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## New Faunistic Records of Weevils Curculionoidea (Coleoptera) Elazığ Province (Turkey)

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**Abstract**

In this study, thirteen (13) specimens which belong to Curculionoidea (Coleoptera) superfamily were determined. *Hypera postica* Gyllenhal, 1813, has been most abundant species in all specimens. Apart from *Ceuthorrhynchus contractus* Marsham, 1802, *Ceuthorrhynchus sulcicollis* Paykull, 1800) and *Hypera postica* Gyllenhal, 1813, and the other species collected has been first recorded in Elazığ province. Among these specimens *Rhynchites hungaricus* (Herbst, 1784) is an important pest. Since *Rhynchites hungaricus* (Herbst, 1784) is important for rosa plant, it is crucial to determine this type of pest in ornamental plant in this province. Additionally; *Rhinusa tetra* (Fabricius, 1792) which was found within the scope of this study has been biological control on *Verbascum* plants in the world and *Otiorychus balcanicus* (Stierlin, 1861) species are important pest on strawberry and fruits in different areas in Turkey. These specimens can cause important damage in fruit plantations in later years. Findings of these species in this province make this study valuable.

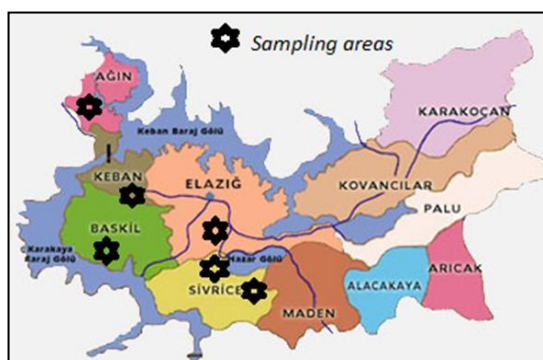
**Keywords:** Curculionoidea, Fauna, Economic Pests, Elazığ, Turkey

**1. Introduction**

Curculionoidea superfamily contains 60000 species among Coleoptera ordo [1]. The insects classified under superfamily which is named "Curculionoidea" (order Coleoptera), are especially harmful. This superfamily species can feed on some organs of fruit trees, such as fruits and flower buds and they cause the reductions in quantity and product quality. Among higher family; Anthribidae, Nemonychidae, Curculionidae, Belidae, Brentidae, Anthribidae, Caridae, Attelabidae families, and Apioninae, Rhinorhynchinae, Brachycerinae subfamilies exist. For these higher families, faunistically varied studies were conducted in our country during the last 10 years; [2-8]. In previous years, different researchers have made variously faunistic studies which related with Curculionidae (Coleoptera) superfamily species in Elazığ province [9-15]. By this study new faunistic records are introduced about Elazığ insect fauna.

**Material and Methods**

This study was carried out between 2013 and 2014, in Elazığ province of Turkey. Sampling areas are seen in the Figure 1. Specimens were collected by sweep net. Specimens were deposited in the Firat University Bioengineering Department Entomology laboratory. Identification was made by second author. Classification follow that of Alonso-Zarazaga & Lyal [16] which was partly done in the of the Catalogue of Palearctic Coleoptera weevil volumes [17]



**Fig 1:** Sampling Areas in Elazığ Province

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## Results

Superfamily Curculionoidea Latreille, 1802

Family Rhynchitidae Gistel, 1848

Tribe Rhynchitini Gistel, 1848

*Mecorhis ungarica* (Herbst, 1783)

= *Rhynchites hungaricus* (Herbst, 1783).

**Material Examined:** Elazığ, Center, Ağın, 30.05.2013, 1 exc., Baskil, 23.06.2014, 3 exc.

**Specimens Collected:** 4

**Distribution in Turkey:** İzmir, Ankara, Afyon, Burdur, Çorum, Isparta and Konya<sup>[18]</sup>

**General distribution:** Southern Europe, Transcaucasia, Kazakhstan, Iran, Iraq, Israel, Turkey.

**Biology:** On *Crataegus* spp. (Rosaceae).

Family Attelabidae Billberg, 1820

Tribe Attelabinae Billberg, 1820

*Attelabus nitens* (Scopoli, 1753)

**Material Examined:** Elazığ, Baskil / Doğancık, 26.05.2013, 3 exc.

**Specimens Collected:** 3

**Distribution in Turkey:** Adana, Artvin, Bursa, Hatay, İstanbul<sup>[18, 19]</sup>

**General distribution:** Europe, Transcaucasia, Turkey, Iran, Israel, Syria.

**Biology:** On *Quercus* spp. (Fabaceae).

Family Curculionidae Latreille, 1802

Subfamily Lixinae Schoenherr, 1823

*Larinus onopordi* (Fabricius, 1787)

**Material Examined:** Elazığ, Keban, 28.05.2011, 3 exc.

**Specimens Collected:** 3

**Distribution in Turkey:** Adana, Adıyaman, Artvin, Bingöl, Bitlis, Diyarbakır, Elazığ, Erzurum, Erzincan, Gaziantep, Hatay, Iğdır, Kars, Kırıkkale, Kilis, Malatya, Nevşehir, Osmaniye, Sivas and Şanlıurfa<sup>[20, 21]</sup>

**General distribution:** Southern Europe, Transcaucasia, Kazakhstan, Central Asia, Turkey, Syria, Israel, North Africa.

**Biology:** On *Carduus* spp. (Asteraceae).

*Larinus griseescens* Gyllenhal, 1835

= *orientalis* (Capiomont, 1874).

**Material Examined:** Elazığ, Centre, Alaca Village, 28.05.2011, 2 exc.

**Specimens Collected:** 2

**Distribution in Turkey:** İzmir, Malatya, Mardin<sup>[22]</sup>

**General distribution:** Southern Europe, Transcaucasia, Turkey, Iran, Iraq, Israel, Syria.

**Biology:** On *Carduus* spp. (Asteraceae).

Subfamily: Ceutorhynchinae Gistel, 1848

Tribe: Ceutorhynchini Gistel, 1848

*Ceutorhynchus contractus* (Marshall, 1802)

**Material Examined:** Elazığ, Baskil / Doğancık, 26. 05. 2013, 1 exc.

**Specimens Collected:** 1

**Distribution in Turkey:** Hatay, Osmaniye<sup>[5, 23]</sup>

**General distribution:** Palearctic

**Biology:** On Brassicaceae.

*Ceutorhynchus sulcicollis* (Paykull, 1800)

**Material Examined:** Elazığ, Sivrice, Kürk, 02.06.2013, 4 exc.

**Specimens Collected:** 4

**Distribution of Turkey:** Hatay, Osmaniye<sup>[5, 23]</sup>

**General distribution:** Europe, Transcaucasia, Kazakhstan, Iran, Iraq, Syria, Turkey, North Africa.

**Biology:** On Brassicaceae.

*Stenocarus cardui* (Herbst, 1784)

**Material Examined:** Elazığ, Sivrice, Hazarbabası, 27.05.2013, 1 exc, Baskil, Doğancık, 21.05.2014, 4 exc.

**Specimens Collected:** 5

**Distribution in Turkey:** Niğde, Osmaniye, Hatay<sup>[5, 24]</sup>

**General distribution:** Southern Europe, Transcaucasia, Mediterranean, Kazakhstan, Central Asia, Syria, Turkey and North Africa

**Biology:** On *Papaver* spp. (Papaveraceae)

Subfamily: Hyperinae Marseul, 1863

Tribe: Hyperini Marseul, 1863

*Hypera postica* (Gyllenhal, 1813)

**Material Examined:** Elazığ, Baskil / Doğancık, 26.05.2013, 10 exc, Sivrice, Hazarbabası, 27.05.2013, 13 exc,

**Specimens Collected:** 23

**Distribution in Turkey:** Elazığ<sup>[3]</sup> and were determined that growing areas in alfalfa all of Turkey<sup>[4]</sup>

**General distribution:** Palearctic.

**Biology:** On *Medicago* spp. (Fabaceae).

Subfamily: Curculioninae Latreille, 1802

Tribe: Mecinini Gistel, 1856

*Rhinusa tetra* (Fabricius, 1792)

**Material Examined:** Elazığ, Baskil / Doğancık, 26.05.2013, 3 exc., Center, Şemsiveren, 28.05.2013, 2 exc., Ağın, 30.05.2013, 4 exc.,

**Specimens Collected:** 9

**Distribution in Turkey:** Adana, Ceyhan, Osmaniye, Hatay<sup>[5, 7, 25]</sup>.

**General distribution:** Europe, the Mediterranean, Kazakhstan, Central Asia, Nepal, Turkey, Syria, North Africa

**Biology:** On *Verbascum* spp. (Scrophulariaceae).

Tribe: Cionini Schoenherr, 1825

*Cionus olens* (Fabricius, 1792)

**Material Examined:** Elazığ, Sivrice, 27.05.2013.

**Specimens Collected:** 2

**Distribution in Turkey:** Adana, Osmaniye, Hatay<sup>[5, 26]</sup>.

**General distribution:** Southern and Central Europe, the Caucasus, Turkey.

**Biology:** On *Verbascum* spp. (Scrophulariaceae).

*Cionus hortulans* (Geoffroy, 1785)

**Material Examined:** Elazığ, Sivrice, 27.05.2013, 2 exc..

**Specimens Collected:** 3

**General distribution:** Europe, Israel, Turkey.

**Biology:** On *Verbascum* spp. (Scrophulariaceae).

Subfamily: Mesoptilinae Lacordaire, 1863

Tribe: Magdalidini Pascoe, 1870

*Magdalis frontalis* (Gyllenhal, 1827)

**Material Examined:** Elazığ, Baskil / Doğancık, 26.05.2013, 3 exc.

**Specimens Collected:** 3

**Distribution in Turkey:** Afyonkarahisar<sup>[6]</sup>, Isparta<sup>[27]</sup>.

**General distribution:** Europe, Transcaucasia, Kazakhstan, Central Asia, Siberia.

Subfamily: Entiminae Schoenherr, 1823

Tribe: Otiiorhynchini Schoenherr, 1826

*Otiiorhynchus balcanicus* Stierlin, 1861

**Material Examined:** Elazığ, Sivrice, Kürk, 02.06.2013, 4 exc.

**Specimens Collected:** 4

**Distribution in Turkey:** Aydın, Balıkesir, Bolu, Çorum, Denizli, Gümüşhane, İzmir, Kayseri, Kırşehir, Kocaeli, Konya, Nevşehir, Tekirdağ, Trabzon and Tunceli [2, 8, 28]

**General distribution:** Southern Europe, Transcaucasia, the Balkans, the south of European Russia, Turkey, Iran, Syria.

### Discussion

As result of this study 13 species which have spread in areas and abundance belonging to 3 families and 6 subfamilies in Curculionoidea superfamily were determined. 13 insect species were determined in six administrative provinces and on different plant areas in this study. Totally; three species were found to be important. These species are: *Hypera positica* Gyllenhal, 1813, *Rhinusa tetra* (Fabricius, 1792) and *Otiorhynchus balcanicus* Stierlin, 1861. The specimen list collected in previous years in Elazığ province is shown in Table 1. Additionally, with this study, the number of species belonging to this superfamily has increased from 69 to 79 in that province. Moreover, it is clearly seen that the species *O. balcanicus* which has been obtained by this study is a significant faunistic record, considering that the mentioned species has caused bites on the leaves of almond trees, as is shown in the previous studies [26]; massive damage on strawberry, especially damage caused by the larva of this pest which are of economic importance [29]; and accordingly, strawberry cultivation and almond production are intensive in

the province Elazığ of Turkey. The *R. tetra*, which has been obtained by this study, have been used in the biological control of *Verbascum* species in North America. Also, in our country, this species has been considered within the natural enemy complex of the species *Verbascum gaillardotii* Boiss in Hatay province [7]. The distribution of this plant throughout the province has made the faunistic determination of the species important. That the species *R. hungaricus* has caused great harms on the plants belonging to the Rosacea family, and especially its being known as a harmful species in different locations of our country in terms of rose, rose hip and dewberry, is important for the faunistic record of the province. *Hypera postica* species is most abundant and distributed species in this faunistic study. The *Hypera postica* was important that on *Medicago* sp. in this area [16, 28, 30, 31]. Livestock breeding is very important in this province and East Anatolia region. In that area was important livestock breeding. This situation was further to increasing the importance of the pest problem.

These are some important points except the types that can cause significant damage in the study are as follows:

1. It should be determined that pest situation on pine trees of *M. frontalis* in that province
2. It should be determined that pest situation of *Cionus* genus to following studies

This study is very important as a base to integrated pest management and biological control studies which will be made in the future.

**Table 1:** Curculionoidea specimens detected in previous years in Elazığ province of Turkey.

Number	Species	References
1	<i>Anthonomus amygdali</i> (Hustache, 1930)	[3, 12]
3	<i>Epirhynchites smyrnensis</i> (Desbrochers, 1869)	[3]
4	<i>Polydrusus roseiceps</i> Pesarini	[3, 12]
5	<i>Apion pallipes</i> (Kirby, 1808)	[3]
6	<i>Anthonomus bituberculatus</i> (Thomson, 1868)	[3]
7	<i>Anthonomus brevipennis</i> Pic	[3]
8	<i>Ceuthorrhynchus carinatus</i> (Gyllenhal, 1837)	[3, 12]
9	<i>Ceuthorrhynchus contractus</i> (Marshall, 1802)	[3]
11	<i>Ceuthorrhynchus erysimi</i> (Fabricius, 1787)	[3]
10	<i>Lixus cardui</i> (Olivier, 1807)	[3]
12	<i>Pseudocoeliodes rubricus</i> (Gyllenhal, 1837)	[3]
13	<i>Sibinia reitteri</i> (Desbrochers, 1895)	[3]
14	<i>Sitona crinitus</i> (Herbs, 1795)	[3, 9]
15	<i>Sitona humeralis</i> (Stephens, 1831)	[3, 15, 29]
16	<i>Sitona lineellus</i> (Bondsorff, 1785)	[12]
17	<i>Sitona longulus</i> (Gyllenhal, 1834)	[10, 12]
18	<i>Tychius bicolor</i> Ch. (Brisout, 1862)	[12]
19	<i>Tychius callidus</i> (Schönherr, 1840)	[12]
20	<i>Tychius meliloti</i> (Stephens, 1831)	[12]
21	<i>Tychius picirostris</i> (Fabricius, 1787)	[12]
22	<i>Ceratapion basicorne</i> (Illiger, 1807)	[3]
23	<i>Ceratapion carduorum</i> (Kirby, 1808)	[3]
24	<i>Ceratapion gibbifrons</i> (Hustache, 1932)	[3]
25	<i>Ceratapion beckeri</i> (Desbrochers, 1875)	[3]
26	<i>Ceratapion fremuthi</i> (Wanat, 1995)	[3]
27	<i>Squamapion elongatum</i> (Germar, 1812)	[3]
28	<i>Squamapion phocopus</i> (Eppelsheim, 1888)	[3]
29	<i>Squamapion ? atomarium</i> (Kirby, 1808)	[3]
30	<i>Malvapion malvae</i> (Fabricius, 1775)	[3]
31	<i>Rhopalapion longirostre</i> (Olivier, 1807)	[3]
32	<i>Aspidapion radiolus</i> (Marshall, 1802)	[3]
33	<i>Alocentron curvirostre</i> (Gyllenhal, 1833)	[3]
34	<i>Protapion trifolii</i> (Linnaeus, 1768)	[3]
35	<i>Catapion pubescens</i> (Kirby, 1811)	[3]
36	<i>Eutrichapion sp. pr. punctigerum</i> (Paykull, 1792)	[3]

37	<i>Bangasternus orientalis</i> (Capiomont, 1873)	[3]
38	<i>Lixus convexicollis</i> (Petri, 1904)	[3]
39	<i>Lixus albomarginatus</i> (Boheman, 1843)	[3]
40	<i>Ceutorhynchus sinapicola</i> (Dieckmann, 1975)	[3]
41	<i>Ceutorhynchus sophiae</i> (Gyllenhal, 1837)	[3]
42	<i>Ceutorhynchus deplanatus</i> (Schultze, 1901)	[3]
43	<i>Ceutorhynchus sulcicollis</i> (Paykull, 1800)	[3]
44	<i>Tychius consputus</i> (Kiesenwetter, 1864)	[3]
45	<i>Tychius tibialis</i> (Boheman, 1843)	[3]
46	<i>Sibinia bipunctata</i> (Kirsch, 1870)	[3]
47	<i>Sibinia phalerata</i> (Gyllenhal, 1836)	[3]
48	<i>Anthonomus variabilis</i> (Hoffman, 1963)	[3]
49	<i>Hypera postica</i> (Gyllenhal, 1813)	[3]
50	<i>Sitona puncticollis</i> (Stephens, 1832)	[3]
51	<i>Sitona callosus</i> (Gyllenhal, 1834)	[3]
52	<i>Acentrus histrio</i> Boh	[15]
53	<i>Araxia cristofario</i> Gül.et.Brov.	[15]
54	<i>Phyllobius canus</i> Gyll	[15]
55	<i>Polydrusus incanus</i> Germ	[15]
56	<i>Polydrusus ponticus</i> Fst.	[15, 31]
57	<i>Protopion assimile</i> Kirpy	[31]
58	<i>Smicronyx jungermanniae</i> Rche.	[31]
59	<i>Ceratapion gibbirostre</i> Gyl.	[31]
60	<i>Lixus elegantulus</i> Bh	[31]
61	<i>Temnocerus aequatus</i> L.	[31]
62	<i>Ceratapion basicorne</i> (Illiger, 1807)	[32]
63	<i>Squamapion jordanianum</i> (Voss, 1965)	[32]
64	<i>Pseudapion malvae</i> (Fabricius, 1775)	[32]
65	<i>Rhopalapion longirostre</i> (Olivier, 1807)	[32]
66	<i>Hypera farinosa</i> (Boheman, 1842)	[12]
67	<i>Coniatus repandus</i> (Fabricius, 1792)	[12]
68	<i>Larinus filiformis</i> (Petri)	[13]
69	<i>Nefis brevicostis</i> (Hochhuth, 1851)	[13]

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