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NOCTUIDAE (LEPIDOPTERA) SPECIES SAMPLED FROM KHABR NATIONAL PARK, KERMAN, IRAN PART I.

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ABSTRACT. Forty two species of the family Noctuidae, excluding *Saragossa siccanorum poecilographa* Varga & Ronkay, 1991 are first reported form the Khabr National Park, Kerman, Iran. *Cucullia cineracea argyllacea* Hacker, Ronkay & Ronkay, 1990 is first reported for Iran. The distribution of each species is presented. Adults are illustrated together with notes on phenology and regional occurrence for each taxon. Maps illustrate the location of the Khabr National Park and its geographical location.

Additional key words: Khabr National Park, fauna, new record, Iran.

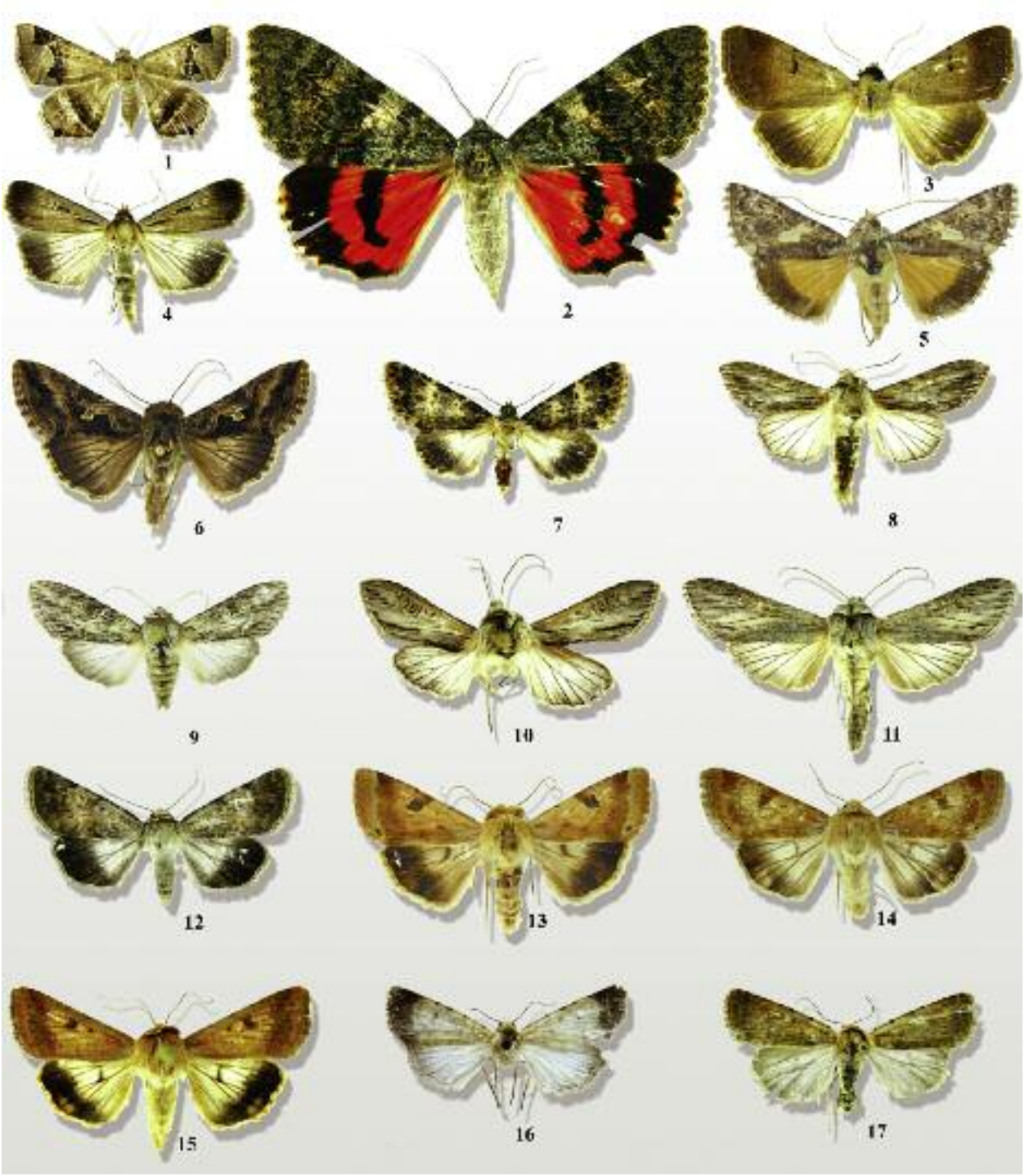
Khabr National Park (KNP), one of the biggest National Parks of the country (3rd place), is located in south Iran, Kerman Province. The Park's 149,982 ha area covers a vast extent of lands from high mountains to tropical plains with altitude ranges of 1040–3860 m. The cold, semi-arid climate of the region is derived from a mean annual precipitation of 200–300mm and a temperature range of 9–21 °C. Because of the diverse flora of trees and shrubs, KNP plays the important role as wildlife refuge. Climate change and global warming are serious threats for diversity of the region. Not long ago, species such as black bear and gazelle occurred in KNP. These species are now presumed extinct. Low levels of precipitation over the last decade threaten to exacerbate species extinctions.

Currently there are about 160,000 described species of Lepidoptera (Kristensen et al. 2007). Of those, Noctuoidea represent about 42,000 species (Speidel & Naumann 2004), making it the largest superfamily worldwide. The adults of this family are known to have a robust body, but the size of them varies from 7 mm wingspan (*Micronoctua* Karsholt, 1997) to 250 mm (*Thysania* Dalman, 1824) (Speidel & Naumann 2004). The monophyly of Noctuoidea is based on the presence of metathoracic tympanal organ and associated abdominal organs (Kitching & Rawlins 1998). This superfamily comprises the families Oenosandridae, Doidae, Notodontidae, Arctiidae, Lymantriidae, Noctuidae, Nolidae and Pantheidae. The higher classification of the families of this taxon has been subject to the frequent changes. On the basis of recent morphological and molecular studies, Lafontaine and Fibiger (2006) added the subfamilies Nolinae, Strepsimaninae, Arctiinae, Lymantriinae and Erebinae to the Noctuidae family. Consequently, the Noctuoidea comprises the families Oenosandridae, Doidae, Notodontidae, Micronoctuidae and Noctuidae. The Noctuidae (*sensu* Fibiger & Lafontaine 2005) contains about 25,000 species (Fibiger 1990), including species of great economic importance such as *Helicoverpa armigera* (Hübner, 1808).

Although the faunistic discoveries on Noctuidae of Iran have a history of more than a century, there is still no comprehensive monographic publication (except that of Hacker 1990 which includes available records of Noctuidae of Asia Minor and the Middle East). Faunistic and taxonomic investigations on the Noctuidae fauna in south and southeast of Iran bear great importance not only because this region is virtually unexplored but also because new species remain to be described (Ronkay & Gyulai 2006; Shirvani et al. 2008a). The present paper contains the list of 42 species collected from KNP during 2009. All species excluding *Saragossa siccanorum poecilographa* (Varga & Ronkay, 1991) are reported for KNP for the first time. *Cucullia cineracea argyllacea* (Hacker et al. 1990), which was collected in a region close to KNP, is considered the first report for the species from Iran. Family-group names follow Speidel and Naumann (2004) and the taxonomic order of each species is after the work of Fibiger and Lafontaine (2005). All species are deposited in the collection of Entomology, Shahid Bahonar University of Kerman.

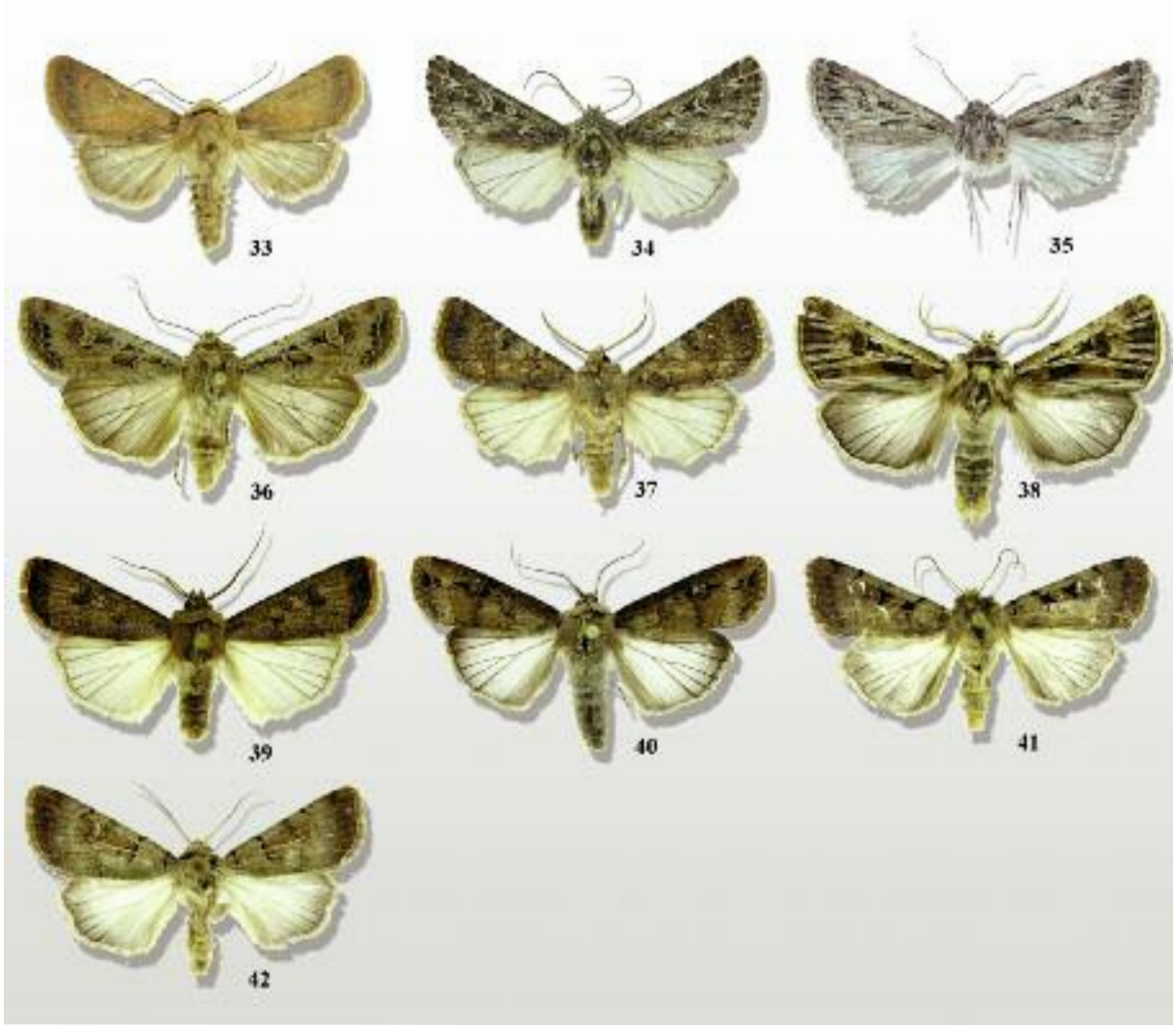
MATERIALS AND METHODS

Adult moths were collected using light traps in different locations of KNP (Figs. 45 & 46). Genitalia were dissected and everted following Fibiger (1997) with a little change. The genitalia and abdomen then were mounted using either canada balzam or euparal. Arc GIS 9.2 software was used to make the geographical maps of the KNP.



FIGS. 1-17: Adults, **1.** *Zethes nemea* **2.** *Catocala elocata* **3.** *Lygephila craccae* **4.** *Lygephila exsiccata* **5.** *Thysanoplusia exquisita* **6.** *Cornutiplusia circumflexa* **7.** *Drasteroides leprosa* **8.** *Cucullia boryphora* **9.** *Cucullia hemidiaphana* **10.** *Cucullia santonici* **11.** *Cucullia cineracea argyllacea* **12.** *Oncocnemis erythropsis* **13.** *Heliothis peltigera* **14**. *Heliothis nubigera* **15.** *Helicoverpa armigera* **16.** *Caradrina didyma* **17.** *Caradrina bodenheimeri*

FIGS 18-32: Adults, **18.** *Phoebophilus veternosa* **19.** *Boursinia oxygramma* **20.** *Maraschia grisescens* **21.** *Polymixis zagrobia* **22.** *Polymixis crinomima* **23.** *Polymixis apotheina laristana* **24.** *Saragossa siccanorum poecilographa* **25.** *Hecatera dysodea* **26.** *Leucania herrichii* **27.** *Parexarnis damnata* **28**. *Dichagyris elbursica* **29.** *Dichagyris tyrannus beluchus* **30.** *Dichagyris argentea darius* **31.** *Dichagyris singularis* **32.** *Dichagyris forficula*



FIGS 33-42: Adults, **33.** *Dichagyris amoena* **34.** *Dichagyris eureteocles* **35.** *Yigoga truculenta toxistigma* **36.** *Euxoa conspicua* **37.** *Euxoa canariensis diamondi* **38.** *Agrotis obesa scytha* **39.** *Agrotis segetum* **40.** *Agrotis ipsilon* **41.** *Eugnorisma chaldaica* **42.** *Eugnorisma insignata* (above)

FIGS 43-44: Male Genitalia of *Cucullia cineracea argyllacea* slide no. AS428m, **43.** Armature **44.** Aedeagus and vesica. (right)

TAXONOMIC ACCOUNTS

Subfamily CATOCALINAE BOISDUVAL, [1828] 1829

Genus: *Zethes* Rambur, 1833

1. *Zethes nemea* Brandt, 1938 (Fig. 1)

Bionomics: Bivoltine species which inhabits desert and semi desert locations up to 2300 m. Adults fly from March to July and come to the artificial light.

Collected localities and dates: Chah Anar, 10.04.2010; Darniyan, 22.07.2009. (7 specimens)

Distribution: Afghanistan (Hacker 1990). In Iran, it has originally been collected from Fars province (Brandt 1938).

Genus: *Catocala* Schrank, 1802

2. *Catocala elocata* (Esper, [1787]) (Fig. 2)

Bionomics: Univoltine, this species was collected in late summer and early autumn. *Catocala elocata* inhabits mountainous and semi mountainous regions with dry climates.

Collected localities and dates: Hesarouyeh, 9. 09.2009; Shah-e-Velayat, 25.10.2009. (3 specimens)

Distribution: Ponto- Mediterranean; Meditrranean ilands, Kazakhstan (Goater et al. 2003); Turkmenistan (Ivinskis & Miatleuski 1999). In Iran, this species has been reported from Tehran, Khouzestan (Ebert & Hacker 2002) and Golestan (Wieser & Stangelmaier 2005) provinces.

Genus: *Lygephila* Billberg, 1820

3. *Lygephila craccae* ([Denis & Schiffermüller], 1775) (Fig. 3)

Bionomics: Bivoltine in southern Europe (Goater et al. 2003), late flying species. This species was collected in October and inhabits cold-dry altitudes.

Collected localities and dates: Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (9 specimens)

Distribution: Eurasiatic. Southern Ural Mountains (Nupponen & Fibiger 2002); Daghestan Republic (Nikolaevitch & Vjatcheslavovna 2002); Cyprus (Fibiger et al. 1999), England, China and Japan (Goater et al. 2003). In Iran, it has been collected from Mazandaran, Tehran, Khouzestan, Kordestan and Lorestan provinces (Hacker 1990; Ebert & Hacker 2002).

4. *Lygephila exsiccata* (Lederer, 1855) (Fig. 4)

Bionomics: This species was taken in early spring and inhabits mountainous and semi mountainous regions up to 3000 m.

Collected localities and dates: Chah Anar, 10.04.2009. (5 specimens)

Distribution: Palaeotropical-subtropical, North Africa, Europe, United States of America (Goater et al. 2003), Yemen (Hacker & Fibiger 2006). In Iran, this species has been reported from Fars (Hacker & Kautt 1999), Tehran, Sistan va Balouchestan and Hormozgan provinces (Hacker 1990; Hacker & Ebert 2002).

Subfamily PLUSIINAE BOISDUVAL, [1828] 1829

Genus: *Thysanoplusia* Ichinose, 1973

5. *Thysanoplusia exquisita* (Felder & Rogenhofer, [1874]) (Fig. 5)

Bionomics: This species probably has more than one generation and early stages are polyphagous (Goater et al. 2003).

Collected localities and dates: Khabr Mountain, 15.03.2009; Dashtab, 24.06.2009. (2 specimens)

Distribution: In Iran, this species has been collected from Fars province (Hacker & Kautt 1999).

Genus: *Cornutiplusia* Kostrowicki, 1961

6. *Cornutiplusia circumflexa* (Linnaeus, 1767) (Fig. 6)

Bionomics: This species flies all year in southeast Iran, and was collected in almost all sampling locations; multivoltine species, inhabits deserts, semi deserts and dry elevations.

Collected localities and dates: Khabr Mountain, 15.03.2009; Chah Anar, 10.04.2009; Rochun Mountain, 15.05.2009; Dashtab, 24.06.2009; Darniyan, 22.07.2009; Hesarouyeh, 9. 09.2009; Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (35 specimens)

Distribution: Palaeotropical, this species has almost been reported from all countries throughout Africa, Asia, and Europe: in Turkmenistan (Ivinskis & Miatleuski 1999), Cyprus (Fibiger et al. 1999), Mongolia (Gyulai & Ronkay 1999). In Iran, this species has been reported from Azarbayjan-e-Gharbi, Tehran, Mazandaran, Ardabil, (Ebert & Hacker 2002), Sistan va Balouchestan (Brandt 1941), Fars and Lorestan provinces (Hacker & Kautt 1999).

Subfamily ACONTIINAE GUENÉE, 1841

Genus: *Drasteroides* Hampson, 1926

7. *Drasteroides leprosa* (Brandt, 1938) (Fig. 7)

Bionomics: Specimens of this species were collected in late summer and early autumn, probably univoltine, adults come to light and inhabit desert and dry altitudes to 3000 m.

Collected localities and dates: Hesarouyeh, 9. 09.2009; Khabr road, 20.10.2009. (4 specimens)

Distribution: Iraq (Hacker 1990). In Iran, reported

FIG. 45. Map showing zone of Khabr National Park

from Sistan va Balouchestan and Lorestan provinces (Brandt 1941).

Subfamily CUCULLIINAE
HERRICHSCHÄFFER, 1850

Genus: *Cucullia* Schrank, 1802

8. *Cucullia boryphora* Fischer de Waldheim, 1840 (Fig. 8)

Bionomics: Bivoltine, this species was collected twice; first generation in March, and again in September.

Collected localities and dates: Khabr Mountain, 15.03.2009; Hesarouyeh, 9. 09.2009. (12 specimens)

Distribution: Ponto-Turkestanian; Turkmenistan (Ivinskis & Miatleuski 1999), Levant (Hacker 2001), Afghanistan (Ronkay & Ronkay 1994). In Iran, *C. boryphora* has been collected from Sistan va Balouchestan and Khorasan provinces (Brandt 1941).

9. *Cucullia hemidiaphana* Graeser, 1892 (Fig. 9)

Bionomics: Specimens of this species were collected in September and October. This species inhabits semi desert and dry mountainous regions.

Collected localities and dates: Hesarouyeh, 9. 09.2009; Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (13 specimens)

Distribution: Levant (Hacker 2001). In Iran, this species has been reported from Sistan va Balouchestan and Khorasan provinces (Brandt 1941).

10. *Cucullia santonici* (Hübner, [1813]) (Fig. 10)

Bionomics: Bivoltine (Ronkay & Ronkay 1994). One specimen was collected from dry mountainous region at 2300 m altitude.

Collected localities and dates: Dashtab, 24.06.2009. (1 specimen)

Distribution: Eurasiatic (Ronkay & Ronkay 1994). In Iran, it was reported from Sistan va Balouchestan and Khorasan provinces (Brandt 1941).

11. *Cucullia cineracea argyllacea* Hacker, Ronkay & Ronkay, 1990 (Figs 11, 43 and 44)

Identification: Wingspan 47–49 mm. Head, tegulae, thorax, abdomen and forewing colour ash grey. Forewing elongate, ash grey suffused with brown, marginal are convex at costal margin; veins covered with black; orbicular and reniform stigmata large, bordered with black, fine lines, both centered with black; fine tornal dash present; crossveins absent; terminal line fine, black; fringes grey. Hindwing white, marginally brown scales; veins covered with brown; fringes light brown.

Male genitalia: uncus long, curved, tapering, dorsally with hairs; tegumen wide, high; vinculum V-shaped. Valva simple, elongated, narrow; costa sclerotized; cucullus acute, corona present; sacculus small, harpe asymmetrical, longer on right side. Aedeagus short and thick; vesica with small basal diverticula, one of them strongly bulbed bearing a long, strong cornutus; large pointed sac present; ductus ejaculatorius originated from the middle of the sac.

Bionomics: univoltine, adults come to artificial light and are on wing in June. Early stages and food plants are still unknown.

FIG. 46. Map showing position of KNP in Kerman province, Iran

Collected localities and dates: Lalehzar Mountain, 25.06.2009. (4 specimens)

Distribution: Afghanistan, Tajikistan; first report for the Iranian fauna.

Subfamily ONCOCNEMIDINAE FORBES & FRANCLEMONT, 1954

Genus: *Oncocnemis* Lederer, 1853

12. *Oncocnemis erythropsis* Brandt, 1938 (Fig. 12)

Bionomics: Univoltine, this species was collected in September and inhabits semi desert and mountainous altitudes up to 2800 m.

Collected localities and dates: Hesarouyeh, 9. 09.2009. (10 specimens)

Distribution: This species has originally been collected from Iran, Fars province (Brandt 1938).

Subfamily HELIOTHINAE BOISDUVAL, [1828] 1829

Genus: *Heliothis* Ochsenheimer, 1816

13. *Heliothis peltigera* ([Denis & Schiffermüller], 1775) (Fig. 13)

Bionomics: Multivoltine, this species is active through the year and feeds on various forms of vegetations such as shrubs, herbaceous plants and trees.

Collected localities and dates: Khabr Mountain, 15.03.2009; Chah Anar, 10.04.2009; Rochun Mountain, 15.05.2009; Dashtab, 24.06.2009; Darniyan, 22.07.2009; Hesarouyeh, 9. 09.2009; Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (43 specimens)

Distribution: Palaeotropical, Central Europe, Turkey, Levant, Iraq, Israel (Kravchenko et al. 2005), Turkmenistan (Ivinskis & Miatleuski 1999). In Iran, this species has been reported from Tehran, Mazandaran, Esfahan, Yazd, Semnan, Qom, Qazvin, Zanjan, Azarbayjan-e-Sharghi, Azarbayjan-e-Gharbi, Kohkiluyeh va Boyer-Ahmad, Kermanshah, Fars, Lorestan, Hormozgan, Sistan va Balouchestan and Kerman provinces (Hacker 1990; Ebert & Hacker 2002; Matov et al. 2008).

14. *Heliothis nubigera* Herrich-Schäffer, 1851 (Fig. 14)

Bionomics: Probably bivoltine with summer aestivation. This species is active through the year and larvae are polyphagous which feed on herbaceous plants.

Collected localities and dates: Khabr Mountain, 15.03.2009; Chah Anar, 10.04.2009; Rochun Mountain, 15.05.2009; Dashtab, 24.06.2009; Darniyan, 22.07.2009; Hesarouyeh, 9. 09.2009; Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (18 specimens)

Distribution: Palaearctic. Europe (migrant in the north), North and East Africa, Caucasus, Transcaucasia, Central Asia, India (Matov et al. 2008), Levant, Iraq, Israel (Kravchenko et al. 2005), Turkmenistan (Ivinskis & Miatleuski 1999). In Iran, it has been recorded from Yazd, Khorasan, Zanjan, Qom, Lorestan, Bushehr, Markazi, Golestan, Semnan, Khorasan, Tehran, Azarbayjan-e-Gharbi, Kerman and Sistan va Balouchestan provinces (Hacker 1990; Ebert & Hacker 2002; Matov et al. 2008).

Genus: *Helicoverpa* Hardwick, 1965

15. *Helicoverpa armigera* (Hübner, 1808) (Fig. 15)

Bionomics: Multivoltine with summer aestivation. This species is collected throughout the year in tropical and subtropical territories of the Old World.

Collected localities and dates: Khabr Mountain, 15.03.2009; Chah Anar, 10.04.2009; Rochun Mountain, 15.05.2009; Dashtab, 24.06.2009; Darniyan, 22.07.2009; Hesarouyeh, 9. 09.2009; Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (48 specimens)

`Distribution: Palaeotropical. Europe, Africa, Middle East, Central and South-East, Australia. In Iran, this species has been recorded from Tehran, Fars, Qom, Semnan, Golestan, Guilan, Yazd, Markazi, Kohkiluyeh va Boyer-Ahmad, Zanjan, Qazvin, Kerman, Sistan va Balouchestan, Ardabil, Hormozgan, Kermanshah, Lorestan, Mazandaran, Ardabil, Khorasan, Bushehr, Ilam, Azarbayjan-e-Gharbi and Azarbayjan-e-Sharghi provinces (Hacker 1990; Ebert & Hacker 2002; Matov et al. 2008).

Subfamily XYLENINAE GUENÉE, 1837

Genus: *Caradrina* Ochsenheimer, 1816

16. *Caradrina didyma* (Boursin, 1939) (Fig. 16)

Bionomics: This species was collected in late autumn. Caradrina didyma inhabits cold, dry semi desert and mountainous regions.

Collected localities and dates: Khabr road, 28.11.2009. (3 specimens)

Distribution: In Iran, it has been collected from Fars province.

17. *Caradrina bodenheimeri* (Draudt, 1934) (Fig. 17)

Bionomics: Bivoltine, active in early spring and winter, this species almost inhabits semi-desert and semi-mountainous regions in Iran from 500 m to more than 3000 m.

Collected localities and dates: Khabr Mountain, 15.03.2009; Chah Anar, 10.04.2009. (23 specimens)

Distribution: Turkmenistan (Ivinskis & Miatleuski 1999), Egypt (Lehmann & Saldaitis 2006), Lebanon, Palestine, Jordan (Hacker 2001). In Iran, it has been collected from Sistan va Balouchestan (Brandt 1941), Khorasan, Golestan (Wieser & Stangelmaier 2005), Fars, Lorestan (Hacker & Kautt 199), Hormozgan, Guilan, Mazandaran, Tehran, Kerman and Esfahan provinces (Ebert & Hacker 2002).

Genus: *Phoebophilus* Staudinger, 1888

18. *Phoebophilus veternosa* (Püngeler, 1907) (Fig. 18)

Bionomics: Univoltine, the specimens were collected in late summer. This species inhabits high altitudes and mountainous regions.

Collected localities and dates: Shah-e-Velayat, 8.09.2009. (3 specimens)

Distribution: Turkmenistan (Ivinskis & Miatleuski 1999). In Iran, it has been reported from Khorasan (Ebert & Hacker 2002).

Genus: *Boursinia* Brandt, 1938

19. *Boursinia oxygramma* Brandt, 1938 (Fig. 19)

Bionomics: Univoltine, late flying species, the specimens were collected in October. This species inhabits dry mountainous regions.

Collected localities and dates: Khabr road, 20.10.2009; Shah-e-Velayat, 8.10.2009. (8 specimens)

Distribution: In Iran, it has originally been reported from Fars province (Brandt 1938).

Genus: *Maraschia* Osthelder, 1933

20. *Maraschia grisescens* Osthelder, 1933 (Fig. 20)

Bionomics: Univoltine, this species was collected in October. Maraschia grisescens inhabits desert, semi desert and dry mountainous regions with scarce vegetations.

Collected localities and dates: Shah-e-Velayat, 8.10.2009; Khabr road, 20.10.2009. (9 specimens)

Distribution: Ponto-Mediteranean-Iranian. This species is known from Turkey (Varga & Ronkay 1991b), Turkmenistan (Ivinskis & Miatleuski 1999). In Iran, it is reported from Zagros Mountains (Ebert & Hacker 2002).

Genus: *Polymixis* Hübner, [1820]

21. *Polymixis zagrobia* (Wiltshire, 1941) (Fig. 21)

Bionomics: Univoltine, autumnal species. This species inhabits mountainous forest, desert and semi desert localities.

Collected localities and dates: Shah-e-Velayat, 8.10.2009; Khabr road, 20.10.2009; Rochun Mountain, 07.11.2009. (5 specimens)

Distribution: Iraq (Hacker 1990). In Iran, *P. zagrobia* has been reported from Fars (Wiltshire 1993) province.

22. *Polymixis crinomima* (Wiltshire, 1946) (Fig. 22)

Bionomics: Univoltine, this species is flying from October to November and inhabits cold habitats in semi-desert and mountainous regions.

Collected localities and dates: Khabr road, 20.10.2009; Rochun Mountain, 07.11.2009. (3 specimens)

Distribution: Turkey (Hacker 1990). In Iran, this species is found in Fars province (Ebert & Hacker 2002).

23. *Polymixis apotheina laristana* (Brandt, 1941) (Fig. 23)

Bionomics: Univoltine, this species is flying from October to November, typical of its other congeners, and inhabits cold habitats in semi desert and mountainous regions.

Collected localities and dates: Khabr road, 20.10.2009; Rochun Mountain, 07.11.2009. (9 specimens)

Distribution: This subspecies is found in central and southern Iran, in Fars, Sistan va Balouchestan and Lorestan provinces (Brandt 1941).

Subfamily HADENINAE GUENÉE, 1837

Genus: *Saragossa* Staudinger, 1900

24. *Saragossa siccanorum poecilographa* Varga & Ronkay, 1991 (Fig. 24)

Bionomics: Univoltine, this species was taken in summer and inhabits mountainous regions with low precipitation. Adults come to light.

Collected localities and dates: Darniyan, 22.08.2009; Chah Anar, 10.09.2009. (10 specimens)

Distribution: This subspecies has been reported from Iraq and Turkey (Varga & Ronkay 1991a). In Iran it was reported from Kerman province (Shirvani et al. 2008b).

Genus: *Hecatera* Guenée, 1852

25. *Hecatera dysodea* ([Denis & Schiffermüller], 1775) (Fig. 25)

Bionomics: Bivoltine, with two generations in spring and autumn. This species was taken in September and inhabits mountainous and semi mountainous regions up to 2500 m.

Collected localities and dates: Chah Anar, 10.09.2009. (2 specimens)

Distribution: Ponto-Mediterranean, with wide range in Europe, North Africa, Near and Middle East (Hacker et al. 2002). In Iran, this species has been reported from Azarbayjan-e-Gharbi, Guilan, Tehran, Kordestan and Fars provinces (Ebert & Hacker 2002).

Genus: *Leucania* Ochsenheimer, 1816

26. *Leucania herrichii* Herrich – Schäffer, 1849 (Fig. 26)

Bionomics: Univoltine, this species prefers open and xerotherm regions. Leucania herrichii was taken in September.

Collected localities and dates: Chah Anar, 10.09.2009. (1 specimen)

Distribution: Mediterranean-Iranian. This species has been reported from Morocco, Turkey, Armenia, Lebanon, Jordan and Iran (Kravchenko et al. 2007; Hacker 1990).

Subfamily NOCTUINAE LATREILLE, 1809

Genus: *Parexarnis* Boursin, 1946

27. *Parexarnis damnata* (Draudt, 1937) (Fig. 27)

Bionomics: Univoltine, the adult are on wing from May to August. This species inhabits open lands with scarce vegetation up to an altitude of 3200 m.

Collected localities and dates: Chah Anar, 10.04.2009; Dashtab, 24.06.2009; Darniyan, 22.08.2009. (7 specimens)

Distribution: Turkey, Armenia (Hacker 1990). In Iran it has been recorded from Tehran and Mazandaran provinces (Ebert & Hacker 2002).

Genus: *Dichagyris* Lederer, 1857

28. *Dichagyris elbursica* (Draudt, 1937) (Fig. 28)

Bionomics: Univoltine, this species appears from May to August in arid and semiarid mountainous and semi mountainous regions up to 3000 m.

Collected localities and dates: Chah Anar, 10.04.2009; Dashtab, 24.06.2009; Darniyan, 22.08.2009. (8 specimens)

Distribution: Afghanistan, Turkmenistan, Turkey (Hacker 1990), Israel (Kravchenko et al. 2006). In Iran, this species is reported from Tehran, Fars, Sistan va Balouchestan, Lorestan and Kermanshah provinces (Hacker 1990; Ebert & Hacker 2002).

29. *Dichagyris tyrannus beluchus* Brandt, 1941 (Fig. 29)

Bionomics: Univoltine, this species inhabits semi mountainous regions with scarce vegetation. Adults are on wing from May to August and come to artificial light.

Collected localities and dates: Chah Anar, 10.04.2009; Dashtab, 24.06.2009; Darniyan, 22.08.2009. (23 specimens)

Distribution: In Iran, this subspecies has been reported from Khorasan and Sistan va Balouchestan provinces (Brandt 1941).

30. *Dichagyris argentea darius* (Boursin, 1940) (Fig. 30)

Bionomics: Univoltine, autumnal subspecies, this subspecies inhabits arid and semiarid regions up to 2000 m.

Collected localities and dates: Shah-e-Velayat, 25.10.2009. (3 specimens)

Distribution: Afghanistan (Hacker 1990). In Iran this subspecies has been collected from Tehran and Markazi provinces (Ebert & Hacker 2002).

31. *Dichagyris singularis* (Staudinger, 1877) (Fig. 31)

Bionomics: Univoltine, autumnal species. This species inhabits extensively cultivated areas from Palestine to Afghanistan.

Collected localities and dates: Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (11 specimens)

Distribution: Turkmenistan (Ivinskis & Miatleuski 1999), Israel (Kravchenko et al. 2006), Iraq, Turkey (Hacker 1990). In Iran, this species has been reported from Tehran and Khorasan provinces (Hacker 1990).

32. *Dichagyris forficula* (Eversmann, 1851) (Fig. 32)

Bionomics: Univoltine, adults are active from May to July and come to the artificial light. This species inhabits open countries up to 3000 m.

Collected localities and dates: Rochun Mountain, 15.05.2009; Dashtab, 24.06.2009; Darniyan, 22.07.2009. (44 specimens)

Distribution: Mediterranean-Asiatic. Turkey, Syria, Iraq, Afghanistan (Fibiger 1990), Turkmenistan (Ivinskis & Miatleuski 1999). In Iran, this species has been reported from Tehran, Azarbayjan-e-Gharbi, Azarbayjan-e-Sharghi, Kermanshah, Khouzestan, Fars, Boushehr and Hormozgan provinces (Hacker 1990; Ebert & Hacker 2002).

33. *Dichagyris amoena* (Staudinger, 1892) (Fig. 33)

Bionomics: Univoltine, automnal species. Dichagyris amoena inhabits arid, semiarid mountainous and semi mountainous regions.

Collected localities and dates: Shah-e-Velayat, 25.10.2009. (3 specimens)

Distribution: Turkey, Armenia (Hacker 1990), Israel (Kravchenko et al. 2006). In Iran, this species was reported from Guilan and Fars provinces (Hacker 1990; Ebert and Hacker 2002).

34. *Dichagyris eureteocles* (Boursin, 1940) (Fig. 34)

Bionomics: Univoltine, autumnal species. This species inhabits mountainous and semi- mountainous regions up to 2400m.

Collected localities and dates: Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (25 specimens)

Distribution: Turkey, Armenia (Hacker 1990). In Iran, *Dichagyris eureteocles* has been reported from Markazi, Tehran and Sistan va Balouchestan provinces (Ebert & Hacker 2002).

Genus: *Yigoga* Nye, 1975

35. *Yigoga truculenta toxistigma* (Hampson, 1903) (Fig. 35)

Bionomics: This subspecies inhabits a wide range of habitats including steppe, mountainous and semi mountainous regions.

Collected localities and dates: Dashtab, 24.06.2009; Hesarouyeh, 9. 09.2009. (8 specimens)

Distribution: Syria (Hacker 1990), Armenia, Turkey, Lebanon and Iraq (Fibiger 1990). In Iran, the taxon was reported from Tehran, Fars, Lorestan and Khorasan provinces (Ebert & Hacker 2002).

Genus: *Euxoa* Hübner, [1821]

36. *Euxoa conspicua* (Hübner, 1827) (Fig. 36)

Bionomics: Bivoltine, this species inhabits mountainous regions with scarce vegetations up to 3000 m.

Collected localities and dates: Khabr Mountain, 15.03.2009; Chah Anar, 10.04.2009; Rochun Mountain, 15.05.2009; Dashtab, 24.06.2009. (53 specimens)

Distribution: This species is widespread form Europe to north of Mongolia and east of India (Fibiger 1990). In Iran, it has been reported from Mazandaran, Tehran, Azarbayjan-e-Gharbi, Azarbayjan-e-Sharghi, Fars, Kermanshah, Kordestan, Lorestan, Zanjan, Hamadan, Kerman and Khouzestan provinces (Hacker 1990; Ebert & Hacker 2002).

37. *Euxoa canariensis diamondi* Boursin, 1940 (Fig. 37)

Bionomics: Univoltine, this subspecies was collected in April and inhabits arid and semi arid regions up to 2300 m.

Collected localities and dates: Chah Anar, 10.04.2009. (3 specimens)

Distribution: In Iran, this subspecies has been reported from Khouzestan, Kordestan, Lorestan, Hormozgan, Boushehr, Fars and Sistan va Balouchestan (Hacker 1990; Ebert & Hacker 2002).

Genus: *Agrotis* Ochsenheimer, 1816

38. *Agrotis obesa scytha* Alphéraky, 1889 (Fig. 38)

Bionomics: Univoltine, late flying subspecies. Agrotis obesa scytha inhabits cold, open habitats with scarce vegetations up to 2600 m.

Collected localities and dates: Shah-e-Velayat, 25.10.2009. (2 specimens)

Distribution: In Iran, this subspecies has been reported from Tehran, Ardabil and Guilan provinces (Hacker 1990; Ebert & Hacker 2002).

39. *Agrotis segetum* ([Denis & Schiffermüller], 1775) (Fig. 39)

Bionomics: Multivoltine, this species inhabits wide range of habitats. Its early stages are pests of agricultural crops and feed on roots of their hosts.

Collected localities and dates: Khabr Mountain, 15.03.2009; Chah Anar, 10.04.2009; Rochun Mountain, 15.05.2009; Dashtab, 24.06.2009; Darniyan, 22.07.2009; Hesarouyeh, 9. 09.2009; Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (38 specimens)

Distribution: Palaeotropical, this species is widespread throughout the Palaearctic, Afro-tropical and Oriental regions. In Iran, it has been reported from Azarbayjan-e-Sharghi, Ardabil, Tehran, Mazandaran, Kordestan, Lorestan, Kermanshah, Khorasan, Zanjan, Hamadan, Fars, Kerman, Sistan va Balouchestan and Hormozgan provinces (Hacker 1990; Ebert & Hacker 2002).

40. *Agrotis ipsilon* (Hufnagel, 1766) (Fig. 40)

Bionomics: Multivoltine, ubiquitous species. This species inhabits a wide range of habitats including agricultural and also uncultivated areas.

Collected localities and dates: Chah Anar, 10.04.2009; Rochun Mountain, 15.05.2009; Hesarouyeh, 9. 09.2009; Khabr road, 20.10.2009; Shah-e-Velayat, 25.10.2009. (13 specimens)

Distribution: Paleotropical, this species is widespread throughout the Palaearctic, Afro-tropical and Indo-Australian regions. In Iran this species has been reported from Azarbayjan-e-Sharghi, Ardabil, Tehran, Mazandaran, Kordestan, Lorestan, Kermanshah, Khorasan, Zanjan, Hamadan, Fars, Kerman, Sistan va Balouchestan and Hormozgan provinces (Hacker 1990; Ebert & Hacker 2002).

Genus: *Eugnorisma* Boursin, 1946

41. *Eugnorisma chaldaica* (Boisduval, 1840) (Fig. 41)

Bionomics: Univoltine, this species is on wing from September to November. Eugnorisma chaldaica inhabits steppes and semi mountainous regions.

Collected localities and dates: Hesarouyeh, 9. 09.2009; Shah-e-Velayat, 25.10.2009; Darniyan, 04.11.2009. (5 specimens)

Distribution: Eurasiatic; Turkey (Varga & Ronkay 1994), Turkmenistan (Fibiger 1990). In Iran, this species has been reported from Tehran and Markazi provinces (Ebert and Hacker 2002).

42. *Eugnorisma insignata* (Lederer, 1853) (Fig. 42)

Bionomics: Univoltine, this species is active from August to October; its habitats are arid steppes with scarce vegetations.

Collected localities and dates: Darniyan, 22.08.2009; Hesarouyeh, 9. 09.2009; Khabr road, 20.10.2009. (36 specimens)

Distribution: Eurasiatic, Turkey, Syria, Caucasus, Afghanistan and Armenia (Fibiger 1990). In Iran, this species has been reported from Guilan, Tehran, Lorestan and Khorasan provinces (Hacker 1990; Ebert and Hacker 2002).

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