

بررسی فونستیک گونه‌های جنس *Euchromius* Guenée (Lepidoptera: Pyralidae: Crambinae) در ایران

هلن عالی‌پناه^۱

چکیده

در این تحقیق ضمن بررسی و شناسایی مجدد نمونه‌های *Euchromius* جمع‌آوری شده از ایران که در موزه‌ی حشرات هایک میرزایانس واقع در مؤسسه‌ی تحقیقات آفات و بیماریهای گیاهی نگهداری می‌شوند، کلید شناسایی گونه‌های این جنس در ایران، مشخصات نمونه‌های بررسی شده و پراکنندگی آنها ارائه گردیده و تفاوت مرفولوژیک آنها با توصیف‌های اصلی شرح داده شده است. گونه‌های معرفی شده عبارتند از:

Euchromius bellus (Hübner), *E. rayatellus* (Amsel), *E. keredjellus* (Amsel), *E. ramburiellus* (Duponchel), *E. jaxartellus* (Erschoff), *E. cambridgei* (Zeller), *E. vinculellus* (Zeller), *E. ocellus* (Haworth), *E. viettei* (Bleszynski).

گونه‌های *E. rayatellus* (Amsel, 1949) که در سال‌های ۱۳۵۰ از طرق مشهد و ۱۳۵۳ از کوهرنگ واقع در استان چهارمحال و بختیاری و نیز *E. viettei* Bleszynski, 1961 که در سال ۱۳۷۹ از جزیره فارور جمع‌آوری شده‌اند، به عنوان اولین گزارش برای فون حشرات ایران معرفی می‌گردند.

واژگان کلیدی: *Euchromius*, Crambinae, Pyralidae, Lepidoptera، گزارش جدید، تاکسونومی، ایران.

۱- مؤسسه‌ی تحقیقات آفات و بیماریهای گیاهی، صندوق پستی ۱۴۵۴-۱۹۳۹۵، تهران.
این مقاله در تاریخ ۱۳۸۱/۱۰/۱۰ دریافت و چاپ آن در تاریخ ۱۳۸۲/۵/۱۴ به تصویب نهایی رسید.

- 27- TUXEN, S. L., 1970. Taxonomist's Glossary of Genitalia in Insects, second edition. Munksgaard, Copenhagen.
- 28- ZELLER, P. C., 1847. Bemerkungen über die auf einer Reise nach Italien und Sicilien beobachteten Schmetterlingsarten. - Isis v. OKEN 1847: 721-771.
- 29- ZELLER, P. C., 1867. Einige von Herrn PICKARD CAMBRIDGE, besonders in Aegypten und Palastina, gesammelte Microlepidoptera.- Ent. Ztg. Stett. 28: 365-387.

- 14- ERSCHOFF, N. G., 1874. Tscheschujekrylia (Lepidoptera) [in] A. P. FEDTSCHENKO: Putschestvije it Türkiestana. Wypusk II, Tom II.- Zoogeografitscheskija Isledovanija. Tschafit V, Odtiel III. VI: 127 S., 1 Taf., Moskau.
- 15- GOZMÁNY, L., 1959. The Results of Zoological Collecting Trip to Egypt in 1957, of the Natural History Museum, Budapest. 6. Egyptian Microlepidoptera. Part I.- Ann. hist.-nat. Mus. nat. hung. 51: 363-370
- 16- GUENÉE, M. A., 1845: Essai sur unc nouvelle classification des Microlépidoptères.- ANN. Soc. Ent. Fr. (2) 3: 297-344, Paris.
- 17- HAMPSON, G. F., 1919. Description of new Pyralidae of the subfamilies Crambinae and Siginac.- Ann. Mag. natur. Hist. (9) 3: 275-292, 437-457, 535-547.
- 18- HEPPNER, J., 1998. Classification of Lepidoptera, Part 1. Introduction, Holarctic Lepidoptera, vol. 5, supp. 1: 148pp.
- 19- HOLLOWAY, J.D., J.D. BRADLEY & D.J. CARTER, 1987. Cie Guides to Insects of Importance to man, 1- Lepidoptera, C.A.B. International Institute of Entomology, British Museum Natural History, 262pp.
- 20- HÜBNER, J. 1796. -[1836]. Sammlung europäischer Schmetterling. Horde VIII. Tineae-Schaben. [Text] 78 S. 1796. Tafeln 1-69, 1796-[1824]. Tafeln 70-71 [herausgeg. Von Geyer], [1832]-[1836]. Augsburg.
- 21- KUZNETSOV, N. Ya., 1967. Fauna of Russia and adjacent countries, LEPIDOPTERA, Vol. I: 29-187.
- 22- MEYRICK, E. 1930-1936. Exotic Microlepidoptera. 4. London, 642s.
- 23- ROTHSCHILD, W. 1921. Captain ANGUS BUCHANAN's Air Expedition. V. on the Lepidoptera collected by Captain A. BCHANAN in northern Nigeria and the southern Sahara.- Novit. Zool. Tring 28: 142-170, 215-229.
- 24- SCHMIDT, A. V. 1934. On the Pyralidae collected by Messres. F. LE CERF and TALBOT in the Great Atlas of Morocco.- Ann. Mag. nat. Hist. (10) 14: 538.
- 25- TREITSCHKE, F. 1832- 1836. Die Schmetterlinge von Europa. (Fortsetzung des OCHSENHEIMER'schen Werks.), Band X, Suppl. Abt. III, 303 S.
- 26- TURATI, E., 1924. Spedizione Lepidopterologica in Cirenaica, 1921-1922.- Atti Soc. Ital. Sci. nat. 63: 21-191.

References

- 1- AMSEL, H.G., 1949. Microlepidopteren der BRANDT'schen Iran- Ausbeute. I. Teil.- Bull. Soc. Fouad Ier Ent. 33: 227-269.
- 2- AMSEL, H.G., 1952. Wissenschaftliche Ergebnisse der zoologischen Expedition des National Museum in Prag nach der Türkei (13). Microlepidoptera. Acta Entomologica Musei Nationalis Pragae. XXVIII, 420, pp. 411-429.
- 3- AMSEL, H.G., 1958. Kleinschmetterlinge aus Nordost-Arabien der Ausbeute A. S. TALHOUK.- Beitr. naturk. Forsch. SW-Deutschl. 17: 61-82.
- 4- AMSEL, H.G., 1955. Kleinschmetterlinge vom Jordantal, Zeitschrift der Wiener Entomologischen Gesellschaft, 279-282.
- 5- AMSEL, H.G., 1961. Die Microlepidopteren der Brändt'schen Iran-Ausbeute, 5, Teil, Arkiv F.r Zoologi, ser. 2, Bd. 13, N. 17: 323-445.
- 6- BLESZYNSKI, S., 1960. Studies on the Crambidae (Lepidoptera). Part XXIX. On some species of the Genus *Euchromius* Gn. Acta Zool. Cracov. 5: 203-247, Taf. 22-34, Krakow.
- 7- BLESZYNSKI, S., 1961. Studies on the Crambidae (Lepidoptera). Part XXVI. Preliminary study on the Genus *Euchromius* Gn. Acta ent. Mus. Nat. Pragae 34: 451-468, 26 Fig., Praha.
- 8- BLESZYNSKI, S., 1965. Crambinae. In: H.G. Amsel, F. Gregor and H. Reisser (Editors), Microlepidoptera Palaearctica. Georg Fromme, Vienna, Vol. 1, xxviii + 533pp., 133pls.
- 9- BLESZYNSKI, S., 1968. Crambinae aus der Türkei und aus Griechenland (Lep., Pyralidae).
- 10- CARADJA, A. 1910. Beitrag zur Kenntnis der geographischen Verbreitung der Pyraliden des europäischen Faunengebietes, nebst Beschreibung einiger neuer Formen.- Dt. ent. Z. Iris 24: 105-147.
- 11- CHRÉTIEN, P., 1907. Lépidoptères du languedoc.- Naturaliste 29: 163-164, 178-179.
- 12- COSTA, O. G., 1829. Catalogo die Lepidotteri del Regno di Napoli.- Dizionario. Univ. Agr. Ed. Napolitana. Napoli, 14 S.
- 13- DUPONCHEL, P. A. J., 1836: [in] J. B. GODART: Histoire Naturelle des Lépidoptères ou papillons de France. Vol. 10. Nocturnes. Tome septième. Paris, 388 S., Taf. 267-286.

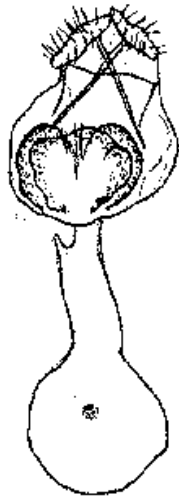


Fig.12



Fig.13



Fig.14

Figs 12- 14: Female genitalia: 12- *E. viettei* Bleszynski (8); 13- *E. ramburiellus* (Duponchel); 14- *E. jaxartellus* (Erschoff) (8).

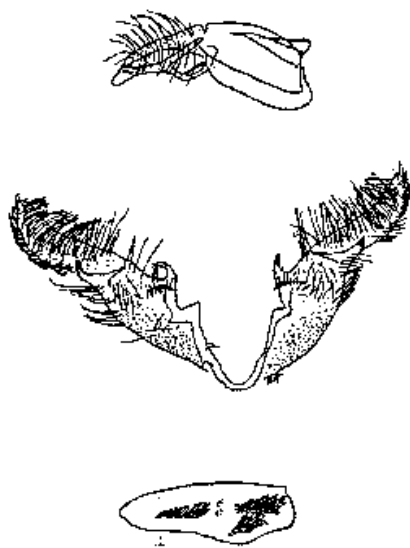


Fig.8



Fig.9



Fig.10

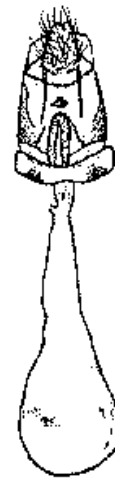


Fig.11

Figs 8- 9: Male genitalia: 8- *E. jaxartellus* (Erschoff); 9- *E. ramburiellus* (Duponchel).

Figs 10- 11: Female genitalia: 10- *E. rayatellus* (Amsel); 11- *E. pulverosus* (Christoph) (8).



Fig.2

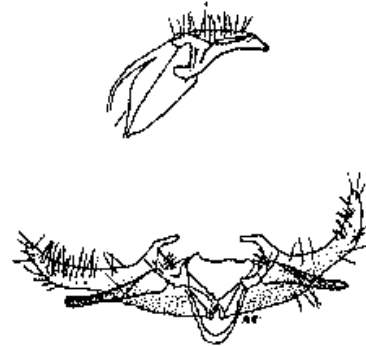


Fig.3



Fig.4



Fig.5



Fig.6



Fig.7

Figs 2-7: Male genitalia: 2- *E. keredjellus* (Amsel); 3- *E. rayatellus* (Amsel); 4- Upper part of genitalia in *E. pulverosus* (Christoph) (8); 5- Upper part of genitalia in *E. cochlearellus* (Amsel) (8); 6- *E. viettei* Bleszynski; 7- *E. gratiocellus* (Amsel)

E. cambridgei (Zeller) which distributed from Spain to west of Pakistan and finally *E. subcambridgei* Bleszynski which distributed from Tunisia to North of Sudan.

Amsel in his survey on the Iranian Microlepidoptera in 1949, introduced *E. cambridgei* from Iran (Bandar-e Chabahar). Bleszynski synonymized according to his literature *E. bahrlutella* with *E. vinculellus* Amsel that was recorded by Amsel from Chabahar, Takht-e Malek, Jahrom, Firuzabad, Karaj and Dalaki (5).

The species *E. bellus* (Hübner) and *E. ocellus* (Haworth) which are found in Iran are representatives of the genus *Euchromius* in Eurosibery and Central Asia. *E. bellus* was collected from Karaj in 1936 and at the same time *E. ocellus* from Karaj, Nesa, Taftan Mountain and Chabahar. In 1937 the latter species was collected from Kotal Pirzan, Shiraz, Ardakan and Jahrom too (5). *E. sobeidae* Bleszynski and *E. zagulaevi* Bleszynski from Turkmenistan and *E. cochlearellus* (Amsel) from Iran and Kordestan are local in Central Asia. Since the type locality of *E. sobeidae* is Afghanistan, It seems that we could find it from Iran in further investigations in eastern territories. *E. cochlearellus* firstly was collected from Iran in Karaj region by Amsel. It is also recorded from Kordestan (8), but in this review it was not found.

Several species distributed from central regions to the west, near to Europe and north of the Africa, like *E. jaxartellus* (Erschoff), *E. gratiosellus* (Caradja), *E. pulverosus* (Christoph) and *E. keredjellus* (Amsel) that all of them recorded from Iran (8). Amsel was recorded *E. keredjellus* from Karaj in 1936. He was recorded this species from Shiraz one year later. According to his literature, *E. pulverosus* was recorded in 1936 from Nesa and Karaj, in 1937 from Kumeh, in 1939 from southern parts of Alborz, in 1940 in Sineh Sefid (Fars province), in 1941 from Shiraz and in 1950 from Firuzabad (Fars province) (5), but I couldn't find it in this survey. I couldn't also find *E. gratiosellus* which its type locality is Oshtorankuh (Lorestan).

Acknowledgements

The study was made possible through kind attentions for which I am indebted to the following specialists: Wolfgang Speidel (Alexander Koenig Museum, Germany); Graziano Bassi (Natural History Museum, Italy); Rob Schouten (Leiden, The Netherlands) and some of my colleagues: Ali Pāzuki, Sayeh Serri, Mohsen Mofidi-Neyestanak and Mahrokh Afra (Plant Pests and Diseases Research Institute, Iran).

leg. Ebrāhimi/Badii; Shahriār: 25.VIII.1971 (L.T.); Yazd: Ashkezar: 1000m., 3.V.1986, leg. Mirzāyāns/Borumand.

Diagnosis. The examined specimens are quite identical to that of Haworth, 1811 (in Bleszynski, 1965) in the wing patterns and color. Forewing has 8 marginal black spots.

Distribution. With a wide distribution in tropical and subtropical regions. In the Palearctic it is recorded from Ireland, England, France, Madeira, Canary, Morocco, Algeria, Libya, Egypt, Portugal, Corsica, Sardinia, Sicily, Switzerland, Germany, Austria, Hungary, Bulgaria, Yugoslavia, Greece, Crete, Cyprus, South of Caucasus, Asia Minor, Lebanon, Palestine, Syria, Iraq, Iran, Pakistan, Afghanistan, Uzbekistan and Tian Shan Mts. This species occurs also in Yemen, India and Australia and extended to the North of Europe.

Euchromius viettei (Bleszynski, 1961)

Euchromius viettei Bleszynski, 1961, Acta ent. Mus. Nat. Pragae 34: 455.

Type locality: Saudi Arabia.

material examined:

Hormozgān: Fārur island: 29,30.XI.1998, leg. Mofidi- Neyestānak/Barāri.

Diagnosis. The examined specimen is quite similar to that of Bleszynski, 1961.

Distribution. Saudi Arabia (Jeddah). This is the first record of its occurrence in Iran.

Discussion

Most of the *Euchromius* species are distributed in Mediterranean region. The total number of the species of this genus in the world by the present knowledge contains 25 species which most of them (21 species) occur in the Palearctic region. In which, *E. malekalis* (Amsel) from Iran, *E. mouchai* Bleszynski and *E. roxanus* Bleszynski from south west of Russia, *E. bleszynskiellus* Popescu-Gorj from Romania and *E. sudanellus* Bleszynski from North Sudan are local for east of Mediterranean region and former Oriental (8). *E. malekalis* was recorded by Amsel from Iran firstly (5). It was collected from Baluchestan province (Takht-e Malek, 750m.), but presently there is no specimen of this species in HMIM.

Some of the species that are widely distributed in Mediterranean region are as follow: *E. vinculellus* (Zeller) which distributed from Spain to Morocco and from the west of Sahara to Afghanistan, *E. rayatellus* (Amsel) that is recorded from Italy, Bulgaria, Afghanistan and now from Iran, *E. ramburiellus* (Duponchel) which is distributed from Spain to Iraq,

Pisāson, 220m., 30.VIII.1975, leg. Mirzāyāns; Hashtpar (15km.), 31.VIII.1975, leg. Mirzāyāns; **Golestān**: Pār-k-e Mellī-e Golestān: Mazārī, 530m., 19-20.VI.1977, leg. Pāzuki/Abāi; **Hamadān**: Arzanfūt: 2240m., 29.VI.1987, leg. Mirzāyāns/Hāshemi; Asadābād: 2200m., 30.VII.1987, leg. Mirzāyāns/Hāshemi; **Hormozgān**: Bandar Abbās: Geno: 800m., 15-17.VI.1992, leg. Mirzāyāns/Badii; Fin: Sarzeh, 260m., 3.V.1995, leg. Badii/Ardheh/V. Nazari; Mināb: Gorbānd, 4.III.1972, leg. Mirzāyāns/Borumand; Sirik: 100m., 30.IV.1996, leg. Badii/Ardheh/V. Nazari; **Kermān**: Jiroft: Esfandagheh: Sargaz, (650m.), 20.V.1977, leg. Safavi/Pāzuki; Ghanāt-e Marvān: 2800m., 23.V.1977, leg. Safavi/Pāzuki/Abāi; Shahr-e Bābak: Tazarj, 1850m., 10.IX.1993, leg. Ebrāhimi/Hāshemi; **Kermānshāh**: Kermānshāh: 9.VI.1975, leg. Abāi, 24-30.V.1975, leg. Ghāzi; Govāvar, 15.VI.1975, leg. Nuri; Ghasr-e Shirin: Nazarābād, 450m., 17.VIII.1996, leg. Parchami/Barāri/V. Nazari; **Khorāsān**: Chenārān: Akhlamad, 16.VII.1971, leg. Pāzuki/Āyatollāhi; Dareh Gaz, 1.VIII.1981, leg. Pāzuki/Āyatollāhi; Ghuchān, 30.VII.1971, leg. Pāzuki/Āyatollāhi; Khosrawieh: Ālādāgh, 1600m., 16.VI.1974, leg. Rajabi/Pāzuki; Mashhad (20km. S.), 1000m., 3.IX.1986, leg. Hāshemi/Zairi; Neyshābur: Zabarkhān Hesār, 1400m., 12.VI.1977, leg. Pāzuki/Abāi, Buzhān, 20.VIII.1993, leg. Ebrāhimi/Badii; Sarakhs: Tajan, 250m., 17.VIII.1993, leg. Ebrāhimi/Badii, Tāibād, 650m., 19.VIII.1993, leg. Ebrāhimi/Badii; Torbat-e Heydariyeh: Fadiheh, 20.VII.1971, leg. Pāzuki/Āyatollāhi; **Khuzestān**: Ābādān: Minoo island, 12m., 11.V.1975, leg. Pāzuki/Borumand, 29.IV.1976, leg. Pāzuki/Abāi; Ahwāz: Hamid, 30.IV.1976, leg. Pāzuki/Abāi; Bostān: Chazzābeh, 20m., 30.IV.1995, leg. Ardheh/Parchami/Badii; **Kohkiluyeh & Boyerahmad**: Yāsuj: Sisakht: Denā, 2200m., 11.IX.1974, Tang-e Sorkh, 12-13.VI.1986, leg. Mirzāyāns/Hāshemi, Ābshār, 1650m., 6.V.1995, leg. Parchami/Ardeh/Badii; **Lorestān**: Malāvi: Pol-e dokhtar, 730m., 14.V.1975, leg. Pāzuki/Borumand; **Semnān**: Shahmirzād: Kabud-Darreh, 2100m., 22.VIII.1993, leg. Ebrāhimi/Badii; **Sistān & Baluchestān**: Pishin: Suldān, 150m., 14.XII.1992, leg. Ebrāhimi/Badii; Rāsk: Cherāghān, 11-12.XII.1992, leg. Ebrāhimi/Badii; Sarāvān: Bakhshān, 1140m., 19.XII.1992, leg. Ebrāhimi/Badii, 1250m., 5.VI.1996, leg. Ebrāhimi/Faghih/Borumand; Zāhedān: Kahurak, 23.IV.1973, leg. Borumand; **Tehrān**: Damāvand: Ābsard, 1900m., 3-7.VII.1978, leg. Pāzuki/Sabzevāri; Disin: 17.VIII.1973, leg. Ebert; Eshtehārd: 980m., 20-21.IX.1991, leg. Ebrāhimi/Badii; Evin: 31.V.1970, 10-16.VI.1970, 3,25,26.VII.1970, 8,15.VIII.1970, 22,28.V.1971, 3-25.VI.1971, 4-22.VII.1971, 11.IX.1971 (L.T.); Kahrizak: Ghaleh-no, 850m., 17.V.1991, leg. Ebrāhimi/Badii; Karāj: 5.VI.1969, leg. Abāi, Baraghān, 1400m., 21.X.1991;

Neyestānak/Gilāsīān/Hājiesmailiān. **Kermān:** Jiroft: Esfāndagheh: Sargaz, 1650m., 20.V.1977, leg. Safavi/Pāzuki; **Sistān & Baluchestān:** Pishin: Sulden, 190m., 14.XI.1996, leg. Parchami/Sarafrāzi/Barāri; Khāsh: Kārvāndar (55km. S. W.), 1400m., 14.V.1972, leg. Abāi/Ebert.

Diagnosis. Wingspan in the examined specimens 13.5-21mm., which is nearly different from that of Bleszynski, 1965 (wingspan 16- 19 mm.); forewing with 6 marginal black spots. According to Bleszynski, 1965, in the male genitalia of examined species sacculus with a long free spined tip, but in some of the Iranian specimens sacculus was without any spine.

Distribution. Widely distributed in Mediterranean region. It is also recorded from Morocco, Sicily, Corsica, South of Italy, Iraq, South of Caucasus, Iran and Afghanistan (8).

Euchromius ocelleus (Haworth, [1811]) (fig. 22)

Palparia ocellea Haworth, 1811; Lep. Brit: 486.

Type locality: England.

syn.: *Crambus cyrilli* O. G. Costa 1829; Dizion. Univ. Agric: 11.

Phycis funiculella Treitschke, 1832, Schm. Eur. 9 (1): 200.

Eromene texana Robinson, 1870, Ann. Lyc. nat. Hist. N. Y. 9: 154.

Eromene gigantea Turati, 1924, Atti Soc. Ital. Sci. nat. 63: 129.

material examined:

Ardabil: Moghān: 15.VII.1967, 22.V.1969, leg. Ārghand, Pārsābād, 9.V.1969, leg. Abāi;
West Āzarbāijān: Sardasht (15km. N.E.): 23.VI.1975, leg. Abāi; **Chāhārmahāl & Bakhtiāri:** Shahrekord: 21.VII.1974, leg. Hāshemi/Zairi; **Esfahān:** Esfahān: 19-20.VII.1974, leg. Hāshemi/Zairi; Kāshān: Niāsar: Saricheh, 1650m., 29-31.VII.1983, leg. Pāzuki/Hāshemi, Ghohrud, 1800m., 12.VIII.1988, leg. Hāshemi; Natanz: Lākaj, 1550m., 21-23.IX.1996, leg. Barāri/Parchami; **Fārs:** Dārāb: Rostāgh, 1250m., 21-23.IV.1992, leg. Mirzāyāns/Badii; Kāzerun: Dasht-e Arzhan, 1950m., 13.V.1974, leg. Abāi/Pāzuki, Kotal Pirehzan, 2000m., 18.VI.1972, leg. Ebert/Pāzuki; Eghlid: Amiriye, 1950m., 5.VI.2001, leg. Mofidi-Neyestānak/Ebrāhimi/Osten; Firuzābād: Ghīr, 1160m., 11.IV.1975, leg. Borumand; Mehkuiyeh, 1450m., 11.VI.1986, leg. Mirzāyāns/Hāshemi; Kāzerun: Miān kotal, 1900m., 11.VI.1972, leg. Ebert/Pāzuki, Tang-e Chogān, 900m., 9.V.1974, leg. Abāi/Pāzuki, Nowdān, 1250m., 15.IV.1975, leg. Borumand/Pāzuki; Gāwkoshak, 1170m., 16.IV.1975, leg. Borumand/Pāzuki, 1150m., 18.V.1975, leg. Pāzuki/Borumand; Mamasani: Nurābād, 15.VIII.1976, leg. Abāi; **Ghom:** Ghom Lake: 26.V.1976, leg. Abāi; **Gilān:** Bandar-e Anzali:

Ommatopteryx ilkui Gozmány, 1959, Ann. hist.-nat. Mus. nat. hung. 366: 51,

material examined:

Bushehr: Bushehr: Ahrām, 100m., 24.XI.1998, leg. Ghayurfar/Barāri/Mofidi- Neyestānak;
Hormozgān: Bandar Abbās: Isin, 3.III.1972, leg. Mirzāyāns/Borumand, 5.IV.1973, leg. Abāi; Mināb: 13.III.1971, leg. Pāzuki/ Āyatollāhi, 24.IV.1971, leg. Safavi/Zairi, 200m., 3.IV.1973, leg. Abāi; Rudān, 4.IV.1973, leg. Abāi; Gorbān, 4.III.1972, leg. Mirzāyāns/Borumand; Lārak island, 6.III.1999, leg. Ghayurfar/Mofidi- Neyestānak

Diagnosis. Wingspan of the examined specimens 13-17 mm., while in that of Bleszynski, 1965 wingspan is 14-16 mm.; forewing with 9 black marginal spot. In the male genitalia of examined specimens harpe extended to 1/2 of the length of valvae, compare with that of Zeller, 1867 (in Bleszynski, 1965), which these processes are extended to 2/3 of valval length.

Distribution. Canary Islands, Spain, south of France, Tunisia, Egypt, Sudan, Jordan, Saudi Arabia, Iran, Afghanistan, west of Pakistan (8).

***Euchromius vinculellus* (Zeller, 1847)**

Crambus vinculellus Zeller, 1847, Isis von OKEN 1847: 760.

Type locality: Sicily.

Syn.: *Ommatopteryx corsicalis* Hampson, 1919, Ann. Mag. nat. Hist. (9) 3: 534.

Ommatopteryx asbenicola W. Rothschild, 1921, Novit. Zool. Tring 28: 220.

Eromene joiceyella Schmidt, 1934, Ann. Mag. nat. Hist. (10) 14: 538.

Eromene bahrlutella Amsel, 1949, Bull. Soc. Fouad I^{er} Ent 33: 236.

material examined:

Bushehr: Kangān, 10m., 25.XI.1998, leg. Ghayurfar/Barāri/Mofidi- Neyestānak; Ahrām, 100m., 24.XI.1998, leg. Ghayurfar/Mofidi- Neyestānak/Barāri; **Fārs:** Kāzerun: Tange Chogān, 23.III.1973, leg. Abāi; Miānkotal, 1900m., 11.VI.1972, leg. Pāzuki/Ebert;
Hormozgān: Bandar Abbās: Isin: 3,10,11.III.1972, leg. Mirzāyāns/Borumand; Jāsk, Bashāgard (20km. E. Sendērk), 300m., 11.V.1977, leg. Safavi/Pāzuki; Geno, 800m., 11.III.1991, leg. Mirzāyāns/Badii; Bandar-e Khamir: 100m., 4.III.1986, leg. Mirzāyāns/Borumand; Hājiābād: 900m., 12.III.1995, leg. Sarafrāzi/Badii; Lārak island: 6.III.1999, leg. Ghayurfar/Manzari; Mināb: 11.III.1971, leg. Pāzuki/Āyatollāhi; Gorbān, 4.III.1972, leg. Mirzāyāns/Borumand; Fin: Gohreh, 9.III.1971, leg. Mirzāyāns/Borumand;
Khuzestān: Andimeshk: Bidrobeh: Amirseyf, 700m., 2.V.2001, leg. Mofidi-

black spots. In all of the examined specimens aedeagus of male genitalia with 3 distinct cornutus (fig. 9), while according to Arenberger in 1965 in the male genitalia of the members of this species aedeagus has two or three cornutus.

Distribution. This species distributed in Spain, through south of the Europe, North Africa and Near East to Central Asia. It is also reported from Sardinia, Balkan countries, Cyprus, Algeria, Egypt, Oral Mts, Sarcpta (south of Russia), Iran and Saudi Arabia (8).

Euchromius jaxartellus (Erschoff, 1874)

Eromene jaxartellus Erschoff, 1874, Lep. Turk: 82.

Type locality: Turkistan

material examined:

East Āzarbāijān: Sadd-e Aras: 780m., 21.V.1997, leg. Badii/Sarafrāzi/V.Nazari; **Golestān:** Gorgān: Pār-k-e Melli-e Golestān: Mazārli, 530m., 19-20.VI.1977, leg. Pāzuki/Abāi; Gonbad-e Kāvus: Inchehborun: Dāneshmand, 0m., 26-27.IX.1992, leg. Ebrāhimi/Badii; **West Āzarbāijān:** Orumieh: 1-3.VI.1975, leg. Abāi; **Sistān & Baluchestān:** Sarāvān: Jālgh, 4.VI.1996; **Khorāsān:** Mashhad: 3.VII.1974, leg. Zāre; Mazār-e Āstān-e Ghods, 280m., 18-20.IV.1997, leg. Badii/Barāri/Sarafrāzi; Sabzevār (10km. S.): Hāresābād, 940m., 13.VI.1977, leg. Pāzuki/Abāi

Diagnosis. Wingspan of the examined specimens 13-18 mm., compare with that of Bleszynski, 1965 (wingspan 14-17 mm.). This species is very similar to *E. ramburiellus* and *E. gratiocellus*, but on average is smaller and lighter colored. In the male genitalia of the examined specimens the length of saccular process (harpe) is clearly shorter than *E. ramburiellus* (fig. 8).

Distribution. South of Caucasus Mts (Ordubad), Iran, Afghanistan, Uzbekistan (Bukhara), Turkmenistan, Sirdarya (8).

Euchromius cambridgei (Zeller, 1867)

Eromene cambridgei Zeller, 1867, Enl. Ztg. Stett. 28: 370.

Type locality: Egypt

syn.: *Eromene luciella* Chrétien, 1907 Naturaliste 29: 178.

Argyria prototypa Meyrick, 1935, Exot. Micr. 4: 571.

Ommatopteryx congruentella Amsel, 1958, Beitr. naturk. Forsch. SW-Dtsch. 17: 64.

Ommatopteryx szijjartoi Gozmány, 1959, Ann. hist.-nat. Mus. nat. hung. 364:51.

Euchromius keredjellus (Amsel, 1949)*Eromene keredjella* Amsel, 1949, Bull. Soc. Fouad I^{er} Ent. 33: 233

Type locality: Iran: Karaj (Alborz Mountains)

material examined:

Ghazvin: Tāleghān, 21-36.VIII.1976, leg. Kāviān; **Hormozgān:** Mināb (km. 15): 150m., 1.IV.1973, leg. Abāi; Rudān, 400m., 4.IV.1973, leg. Abāi; **Kermānshāh:** Kangāvar (51km. E.): 1500m., 29.VI.1972, leg. Mirzāyāns/Abāi;

Diagnosis. The examined specimens identical with that of Amsel, 1949 (in Bleszynski, 1965), except of Kermanshah specimen which is rather bigger (wingspan 20mm.) than that of Bleszynski, 1965 (wingspan 15- 19 mm.). Although the median band of the forewing in the members of this species is straight, but in that of Kermanshah it is nearly curved. Forewing with 7 black marginal spots.

Distribution. Iran (Karaj). Afghanistan, Anatoly and Armenia (8).

Euchromius ramburiellus (Duponchel, 1836)*Crambus ramburiellus* Duponchel, 1836, Hist. nat. Lép. Fr. 10: 83

Type locality: Corsica.

syn.: *Crambus zonellus* Zeller, 1847, Isis von OKEN 1847: 758.*Eromene ramburiellus* var. *luteella* Caradja, 1910, Dtsch. ent. Z. Iris 24: 116.*Eromene islamella* Amsel, 1949, Bull. Soc. Fouad I^{er} Ent. 33: 235.**material examined:**

Bushehr: Ahrām, 100m., 24.XI.1998, leg. Ghayurfar/Barāri/Mofidi- Neyestānak; Borāzjān: Dālaki, 300m., 21.III.1973, leg. Abāi; **Esfahān:** Nāin, 24.VI.1973, leg. Zairi; **Fārs:** Kāzerun: Tang-e Chogān, 900m., 9.V.1974, leg. Abāi/Pāzuki; **Hormozgān:** Bandar Abbās, 3.III.1972, leg. Mirzāyāns/Borumand; **Khorāsān:** Mashhad, 6.VI.1971, leg. Kalāli, 3.VII.1974, leg. Zāre; **Khuzestān:** Ābādān: Minoo island, 12m., 11.V.1975, leg. Pāzuki/Borumand; Ahwāz: 7.IV.1974, leg. Zairi; Mollāsāni, 12.V.1974, leg. Zairi; Hamid, 30.IV.1976, leg. Pāzuki/Abāi; Albāji (30km. N. Ahwāz), 1.V.1976, leg. Pāzuki/Abāi; Kuteshā hnuf, 5m., 11.V.1994, leg. Hāshemi/Sarafrāzi; Masjed Soleymān: 60m., 8.V.1975, leg. Pāzuki/Borumand; Dezful: Haft Tappeh, 100m., 5.V.1996, leg. Sarafrāzi/Hāshemi; **Sistān & Baluchestān:** Zāhedān: Kahurak, 610m., 2.VI.1977, leg. Safavi/Pāzuki/Abāi

Diagnosis. Wingspan of the examined specimens 14.5-18 mm. (n= 22), compare with that of Duponchel, 1836 (in Bleszynski, 1965) (wingspan 11.5-20m.); forewing with 9 marginal

Euchromius bellus (Hübner, 1796)*[Tinea] bella* Hübner, 1796, Samml. eur. Schmett. Tineae: 29

Type locality: Hungary

material examined:

East Āzarbāijān: Marāgheh: 15.VI.1991, leg. Hāshemi; **Chahārmahāl & Bakhtiāri:** Shahrekord: 21.VIII.1974, leg. Hāshemi/Zairi; **Fārs:** Saādātshahr: Sivand, 1700m., 24.V.1995, leg. Hāshemi/Badii; Shirāz: Bājgāh, 29.V.1973; Bamu, 650m., 13-14.VI.1996, leg. Badii/Linnāvori/Sarafrāzi; **Ghazvin:** Tāleghān (8km. W. Zidasht): 2200m., 10-13.VI.1977, leg. Pāzuki/Mortazavihā; Kalānak, 1950m., 26.VI.1994, leg. Ebrāhimi; **Kermānshāh:** Eslāmābād-e Gharb: Govāvar, 15.VI.1975, leg. Nuri; Kangāvar (5km. E.): 1500m., 29.VI.1972, leg. Mirzāyāns/Abāi; Kermānshāh: 18.VI.1975, leg. Abāi; Māhidasht, Chāhārzebar-e Olyā, 1500m., 21.VIII.1996, leg. Parchami/Barāri/V. Nazari; **Kordestān:** Javānrud: Ravānsar, 20.VI.1975, leg. Abāi, Bijār: 1700m., 28.VI.1975, leg. Pāzuki; **Tehrān:** Damāvand: Ābsard, 1900m., 3-7.VII.1978, leg. Pāzuki/Sabzevāri; Evin: 3.VII.1970.

Diagnosis. The examined specimens are similar to that of Hübner, 1796 (in Bleszynski, 1965) on average compare with that of Bleszynski, 1965 (wingspan 16-19 mm.), they are somewhat bigger (wingspan 16-21.5 mm., n=31).

Distribution. They are distributed from France to Italy, Sicily, Yugoslavia, Bulgaria, Greece, Romania, Check Republic, Slovakia, Hungary, Middle East, Palestine, Lebanon, Iraq, Syria, Caucasus (south of Caucasus Mt.), Iran (8).

Euchromius rayatellus (Amsel, 1949)*Eromene rayatellus* Amsel, 1949, Bull. Soc. Fouad 1^{er} Ent. 33: 278.

Type locality: Iraq: Kordestan

material examined:

Esfahān: Kuhrang: 26.VII.1974, leg. Hāshemi/Zairi; **Khorāsān:** Mashhad: Torogh, 12.VI.1971, leg. Shāhrokhi

Diagnosis. Wingspan of the examined specimens 14.5- 16.5 mm., compare with that of Bleszynski, 1965 (wingspan 14- 15.5 mm.); forewing with 7 marginal spots. In the male genitalia of the examined specimens valvae longer than that of Amsel, 1949 (fig. 3).

Distribution. Kert, Italy, Iraq (Kordestan, Rayat), North of Afghanistan, Middle East, Jordan. Some specimens recorded from Bulgarian coast of Black sea, Sarepta and Bukhara (8). This is the first record of its occurrence in Iran.

- Papillae analis with normal hairs, ostium pouch with strong sclerotized ventral plate	<i>rayatellus</i> (Amsel)
7- Middle band of the forewing at the lower half of costa angled.....	<i>cambridgei</i> (Zeller)
- Middle band of the forewing at the lower half of costa without angle	8
8- Middle band of the forewing in the shape of two yellow band with a white band between them. The internal yellow band sometimes reduced.....	9
- Middle band of the forewing internally restricted with a narrow whitish band	10
9- Middle band of the forewing distinctly oblique.....	<i>ocelleus</i> (Haworth)
- Middle band of the forewing not oblique	<i>bellus</i> (Hübner)
10- Male	11
- Female	17
11- Gnathos with a toothed fold at the base	12
- Gnathos without any fold at the base	13
12- The toothed basal fold of gnathos with round edges (fig. 14).....	<i>pulverosus</i> (Christoph)
- The toothed basal fold of gnathos with angled edges (fig. 14)	<i>cochlearellus</i> (Amsel)
13- Cucullus two lobbed (fig. 14)	<i>viettei</i> Bleszynski
- Cucullus simple	14
14- Uncus with dorsal thorn (fig. 7).....	<i>gratiosellus</i> (Caradja)
- Uncus without dorsal thorn	16
15- Free end of sacculus rather direct, basal part of costal arms distinctly spread (fig. 7)	<i>gratiosellus</i> (Caradja)
- Free end of sacculus more or less curved, costal arms gradually narrowed	17
16- Free end of sacculus strongly curved (fig. 8)	<i>jaxartellus</i> (Erschoff)
- Free end of sacculus slightly curved (fig. 9).....	<i>ramburiellus</i> (Duponchel)
17- Copulatrix bursae without signa (fig. 11).....	<i>pulverosus</i> (Christoph)
- Copulatrix bursae with one or two distinct signum	18
18- Copulatrix bursae with one signum (fig. 12)	<i>viettei</i> Bleszynski
- Copulatrix bursae with two signum.....	19
19- Ductus bursae without a distinct lateral projection.....	<i>gratiocellus</i> (Caradja)
- Ductus bursae with a distinct lateral projection.....	20
20- Ostium pouch distinctly extended longitudinally (fig. 13)	<i>ramburiellus</i> (Duponchel)
- Ostium pouch broad, curved longitudinally (fig. 14)	<i>jaxartellus</i> (Erschoff)

margin. These spots arranged in 3 to 4 groups. The first group consisted of 2 spots, second one 3 and each of the third and fourth consisted of 2 spots. The number of these spots is a very important taxonomic character for identification of the species (8).

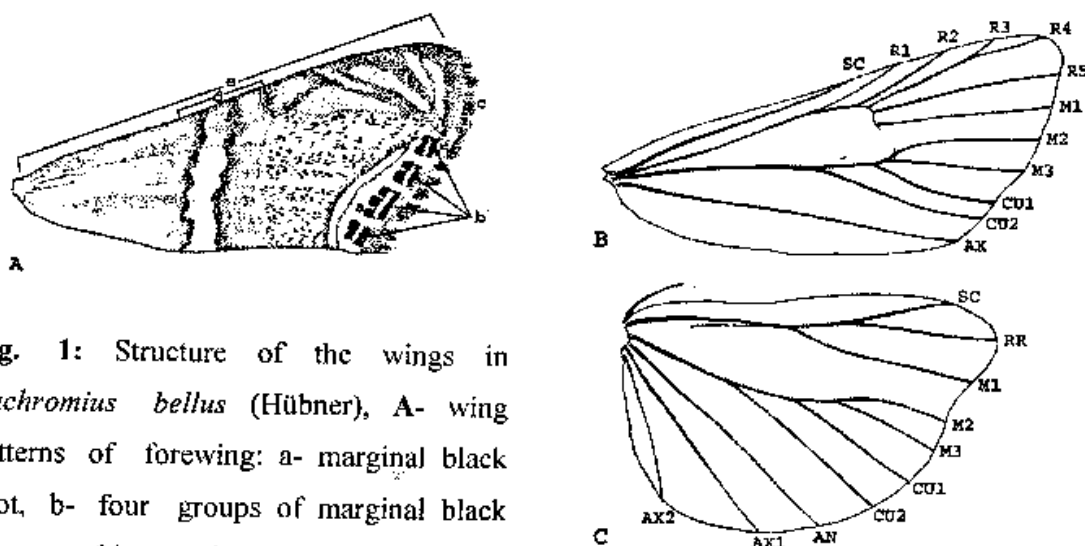


Fig. 1: Structure of the wings in *Euchromius bellus* (Hübner), A- wing patterns of forewing: a- marginal black spot, b- four groups of marginal black spots, c- fringes, d- middle band, e- costa; B- venation of forewing; C- venation of hindwing.

Identification key to the species of *Euchromius* Guenée in Iran

- 1- Forewing with 6 to 7 marginal black spots..... 2
- Forewing with 8 to 9 marginal black spots..... 7
- 2- Frons slightly projected anteriorly *vinculellus* (Zeller)
- Frons completely projected anteriorly 3
- 3- male..... 4
- female..... 6
- 4- Free end of sacculus curved *malekalis* (Amsel)
- Free end of sacculus straight and without curvature..... 5
- 5- Free end of sacculus shorter than costal arms (fig. 2) *keredjellus* (Amsel)
- Free end of sacculus very longer than costal arms (fig. 3) *rayatellus* (Amsel)
- 6- Papillae analis with very long hairs, ostium pouch without distinct strong sclerotized ventral plate *keredjellus* (Amsel)

Palaearctic region recorded *E. cochlearellus* (Amsel), *E. jaxartellus* (Erschoff), *E. ramburiellus* (Duponchel) and *E. gratiosellus* (Caradja) from Iran and thus raised the list up to 11 species. He considered *E. islamellus* as the synonym of *E. ramburiellus* (8).

Material and Methods

This study is mostly based upon the material in the collection of HMIM. Also a few material was sent from some other parts of Iran. Most of the species have been collected by light trap. The summarized data are listed in "Material examined".

For determination, the morphological characters of the adults such as the size and wing patterns and the structure of the genitalia were studied. The slides of their genitalia were prepared as Tuxen (27) and the specimens identified by means of credible references (5, 6, 8). The most important characters such as the pattern of the forewing, the shape and position of its middle and marginal bands, and the number and position of marginal spots examined in details (all of the details in wing patterns are shown in fig. 1-A). In the male genitalia, shape of the uncus, gnathos, costal arm, aedeagus and the number of its cornutus and in the female genitalia, the shape of ostium pouch, the shape and size of ductus bursae and copulatrix bursae and also the presence or absence of signae were considered. Terminology follows that of Kuznetsov (21).

Results

In spite of 11 recorded species of this genus from Iran, only 7 species are in HMIM and I added *E. rayatellus* (Amsel) and *E. viettei* Bleszynski as new records for fauna of Iran. Thus the total number of the species of this genus in Iran increased to 13 which 9 of them are deposited in HMIM. In this paper, illustrated identification key of *Euchromius* species of Iran was presented also.

Genus *Euchromius* Guenée, 1845

Euchromius Guenée, 1845, Ann. Soc. ent. Fr. (2): 324.

Type species: [*Tinea*] *bella* Hübner, 1796

In the forewing R₁, R₂ and R₅ free, M₂ and M₃ arise from the upper side of the discoidal cell (fig. 1-B); In the hindwing discoidal cell is open, M₂ and M₃ have a common stalk (fig. 1-C); forewing nearly triangular, with a big series of black spots in the outer

Faunal Study of *Euchromius* Guenée (Lepidoptera: Pyralidae: Crambinae)
Species in Iran

H. Alipanah¹

Abstract

In this study the specimens belonging to the genus *Euchromius* held in Hayk Mirzayans Insect Museum (HMIM) of Plant Pests and Diseases Research Institute (PPDRI), examined and revised. Identification keys for the Iranian species, their diagnostic characters, differences with the original descriptions and the distribution of the species are provided. The mentioned species are listed as follow: *Euchromius bellus* (Hübner), *E. rayatellus* (Amsel), *E. keredjellus* (Amsel), *E. ramburiellus* (Duponchel), *E. jaxartellus* (Erschoff), *E. cambridgei* (Zeller), *E. vinculellus* (Zeller), *E. ocellus* (Haworth), *E. viettei* (Bleszynski).

E. rayatellus (Amsel, 1949) collected in 1971 in Mashhad as well as 1974 in Kuhrang and *E. viettei* Bleszynski, 1961 collected in 2000 in Farur Island (Persian Gulf) are new records for fauna of Iran.

Key words: Lepidoptera, Pyralidae, Crambinae, new record, *Euchromius*, Taxonomy, Iran.

Introduction

The genus *Euchromius* has wide distribution in Mediterranean region, Near east and Ethiopian. Till now about 25 species are recorded from Palearctic region, a few species from Nearctic and only one species have been found in the Oriental, but there is no report of the genus in Neotropical and Australian region (8). In 1960, the first studies of *Euchromius* species of Iran was done by Bleszynski who introduced *E. islamellus* (Amsel), *E. cambridgei* (Zeller), *E. bellus* (Hübner), and *E. vinculellus* (Zeller) as first records for fauna of Iran (6). At the same year eight further species assigned to the *Euchromius* species of Iran since Amsel's work on Microlepidoptera of Iran. He added *E. ocella* (Haworth), *E. keredjella* (Amsel), and *E. pulverosa* (Christoph) to the previous list and introduced *E. malekalis* (Amsel) from Iran as a new species (5). In 1965 Bleszynski in his studies on crambids of the

1- Insect Taxonomy Research Department, Plant Pests and Diseases Research Institute, Tehran 19395 – 1454, Iran.