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A faunistic survey on the weevils (Coleoptera: Curculionidae) in West Azarbaijan province, northwestern Iran

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Abstract

The fauna of weevils (Coleoptera: Curculionidae) from West Azarbaijan province, northwestern Iran is studied in this paper. Totally 59 species from 23 genera and 7 subfamilies (including, Bagoinae, Baridinae, Ceutorhynchinae, Curculioninae, Entiminae, Hyperinae, Lixinae) were collected and identified.

Key words: Coleoptera, Curculionidae, Weevils, Fauna, West Azarbaijan, Iran.

Zusammenfassung

Die Rüsselkäferfauna (Coleoptera: Curculionidae) der westlichen Provinz Aserbaidschan, im Nordwesten des Iran, wird in vorliegender Arbeit behandelt. Es gelang 59 Arten aus 23 Gattungen und 7 Unterfamilien (Bagoinae, Baridinae, Ceutorhynchinae, Curculioninae, Entiminae, Hyperinae, Lixinae) zu sammeln beziehungsweise nachzuweisen.

Introduction

Weevils (Coleoptera: Curculionidae), with about 48.000 valid species, are the largest family of known organisms (ANDERSON 1993, 1995). These insects represent one of the most stunning radiations of animals and thus figure prominently among the phenomena to be explained (MAYR 1963). Collectively, weevils use every plant part and nearly every plant taxon (ANDERSON 1995), and yet related species are often similar in host use. Curculionids constituting various taxonomic groups feed on plant roots, stems, leaves, flowers, fruits, or seeds. They may be among the first enemies to consume healthy plants or may be specialists on decaying tissues or the dead remains of plants felled by other causes (FARRELL et al. 2001; LANTERI et al. 2002; MARVALDI et al. 2002; BEUTEL & LESCHEN 2005).

In this paper, the curculionids' fauna of West Azarbaijan province (located in North West of Iran, bordering with Turkey, Iraq and Armenia, and the provinces of East Azerbaijan, Zanjan and Kurdistan) is dealt with. 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. West Azerbaijan province encompasses vast and fertile plains, high mountains, rivers with high volume of water, vineyards, orchards, luxuriant forest and rangelands, mountain outskirts with wonderful flora, magnificent wildlife and beautiful shores around the lake with different recreational facilities, which all together form one of the most beautiful and spectacular region in Iran. A land with wonderful flora during the spring and the summer covered with tulip, poppy, narcissus and hyacinth. The objective of this paper is faunistic survey on the family Curculionidae from West Azarbaijan province where included various geographical regions and diverse flora.

Materials and Methods

Specimens of this research were collected by sweeping net, beating tray, aspirator and other methods (LODOS et al. 1978, 2003) from different regions of West Azarbaijan province. The sampled regions of this research were Bookan, Hassanloo, Khoy, Mahabad, Makoo, Myandoab, Naqadeh, Ourmieh, Piranshahr, Salmas, Seroo, Shahin-Dezh, Siah-Cheshmeh, and Takab. 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 species' name, describer, locality, altitude (in brackets), date of collection, place/plant on which the species were collected, and the number of specimens (in brackets) are also 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), ALONSO-ZARAZAGA & LYAL (1999), STREJCEK (2001), COLONNELLI (2003) and VELAZQUEZ DE CASTRO et al. (2007) have been followed. The recorded insect genera have been listed in phylogenetic order and species sorted in alphabetical order.

Results

In this research totally 59 curculionid species from 23 genera and 7 subfamilies were collected and identified. The list of species is given below.

Family *Curculionidae* LATREILLE 1802

Subfamily *Curculioninae* LATREILLE 1802

Tribe *Curculionini* LATREILLE 1802

Genus *Curculio* LINNAEUS 1758

Curculio excellens KHNZORIAN 1953

Material examined: Bookan (1366 m), (1), June 2008.

Curculio pyrrhoceras MARSHAM 1802

Material examined: Siah-Cheshmeh (1817 m), (2), May 2007. Mahabad (1345 m), (3), June 2007.

Curculio filiformis FABRICIUS 1781

Material examined: Naqadeh (1312 m), (1), Unknown date.

Curculio cynarae FABRICIUS 1787

Material examined: Takab (1832 m), (2), September 2006.

Curculio planus FABRICIUS 1792

Material examined: Hassanloo (1277 m), (3), July 2008.

Curculio mucronatus FABRICIUS 1792

Material examined: Ourmieh (1368 m), (4), July 2006. Oshnaviyeh (1467 m), (3), September 2007.

Tribe *Cionini* SCHOENHERR 1825

Genus *Cionus* CLAIRVILLE 1798

Cionus schultzei REITTER 1904

Material examined: Myandoab (1339 m), (1), June 2007.

Tribe *Tychiini* C.G. THOMSON 1859

Genus *Tychius* GERMAR 1817

Tychius bicolor Ch. BRISOUT 1862

Material examined: Ourmieh (1377 m), (1), July 2006. Mahabad (1354 m), (2), June 2007.

***Tychius festivus* (FAUST 1884)**

Material examined: Hassanloo (1288 m), (1), Summer 2008.

***Tychius hirtellus* TOURNIER 1873**

Material examined: Siah-Cheshmeh (1790 m), (2), May 2007.

***Tychius ochraceus* TOURNIER 1873**

Material examined: Myandoab (1331 m), (3), June 2007.

***Tychius polylineatus* (GERMAR 1824)**

Material examined: Makoo (1645 m), (1), unknown date.

***Tychius squamulatus* GYLLENHAL 1836**

Material examined: Takab (1822 m), (2), September 2006.

***Tychius striatulus* GYLLENHAL 1836**

Material examined: Myandoab (1346 m), (1), June 2007. Seroo (1628 m), (2), May 2008.

***Tychius thoracicus* BOHEMAN 1843**

Material examined: Takab (1788 m), (2), Unknown date.

Subfamily Bagoinae THOMSON 1859

Genus *Bagous* GERMAR 1817

***Bagous argillaceus* GYLLENHAL 1836**

Material examined: Shahin-Dezh (1427 m), (1), August 2008.

Subfamily Baridinae SCHOENHERR 1836

Tribe Baridini SCHOENHERR 1836

Genus *Malvaevora* ZASLAVSKII 1956

***Malvaevora timida* (ROSSI 1792)**

Material examined: Oshnaviyeh (1467 m), (1), September 2007.

Subfamily Ceutorhynchinae GISTEL 1856

Tribe Ceutorhynchini GISTEL 1856

Genus *Ceutorhynchus* GERMAR 1824

***Ceutorhynchus niyazii* HOFFMANN 1957**

Material examined: Salmas (1323 m), (2), October 2007.

***Ceutorhynchus pallipes* CROTCH 1866**

Material examined: Seroo (1619 m), (1), May 2008. Piranshahr (1461 m), (2), July 2008.

***Ceutorhynchus pulvinatus* GYLLENHAL 1837**

Material examined: Shahin-Dezh (1414 m), (1), August 2008.

***Ceutorhynchus sophiae* GYLLENHAL 18371**

Material examined: Ourmieh (1422 m), (4), summer 2007.

***Ceutorhynchus picitarsis* (GYLLENHAL 1837)**

Material examined: Naqadeh (1318 m), (2), July 2007.

Genus *Datonychus* WAGNER 1944

***Datonychus melanostictus* (MARSHAM 1802)**

Material examined: Ourmieh (1439 m), (1), August 2007.

Genus *Glocianus* REITTER 1916

***Glocianus pilosellus* (GYLLENHAL 1837)**

Material examined: Takab (1822 m), (1), September 2006.

Genus *Mogulones* REITTER 1916

***Mogulones javetii* (GERHARDT 1867)**

Material examined: Ourmieh (1378 m), (1), July 2006.

Genus *Ranunculiphilus* DIECKMANN 1969

***Ranunculiphilus* (s. str.) *faeculentus* (GYLLENHAL 1837)**

Material examined: Shahin-Dezh (1433 m), (2), August 2008.

Subfamily *Entiminae* SCHOENHERR 1823

Tribe *Otiorrhynchini* SCHOENHERR 1826

Genus *Otiorrhynchus* (GERMAR 1822)

***Otiorrhynchus* (*Podoropelmus*) *kaltakkirani* VOSS 1936**

Material examined: Ourmieh (1378 m), (1), Unknown date.

***Otiorrhynchus* (*Melasemnus*) *tetrarchus* REITTER 1913**

Material examined: Shahin-Dezh (1422 m), (1), August 2008.

***Otiorrhynchus* (*Tecutinus*) *tmolosensis* LONA 1943**

Material examined: Mahabad (1354 m), (1), June 2007.

***Otiorhynchus (Choilisanus) balcanicus* STIERLIN 1861**

Material examined: Ourmieh (1435 m), (2), August 2007. Hassanloo (1288 m), (1), July 2008.

***Otiorhynchus (Podonebistus) prolongatus* STIERLIN 1861**

Material examined: Siah-Cheshmeh (1807 m), (2), spring 2007.

***Otiorhynchus (Viroprius) asiaticus* STIERLIN 1861**

Material examined: Oshnaviyeh (1457 m), (3), September 2007. Makoo (1642 m), (2), September 2008.

Tribe Phyllobiini SCHOENHERR 1826

Genus *Phyllobius* GERMAR 1824

***Phyllobius delagrangi* DESBROCHERS 1892**

Material examined: Myandoab (1346 m), (2), June 2007.

***Phyllobius pictus* (STEVEN 1829)**

Material examined: Bookan (1396 m), (1), June 2008.

***Platymycterus turkestanicus* FAUST 1885**

Material examined: Piranshahr (1455 m), (1), July 2008.

Tribe Polydrusini SCHOENHERR 1823

Genus *Polydrusus* GERMAR 1817

***Polydrusus marcidus* KIESENWETTER 1864**

Material examined: Seroo (1608 m), (1), May 2008.

Tribe Sitonini GISTEL 1856

Genus *Sitona* GERMAR 1817

***Sitona striatellus* GYLLENHAL 1834**

Material examined: Bookan (1385 m), (1), June 2008.

Tribe Tanymericini LACORDAIRE 1863

Genus *Xylinophorus* FAUST 1885

***Xylinophorus persianus* VOSS 1936**

Material examined: Makoo (1712 m), (1), September 2008.

Tribe Thecesternini LACORDAIRE 1863

Genus *Herpes* BEDEL 1874

***Herpes porcellus* LACORDAIRE 1863**

Material examined: Ourmieh (1430 m), (1), August 2007, on *Anchusa orientalis* (L).

Subfamily Hyperinae LACORDAIRE 1863

Tribe Hyperini LACORDAIRE 1863

Genus *Donus* JEKEL 1865

***Donus audax* FAUST 1887**

Material examined: Myandoab (1327 m), (2), June 2007.

***Donus comatus* (BOHEMAN 1842)**

Material examined: Shahin-Dezh (1436 m), (1), August 2008.

***Donus zoilus* (SCOPOLI 1763)**

Material examined: Naqadeh (1344 m), (2), July 2007. Oshnaviyeh (1452 m), (1), September 2007.

Genus *Hypera* GERMAR 1817

***Hypera crinita* (BOHEMAN 1834)**

Material examined: Hassanloo (1295 m), (3), July 2008.

***Hypera fasciculata* (HERBST 1795)**

Material examined: Naqadeh (1336 m), (2), July 2007. Salmas (1311 m), (2), October 2007.

***Hypera maculipennis* FAIRMAIRE 1859**

Material examined: Ourmieh (1391 m), (2), Unknown date.

***Hypera orientalis* CAPIOMONT 1867**

Material examined: Piranshahr (1479 m), (1), July 2008.

***Hypera plantaginis* (DE GEER 1775)**

Material examined: Salmas (1311 m), (3), October 2007.

***Hypera striata* (BOHEMAN 1834)**

Material examined: Bookan (1379 m), (2), June 2008.

***Hypera variabilis* (HERBST 1795)**

Material examined: Ourmieh (1376 m), (3), July 2006. Mahabad (1354 m), (2), June 2007.

Genus *Limobius* SCHÖNHERR 1843

***Limobius borealis* (PAYKULL 1792)**

Material examined: Khoy (1153 m), (2), August 2008.

Subfamily *Lixinae* SCHOENHERR 1823

Tribe *Lixini* SCHOENHERR 1823

Genus *Larinus* DEJEAN 1821

***Larinus flavescens* GERMAR 1824**

Material examined: Mahabad (1358 m), (2), June 2007.

***Larinus ovaliformis* CAPIOMONT 1874**

Material examined: Seroo (1627 m), (1), Spring 2008.

***Larinus planus* (FABRICIUS 1792)**

Material examined: Myandoab (1344 m), (1), June 2007, on *Carduus nutans* L.

***Larinus turbinatus* GYLLENHAL 1836**

Material examined: Khoy (1153 m), (3), August 2008.

***Larinus cribricollis* DESBROCHERS 1896**

Material examined: Piranshahr (1456 m), (2), Unknown date.

***Larinus densicollis* DESBROCHERS 1897**

Material examined: Naqadeh (1313 m), (1), July 2007. Seroo (1626 m), (2), spring 2008.

Tribe *Cleonini* SCHOENHERR 1826

Genus *Coniocleonus* MOTSCHULSKY 1860

***Coniocleonus nigrosuturatus* (GOEZE 1777)**

Material examined: Shahin-Dezh (1440 m), (2), August 2008.

Tribe *Rhinocyllini* LACORDAIRE 1863

Genus *Bangasternus* GOZIS 1882

***Bangasternus orientalis* (CAPIOMONT 1873)**

Material examined: Makoo (1626 m), (1), Summer 2008.

Genus *Rhinocyllus* GERMAR 1817

***Rhinocyllus conicus* (FRÖLICH 1792)**

M a t e r i a l e x a m i n e d : Khoy (1164 m), (3), August 2008, on *Carduus nutans* L.

C o m m e n t : In this research *Exeristes roborator* (FABRICIUS 1795) (Hymenoptera: Ichneumonidae) was collected as the parasitoid of *R. conicus*.

Discussion

The results of this research indicate that the fauna of Curculionidae is rather diverse in West Azarbaijan province. Among the 23 genera of this paper, the 5 genera *Tychius* GERMAR, *Hypera* GERMAR, *Curculio* LINNAEUS, *Otiorynchus* (GERMAR) and *Larinus* DEJEAN with 8, 7, 6, 6 and 6 collected species respectively, are the more diverse than the others in West Azarbaijan province. The family Curculionidae with over than 45,000 valid species is the largest family in kingdom Animalia. On the other hand Iran is a large country and almost the provinces as West Azarbaijan incorporate the various geographical regions and climates and also diverse flora; therefore we expect that there are several other curculionid species which have not been collected and reported so far, and it is necessary that the researchers continue these faunistic works toward to finding new records, new distributional data and especially determining the host plants and natural enemies of Iranian Curculionidae.

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