

An annotated checklist of Malachiidae (Coleoptera: Cleroidea) from Iran

VLADYSLAV MIRUTENKO¹ & HASSAN GHAHARI²

¹Uzhhorod National University, Department of Entomology and Biodiversity Conservation, Voloshyn str. 32, Uzhhorod, Ukraine, 88000. E-mail: vmir.ukr@gmail.com

²Department of Plant Protection, Yadegar – e-Imam Khomeini (RAH) Shahre Rey Branch, Islamic Azad University, Tehran, Iran. E-mail: hghahari@yahoo.com

Abstract

A checklist of Iranian Malachiidae (Coleoptera) is given in this paper. Eighty two species from 22 genera (subfamily Malachiinae) are listed in the fauna of Iran. Of these species, 31 are endemic to Iran, and one *Anthocomus pupillatus* Abeille de Perrin, 1890 is a new record for this country.

Key words: Malachiidae, beetles, Iran, fauna, checklist

Introduction

The Malachiidae (Soft-winged flower beetles) represent a large group in the superfamily Cleroidea (Švihla & Hajek 2009), and are represented by about 150 genera and about 3,000 described species worldwide (Švihla & Mifsud 2006); over 1,400 species occur in the Palaearctic Region (Mayor 2007). Adults feed on pollen or fungi, and larvae live mainly in dead wood and in stems of plants, where they feed on larvae of xylophagous insects (Plata Negrache & Santiago Hernandez 1987; Švihla & Mifsud 2006).

Iran forms a large part of the Iranian plateau, and covers an area of 1,623,779 km². It is bordered to the north by the Caucasus Mountains, the Caspian Sea (-27 m below sea level), and Middle Asian natural regions; to the west by the Anatolian and Mesopotamian regions; to the east by the eastern part of the Iranian plateau (Afghanistan and adjacent west Pakistan) and the Baluch-Sindian region; and to the south by the Persian Gulf and Gulf of Oman, which are connected by the latter to the Indian Ocean (fig. 1). Climatologically, Iran is a predominantly arid and semi-arid country, but the northern slopes of the Alburz Range and the Caspian Lowland receive 800 to 2000 mm annual rainfall, making them the most humid parts of the country. The Dasht-e Kavir and Dasht-e Lut deserts are the driest areas in the country with an annual precipitation of less than 150 mm. The highlands receive between 250 and 800 mm (Zehzad *et al.* 2002).

Material and methods

The published data on distribution of the family Malachiidae (Coleoptera) in Iran are summarized by province. Tribes, genera and species are listed alphabetically. The following data are included in the catalogue for each species: (1) valid name, (2) junior synonym(s), (3) published records synthesised by provinces (classified in alphabetical order), and relevant references (classified in chronological order) with cited species name if it differs from a current status, (4) synthesised information on general distribution on a world scale (listed chronologically, and from West to East, from North to South), and on feeding habits, (5) new records for Iran. Information given on classification, nomenclature and distribution is based mainly on Mayor (2007), but for later additions and changes exact references are given. Where accurate data about local distribution in Iran are lacking in a quoted reference, the note “Iran (no locality cited)” is used. Additionally, the name “Persia” has been retained because it is a traditional synonym for Iran. The provinces of Iran are represented in figure 1.

and some other coleopteran families for 35 years; we dedicate this publication to him. We thank also our colleagues Sergei Tshernyshev (Institute of Animals Systematics and Ecology, Novosibirsk, Russia) for his personal communications and Robert Constantin (Saint-Lo, France) for his critical reading. This research was supported by Uzhhorod National University (Ukraine) and Islamic Azad University (Yadegar—e- Imam Khomeini (RAH) Shahre Rey Branch).

References

- Abeille de Perrin, E. (1885) Nouveaux documents pour servir à l'histoire des Malachides. *Revue d'Entomologie*, 4, 4–28.
- Abeille de Perrin, E. (1890) Malachides d'Europe et pays voisins. *Annales de la Société Entomologique de France*, Series 6, 10, 181–260.
- Abeille de Perrin, E. (1891) Malachides d'Europe et pays voisins. *Annales de la Société Entomologique de France*, Series 6, 10, 115–230.
- Abeille de Perrin, E. (1893) Les descriptions de quatre nouvelles espèces de Malachiidae. *Bulletin des Séances et Bulletin Bibliographique de la Société Entomologique de France*, 1, 162–165.
- Arefnia, A. & Tshernyshev, S. (2004) First record of *Laius venustus* Erichson, 1840 (Coleoptera: Malachiidae) in Iran. *Euroasian Entomological Journal*, 3 (1), 32.
- Baudi di Selve, F. (1871) Coleopterorum messis in insula Cypro et Asia minore ab Eugenio Truqui congregatae recensitio: de Europaeis notis quibusdam additis. Pars quarta. *Berliner Entomologische Zeitschrift*, 15 (1), 49–71.
<http://dx.doi.org/10.1002/mmnd.18710150113>
- Baudi di Selve, F. (1873) Catalogo dei Dascillidi, Malacodermi e Teredili della Fauna europea e circummediterranea appartenenti alle collezioni del Museo Civico di Genova. *Annali Del Museo Civicco di Storia Naturale di Genova*, 4, 226–268.
<http://dx.doi.org/10.5962/bhl.part.9094>
- Bunalski, M. & Ghahari, H. (2015) A study on some families of Coleoptera from Savadkooh County, Mazandaran province, northern Iran. *Wiadomości Entomologiczne*, 34 (3), 5–12.
- Champion, G.C. (1920) Notes on various African and Asiatic Species of *Hapalochrus*, Er., with an Account of their accessory ♂-characters [Coleoptera]. *The Annals and Magazine of Natural History*, 34, 305–328.
<http://dx.doi.org/10.1080/00222932008632448>
- Evers, A.M.J. (1985) Aufteilung der paläarktischen Arten des Gattungskomplexes *Malachius* F. 54. Beitrag zur Kenntnis der Malachiidae. *Entomologische Blätter*, 81, 1–40.
- Evers, A.M.J. (1987) Synopsis der Gattung *Apalochrus* Er. und der verwandten Gattungen der Welt (Col., Malachiidae). *Musée Royal de l'Afrique Centrale, Tervuren, Belgique, Sciences Zoologiques*, 253, 1–73.
- Ezzatpanah, S. (2011a) *Anthomalachius davoodi* sp. nov., a new species of soft-winged flower beetle from Eskan, Hake Balagh & Shazand, Markazi Province, Iran (Coleoptera: Malachiidae). *Calodema*, 168, 1–4.
- Ezzatpanah, S. (2011b) *Clanoptilus makhani* sp. nov., a new species of soft-winged flower beetle from Gerdoo Mountain, Arak, Markazi Province, Iran (Coleoptera: Malachiidae). *Calodema*, 169, 1–4.
- Ezzatpanah, S., Makhan, D., Ghahari, H., Naderian, H. & Hadian, A. (2011) A new locality record for *Anthomalachius davoodi* Ezzatpanah, 2011 (Coleoptera: Malachiidae), a soft-winged flower beetle from Semnan Province, Iran. *Calodema*, 172, 1–2.
- Ezzoddinloo, L. & Mohammadian, H. (2012) Faunistic investigations on Coleoptera in Khojeer and Sorkhe hesar National Parks. *Proceedings of the 17th National and 5th International Iranian Biology Conference, Kerman*, September 5–7, 2012, 1–9.
- Fagerstrom, C. (2014) Biological Museum. Lund University. Database: Search for species. Available from: <http://www.biomus.lu.se/en/entomology/databases/database-search-for-species> (accessed 12 December 2014)
- Ghahari, H. & Jedryczkowski, W.B. (2011) A faunistic survey on some families of Coleoptera (Insecta) from Iran. *Calodema*, 175, 1–4.
- Ghahari, H. & Tabari, M. (2008) Predator beetles (Coleoptera) and their population fluctuation in rice fields of Mazandaran. *Journal of Agriculture*, 10 (2), 147–159. [in Persian, English summary]
- Ghahari, H. & Tabari, M. (2010) *Natural enemies in Iranian rice fields*. Iran's Minister of Jihad-e-Agriculture & Agricultural Research, Education and Extension Organization & Iran Rice Research Institute, Tehrān, 62 pp.
- Ghahari, H., Hayat, R., Lavigne, R. & Ostovan, H. (2014) An annotated checklist of Iranian Asilidae (Insecta: Diptera: Brachycera: Asiloidea). *Linzer biologische Beiträge*, 46 (2), 1379–1446.
- Ghahari, H., Hayat, R., Tabari, M., Ostovan, H. & Imani, S. (2008a) A contribution to the predator and parasitoid fauna of rice pests in Iran, and a discussion on the biodiversity and IPM in rice fields. *Linzer biologische Beiträge*, 40 (1), 735–764.
- Ghahari, H., Makhan, D. & Hawkeswood, T.J. (2012) A faunistic survey on some families of Coleoptera from cotton fields of northern Iran. *Calodema*, 203, 1–7.
- Ghahari, H., Ostovan, H., Kamali, K. & Tabari, M. (2008b) Arthropod predators of rice fields in central parts of Mazandaran. *Journal of Agricultural Science (Islamic Azad University)*, 14 (1), 63–74. [in Persian, English summary]

- Ghahari, H., Volkovitsh, M. & Bellamy, C.L. (2015) An annotated catalogue of the Buprestidae of Iran (Coleoptera: Buprestoidea). *Zootaxa*, 3984 (1), 001–141.
<http://dx.doi.org/10.11646/zootaxa.3984.1.1>
- Hájek, J. & Švihla, V. (2012) Catalogue of the type specimens of beetles (Coleoptera) deposited in the National Museum, Prague, Czech Republic. Trogossitidae, Cleridae, Prionoceridae, Melyridae, Dasytidae, Rhadalidae and Malachiidae. *Acta Entomologica Musei Nationalis Pragae*, 52 (2), 603–654.
- Hicker, R. (1955) Die Ergebnisse der Österreichischen Iran-Expedition 1949/50. Coleoptera VI. Teil: Malacodermata. *Sitzungsberichte der Akademie der Wissenschaften mathematisch-naturwissenschaftliche Klasse*, 164, 77–80.
- Islami, I. & Nikbakhtzadeh, M.R. (2009) New records of canthariphily among beetles (Coleoptera) from Iran. *Türkiye Entomoloji Dergisi*, 33 (4), 243–251.
- Khanjani, M. (2006) *Field crop pests in Iran (Insects and Mites)*. Bu-Ali Sina University Press, Hamadan, 719 pp. [in Persian]
- Kollar, V. & Redtenbacher, L. (1850) Über den Charakter der Insecten-Fauna von Südpersien. *Denkschriften der Kaiserlichen Akademie der Wissenschaften*, 1, 42–53.
- Kolov, C.V. & Temreshev, I.I. (2012) To the knowledge of the beetle fauna (Insecta; Coleoptera) of Toraygyr ridge. *Euroasian Entomological Journal*, 12 (4), 337–342.
- Lehr, P.A., Ghahari, H. & Ostovan, H. (2007) A contribution to the robber flies of subfamilies Stenopogoninae and Asilinae (Diptera: Asilidae) from Iran. *Far Eastern Entomologist*, 173, 1–14.
- Makhan, D. (2012) A new locality record for *Clanoptilus (Hypoptilus) erythropterus* (Erichson, 1840) (Coleoptera: Malachiidae), a soft-winged flower beetle from Chal Godarzi, Borujerd Lorestan Province, Iran. *Calodema*, 233, 1–2.
- Makhan, D. (2013) A new locality record for *Clanoptilus (Hypoptilus) erythropterus* (Erichson, 1840) (Coleoptera: Malachiidae), a soft-winged flower beetle from Shazand, Markazi Province, Iran. *Calodema*, 249, 1–2.
- Marshall, M.D. (1954) A key to the world genera of Malachiidae. *The Coleopterists' Bulletin*, VIII (5 & 6), 69–82.
- Mayor, A. (2007) Family Malachiidae. In: Löbl, I. & Smetana, A. (Ed.), *Catalogue of Palaearctic Coleoptera. Vol. 4. Elateroidea, Derodontidae, Bostrichoidea, Lymexyloidea, Cleroidea, Cucujoidea*. Apollo Books, Stenstrup, pp. 415–454.
- Mirutenko, V.V. (2013a) The family Malachiidae (Insecta, Coleoptera) in collections of the Natural History Museum in Belgrade. *Acta Entomologica Serbica*, 18 (1/2), 43–54.
- Mirutenko, V.V. (2013b) The families Malachiidae and Dasytidae in the collections of the Goulandris Natural History Museum, Athens, Greece. *Entomologia Hellenica*, 22, 1–6.
- Modarres Awal, M. (1997) Malachiidae. In: Modarres Awal, M. (Ed.), *List of agricultural pests and their natural enemies in Iran*. Ferdowsi University Press, Mashhad, pp. 175.
- Nikbakhtzadeh, M.R. & Tirgari, S. (2002) Blister beetles (Coleoptera: Meloidae) in Nahavand county (Hamedan province, Iran) and their ecological relationship to other Coleopteran families. *Iranian Journal of Public Health*, 31 (1–2), 55–62.
- Peyron, M.E. (1877) Etude sur les Malachiides d'Europe et du Bassin de la Méditerranée. L'Abeille, *Journal d'Entomologie*, 15, 3–312.
- Pic, M. (1911) Notes sur divers Coléoptères paléarctiques. *Bulletin de la Société Entomologique de France*, 5, 91–92.
- Plata Negrache, P. & Santiago Hernandez, C.T. (1987) *Revision de la familia Malachiidae* Erichson (Insecta: Coleoptera) en Marruecos. Goecke & Evers, Krefeld, 808 pp.
- Plonski, I.S. (2013) Studies on the genus *Intybia* Pascoe (Coleoptera: Malachiidae). I. Some nomenclatorial acts and faunistic records. *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen*, 65, 61–68.
- Radjabi, G. (1968) Contribution à la connaissance de la faune de Buprestides de l'Iran. *Entomologie et Phytopathologie Appliquées*, 27, 69–79. [in French, Iranian summary]
- Sakenin, H., Imani, S., Shirdel, F., Samin, N. & Havaskary, M. (2008) Identification of Pentatomidae (Heteroptera) and their host plants in central and eastern Mazandaran province and introducing of many dominant natural enemies. *Journal of Plant & Ecosystem*, 15, 37–51.
- Sakenin, H., Samin, N., Shakouri, M.J., Mohebbi, H.R., Ezzatpanah, S. & Moemen Beitollahi, S. (2011) A faunistic survey of the insect predators in some regions of Iran. *Calodema*, 142, 1–10.
- Samin, N., Jedryczkowski, W.B., Galini, N., Sakenin, H. & Naderian, H. (2015) A faunistic study on some families of Coleoptera from Iran. *Arquivos Entomológicos*, 14, 253–260.
- Švihla, V. (1987) Results of the Czechoslovak-Iranian Entomological Expedition to Iran 1973 and 1977. Coleoptera, Melyridae, Malachiinae. *Acta Entomologica Musei Nationalis Pragae*, 42, 277–286.
- Švihla, V. (1998) New species of the family Malachiidae (Coleoptera) for the fauna of Turkey. *Klapalekiana*, 34, 233–237.
- Švihla, V. & Hájek, J. (2009) Taxonomic changes in Eastern Mediterranean *Malachius* (Coleoptera: Malachiidae). *Acta Entomologica Musei Nationalis Pragae*, 49 (1), 217–224.
- Švihla, V. & Mifsud, D. (2006) Annotated review of the Cantharidae and Malachiidae (Coleoptera) of the Maltese Islands. *Acta Entomologica Musei Nationalis Pragae*, 46, 89–105.
- Tshernyshev, S.E. (1998) Towards the knowledge of the *Malachius* group soft-winged flower beetles (Coleoptera: Malachiidae) of the fauna of Russia and adjacent countries. Part 1. *Russian Entomological Journal*, 7 (3–4), 129–146.
- Tshernyshev, S.E. (2012) A review of soft-winged flower beetle fauna (Coleoptera, Malachiidae) of North Asia. *Euroasian Entomological Journal*, 11 (6), 575–587. [in Russian]
- Tshernyshev, S.E. (2015) Soft winged flower beetles (Insecta: Coleoptera: Malachiidae) of the Himalayan region, with notes on Apalochrini. In Hartmann, M. & Weipert, J. (Ed.), *Biodiversität und Naturaussstattung im Himalaya V*. Verein der Freunde

- und Förderer des Naturkundemuseums Erfurt, Erfurt, pp. 289–405.
- Wittmer, W. (1958) 23. Beitrag zur Kenntnis der palaearktischen Malacodermata (Col.). *Entomologische Arbeiten aus dem Museum G. Frey*, 9 (1), 114–130.
- Wittmer, W. (1967) Contribution à la faune de l'Iran 3. Coléoptères Drilidae, Cantharidae et Malachiidae. *Annales de la Société Entomologique de France*, New Series, 3, 1087–1091.
- Wittmer, W. (1968) Die Ebaeus-Arten aus der Gruppe turkestanicus-caspicus (38. Beitrag zur Kenntnis der paläarktischen Malachiidae, Col.). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, 41 (1–4), 205–210.
- Wittmer, W. (1970) 47. Beitrag zur Kenntnis der palaearktischen Cantharidae und Malachiidae. *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, 43 (2), 73–98.
- Wittmer, W. (1979a) 64. Beitrag zur Kenntnis der palaearktischen Cantharidae Phengodidae und Malachiidae (Col.). *Entomologica Basiliensis*, 4, 327–346.
- Wittmer, W. (1979b) Zur Kenntnis der Gattung *Malachius* F. sensu lato (Col. Malachiidae). *Entomologische Arbeiten aus dem Museum G. Frey*, 28, 1–8.
- Wittmer, W. (1981) Zur Kenntnis der Malachiidae (Col.) des Himalaja und angrenzender Gebiete. *Entomologische Arbeiten aus dem Museum G. Frey*, 29, 181.
- Wittmer, W. (1986) 76. Beitrag zur Kenntnis der palaearktischen Fauna. *Mitteilungen der Entomologischen Gesellschaft Basel*, 36 (3), 100–122.
- Wittmer, W. (1988a) *Clanoptilus kruperi* (Pic) und verwandte Arten (Coleoptera, Malachiidae). (77. Beitrag zur Kenntnis der palaearktischen Fauna). *Entomologica Basiliensis*, 12, 397–406.
- Wittmer, W. (1988b) 78. Beitrag zur Kenntnis der palaearktischen Fauna (Coleoptera: Malachiidae). *Mitteilungen der Entomologischen Gesellschaft Basel*, 38 (1), 21–30.
- Wittmer, W. (1992) 78. Beitrag zur Kenntnis der palaearktischen Malachiidae (Coleoptera). *Mitteilungen der Entomologischen Gesellschaft Basel*, 42 (1), 11–34.
- Wittmer, W. (1994) Neue Malachiidae (Coleoptera) aus dem paläarktischen und indomalayischen Faunengebiet. *Mitteilungen der Entomologischen Gesellschaft Basel*, 44 (1), 2–26.
- Yıldırım, E. & Bulak, Y. (2012) A contribution to the knowledge of the Malachiidae (Coleoptera: Cleroidea) fauna of Turkey. *Türkiye Entomoloji Dergisi*, 36 (2), 231–238.
- Zehzad, B., Kiabi, B.H. & Madjnoonian, H. (2002) The natural areas and landscape of Iran: an overview. *Zoology in the Middle East*, 26, 7–10.
<http://dx.doi.org/10.1080/09397140.2002.10637915>