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A SURVEY OF EREBIDAE, NOLIDAE AND EUTELIIDAE (LEPIDOPTERA) IN SOUTHERN AND NORTHEASTERN OF IRAN

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Esfandiari M., Rabieh M.M., Matov A., Mossadegh M.S. – A survey of Erebidae, Nolidae and Euteliidae (Lepidoptera) in Southern and Northeastern of Iran.

Noctuoidea are the largest superfamily of Lepidoptera which have not yet fully investigated in Iran. In order to inventories such important group, faunistic studies on the families Erebidae, Nolidae and Euteliidae were made by light traps mainly in the three Iranian provinces of Fars, Khuzestan and Khorasan-e-Razavi during 2009-2011. Totally, 42 taxa belonging to 26 genera and 7 subfamilies were collected. Among these, one species – *Drasteria kusnezovi* (John, 1910) – is newly reported for the Iranian fauna, together with 23 new provincial records. For all species, illustrations of adults and their genitalia are given with remarks.

KEY WORDS: fauna, Noctuoidea, new record, *Drasteria*, distribution.

INTRODUCTION

While specific geographical situation of Iran promises a rich entomofauna, inventorying the large insect order Lepidoptera has a great importance. In the present period of taxonomic and faunistic study on the superfamily Noctuoidea in Iran which began in late 1990s, the exploration of the Iranian Noctuoidea fauna has become remarkably more intensive due to several new projects conducted by local experts along with foreign researchers. These expeditions on the Iranian noctuoids have resulted in description of new taxa and report of new distributional records (e.g. EBERT & HACKER, 2002; ESFANDIARI *et al.*, 2010; ESFANDIARI, 2014; FIBIGER *et al.*, 2007; GYULAI *et al.*, 2002; HACKER & MEINEKE, 2001; RABIEH *et al.*, 2013a,b; RONKAY & GYULAI, 2006; VARGA & GYULAI, 2002). Here, we report the results of a study on the fauna of three noctuoid families Erebidae, Nolidae and Euteliidae from different geographical zones of Iran. The present study is in the framework of faunistic studies of noctuoid fauna of Iran at Shahid Chamran University of Ahvaz, Iran (e.g. ESFANDIARI *et al.*, 2011; RABIEH *et al.*, 2013a,b,c; RABIEH *et al.*, 2014). This report contains records of 42 species and subspecies of the three mentioned families. Illustrations of collected adults and their genitalia are presented for all species. We also report a new record for the fauna of Iran: *Drasteria kusnezovi* (JOHN, 1910). For this species, remarks on the diagnosis, bionomy and distribution are also given.

MATERIAL AND METHODS

Collectings were carried out mainly during 2009-2011, in different altitudes and vegetation types of the sampling localities in Khorasan-e-Razavi, Khuzestan and Fars provinces of Iran (Fig. I). Sampling program was made by using light traps powered by 12 volt batteries and 8 watt Black light UVB tubes. Genitalia of the specimens were dissected, stained and mounted according to FIBIGER (1997) with some modifications. The specimens and slides of their genitalia are deposited in the Insect and Mite Collection of Ahvaz (IMCA), Plant Protection Department, Shahid Chamran University of Ahvaz, Ahvaz, Iran. The systematics and nomenclature are according to LÖDL *et al.* (2012). Species denoted with an asterisk (*) are new provincial records. Results of collecting *Catocala* spp. was not listed here and will be presented later. Some specimens from other years and provinces (Golestan, Kerman & Khorasan-e-Jonubi, Fig. I) were added to the materials. Collectings in Khorasan and Golestan were carried out by M.M. Rabieh and other materials were collected by M. Esfandiari. Few specimens were found at IMCA and added to the materials.

RESULTS

Totally, 42 taxa belonging to 26 genera and 7 subfamilies were found from families Erebidae (36 species and two subspecies), Nolidae (three species) and Euteliidae (one species) in Iran. Among them, *Drasteria kusnezovi* is newly reported for the Iranian fauna. Twenty-three new provincial records were also registered in this study; 13 for Khuzestan, 6 for Khorasan-e-Razavi, 2 for Khorasan-e-Jonubi, 1 for Kerman and 1 for Golestan provinces.

LIST OF SPECIES

Family Erebidae

Apart from Lymantriinae and Arctiinae, other subfamilies of Erebidae can be distinguished as the clypeofrons is usually unscaled, which may be correlated with elongation and modification of the labial palps. The forewings are generally broader than in the other

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Fig. I – Map of the study area showing the Iranian provinces and main collecting areas of presented materials (Fars, Khorasan-e-Razavi, Khuzestan).

noctuoid families, such that a perpendicular line from the costa to the tornus is generally more than half the length of the costa, rather than less than half. However, there are many exceptions. The hindwing venation is usually quadrifine, although Micronoctuini show vein reduction. Erebidae are more likely to have patterned hindwings, and possibly all genera where the forewing pattern is continued onto the hindwing are erebids. A sharply angled forewing postmedial line, associated with a darker triangle or trapezium, with its base along the costa that is placed between it and the submarginal line or the apex, may serve to identify some erebids (ZAHIRI *et al.*, 2012).

Subfamily Rivulinae

Rivula tanitalis Rebel, 1912

Adult male, Fig. IV: 1; male genitalia, Fig. VI: 1.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Ahvaz, 20m, 31°18 14 N 48°39 30 E, 1 male, 28.IX.2014.

Subfamily Hypeninae

Hyrcanypena schwingenschussi Wagner, 1937*

Adult female, Fig. IV: 2; female genitalia, Fig. IX: 1.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 female, 10.V.2011, 1 female, 7.VI.2011.

REMARK: It has previously reported from north Iran as well as southern range of Zaghros in provinces of Fars, Lorestan and Kohgiluyeh-va-Boyerahmad (EBERT & HACKER, 2002).

Zekelita ravalis (Herrich-Schäffer, 1851)

Adult male, Fig. IV: 3; male genitalia, Fig. VI: 2; female genitalia, Fig. IX: 2.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Mashhad, Imam Reza Holy shrine, 974m, 36°17 21 N 59°36 48 E, 1 male, 29.V.2011; Kalat-e-Nader city, 1087m, 36°58 48 N 59°44 46 E, 3 males and 1 female, 10.VIII.2010; Binaloud mountains, 1558m, 36°25 56 N 59°09 41 E, 1 female, 30.IV.2011. Iran, Khuzestan Prov., Ahvaz-Baghmalek road, 630m, 31°30 57 N 49°41 26 E, 6 females, 6 males, 25.V.2011; Gotvand, 116m, 32°18 10 N 48°52 24 E, 1 male, 28.IX.2011. Iran, Fars Prov., Kamfiruz, 1700m, 30°20 28 N 52°13 13 E, 1 male, 25.VIII.2011.

Subfamily Boletobiinae

Colobochyla platizona (Lederer, 1870)*

Adult female, Fig. IV: 4; female genitalia, Fig. IX: 3.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 male, 13.V.2011, 1 male, 18.V.2011, 1 female, 30.VII.2011, 1 female, 20.VIII.2011; Karun 3 dam, 900m, 31°46 54 N 50°06 13 E, 2 males, 1 female, 6.VI.2012; Imamzadeh Abdollah, 2030m, 31°23 03 N 50°09 13 E, 2 males, 2 females, 11.V.2012. Iran, Fars Prov., Kamfiruz, 1700m, 30°20 28 N 52°13 13 E, 1 female, 25.VIII.2011; Neyriz, 2050m, 29°13 22 N 54°26 17 E, 2 males, 1 female, 27.VIII.2011.

REMARK: It seems that this species is distributed across

the mountains of Alborz and Zaghros in Iran (HACKER, 1990; EBERT & HACKER, 2002; LEHMANN & ZAHIRI, 2011). Here, we report it for the first time from Khuzestan province.

Calymma gracilis Osthelder, 1933*
Adult female, Fig. IV: 5; male genitalia, Fig. VI: 3; female genitalia, Fig. IX: 4.
MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Mashhad, Toos area, 1030m, 36°29 58 N 59°31 11 E, 1 male, 27.VI.2011. Iran, Fars Prov., Neyriz, Layraz, 2050m, 29°13 22 N 54°26 17 E, 1 male, 1 female, 27.VIII.2011; Kamfiruz, 1700m, 30°20 28 N 52°13 13 E, 1 female, 25.VIII.2011.
REMARK: The larvae of this species live in soft cases on coccid pests of fruit trees and are a predator in all stages (HACKER, 2001). This is the first record for Khorasan-e-Razavi.

Eublemma ostrina (Hübner, 1808)
Adult female, Figs. IV: 6, 7; male genitalia, Fig. VI: 4; female genitalia, Fig. IX: 5.
MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Sabzevar, Shirahmad, 985m, 36°07 09 N 57°51 08 E, 1 female, 02.V.2011; Binaloud mountains, 1558m, 36°25 56 N 59°09 41 E, 2 males and 1 female, 30.IV.2011.
REMARK: The larvae are oligophagous on Asteraceae species (HACKER, 2001). This species is very variable; it can be from concolourous dark reddish brown to uniform yellow (P. Gyulai, personal communication). In this study we collected two completely different forms of this species; a common form (Fig. IV: 6) from Shirahmad Wildlife Refuge in NE Iran and a rare migrant form (Fig. IV: 7) from Binaloud mountains.

Rhypagla lacernaria (Hübner, 1813)*
Adult male, Fig. IV: 8; male genitalia, Fig. VI: 5.
MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 male, 27.IV.2011.
REMARK: The larvae of this species feed on species of the genus *Phlomis* (HACKER, 2001) which occur in the collecting area.

Subfamily Toxocampinae
Lygephila craccae (Denis & Schiffermüler, 1775)*
Adult male, Fig. IV: 9; male genitalia, Fig. VI: 6; female genitalia, Fig. IX: 6.
MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 female, 20.VIII.2011. Iran, Fars Prov., Sepidan, 2330m, 30°21 22 N 52°03 36 E, 2 males, 21.VII.2011.
REMARK: The commonest *Lygephila* species on the mainland of Western Europe. This Eurasiatic species is found in grassy places where the foodplants (various Fabaceae such as *Vicia*, *Astragalus*, *Coronilla* and *Lathyrus*) occur (GOATER *et al.*, 2003; HACKER, 2001). This is first record for Khuzestan.

Tathorhynchus exsiccata (Lederer, 1855)
Adult male, Fig. IV: 10; male genitalia, Fig. VI: 7; female genitalia, Fig. IX: 7.
MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 4 males, 4 females, 5.VI.2010.

Autophila luxuriosa clara Wiltshire, 1952*
Adult male, Fig. IV: 11; male genitalia, Fig. VI: 8; female genitalia, Fig. IX: 8.
MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 male, 4.V.2010, 1 male, 10.V.2011, 1 male, 1 female, 18.V.2012; Karun 3 dam, 900m, 31°46 54 N 50°06 13 E, 1 male, 4.VI.2011; Imamzadeh Abdollah, 2030m, 31°23 03 N 50°09 13 E, 5 males, 2 females, 11.V.2012.
REMARK: The subspecies *clara* is an Iranian taxon described from Fars province (Zaghros range) (WILTSHIRE, 1952). The bionomy and food plants are unknown.

A. asiatica (Staudinger, 1888)*
Adult male, Fig. IV: 12; male genitalia, Fig. VI: 9; female genitalia, Fig. IX: 9.
MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 2 males, 18.V.2012, 1 female, 13.V.2011; Imamzadeh Abdollah, 2030m, 31°23 03 N 50°09 13 E, 1 male, 2 females, 11.V.2012; Karun 3 dam, 900m, 31°46 54 N 50°06 13 E, 1 male, 4.VI.2011, 1 female, 6.VI.2012.

A. cerealis (Staudinger, 1871)*
Adult female, Fig. IV: 13; male genitalia, Fig. VI: 10; female genitalia, Fig. IX: 10.
MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 female, 27.IV.2011; 1 female, 20.IV.2012; Imamzadeh Abdollah, 2030m, 31°23 03 N 50°09 13 E, 4 males & females, 11.V.2012; Behbahan, 226m, 30°35 40 N 50°17 23 E, 1 female, 22.V.2007; Ramhormoz, 300m, 31°18 49°39 , 1 female, 28.III.2013. Ilam Prov., Dehloran, 545m, 32°41 N 47°16 E, 1 male, 17.III.2014.
REMARK: This is the most frequent of all *Autophila* species and its larvae feed on low herbs as *Salvia*. The species inhabits rocky semidesert and also mountainous areas (HACKER, 2001).

Subfamily Erebinae
Pandesma robusta (Walker, 1858)
Adult female, Fig. IV: 14; male genitalia, Fig. VII: 1; female genitalia, Fig. IX: 11.
MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Mashhad, Imam Reza Holy shrine, 974m, 36°17 21 N 59°36 48 E; 1 female, 26.V.2011; 3 females, 29.V.2011; 1 male and 10 females, 03.VI.2011; 3 females, 04.VI.2011; 2 females, 06.VI.2011; 2 males, 6 females, 08.VI.2011; 1 male and 3 females, 11.VIII.2011; 5 females, 20.VIII.2011; 7 females, 15.VIII.2011; 3 females, 20.VIII.2011; Sabzevar, Shirahmad, 985m, 36°07 09 N 57°51 08 E, 1 male and 1 female, 02.V.2011; Khaf city, 1034m, 34°33 17 N 60°07 57 E, 1 female, 22.VI.2010. Khuzestan Prov., Haftappeh, 44m, 32°03 43 N 48°31 54 E, 1 female, 4.V.2009; Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 male, 2.V.2011, 1 female, 20.IV.2012; Hamidieh, 11m, 31°22 43 N 48°32 11 E, 1 male, 24.V.2010.
REMARK: Species of *Acacia*, *Populus* and *Albizzia* which occur in Khuzestan previously recorded as foodplants of this moth (HACKER, 2001; Kravchenko *et al.*, 2007).

Zethes narghisa Brandt, 1938
Adult female, Fig. IV: 15; male genitalia, Fig. VII: 2; female genitalia, Fig. IX: 12.

MATERIAL EXAMINED: Iran, Fars Prov., Saadatshahr, 1750m, 29°58 14 N 53°14 34 E, 1 male, 4.VIII.2011; Sepidan, 2330m, 30°21 22 N 52°03 36 E, 1 male, 21.VII.2011; Sepidan, Kakun village, 2500m, 30°32 22 N 51°49 56 E, 1 male, 11.VIII.2011, 1 female, 8.IX.2011; Kohmare Sorkhi, 1900m, 29°28 11 N 52°08 44 E, 1 females, 28.IV.2011; Neyriz, Layraz, 2050m, 29°13 22 N 54°26 17 E, 1 male, 27.VIII.2011.

REMARK: It has only reported from Fars and Sistan-va-Baluchestan provinces of Iran (HACKER, 1990; EBERT & HACKER, 2002).

Z. nemea Brandt, 1938

Adult female, Fig. IV: 16; male genitalia, Fig. VII: 3; female genitalia, Fig. IX: 13.

MATERIAL EXAMINED: Iran, Fars Prov., Neyriz, Layraz, 2050m, 29°13 22 N 54°26 17 E, 1 male, 2 females, 27.VIII.2011; Neyriz-Estahban road, 1900m, 29°10 45 N 54°12 21 E, 6 male & females, 2.IX.2012.

REMARK: This species is only reported from Iran and Afghanistan (HACKER, 1990). The bionomy and food plants are unknown. Two collected localities had distance of 10 kms; however, specimens we collected in the first locality are paler.

Z. brandti Janzon, 1977

Adult female, Fig. IV: 17; female genitalia, Fig. IX: 14.

MATERIAL EXAMINED: Iran, Fars Prov., Firuzabad, 1600m, 29°00 47 N 52°29 51 E, 1 female, 1.IX.2008.

Pericyma albidentaria (Freyer, 1842)*

Adult male, Fig. IV: 18; male genitalia, Fig. VII: 4; female genitalia, Fig. IX: 15.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Mashhad, Toos area, 1030m, 36°29 58 N 59°31 11 E, 2 females, 11.VII.2010; 1 female, 23.V.2011; Binaloud mountains, 1558m, 36°25 56 N 59°09 41 E, 1 male, 27.V.2011; Mashhad, Imam Reza Holy shrine, 974m, 36°17 21 N 59°36 48 E; 1 female, 04.VI.2011; Chelmir, 1024m, 37°23 34 N 58°51 22 E, 1 female, 10.V.2011. Khorasan-e-Jonubi Prov., Birjand, 1450m, 32°52 41 N 59°13 50 E, 1 female, found at insect collection of University of Birjand with no more data.

REMARK: Usually this species resembles *P. squalens* in habitus and wing pattern, and also to species of the genus *Heteropalpia*. This is the first record from Khorasan-e-Jonubi.

P. squalens Lederer, 1855*

Adult male, Fig. IV: 19; male genitalia, Fig. VII: 5; female genitalia, Fig. IX: 16.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Haftappeh, 44m, 32°03 43 N 48°31 54 E, 1 male, 1 female, 4.V.2009, 1 male, 2 female, 24.IV.2009. Iran, Golestan Prov., Qoroq, 116m, 36°52 47 N 54°41 01 E, 2 female, 20.VII.2010.

REMARK: This is the first record for Golestan province.

Heteropalpia vetusta (Walker, 1865)

Adult male, Fig. IV: 20; male genitalia, Fig. VII: 6; female genitalia, Fig. IX: 17.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Haftappeh, 44m, 32°03 43 N 48°31 54 E, 2 female, 8.V.2007, 2 male, 2 female, 4.V.2009, 2 male, 24.IV.2009; Hamidieh, 11m, 31°22 43 N 48°32 11 E, 2 male, 24.V.2010; Gotvand, 120m, 32°18 25 N 48°47 00 E, 1 male, 24.VIII.2011; Masjed-Soleiman, 120m, 31°58 29 N 49°04 04 E, 2 male, 4.IX.2011.

Acantholipes regularis (Hübner, 1813)

Adult male, Fig. IV: 21; male genitalia, Fig. VII: 7; female genitalia, Fig. IX: 18.

MATERIAL EXAMINED: Iran, Fars Prov., Kamfiruz, 1700m, 30°20 28 N 52°13 13 E, 1 female, 25.VIII.2011; Sepidan-Nurabad road, 1900m, 30°00 43 N 52°02 06 E, 1 male, 23.VI.2011.

A. regulatrix Wiltshire, 1961*

Adult female, Fig. IV: 22; female genitalia, Fig. IX: 19.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Akhlamad mountains, 1550m, 36°35 52 N 58°55 07 E, 1 female, 05.VII.2011; Iran, Khorasan-e-Razavi Prov., Binaloud mountains, 1558m, 36°25 56 N 59°09 41 E, 1 female, 27.V.2011.

REMARK: This species was described from Afghanistan. MUHABBET *et al.* (2007) mentioned the species for Iran; however, we could not trace back this record. We collected this species from Binaloud and also from Kopet-Dagh mountains near the border between Iran and Turkmenistan.

Iranada turcorum (Zerny, 1915)*

Adult female, Fig. IV: 23; male genitalia, Fig. VII: 8; female genitalia, Fig. IX: 20.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Sabzevar, Shirahmad, 985m, 36°07 09 N 57°51 08 E, 3 males, 02.V.2011.

REMARK: It was not previously reported from NE Iran. We collected this species from a semidesert area in the Khorasan-e-Razavi province.

Drasteria cailino (Lefèbvre, 1827)*

Adult male, Fig. IV: 24; male genitalia, Fig. VII: 9; female genitalia, Fig. X: 1.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Gonabad city, 1706 m, 34°07 49 N 58°37 57 E, 1 male, 05.VI.2011. Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 female, 20.VIII.2011.

REMARK: This Ponto-Mediterranean species occurs in Alborz and Zaghros mountain areas (HACKER, 1990; EBERT & HACKER, 2002). In Northeastern Iran, it was collected it in the dry mountains of Gonabad city. The larvae feed on shrubs as *Salix viminalis* and *Rosa canina* in European countries (GOATER *et al.*, 2003). This is the first provincial record for both Khorasan-e-Razavi and Khuzestan.

D. kusnezovi (John, 1910)

Adult male, Fig. II: 1; adult female, Fig. II: 2; male genitalia, Figs. III: 1,2; female genitalia, Fig. III: 3.

Leucanitis kusnezovi John, 1910: Horae Soc. Ent. Ross. 39: 606. L.t.: [Kazakhstan] Syr-darja Gebiet, Perovsk, Aj-darle, Baigakum, Dshulek. Syntypes: 34 , 11 [ZIN, Saint-Petersburg].

MATERIAL EXAMINED: Iran, Kerman Prov., Sirjan, 1750m, 29°26 53 N 55°41 45 E, 1 male, 1 female, 1.IV.2008.

REMARK: Checking the type series revealed that the old labels "specimen typicum" were put by somebody (may be, by John himself) only under one male (Fig. II:3, Kazakhstan, Sir Darja, Dshulek) and one female (Fig. II: 4, Kazakhstan, Sir Darja, Baigakum), but in

fact the type series, according the original description, is very large.

DESCRIPTION: Wingspan 33-39 mm. Head, thorax and abdomen pale ochreous grey; thorax with 2 dark brown lateral stripes. Basal area of forewing to antemedial line brown grey with ochreous irroration; antemedial line double, brown basally and black apically, usually with short black longitudinal stroke in the middle; postmedial line double, black basally and brown apically, with toothed projections on veins 3-5, then curving strongly around cell and sinuous-oblique to anal margin; medial line double, brown, very close to postmedial line; medial area between crosslines broad, ochreous or ochreous grey, in some specimens light greyish brown; subterminal line double, dark brown basally, light brown apically, with short black longitudinal strokes on some veins; area between postmedial and subterminal lines dark greyish brown; terminal area grey; reniform stigma grey, with dark brown outline; fringe pale ochreous, with brown strokes near tips of veins. Hindwing white, suffused brown near anal margin, edged by a strongly curved dark brown band which form 2 arms, both extends termen and one of them widens to termen; usually this band is broader than a third of hindwing length, but in some specimens much narrower; discal spot long and narrow, dark brown, medially curved, its anal tip joined with dark brown band; fringe white with 2 light brown strokes. Underside of forewing white, with broad dark brown medial line, dark brown area between postmedial and subterminal lines and dark brown spot in terminal area. Underside of hindwing is similar to upperside but paler. One syntype is an aberrant with black medial area on forewing (Fig. II: 5, Kazakhstan, Sir Darja, Aj-Darle). The collected specimens in Iran are darker than type series but there are similar specimens from Kazakhstan (Semirechie, in Chulokaj). However, the medial field in any case is much lighter than the background of forewing. Male genitalia asymmetrical; uncus slightly broadened medially; scaphium fine, well-defined, mandibulate with uncus; valva slightly broadened to apex, with rounded apical part; right ampulla broad-based, triangular, curved apically, left ampulla broader and not curved; costa well-developed, right costa curved apically, that on left some shorter and almost straight; short thin process situated near base of right costa; saccular extension long but falls well short of tip of valva and its tip bluntly falcate; juxta nearly divided into left and right halves, with two blunt, oblique posterior arms and much narrower, widely divergent anterior arms; aedeagus tubular, with V-shaped, oblique tip; vesica angled into two principal lobes of different size and shape, each with small accessory diverticula, dorsal side near base bear 2 fields covered with small spines. In female genitalia ovipositor telescopic, papillae anales pointed; apophyses slender, posterioris to one third longer than anterioris; antrum wide, with V-shaped sclerotised plate and narrow transverse plate; ductus bursae straight, with sclerotised plate on dorsal and ventral sides; corpus bursae ovoid, with short neck (genital figures from type series, Fig. III:4-6).

DIAGNOSIS: The species is very similar to *Drasteria herzi* (Alpheraky, 1895) but differ by more narrow forewings with paler and more greyish colouration and twice broader light medial area. On hindwing discal spot and dark brown edging band usually narrower than in *D. herzi*. In male genitalia valva of *D. kusnezovi* is narrower with much shorter ampulla than in *D. herzi*.

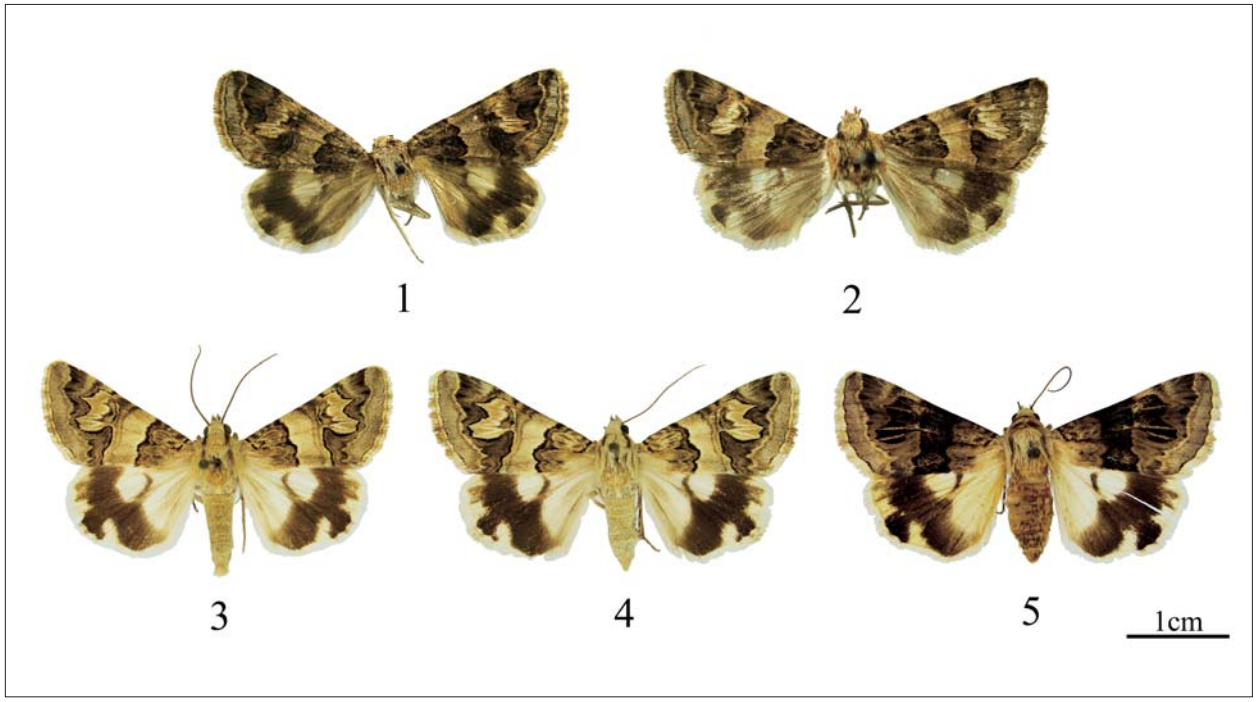

Fig. II – Wing patterns of *Drasteria kusnezovi* speciemns. 1: male specimen (Iran, Sirjan), 2: female specimen (Iran, Sirjan), 3: male specimen (Kazakhstan, Sir Darja, Dshulek), 4: female specimen (Kazakhstan, Sir Darja, Baigakum), 5: abbrant syntype (Kazakhstan, Sir Darja, Aj-Darle).

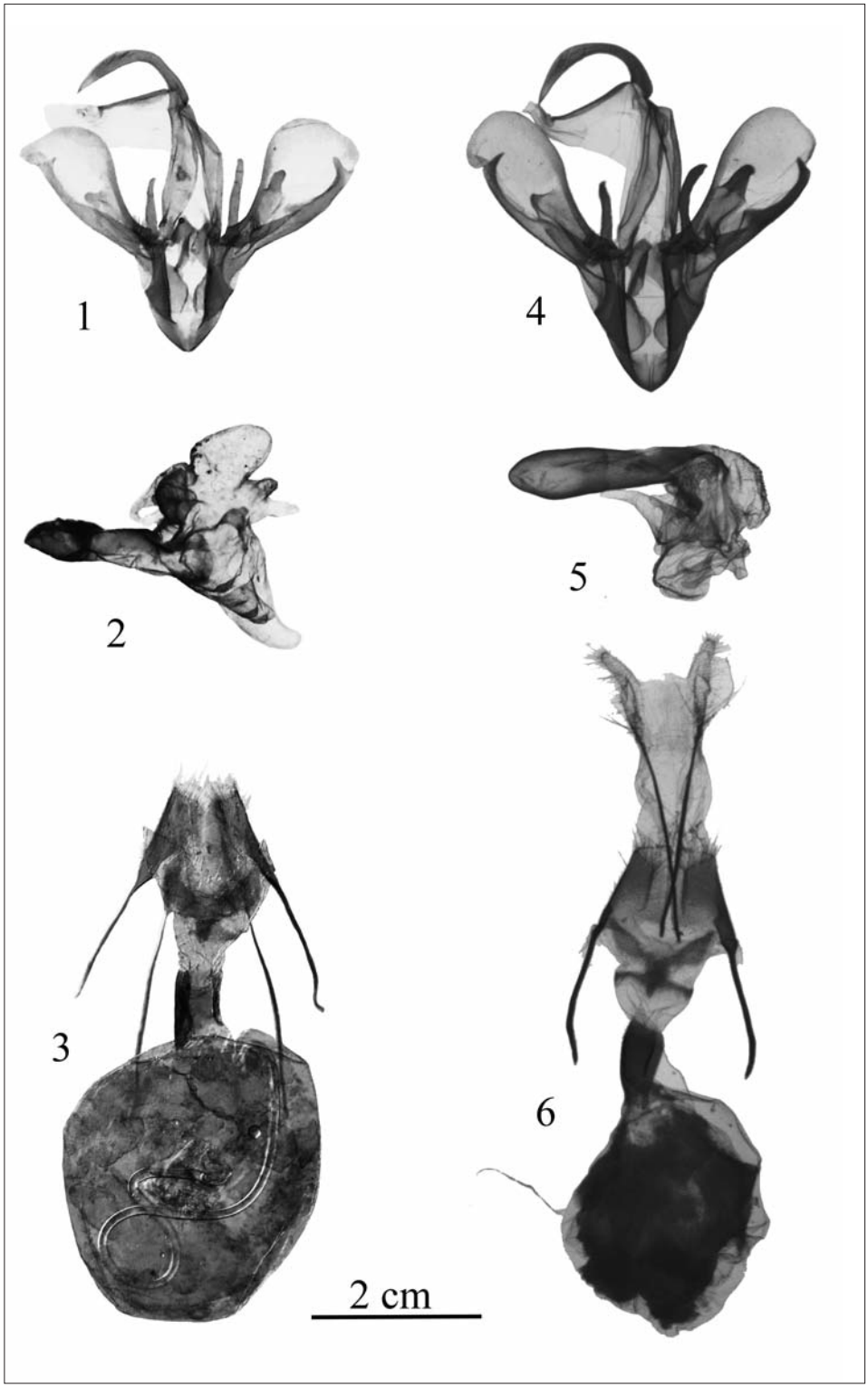

Fig. III – Male and female genitalia of *Drasteria kusnezovi* speciemns. 1-2: armature and aedeagus of male genitalia (Iran, Sirjan), 3: female genitalia (Iran, Sirjan); 4-5: armature and aedeagus of male genitalia (Kazakhstan, Sir Darja, Baigakum), 6: female genitalia (Kazakhstan, Sir Darja, Aj-Darle).

BIONOMICS: Moths fly from April to July, presumably in 2 generations. They inhabit sandy deserts, especially near river valleys and their foodplants are unknown. The collected locality (Sirjan) in Kerman province is a desert area with a cold semi-arid climate.

DISTRIBUTION: Irano-Turanian. Kazakhstan (western and southern parts), Uzbekistan (western part), Turkmenistan.

D. saisani (Staudinger, 1882)

Adult male, Fig. IV: 25; male genitalia, Fig. VII: 10.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Kalat-e-Nader city, 1087m, 36°58 48 N 59°44 46 E, 1 male and 1 female, 10.VIII.2010; Binaloud mountains, 1558m, 36°25 56 N 59°09 41 E, 1 male, 27.V.2011.

D. picta (Christoph, 1877)

Adult male, Fig. IV: 26; male genitalia, Fig. VII: 11; female genitalia, Fig. X: 2.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov.,

Sarakhs, 430m, 35°56 59 N 61°09 46 E, 10 females, 12 males, 27.III.2012.

REMARK: Many specimens of this species were found around the Doosti dam area and attracted to light during the night. During the day they were eaten by different birds, small mammals and predatory insects.

D. flexuosa (Ménétriés, 1848)

Adult male, Fig. V: 1; male genitalia, Fig. VII: 12; female genitalia, Fig. X: 3.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Mashhad, Imam Reza Holy shrine, 974m, 36°17 21 N 59°36 48 E; 2 males, 20.VII.2011; Sabzevar, Shirahmad, 985m, 36°07 09 N 57°51 08 E, 3 males, 02.V.2011. Iran, Fars Prov., Saadatshahr, 1750m, 29°58 14 N 53°14 34 E, 1 female, 4.VIII.2011; Neyriz, Layraz, 2050m, 29°13 22 N 54°26 17 E, 1 male, 27.VIII.2011; Kamfiruz, 1700m, 30°20 28 N 52°13 13 E, 2 males, 2 females, 25.VIII.2011; Kohmare Sorkhi, 1900m, 29°28 11 N 52°08 44 E, 1 female, 28.IV.2011. Kerman Prov., Sirjan, 1750m, 29°26 53 N 55°41 45 E, 1 male, 28.III.2008. Khorasan-e-Jonubi Prov., Birjand, 1450m, 32°52 41 N 59°13 50 E, 2 male, 2 female, found at insect collection of University of Birjand with no more data.

D. yerburii (Butler, 1892)*

Adult male, Fig. V: 2; male genitalia, Fig. VIII: 1; female genitalia, Fig. X: 4.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Sabzevar, Shirahmad, 985m, 36°07 09 N 57°51 08 E, 2 males and 1 female, 02.V.2011; Khorasan-e-Jonubi Prov., Birjand, 1450m, 32°52 41 N 59°13 50 E, 1 male, found at insect collection of University of Birjand with no more data.

REMARK: It has recorded from western and southern Iran (HACKER, 1990; EBERT & HACKER, 2002). This is the first record from northeastern Iran.

Anumeta cestis (Ménétriés, 1848)

Adult male, Fig. V: 3; male genitalia, Fig. VIII: 2.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Sabzevar, Shirahmad, 985m, 36°07 09 N 57°51 08 E, 1 male, 02.V.2011.

Ophiusa tirhaca (Cramer, 1777)*

Adult male, Fig. V: 4; male genitalia, Fig. VIII: 3; female genitalia, Fig. X: 5.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Ahvaz, 20m, 31°18 14 N 48°39 30 E, 3 male, 2 female, 23.IV.2010. Iran, Kerman Prov., vicinity of Kerman, 1780m, 30°15 N 57° 08 E, 3 female, 18.IX.2012; Sirjan, 1830m, 29°33 N 55°39 E, 1 male, 20.IX.2012.

REMARK: This is the first provincial record for Kerman.

Clytie gracilis (Bang-Haas, 1907)*

Adult male, Fig. V: 5; male genitalia, Fig. VIII: 4; female genitalia, Fig. X: 6.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Hamidieh, 11m, 31°22 43 N 48°32 11 E, 1 male, 24.V.2010; Ahvaz-Baghmalek road 180 kms., 626m, 31°30 57 N 49°41 26 E, 1 male, 3 female, 25.V.2011. Iran, Fars Prov., Tangetizab, 2200m, 30°20 18 N 51°50 09 E, 1 male, 1 female, 28.VII.2011.

REMARK: Great variation in size and facies as well as sexual dimorphism in members of *Clytie* makes difficulties in their identification. However, revision of this genus by Hacker (2001) is a very good identification guide. *Clytie* spp. feed on *Tamarix* species which occur in Khuzestan plains. This is the first provincial record for Khuzestan.

C. delunaris (Staudinger, 1889)

Adult male, Fig. V: 6; male genitalia, Fig. VIII: 5; female genitalia, Fig. X: 7.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Haftappeh, 44m, 32°03 43 N 48°31 54 E, 1 male, 3 female, 4.V.2009; Hamidieh, 11m, 31°22 43 N 48°32 11 E, 1 female, 24.V.2010.

C. distincta iranica Brandt, 1939*

Adult male, Fig. V: 7; male genitalia, Fig. VIII: 6.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 male, 5.VI.2010.

C. infrequens (Swinhoe, 1884)*

Adult female, Fig. V: 8; adult male, Fig. V: 9; male genitalia, Fig. VIII: 7; female genitalia, Fig. X: 8.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Hamidieh, 11m, 31°22 43 N 48°32 11 E, 1 male, 2 female, 24.V.2010.

Dysgonia algira (Linnaeus, 1767)*

Adult male, Fig. V: 10; male genitalia, Fig. VIII: 8.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Binaloud mountains, 1558m, 36°25 56 N 59°09 41 E, 1 male, 27.V.2011.

D. torrida (Guenée, 1852)

Adult male, Fig. V: 11; male genitalia, Fig. VIII: 9; female genitalia, Fig. X: 9.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Ahvaz, 20m, 31°18 14 N 48°39 30 E, 1 female, 21.IV.2004, 1 female, 24.V.1984; Haftappeh, 44m, 32°03 43 N 48°31 54 E, 1 male, 24.IV.2009; Masjed-Soleiman, 120m, 31°58 29 N 49°04 04 E, 1 female, 4.IX.2011; Dezful, 130m, 31°58 29 N 49°04 04 E, 1 male, 14.IX.2014. Iran, Fars Prov., Neyriz, 1600m, 29°11 42 N 54°19 42 E, 1 male, 29.III.2013; Nurabad, 970m, 30°06 44 N 51°31 14 E, 1 female, 19.VII.2012.

REMARK: Specimens of lowland areas had paler colour compare with those from higher altitudes.

Grammodes bifasciata (Petagna, 1788)

Adult male, Fig. V: 12; male genitalia, Fig. VIII: 10; female genitalia, Fig. X: 10.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Ahvaz-Abadan road, 25Kms., 12m, 31°02 16 N 48°24 27 E, 1 female, 10.IX.2012.

Trigonodes hyppasia (Stoll in Cramer, 1779)

Adult female, Fig. V: 13; female genitalia, Fig. X: 11.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Behbahan, 226m, 30°35 40 N 50°149 293 E, 1 female, 30.XII.1994.

Family Nolidae

The family Nolidae is diagnosed and morphologically characterized by construction of a ridged boat-shaped cocoon that bears a vertical exit slit at one end; elongation of the forewing retinaculum into a bar-like or digitate condition and possession of a postpiracular

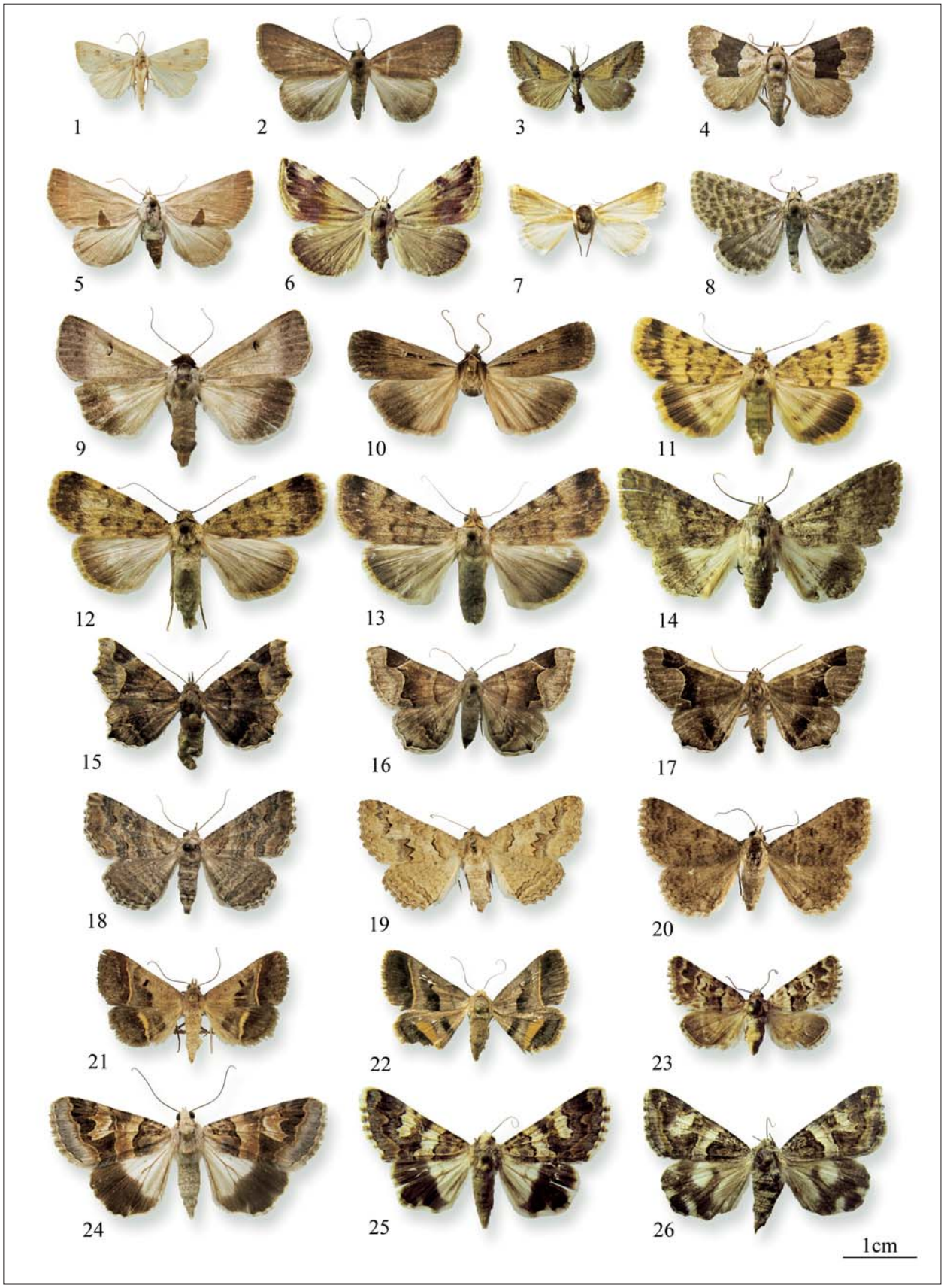

Fig. IV – Wing patterns of collected species. 1. *Rivula tanitalis,* male (Khuzestan); 2. *Hyrcanypena schwingenschussi*, female (Fars); 3. *Zekelita ravalis*, male (Khorasan-e-Razavi); 4. *Colobochyla platizona,* female (Khuzestan); 5. *Calymma gracilis,* female (Fars); 6. *Eublemma ostrina,* female (common form from Khorasan-e-Razavi: Shirahmad); 7. *E. ostrina,* male (rare form from Khorasan-e-Razavi: Binaloud mountains); 8. *Rhypagla lacernaria*, male (Khuzestan); 9. *Lygephila craccae,* male (Fars); 10. *Tathorhynchus exsiccata*, male (Khuzestan); 11. *Autophila luxuriosa clara*, male (Fars); 12. *A. asiatica*, male (Fars); 13. *A. cerealis,* female (Fars); 14. *Pandesma robusta*, female (Khorasan-e-Razavi); 15. *Zethes narghisa*, male (Fars); 16. *Z. nemea*, female (Fars); 17. *Z. brandti*, female (Fars); 18. *Pericyma albidentaria*, male (Khorasan-e-Razavi); 19. *P. squalens*, male (Khuzestan); 20. *Heteropalpia vetusta*, male (Khuzestan); 21. *Acantholipes regularis,* male (Khuzestan); 22. *A. regulatrix,* female (Khorasan-e-Razavi); 23. *Iranada turcorum*, male (Khorasan-e-Razavi); 24. *Drasteria cailino*, male (Khorasan-e-Razavi); 25. *D. saisani*, male (Khorasan-e-Razavi); 26. *D. picta*, male (Khorasan-e-Razavi).

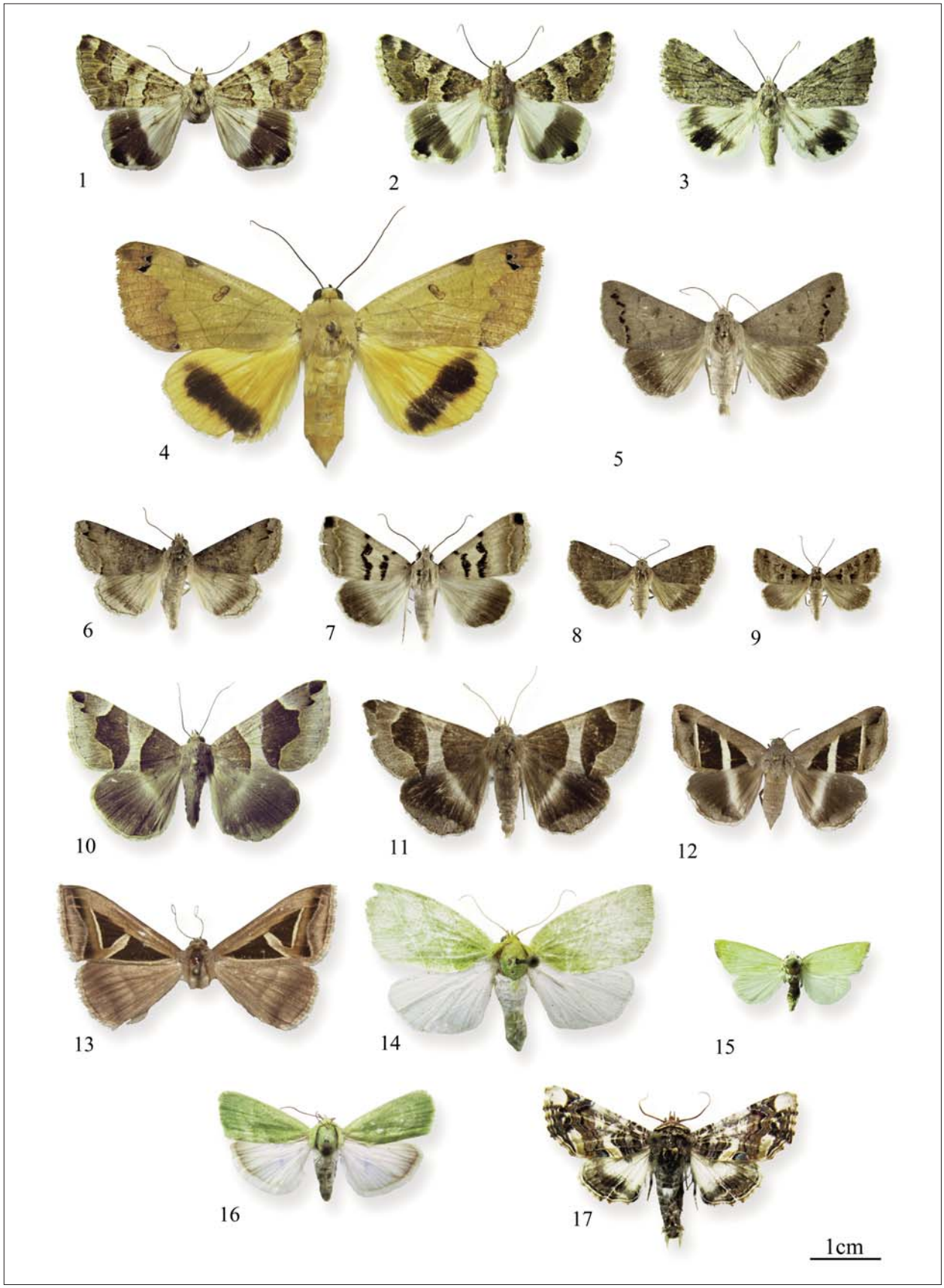

Fig. V – Wing patterns of collected species. 1. *Drasteria flexuosa*, male (Khorasan-e-Razavi); 2. *D. yerburii*, male (Khorasan-e-Razavi); 3. *Anumeta cestis,* male (Khorasan-e-Razavi); 4. *Ophiusa tirhaca*, male (Khuzestan); 5. *Clytie gracilis*, male (Khuzestan); 6. *C. delunaris*, male (Khuzestan); 7. *C. distincta iranica*, male (Khuzestan); 8. *C. infrequens*, female (Khuzestan); 9. *C. infrequens*, male (Khuzestan); 10. *Dysgonia algira*, male (Khorasan-e-Razavi); 11. *D. torrida*, male (Khuzestan); 12. *Grammodes bifasciata*, male (Khuzestan); 13. *Trigonodes hyppasia*, female (Khuzestan); 14. *Bena bicolorana*, female (Fars); 15. *Earias* sp., male (Khorasan-e-Razavi); 16. *E. insulana,* female (Fars); 17. *Eutelia adulatrix*, male (Fars).

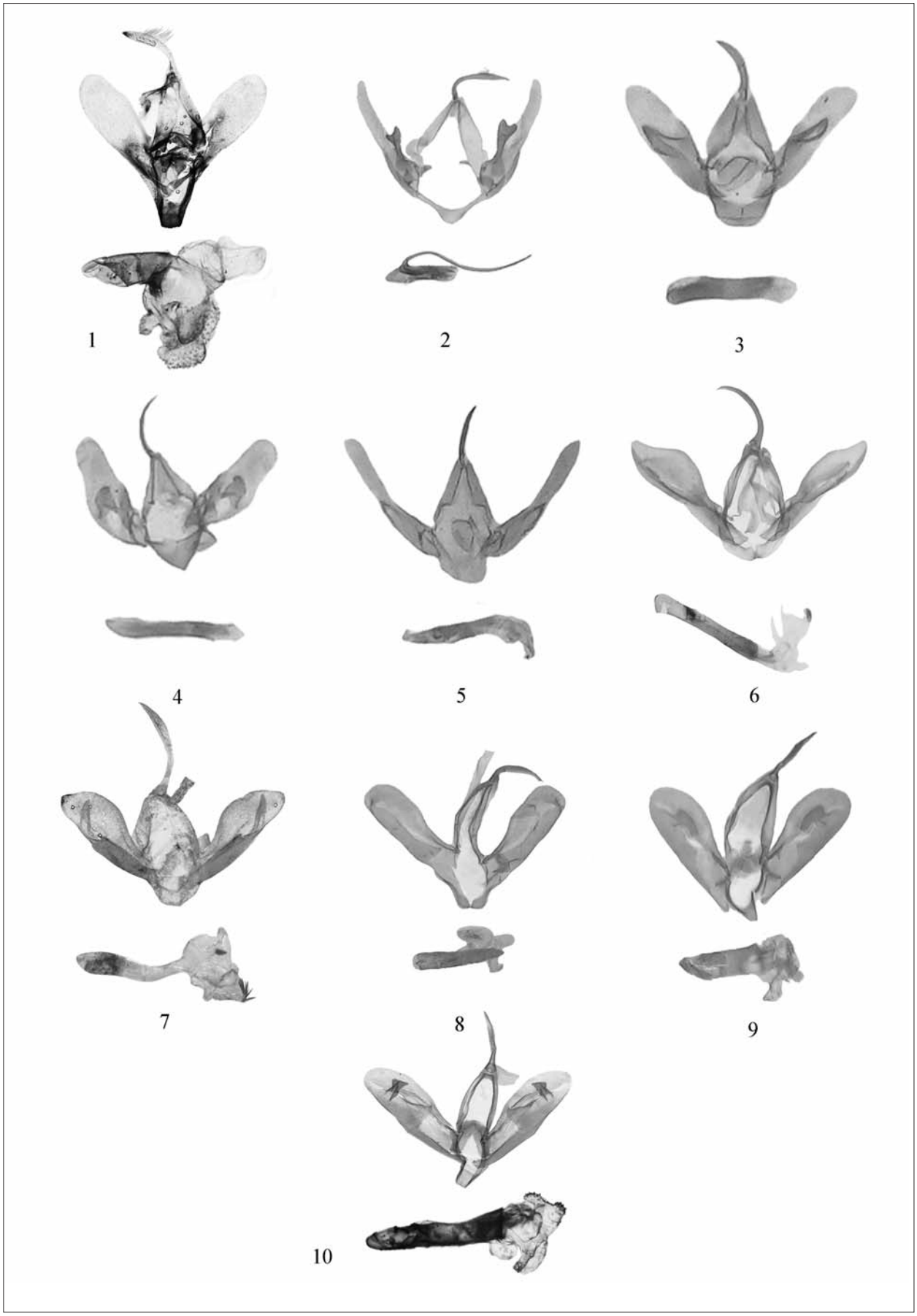

Fig. VI – Male genitalia of collected species. 1. *Rivula tanitalis* (Khuzestan); 2. *Zekelita ravalis* (Khorasan-e-Razavi); 3. *Calymma gracilis* (Fars); 4. *Eublemma ostrina* (rare form from Khorasan-e-Razavi: Binaloud mountains); 5. *Rhypagla lacernaria* (Khuzestan); 6. *Lygephila craccae* (Fars); 7. *Tathorhynchus exsiccata* (Khuzestan); 8. *Autophila luxuriosa clara* (Fars); 9. *A. asiatica* (Fars); 10. *A. cerealis* (Fars).

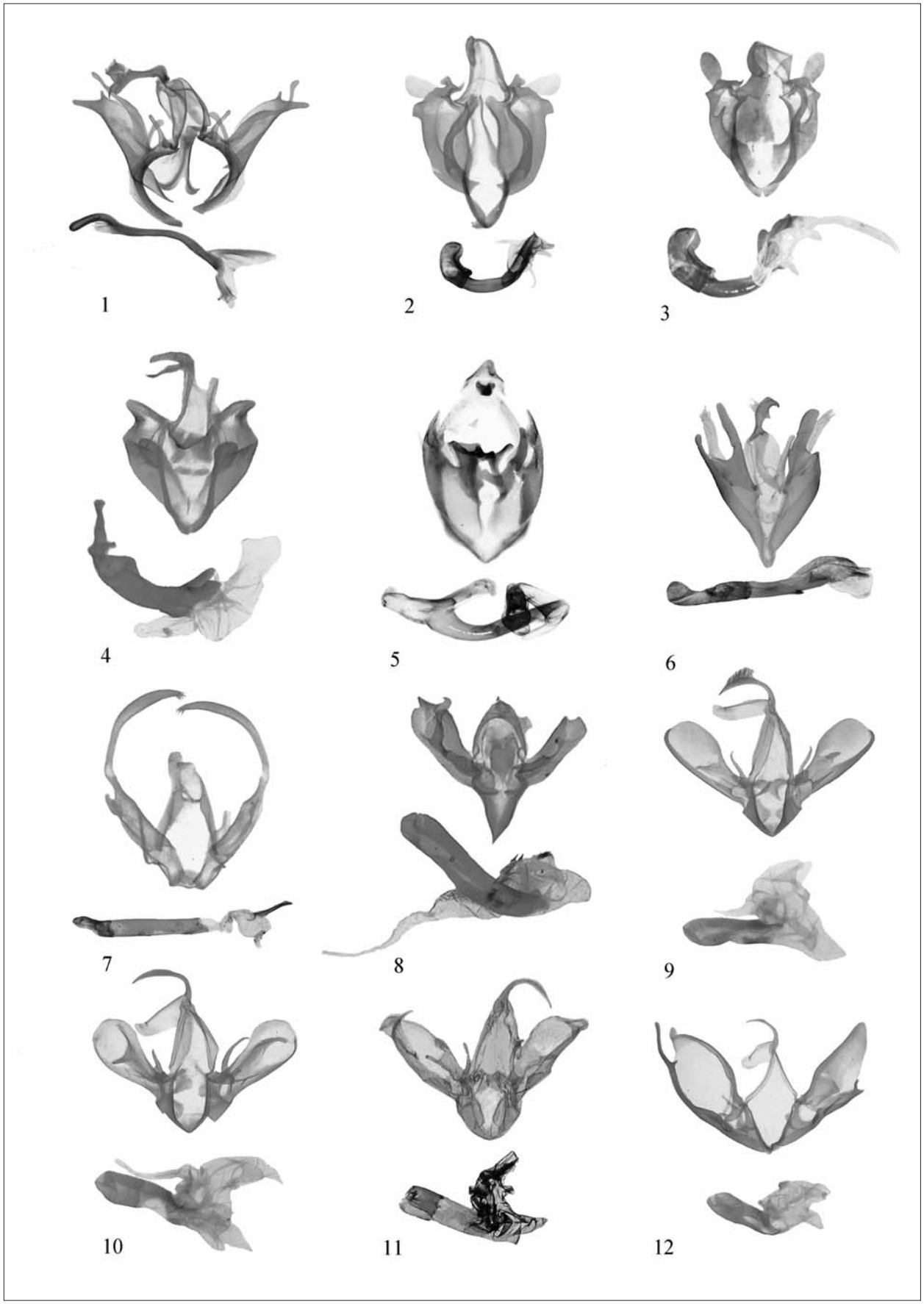

Fig. VII – Male genitalia of collected species. 1. *Pandesma robusta* (Khorasan-e-Razavi); 2. *Zethes narghisa* (Fars); 3. *Z. nemea* (Fars); 4. *Pericyma albidentaria* (Khorasan-e-Razavi); 5. *P. squalens* (Khuzestan); 6. *Heteropalpia vetusta* (Khuzestan); 7. *Acantholipes regularis* (Khuzestan); 8. *Iranada turcorum* (Khorasan-e-Razavi); 9. *Drasteria cailino* (Khorasan-e-Razavi); 10. *D. saisani* (Khorasan-e-Razavi); 11. *D. picta* (Khorasan-e-Razavi); 12. *D. flexuosa* (Khorasan-e-Razavi).

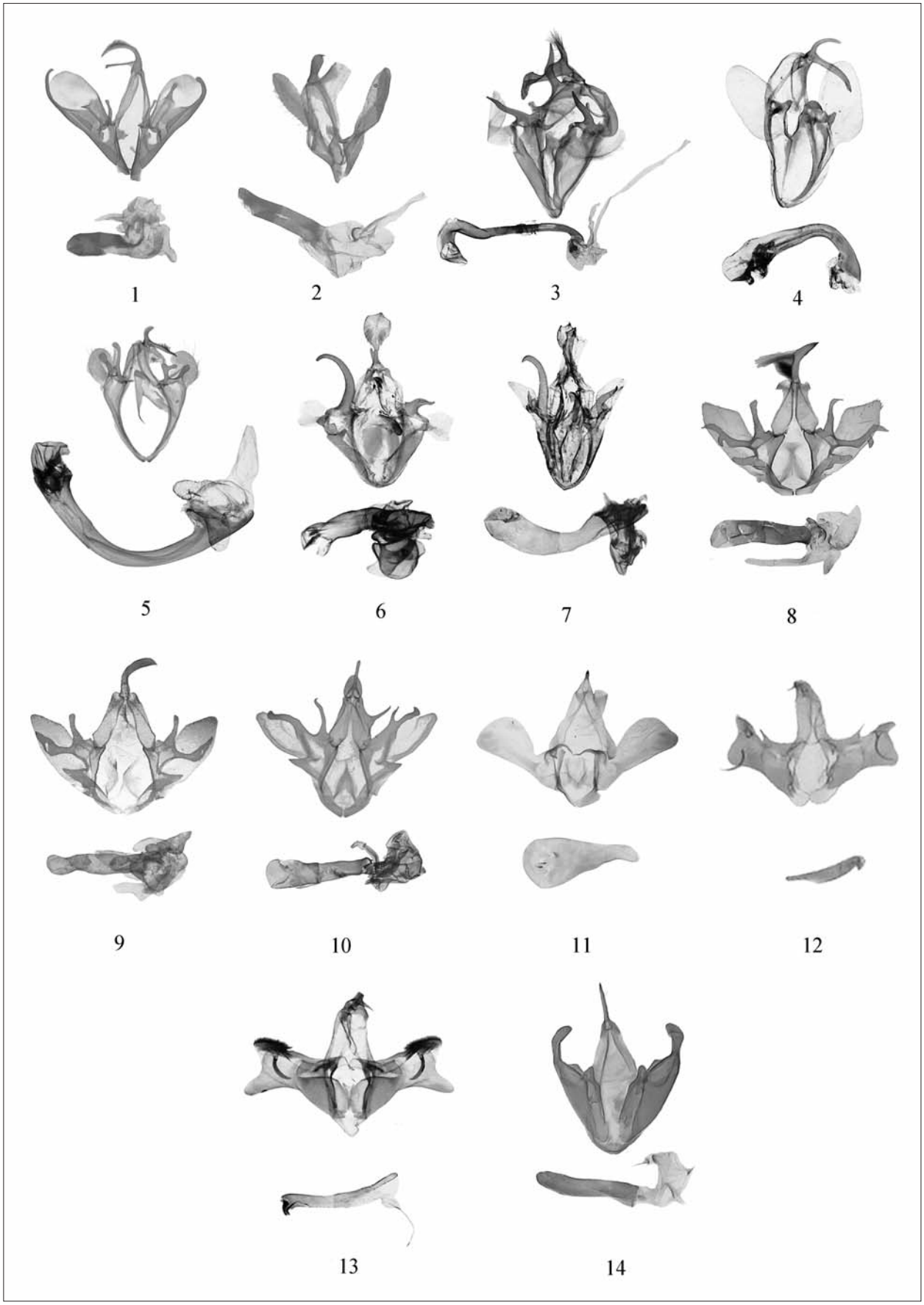

Fig. VIII – Male genitalia of collected species. 1. *Drasteria yerburii* (Khorasan-e-Razavi); 2. *Anumeta cestis* (Khorasan-e-Razavi); 3. *Ophiusa tirhaca* (Khuzestan); 4. *Clytie gracilis* (Khuzestan); 5. *C. delunaris* (Khuzestan); 6. *C. distincta iranica* (Khuzestan); 7. *C. infrequens* (Khuzestan); 8. *Dysgonia algira* (Khorasan-e-Razavi); 9. *D. torrida* (Khuzestan); 10. *Grammodes bifasciata* (Khuzestan); 11. *Bena bicolorana* (Fars); 12. *Earias* sp. (Khorasan-e-Razavi); 13. *E. insulana* (Fars); 14. *Eutelia adulatrix* (Fars).

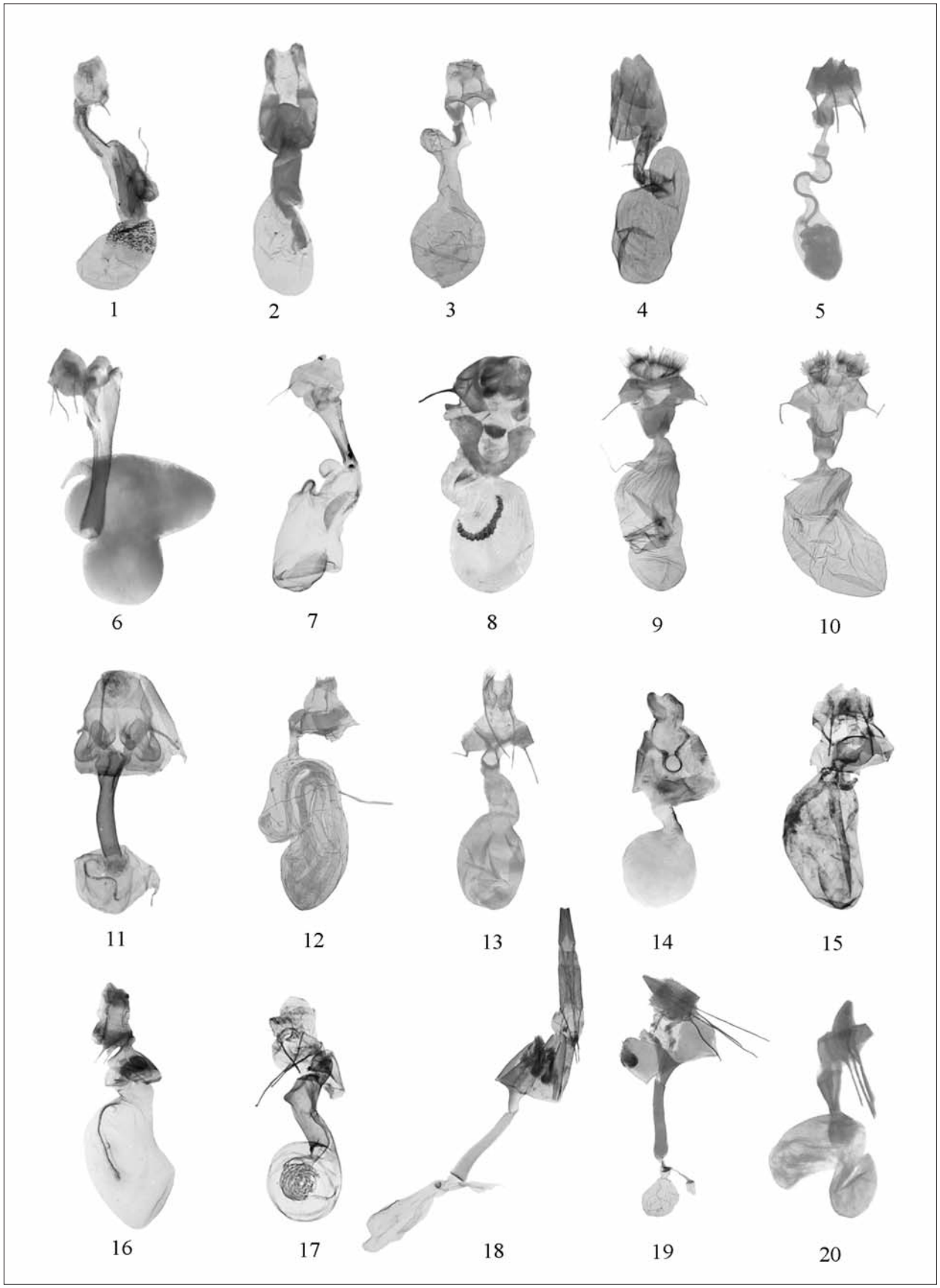

Fig. IX – Female genitalia of collected species. 1. *Hyrcanypena schwingenschussi* (Fars); 2. *Zekelita ravalis* (Khorasan-e-Razavi); 3. *Colobochyla platizona* (Khuzestan); 4. *Calymma gracilis* (Fars); 5. *Eublemma ostrina* (Khorasan-e-Razavi); 6. *Lygephila craccae* (Fars); 7. *Tathorhynchus exsiccata* (Khuzestan); 8. *Autophila luxuriosa clara* (Fars); 9. *A. asiatica* (Fars); 10. *A. cerealis* (Fars); 11. *Pandesma robusta* (Khorasan-e-Razavi); 12. *Zethes narghisa* (Fars); 13. *Z. nemea* (Fars); 14. *Z. brandti* (Fars); 15. *Pericyma albidentaria* (Khorasan-e-Razavi); 16. *P. squalens* (Khuzestan); 17. *Heteropalpia vetusta* (Khuzestan); 18. *Acantholipes regularis* (Khuzestan); 19. *A. regulatrix* (Khorasan-e-Razavi); 20. *Iranada turcorum* (Khorasan-e-Razavi).

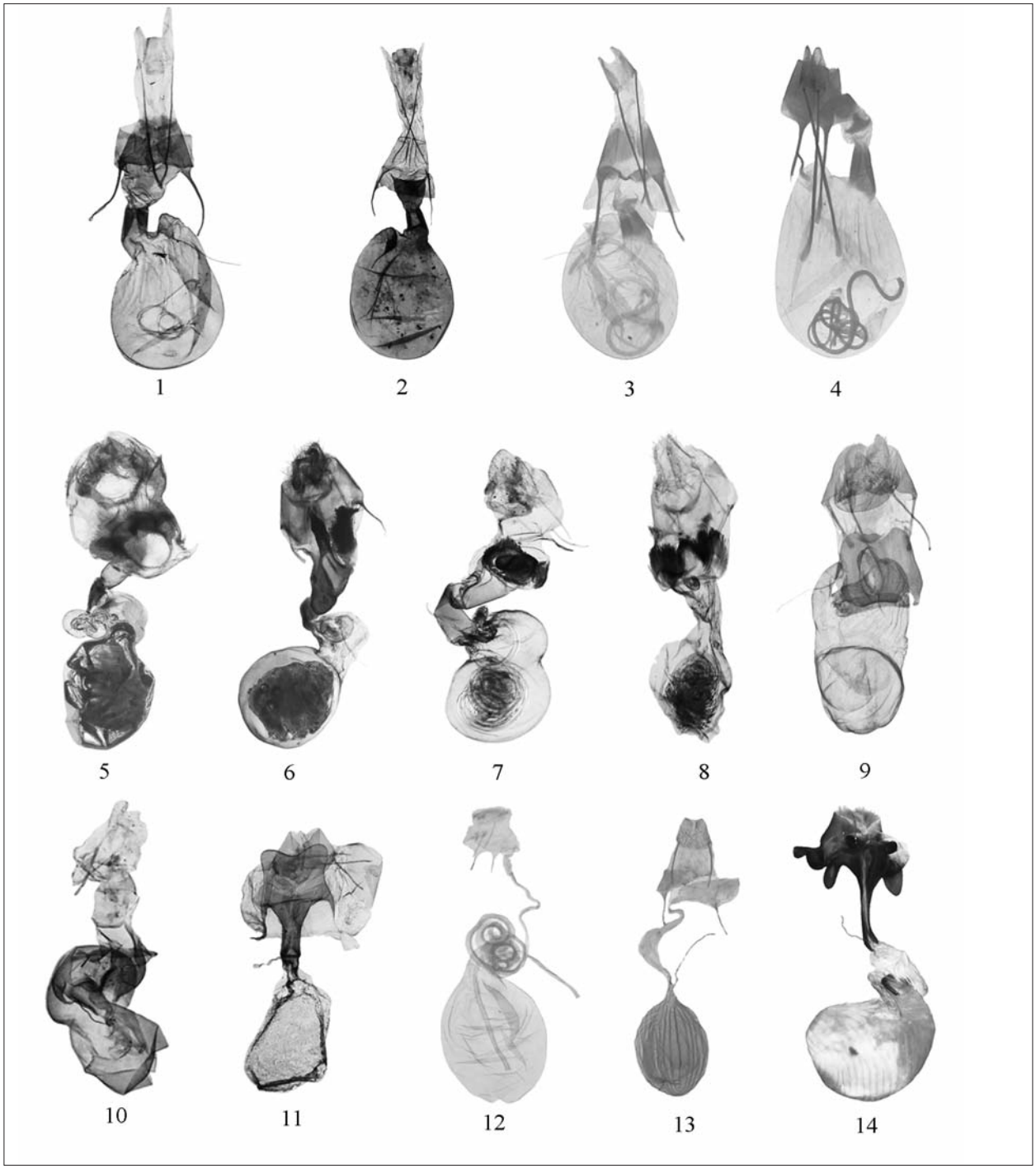

Fig. X – Female genitalia of collected species. 1. *Drasteria cailino* (Khorasan-e-Razavi); 2. *D. picta* (Khorasan-e-Razavi); 3. *D. flexuosa* (Khorasan-e-Razavi); 4. *D. yerburii* (Khorasan-e-Razavi); 5. *Ophiusa tirhaca* (Khuzestan); 6. *Clytie gracilis* (Khuzestan); 7. *C. delunaris* (Khuzestan); 8. *C. infrequens* (Khuzestan); 9. *Dysgonia torrida* (Khuzestan); 10. *Grammodes bifasciata* (Khuzestan); 11. *Trigonodes hyppasia* (Khuzestan); 12. *Bena bicolorana* (Fars); 13. *Earias insulana* (Fars); 14. *Eutelia adulatrix* (Fars).

counter-tympanal hood. The group occurs worldwide, but shows a primarily Palaeotropical distribution. Most are small moths of little economic importance, but several genera include agricultural pests (ZAHIRI *et al.*, 2013).

Subfamily Chloephorinae

Bena bicolorana (Fuessly, 1775)*

Adult female, Fig. V: 14; male genitalia, Fig. VIII: 11; female genitalia, Fig. X: 12.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 4 males, 1 female, 5.V.2010. Iran, Fars Prov., Sepidan, 2330m, 30°21 22 N 52°03 36 E, 2 males, 2 females, 21.VII.2011; Shiraz-Eqlid road, 2420m, 30°32 54 N 51°49 47 E, 1 male, 1 female, 8.IX.2011; Shiraz-Kazerun road, 1670m, 29°29 24 N 51°58 23 E, 3 males, 27.X.2011; Shiraz-Kazerun road, 800m, 29°04 00 N 52°03 10 E, 3 males, 4 females, 20.X.2011;

Sepidan-Nurabad road, 1900m, 30°00 43 N 52°02 06 E, 1 female, 23.VI.2011; Tangetizab, 2200m, 30°20 18 N 51°50 09 E, 4 males, 3 females, 28.VII.2011; Sivand, 1700m, 30°05 17 N 52°54 58 E, 5 males, 4 females, 18.VIII.2011; Nurabad, Babameidan, 1000m, 30°11 36 N 51°31 27 E, 2 males, 1 female, 15.IX.2011; Kotale Pirezan, 2000m, 29°36 48 N 51°56 28 E, 1 male, 2 females, 2.VI.2011; Tangebolhayat, 1300m, 29°44 02 N 51°46 58 E, 6 males, 2 females, 29.IX.2011; Shiraz-Farashband road, 1700m, 28°54 12 N 52°176 31 E, 4 males, 6 females, 13.X.2011.

REMARK: This species has only reported from the Zaghros chain (provinces: Kordestan, Kermanshah, Fars, Kohgiluyeh-va-Boyerahmad) in Iran (EBERT & HACKER, 2002). Its larvae are monophagous on oak (HACKER, 2001), the dominant deciduous trees of Zaghros. This is the first provincial record for Khuzestan.

Earias sp.

Adult male, Fig. V: 15; male genitalia, Fig. VIII: 12.

MATERIAL EXAMINED: Iran, Khorasan-e-Razavi Prov., Mashhad, Toos area, 1030m, 36°29 58 N 59°31 11 E, 2 males, 27.VI.2011.

REMARK: Collected specimens are close to *Earias biplaga* Walker, 1866. However, we cannot confirm it as we couldn't examine the type materials of *E. biplaga*.

E. insulana (Boisduval, 1833)

Adult female, Fig. V: 16; male genitalia, Fig. VIII: 13; female genitalia, Fig. X: 13.

MATERIAL EXAMINED: Iran, Fars Prov., Kamfiruz, 1700m, 30°20 28 N 52°13 13 E, 1 male, 25.VIII.2011. Iran, Khuzestan Prov., Masjed-Soleiman, 120m, 31°58 29 N 49°04 04 E, 1 male, 4.IX.2011; Ahvaz, 20m, 31°18 14 N 48°39 30 E, 1 male & 2 female, 21.X.2014. Khorasan-e-Jonubi Prov., Birjand, 1450m, 32°52 41 N 59°13 50 E, 1 female, found at insect collection of University of Birjand with no more data.

REMARK: This species is widely distributed in Iran (e.g. HACKER, 1990; EBERT & HACKER, 2002). This oligophagous pest of Malvaceae plants is multivoltine and active all the year round; no true diapause has been noted (HACKER, 2001). We reared its larvae from okra in Ahvaz.

Family Euteliidae

In the quadrifid Noctuoidea, the family Euteliidae form a monophyletic group, based on a large number of synapomorphies including: reduced female frenulum, modified basiconic sensilla on the proboscis, presence of a small oval plate in the ductus ejaculatorius, anal papillae modified so that their inner surfaces are directed posteriorly and the counter-tympanal hood has a unique double structure. The host plant range of this family embraces mostly lactiferous plants (KITCHING, 1987; ZAHIRI *et al.*, 2011).

Subfamily Euteliinae

Eutelia adulatrix (Hübner, 1813)*

Adult male, Fig. V: 17; male genitalia, Fig. VIII: 14; female genitalia, Fig. X: 14.

MATERIAL EXAMINED: Iran, Khuzestan Prov., Mal Aqa, 1100m, 31°35 57 N 50°00 50 E, 1 male, 4.V.2010, 1 male, 10.V.2011, 1 male, 20.IV.2012, 1 female, 18.V.2012. Iran, Fras Prov., Shiraz-Nurabad road, 1100m, 29°55 56 N 31°35 52 E, 1 female, 3.XI.2011.

REMARK: Despite of records of this species from Zaghros and Alborz mountain areas, there is no record from NE Iran (HACKER, 1990; HACKER & MEINKE, 2001; EBERT & HACKER, 2002). The larvae of this multivoltine species feed on *Pistacia lentiscus* and *Cotinus coggyria*, and can be active throughout the year (HACKER, 2001). This is the first provincial record for Khuzestan.

DISCUSSION

According to HACKER (2001) zoogeographical categories, more than half of the collected species were Palaearctic arboreal elements. This group contains Iranian species such as *H. schwingenschussi, Z. nemea*, *Z. narghisa* and *A. luxuriosa clara*. A quarter of species such as *Clytie* spp. had tropical chorotype. All tropical species were collected in western Khuzestan province, except *P. robusta* which was collected in both Khuzestan and Khorasan-e-Razavi. Few eremic species were mostly recorded from semi-desert or desert areas of western Khuzestan province as well as eastern Khorasan-e-Razavi (e.g. *I. turcorum* and *R. tanitalis*).

Khorasan-e-Razavi province is a part of Iran-o-Turanian ecozone with dry and mainly cold climate in winter. It contains plane and mountain areas. The plain subregion is dominated by desert climate and hot summer (HESHMATI, 2007). Mountain part includes Iranian part of the Kopet-Dagh and the Binaloud mountains. Also, in the central of province, it is influenced by the elements of the Central Asia region. Khuzestan province is a transition zone of Afrotropical to the Palearctic fauna. Western Khuzestan province is a part of Khalidj-o-Ommanian ecological zones of Iran. This ecozone is dominated by sub-equatorial climate. The main plant species of this region belong to *Acacia*, *Prosopia*, *Ziziphus*, *Avicennia*, *Rhizophora*, *Populus euphatica* and *Prosopis stephaniana* (HESHMATI, 2007). Eastern Khuzestan province as well as western Fars province are located in Zaghros ecological zone of Iran. Zaghros mountains are characterized as an area of endemism due to long-term isolation (NOROOZI *et al.*, 2008; RAJAEI *et al.*, 2013). Zaghros mountains has semi-arid temperate climate. The forest and steppe forest areas of the Zaghros mountains consists mainly of deciduous, broad-leaved trees or shrubs with a dense ground cover of steppe vegetation. The dominant species are oak (*Quercus* spp.), pistachio (*Pistacia* spp.) and a few others (HESHMATI, 2007). The species *B. bicolorana* was collected in large series in this region as its larvae are monophagous on oak. Future intensive faunistic studies in different regions of Iran are needed to provide information on unknown bionomics and distributions.

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