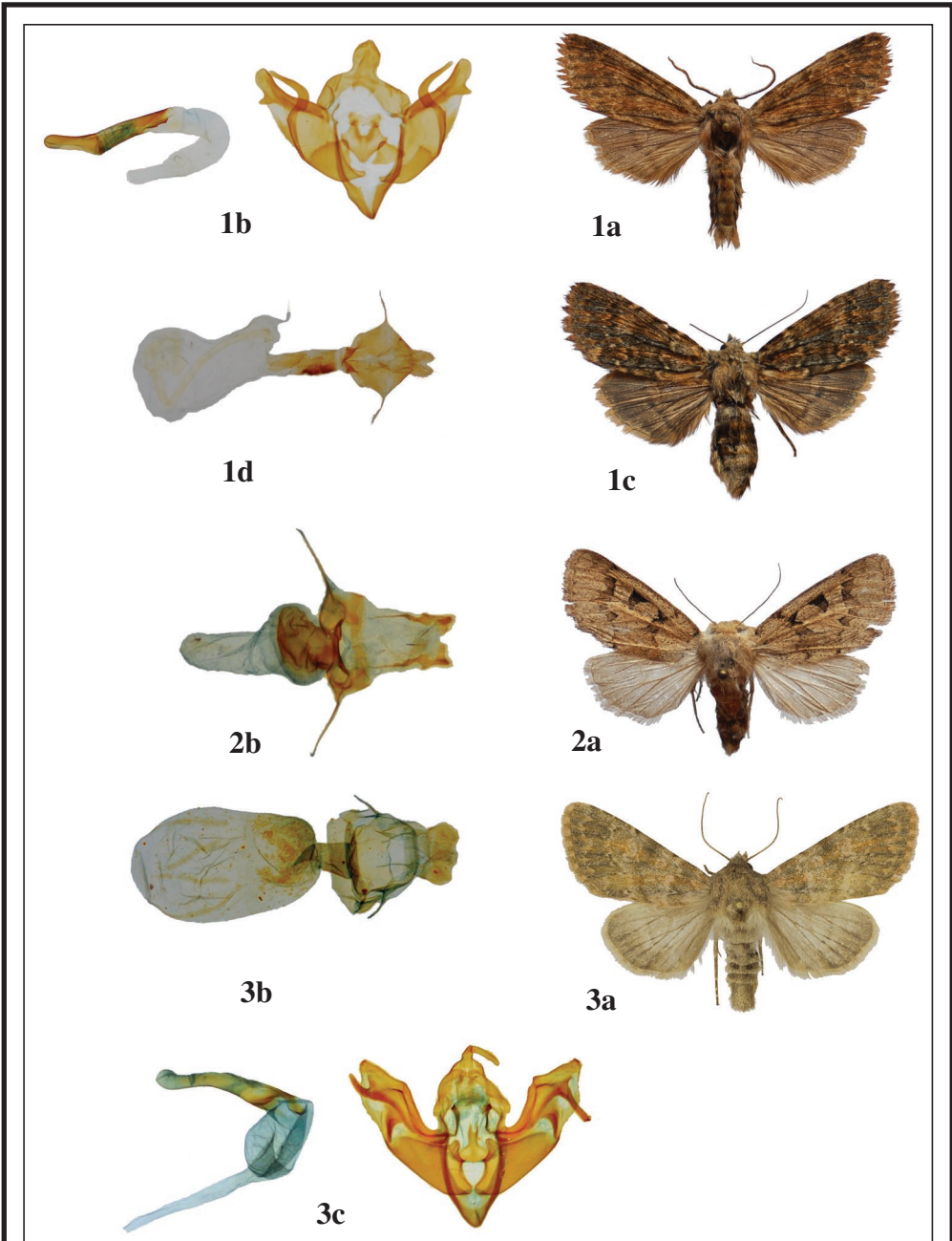
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Figures 1-3.– 1. *Dasytopia eberti*: a. adult male, b. male genitalia, c. adult female, d. female genitalia; 2. *Episema minutoides*: a. adult female, b. female genitalia; 3. *Polymixis schistochlora*: a. adult female, b. female genitalia, c. male genitalia.