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A study on the Scarabaeoidea from West Azarbaijan province, Northwestern Iran (Coleoptera, Scarabaeidae)

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Abstract

This paper deals with some records of Scarabaeidae (Coleoptera, Scarabaeoidea) from West Azarbaijan province, northwestern Iran. A total 19 species from 16 genera were collected and identified. *Psammodyus (Rhyssemus) germanus* (LINNÉ, 1767) is newly recorded from Iran.

Zusammenfassung

In dieser Arbeit werden einige Nachweise von Scarabaeidae (Coleoptera, Scarabaeoidea) aus der West Azarbaijan Provinz im nordwestlichen Iran publiziert. 19 Arten aus 16 Gattungen wurden gesammelt und determiniert. *Psammodyus (Rhyssemus) germanus* (LINNÉ, 1767) wird neu für den Iran gemeldet.

Introduction

The superfamily Scarabaeoidea comprises worldwide more than 35.000 species (RATCLIFFE & PAULSEN 2008), including, the families Scarabaeidae (scarab beetles), Lucanidae (stag beetles), Passalidae (bess beetles), and several of the traditional subfamilies of the Scarabaeidae that are now generally treated as separate families (RILEY

& WOLFE 2003). The family Scarabaeidae includes about 91% of all scarabaeoids and includes about 27,800 species worldwide. Within the Scarabaeidae, the Aphodiinae and Scarabaeinae include approximately 6,850 species worldwide (about 22% of scarabaeoids and 25% of Scarabaeidae) (ARNETT et al. 2002; ŞENYÜZ et al. 2013). Perhaps the most well-known features of adult scarabaeoids are their 3-7 segmented, fan-like or lamellate antennal club and powerful legs armed with teeth on the outer edge, an adaptation for digging (BORROR et al. 1989). Scarabaeoids feed on most types of dung and a wide range of plant and animal matter, from detritus through lower plants to virtually all higher plant tissues and carrion to predation on other insects. Their habits range from free-living through fairly sophisticated forms of brood care to sub-social behaviour (BORROR et al. 1989; SCHOLTZ 1990; JAMESON & RATCLIFFE 2002).

The fauna of Iranian Scarabaeoidea has been poorly studied so far. Totally 150 species have been listed in the checklist of MODARRES AWAL (1997) and nearly 80 species in other papers (PETROVITZ 1954; PETROVITZ 1958; BARAUD 1968; BORTESI & ZUNINO 1974; ZAIRI 1976; PETROVITZ 1980; KABAKOV 1982; NIKODÝM & KRÁL 1998; NIKODÝM & KRÁL 1998; BARARI et al. 1998a, b; ZIANI & GUDENZI 2000; BARARI 2001; KEITH & AHRENS 2002; MODARRES AWAL 2006; ZIANI & GUDENZI 2006; ZIANI & GUDENZI 2007; ZIANI 2006, 2011; MONTREUIL & SERRI 2007; KEITH & ULIANA 2008; MOWLAVI et al. 2008; MORADI GHARAKHLOO & ZIANI 2009; ZIANI & GUDENZI 2009; MORADI GHARAKHLOO & ZIANI 2010; ZIANI & MORADI GHARAKHLOO 2010; GHAHARI et al. 2011; YARMAND et al. 2012); additionally several species which are listed in catalogue of Palaearctic Coleoptera (LÖBL & SMETANA 2006).

This paper presents some occasional records of Scarabaeidae collected in West Azerbaijan which is located in North West of Iran, bordering with Turkey, Iraq and Armenia, and the provinces of East Azerbaijan, Zanjan and Kurdistan. It covers an area of 43,660 km². The climate of the province is largely influenced by the rainy winds of the Atlantic Ocean and Mediterranean. According to existing meteorological data, local temperatures vary within the province. The highest temperature reaches 34 °C in July, and the lowest temperature is -16 °C in January.

Materials and Methods

The materials of this research were collected from some regions of West Azarbaijan province (northwestern Iran), during occasional field survey. The methods for collecting were sweeping net, light traps, and knock down. All the collected specimens were put in alcohol (ethanol 75%) and determined by the authors. Information concerning date of collection, locality, altitude in brackets, and number of specimens in brackets are given. The classification and nomenclature of scarab beetles suggested by LAWRENCE & NEWTON (1995), RATCLIFFE et al. (2002), and LÖBL & SMETANA (2006) have been followed.

Results

Regarding to the fauna of Scarabaeoidea of West Azerbaijan province, totally 18 species from 15 genera were collected and identified. The list of species is given below.

Family Geotrupidae LATREILLE, 1802
Subfamily Lethrinae MULSANT & REY, 1871
Genus Lethrus SCOPOLI, 1777

Lethrus (Lethrus) acutangulus BALLION, 1871
Material examined: Salmas (1357 m), (3), June 2011.

Family Glaphyridae MACLEAY, 1819
Genus Glaphyrus LATREILLE, 1807

Glaphyrus (Glaphyrus) luristanus REITTER, 1903
Material examined: Makoo (1674 m), (4), September 2008.

Glaphyrus varians varians MENETRIES, 1836
Material examined: Ourmieh (1387 m), (3), September 2010.

Family Scarabaeidae LATREILLE, 1802
Subfamily Aphodiinae LEACH, 1815
Genus Aphodius ILLIGER, 1798

Aphodius (Mesontoplatys) arabicus HAROLD, 1875
Material examined: Ourmieh (1379 m), (3), 7 September 2010.

Genus Rhyssemus MULSANT, 1842

Rhyssemus germanus (LINNÉ, 1767)
Material examined: Piranshahr (1466 m), (2), October 2009.
Remark: This species is a new record for the fauna of Iran.

Subfamily Scarabaeinae LATREILLE, 1802
Tribe Gymnopleurini LACORDAIRE, 1856
Genus Gymnopleurus ILLIGER, 1803

Gymnopleurus flagellatus (FABRICIUS, 1787)
Material examined: Khoy (1148 m), (2), June 2011.

Tribe Oniticellini H.J. KOLBE, 1905
Genus Paroniticellus BALTHASAR, 1963

Paroniticellus festivus (STEVEN, 1809)
Material examined: Makoo (1648 m), (2), September 2008.

Tribe Onthophagini BURMEISTER, 1847
Genus Euonthophagus BALTHASAR, 1959

Euonthophagus gibbosus (SCRIBA, 1790)
Material examined: Ourmieh (1379 m), (4), September 2010; Hassanloo (1288 m), (4), 20 April 2011.

Euonthophagus sulcicollis (REITTER, 1892)
Material examined: Oshnavieh (1451 m), (5), July 2012.

Genus *Onthophagus* LATREILLE, 1802

***Onthophagus (Palaeonthophagus) fissicornis* (STEVEN, 1809)**

Material examined: Seroo (1612 m), (6), 13 July 2009; Ourmieh (1387 m), (6), September 2010.

Tribe Scarabaeini LATREILLE, 1802

Genus *Scarabaeus* LINNAEUS, 1758

***Scarabaeus pius* ILLIGER, 1803**

Material examined: Kelvans (1869 m), (4), 8 April 2010; Oshnavieh (1451 m), (6), 14 July 2012.

Subfamily Melolonthinae SAMOUELLE, 1819

Tribe Melolonthini SAMOUELLE, 1819

Genus *Cyphonoxia* REITTER, 1889

***Cyphonoxia praestabilis* REITTER, 1889**

Material examined: Salmas (1357 m), (1), June 2011.

Genus *Polyphylla* HARRIS, 1842

***Polyphylla (Xerasiobia) adspersa* MOTSCHULSKY, 1853**

Material examined: Khoy (1148 m), (4), June 2011.

***Polyphylla (Polyphylla) olivieri* LAPORTE, 1840**

Material examined: Ourmieh (1406 m), (6), April 2012.

Tribe Pachydemini BURMEISTER, 1855

Genus *Tanyproctus* MÉNÉTRIÉS, 1832

***Tanyproctus persicus* (MÉNÉTRIÉS, 1832)**

Material examined: Ourmieh (1391 m), (1), August 2008; Naqadeh (1327 m), (2), 21 July 2010.

Tribe Rhizotrogini BURMEISTER, 1855

Genus *Chioneosoma* KRAATZ, 1891

***Chioneosoma (Aleucolomus) porosum* (FISCHER, 1824)**

Material examined: Makoo (1648 m), (3), September 2008.

Subfamily Dynastinae MACLEAY, 1819

Genus *Oryctes* ILLIGER 1798

***Oryctes nasicornis latipennis* MOTSCHULSKY, 1845**

Material examined: Myandoab (1338 m), (4), July 2012.

Subfamily Cetoniinae LEACH, 1815

Tribe Cetoniini LEACH, 1815

Genus *Protaetia* BURMEISTER, 1842

***Protaetia (Netocia) asiatica* (FALDERMANN, 1835)**

Material examined: Mamakan (1806 m), (2), 6 June 2009; Myandoab (1338 m), (2), July 2012.

Discussion

The results of this research indicate that the fauna of Scarabaeoidea of West Azerbaijan is rather diverse and it is necessary to continue the faunistic researches on this taxon for completing the list of Iranian Scarabaeoidea. Additionally about the phytophagous scarabaeoids, determining their host plants can be valuable research topic. Also, almost these insects have natural enemies and we suggest the researchers to establish research on this interesting subject.

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Buchbesprechung

EVANS A.V.: **Beetles of Eastern North America.** - Princeton University Press, Princeton and Oxford, 2014. 560 S.

Beetles of Eastern North America ist in der Tat das erste, farbig illustrierte (Fotos) Bestimmungsbuch über Käfer in Nordamerika, konkret über die Käfer der USA und Kanada östlich des Mississippi Rivers. Alle 115 Familien dieser Region werden behandelt und genau 1406 Arten werden vorgestellt.

Obwohl die einführenden Kapitel sehr kurz gehalten sind (rund 50 Seiten), bieten sie doch eine Fülle von Themen, u.a. die Einführung in die Käfermorphologie und -anatomie, Verhalten, Entwicklung, Ökologie, wo man Käfer findet, wie man sie sammelt, züchtet und fotografiert, bis hin zur Aufstellung einer Sammlung. Den Abschluss dieser Einführung bildet ein sehr kurzer, illustrierter Bestimmungsschlüssel zu den häufigsten Familien.

Im Bildteil sind meist vier Arten pro Seite abgebildet (im wesentlichen Lebendaufnahmen), der kurze gegenüberliegende Text bringt jeweils Angaben zu Morphologie, Lebensweise und Verbreitung.

Alle Fotos sind von hervorragender Qualität, der Farbdruck ist ausgezeichnet und der Autor Arthur V. Evans (u.a. bereits bekannt als Co-Autor von "An inordinate fondness for beetles") hat eine sehr gute Auswahl getroffen.

Ein sehr empfehlenswertes Buch, das man sich auch für das westliche und südliche Nordamerika wünschen würde.

R. Gerstmeier

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