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CONTRIBUTION TO THE KNOWLEDGE OF CURCULIONIDAE (COLEOPTERA)
FROM KURDISTAN PROVINCE (WESTERN IRAN)

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[Гахари Х., Леголов А.А. К познанию фауны Curculionidae (Coleoptera) провинции Курдистан (Западный Иран)]

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Key words: *Coleoptera, Curculionidae, Weevils, Fauna, Kurdistan, Iran*

Ключевые слова: *Coleoptera, Curculionidae, долгоносики, фауна, Курдистан, Иран*

Summary. In a total 57 species from 26 genera and 4 subfamilies of Curculionidae (Coleoptera: Curculionidae) were collected for the first time from Kurdistan province, western Iran. 28 species are first recorded for the Iranian fauna.

Резюме. Приводятся данные о 57 видах 26 родов из 4 подсемейств жуков-долгоносиков (Coleoptera: Curculionidae), впервые собранных в Курдистане (Западный Иран). 28 видов впервые отмечаются для фауны Ирана.

INTRODUCTION

Weevils (Coleoptera: Curculionidae), with about 48,000 valid species, are the largest family of known organisms [Anderson, 1993, 1995]. Collectively, weevils use every plant part and nearly every plant taxon and yet related species are often similar in host use. Different taxonomic groups of weevils attack plant roots, stems, leaves or seeds. They can number among the first enemies to attack healthy plants or be specialists on the dead remains of plants felled by other causes. Taxonomic groups of weevils are also often restricted to particular host groups, specializing on cycads, conifers, dicots or monocots or subsets of these plant taxa, though many exceptionally polyphagous species also occur. Some are serious pests of agricultural crops and stored products as well as standing trees and forestry products; on the other hand others have been successfully used as biological control agents for weed control [Wibmer, O'Brein, 1986; Anderson, Lyal, 1995; Marvaldi et al., 2002; Oberprieler et al., 2007]. With so many species to classify and over 400 genera, the taxonomy of this family is quite complicated, and authors disagree on the number and placement of various subfamilies, tribes, and subtribes [Wanat and Mokrzycki, 2005; Legalov, 2006; Oberprieler et al., 2007].

Kurdistan province is 28,817 km² in area which is located in the west of Iran and bound by Iraq on the west. Kurdistan is one of the most mountainous regions in Iran and has a generally mild and quite pleasant climate throughout the spring and summer. As a result of its elevation and mountains, Kurdistan province has many rivers, lakes, glaciers and caves, which render it rather picturesque. Kurdistan has vast forests and refuges, where diverse flora and fauna are present.

The fauna of Iranian Curculionidae was studied rather well [Modarres Awal, 1997; Broumand, 1998; Sakenin et al. 2009; Ghahari et al., 2009, 2010]; all the published data on Iranian Curculionid-beetles were catalogued by Legalov et al. [2010]. The aim of this paper is faunal study on the family Curculionidae in Kurdistan province to completing the knowledge of species diversity of Iranian weevils.

MATERIALS AND METHODS

Materials were collected by sweeping, aspirator, beating tray, canopy fogging, leaf litter sifting (and processing the samples through Berleise funnels), Malaise and flight intercept traps and of course by hand collecting by locating suitable hosts and searching for the weevils (e.g. under the bark). The sampled regions in this research were Marivan, Baneh, Saqqez, Qorveh, Bijar, Kamyaran, Dehgolan, Sanandaj, Diwandarreh and Sarvabad. In addition to these, the data of preserved materials in various museums in Iran or other countries, and personal collections of some researchers have also been included in this study. The information concerning the locality, altitude (in brackets), date of collection, place/plant on which the species were collected, and the number of specimens (in brackets) is given. Although the name of the plants on which the specimens were collected, have been given, this doesn't necessarily mean that they are the host of the species. In this paper the classifications and nomenclature of curculionids suggested by Zherichin & Egorov [1991], May [1993], Zimmerman [1993], Alonso-Zarazaga & Lyal [1999], Colonnelli [2003, 2004], Legalov [2006, 2011] and Velazquez de Castro et al. [2007] have been followed.

Species marked with * – are the first records for the fauna of Kurdistan and ** – the first records for the fauna of Iran.

RESULTS

As a result of this research, totally 57 curculionid species from 26 genera and 4 subfamilies were collected from Kurdistan province. The list of species is given below.

Family **CURCULIONIDAE** Latreille, 1802

Subfamily **LIXINAE** Schoenherr, 1823

Tribe **Lixini** Schoenherr, 1823

Genus **Larinus** Dejean, 1921

Larinus crassiusculus Desbrochers, 1895**

Material examined: Kavaneh, (1460 m), (3), September 2008.

Larinus elegans Desbrochers, 1897**

Material examined: Baneh, (1444 m), (2), June 2008.

Larinus jaceae (Fabricius, 1775)*

Material examined: Ebrahim-Abad, (1956 m), (2), July 2006, on *Carduus nutans* L.

Larinus obtusus Gyllenhal, 1836**

Material examined: Ebrahim-Abad, (1945 m), (2), July 2006.

Larinus onopordi (Fabricius, 1787)*

Material examined: Marivan, (1328 m), (1), June 2008. Bijar, (1744 m), (2), July 2008; Diwandarreh, (1855 m), (1), October 2008.

Larinus rugithorax Desbrochers, 1897**

Material examined: Kamyaran, (1462 m), (3), August 2008.

Larinus sacer Desbrochers, 1896**

Material examined: Mirdeh, (1505 m), (4), June 2006.

Larinus villosiventris Desbrochers, 1892**

Material examined: Dehgolan, (1837 m), (1), September 2008.

Genus *Lixus* Fabricius, 1801

Lixus bardanae (Fabricius 1787)**

Material examined: Sanandaj, (1525 m), (2), September 2007. Boein Sofla (1388 m), (3), September 2008.

Lixus pulverulentus (Scopoli 1763)*

Material examined: Kavaneh, (1465 m), (3), September 2008.

Tribe **CLEONINI** Schoenherr, 1826

Genus *Temnorhinus* Chevrolat, 1873

Temnorhinus verrucosus (Gebler, 1830)*

Material examined: Diwandarreh, (1855 m), (2), October 2008.

Subfamily **CEUTORHYNCHINAE** Gistel, 1848

Tribe **Ceutorhynchini** Gistel, 1848

Genus *Ceutorhynchus* Germar, 1824

Ceutorhynchus assimilis (Paykull, 1792)*

Material examined: Sanandaj, (1500 m), (3), September 2007.

Ceutorhynchus coarctatus Gyllenhal, 1837*

Material examined: Sarvabad, (1027 m), (1), June 2006. Boein Sofla (1388 m), (2), September 2008.

Ceutorhynchus languidus Schultze, 1902*

Material examined: Chenareh (1449 m), (2), July 2008.

Ceutorhynchus niyazii Hoffmann, 1957**

Material examined: Dezaj (1512 m), (1), October 2008.

Ceutorhynchus pulvinatus Gyllenhal, 1837*

Material examined: Mirdeh, (1510 m), (3), June 2006.

Ceutorhynchus sophiae Gyllenhal, 1837*

Material examined: Ebrahim-Abad, (1950 m), (2), July 2006.

Ceutorhynchus sulcicollis (Paykull, 1800)*

Material examined: Kamyaran, (1462 m), (2), August 2008. Kavaneh, (1462 m), (2), September 2008.

Ceutorhynchus subpilosus C. Brisouth, 1869**

Material examined: Boein Sofla (1388 m), (1), September 2008.

Genus *Ethelcus* Reitter, 1916

Ethelcus denticulatus (Schrank, 1781)*

Material examined: Baneh, (1435 m), (2), June 2008.

Genus *Mogulones* Reitter, 1916

Mogulones crucifer (Pallas, 1771)**

Material examined: Sanandaj, (1357 m), (4), September 2007.

Mogulones korbi (Schultze, 1901)**

Material examined: Dehgolan, (1830 m), (2), September 2008.

Genus *Neoglocianus* Dieckmann, 1972

Neoglocianus maculaalba (Herbst, 1795)*

Material examined: Kavaneh, (1464 m), (3), September 2008.

Genus *Stenocarus* C.G. Thomson, 1859

Stenocarus cardui (Herbst, 1784)*

Material examined: Sanandaj, (1525 m), (1), September 2007.

Genus *Zacladus* Reitter, 1913

Zacladus asperatus (Gyllenhal, 1837)*

Material examined: Baneh, (1435 m), (1), June 2008.

Genus *Coeliodes* Schönherr, 1837

Coeliodes ruber (Marsham, 1802)**

Material examined: Sarvabad, (1017 m), (1), June 2006.

Genus *Pseudocoeliodes* Hoffmann, 1956

Pseudocoeliodes rubricus (Gyllenhal, 1837)**

Material examined: Diwandarreh, (1855 m), (1), October 2008.

Subfamily **CURCULIONINAE** Latreille, 1802

Tribe **Curculionini** Latreille, 1802

Genus *Curculio* Linnaeus 1758

Curculio excellens Khnzorian, 1953**

Material examined: Marivan, (1326 m), (1), June 2008.

Genus *Archarius* Gistel, 1856

Archarius pyrrhoceras (Marsham, 1802)**

Material examined: Saqqez, (1333 m), (2), April 2008.

Tribe **Tychiini** Gistel, 1848

Genus *Sibinia* Germar, 1817

Sibinia bipunctata Kirsch, 1870*

Material examined: Qorveh, (1307 m), (2), July 2007.

Genus *Tychius* Germar, 1817

Tychius argentatus Chevrolat, 1859**

Material examined: Marivan, (1340 m), (4), June 2008.

Tychius aureolus Kiesenwetter, 1851*

Material examined: Saqqez, (1333 m), (2), April 2008. Chenareh (1441 m), (2), July 2008.

Tychius brevisculus Desbrochers, 1873*

Material examined: Chenareh (1430 m), (3), July 2008.

Tychius consputus Kiesenwetter, 1864**

Material examined: Saqqez, (1357 m), (1), April 2008. Diwandarreh, (1866 m), (3), October 2008; Baneh, (1435 m), (3), June 2008.

Tychius flavus Becker, 1864**

Material examined: Sanandaj, (1368 m), (2), September 2007.

Tychius grenieri Ch. Brisout, 1861**

Material examined: Kamyaran, (1483 m), (2), August 2008.

Tychius hirtellus Tournier, 1873*
Material examined: Bijar, (1735 m), (2), July 2008.

Tychius palaestinus Desbrochers, 1875**
Material examined: Bijar, (1735 m), (1), July 2008.

Tychius stephensi Schönherr, 1836*
Material examined: Sanandaj, (1500 m), (1), September 2007.

Subfamily ENTIMINAE Schoenherr, 1823
 Tribe HYPERINI Marseul, 1863
 Genus *Donus* Jekel, 1865
Donus dauci (Olivier, 1808)*
Material examined: Dezaj (1525 m), (2), October 2008.

Genus *Hypera* Germar, 1817
Hypera cumana (Petri 1901)**
Material examined: Sanandaj, (1525 m), (1), September 2007.

Hypera meles (Fabricius, 1792)*
Material examined: Chenareh (1430 m), (2), July 2008.

Genus *Zaslavskypera* Legalov, 2011
Zaslavskypera contaminata (Herbst, 1795)**
Material examined: Qorveh, (1307 m), (3), July 2007.
 Sanandaj, (1321 m), (2), September 2007.

Genus *Tigrinellus* Capiomont, 1868
Tigrinellus pastinacae (Rossi, 1790)*
Material examined: Dehgolan, (1830 m), (1), September 2008.

Genus *Erinomorphus* Capiomont, 1868
Erinomorphus rumicis (Linnaeus, 1758)*
Material examined: Sanandaj, (1327 m), (2), September 2007.

Tribe *Sitonini* Gistel, 1856
 Genus *Sitona* Germar, 1817
Sitona lineellus (Bonsdorff, 1785)**
Material examined: Dezaj (1528 m), (1), October 2008.

Sitona macularius (Marsham, 1802)*
Material examined: Marivan, (1340 m), (2), June 2008.

Tribe *Tanymecini* Lacordaire, 1863
 Genus *Xylinophorus* Faust, 1885
Xylinophorus prodromus Faust 1885*
Material examined: Kamyaran, (1475 m), (1), August 2008.

Tribe *Cyphicerini* Lacordaire, 1863
 Genus *Myllocerus* Schönherr, 1823
Myllocerus benignus Faust, 1892*
Material examined: Dehgolan, (1830 m), (2), September 2008.

Tribe *Nastini* Reitter, 1913
 Genus *Nastus* Schoenherr, 1843
Nastus margelanicus Faust, 1894**
Material examined: Marivan, (1340 m), (1), June 2008.

Tribe *Otiorhynchini* Schoenherr, 1826
 Genus *Otiorhynchus* (Germar, 1822)
Otiorhynchus bleusei Faust, 1899**
Material examined: Dezaj (1512 m), (1), October 2008.

Otiorhynchus brunneus Krynicki, 1834**
Material examined: Saqqez, (1357 m), (1), April 2008.

Otiorhynchus dubitabilis Fairmaire, 1866*
Material examined: Marivan, (1326 m), (1), June 2008.

Otiorhynchus lugens (Germar, 1817)**
Material examined: Bijar, (1744 m), (2), July 2008.

Otiorhynchus ovalipennis Boheman, 1843*
Material examined: Sarvabad, (1017 m), (2), June 2006.

Otiorhynchus tmolosensis Lona, 1943**
Material examined: Kamyaran, (1475 m), (2), August 2008.

Tribe *Polydrusini* Schoenherr, 1823
 Genus *Polydrusus* Germar, 1817
Polydrusus ponticus Faust, 1888*
Material examined: Qorveh, (1316 m), (2), July 2007.

DISCUSSION

Regarding to the result of this research which has dealt with the species diversity of Curculionidae in Kurdistan province, and also the prior publication on Iranian Curculionidae (see the references), the fauna of this family in Iran is very diverse. Although a few species were recorded as the important and destructive pest in Iran so far, their number could be much more in some regions by the observations of the first author. With the improving of our knowledge of species diversity of weevils in different regions of Iran, the main pests of this family should be detected and the efficient strategies could be applied for their population decreasing. By the material of the first author, many powerful parasitoids especially in the family Pteromalidae (Hymenoptera) have efficient role in biological control of the weevils [Bouček & Rasplus, 1991], and conservation of them results in more successful control of pest weevils.

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