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Jewel beetles (Coleoptera, Buprestidae) of State National Nature Park Zhongar-Alatau, Kazakhstan
Жуки-златки (Coleoptera, Buprestidae) государственного национального природного парка «Жонгар-Алатау» Казахстана

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Key words: Jewel beetles, fauna, State National Nature Park, Zhetysu (Dzhungar) Alatau, Kazakhstan.
Ключевые слова: жуки-златки, фауна, государственный национальный природный парк, Жетысу (Джунгарский) Алатау, Казахстан.

Abstract. 24 species and subspecies of jewel beetles from 10 genera, 9 tribes and 3 subfamilies (Chrysochroinae, Buprestinae, Agrilinae) are registered from the state national nature park Zhongar-Alatau, Kazakhstan. Species diversity in subfamilies is as follows: Chrysochroinae (3 species), Buprestinae (7), Agrilinae (14), and in the genera *Agrilus* (10), *Anthaxia* (3) and *Chrysobothris* (3). The jewel beetle species discovered are distributed along six high altitude belts and biotopes, the most rich being in mountain-flood forests (12 species), deciduous-spruce-forests (13), bushy steppes (5), coniferous forests (5), middle mountain mixed grass meadows (3) and subalpine meadows (1). *Agrilus fleischeri* is newly recorded from southeast Kazakhstan, and *Agrilus fleischeri* and *Trachys minuta minuta* are newly recorded from the Zhetysu Alatau mountains.

Резюме. В государственном национальном природном парке «Жонгар-Алатау» выявлено 24 вида и подвида жуков-златок из 10 родов, 9 триб и 3 подсемейств (Chrysochroinae, Buprestinae, Agrilinae). По видовому разнообразию на уровне подсемейства златки распределены следующим образом: Chrysochroinae — 3 вида, Buprestinae — 7 видов, Agrilinae — 14 видов. На уровне родов наиболее многочисленны в Джунгарском Алатау *Agrilus* (10 видов), *Anthaxia* (3 вида) и *Chrysobothris* (3 вида). Выявленные виды жуков-златок приурочены к шести высотным поясам и биотопам: наиболее богато заселены горно-пойменные леса (12 видов) и лиственно-пихтово-лесной пояс (13 видов), а также кустарниково-степной (5 видов), хвойно-лесной пояс (5 видов) и среднегорные разнотравные луга (3 вида). Один вид жуков-златок выявлен на субальпийских лугах. Для юго-востока Казахстана впервые отмечен *Agrilus fleischeri.* Для Жетысу Алатау впервые приводятся два вида *Agrilus fleischeri* и *Trachys minuta minuta*.

Introduction

The Buprestidae is a large family of beetles, numbering more than 14700 species in the world fauna [Bellamy, 2008]. In the fauna of the former USSR, 608 species were recorded [Volkovitsh, 2013]. More than two hundred species and subspecies of jewel beetles [Kostin, 1973; Tleppaeva 2011; Volkovitsh, 2013] are known For Kazakhstan from literature sources.

Jewel beetles develop on the larval stage in the living, dying and dead woody plant tissues, in the adult stage they also trophic associated with one or several host plants [Richter, 1949]. Jewel beetles develop in trunks and twigs of woody plants, in stems of grass, in roots of both. The larvae of some jewel beetles (Julodinae) develop in the soil feeding externally on the roots of plants.

The duration of development cycles from egg to beetle is not the same. Large beetles develop from two to four years. Small forms have a one-year generation. Eggs are laid one by one or several eggs together.

The adults of jewel beetles are active at maximum temperature and light, and only a few species are active also at night (*Melanophila*).

In general, the biology of many species has been studied extremely poorly. Some species are serious pests of forestry and agriculture [Gurjeva, 1974; Nikitsky, Izhevsky, 2005; Zang et. al., 2017a, b].

As the analysis of the available literature sources has shown, the fauna of the jewel-beetles of the national park has been insufficiently studied. There are only fragmentary data on the distribution of beetles in Dzhungar Alatau mountain system [Kostin, 1955, 1964, 1973; Tleppaeva, 2012, 2013, 2014]. I.A. Kostin [1955, 1973] provides information on the distribution of 7 species in Dzungar Alatau: *Julodis variolaris, Anthaxia syrdariensis, Anthaxia auriventris, Chrysobothris affinis tremulae, Coraebus elatus, Habroloma breiti, Trachys* sp. We studied the buprestids from the adjacent southern parts of this mountain system from the territory of the natural park «Altyn-Emel», where 24 species of jewel-beetles were recorded from the southern macroslopes of the mountains of Degeres, Sholak, Matay, from the southeastern macroslope of

the Altyn-Emel ridge, the southern macroslope of the Koyandytau ridge and the mountains of Katutau [Tleppaeva, 2014].

The purpose of our work was the inventory of the jewel-beetles fauna of the national park Zhongar-Alatau, to ascertain their altitude-belt distribution, and penetration of the invaders into the fauna of the Dzungar Alatau.

The state national nature park Zhongar-Alatau occupies a vast territory in the northern part of the Dzhungar Alatau mountain system from the Aksu river basin in the south to the ridges of Kaykan, Kungei and the border with Republic of China in the north and east. The total area of the park is 356,022 thousand hectares. The park was organized in 2010.

Materials and methods

The research was carried out in the territory of the state national park by 2015–2017 during the summer months at altitudes from 600 to 3000 m a.s.l.

The material for this study is from our own collections, as well as materials, stored in the collection of the Institute of Zoology of the Ministry of Education and Science of the Republic of Kazakhstan (Almaty).

The distribution of the jewel-beetles in the territory of the natural park was studied in the following belts and biotopes: shrub-steppe belt, mountain-floodplain forests, deciduous-fir belt, coniferous forest belt, medium-grass meadows and subalpine meadows.

During the work, the following collection methods were used: entomological net sweeping, morning shaking from trees and shrubs, by hand.

The collected beetles were determined under the MBS–9 binocular. Specific keys were used to identify species [Richter, 1949, 1952; Alekseev, 1959, 1964; Kostin, 1973; Bilı, 1984; Alekseev, Volkovich, 1989; Jendek, Grebennikov, 2011].

The taxonomy and distribution of the jewel beetles is presented in accordance with the Catalog of Palearctic Coleoptera [Kuban et al., 2006] and the annotated catalog of the Buprestidae of the fauna of the former USSR [Volkovitsh, 2013].

Abbreviation used in the text are as follows, names of collectors: A.M. Tleppaeva — A.T., Kadyrbekov R.Kh. — R.K.; localities: **1** — 8 km E of Lepsinsk village, cordon Black River; **2** — 8 km SSW of Lepsinsk village, cordon Zhalanash; **3** — Sarkan ravine, 8 km SW Amanbokter village; **4** — Sarkan River Gorge; **5** — Sarkan ravine, 10 km SSW of Amanbokter village; **6** — 8 km E Topolevka village, Soldatka ravine, SNNP Zhongar-Alatau, cordon Osinovaya; **7** — 3 km E of Kokzhar village, floodplain of the Tentek river; **8** — 8 km SW of Lepsinsk village, cordon «Zhalanash»; **9** — 8 km east of Lepsinsk village, cordon «Black River»; **10** — Floodplain of the Malyi Baskan river; **11** — 3 km NE of Gerasimovka village, H ~ 927 m a.s.l., 45.79767° N, 80.91031 E ; other: SNNP — State National Natural Park; H — altitude; ex. — exemplar.

In general, as a result of identification of our own collections and collection materials of the Institute of Zoology of the Ministry of Education and Science of the Republic of Kazakhstan in National Park, 24 species and subspecies of jewel beetles from 10 genera, 9 tribes and 3 subfamilies (Chrysochroinae, Buprestinae, Agrilinae) were identified.

Results

Chrysochroinae Laporte, 1835

Dicerca aenea validiuscula Semenov, 1909

Material. **1** — h ~ 1176 m a.s.l., 45.52125° N, 80.71629° E, 4.VI.2015, A.T., 1 ex., 5.VI.2015, A.T., 2 ex.; **2** — h ~ 1082 m a.s.l., 45.47124° N, 80.55165° E, 6.VI.2015, A.T., 2 ex., h ~ 1086, 8.VI.2015, A.T., 2 ex.; **3** — h ~ 1303 m a.s.l., 11.VI.2015, A.T., 1 ex., 12.VI.2015, A.T., 1 ex., h ~ 1200 m a.s.l., 45.23675° N, 80.01707° E, 7.VI.2016, A.T., 1 ex.; **6** — h ~ 1500 m a.s.l., 45.39258° N, 80.40826° E, 11.VI.2016, A.T., R.K., 2 ex.; **7** — h ~ 1050 m a.s.l., 45.64742° N, 080.89111° E, 14.VI.2016, A.T., 2 ex.

Host plants for larvae. *Populus talassica* Kom., *Salix* spp. (Salicaceae).

Distribution. Armenia, Azerbaijan, Georgia, Iran, Turkmenistan, Uzbekistan, Tajikistan, Kyrgyzstan, Kazakhstan.

Dicerca obtusa Kraatz, 1882

Material. **7** — h ~ 1050 m a.s.l., 45.64742° N, 080.89111° E, 14.VI.2016, A.T., 14 ex.

Host plants for larvae. *Juglans regia* L. (Juglandaceae) [Richter, 1952]. *Juglans regia* does not grow in the region, we collected beetles from *Betula pendula* Roth.

Distribution. Uzbekistan, Tajikistan, Kyrgyzstan, Kazakhstan.

Poecilonota variolosa variolosa Paykull, 1799

Material. **2** — h ~ 1162 m a.s.l., 45.47028° N, 80.55076° E, 8.VI.2015, A.T., R.K., 3 ex.; **7** — aspen forest, h ~ 1250 m a.s.l., 45.64025° N, 80.91018° E, 15.VI.2016, A.T., 1 ex.

Host plants for larvae. *Populus tremula* L. (Salicaceae).

Distribution. Europe (including the European part of Russia), Kazakhstan, Mongolia.

Buprestinae Leach, 1815

Anthaxiini Gory et Laporte, 1837

Anthaxia Eschscholtz, 1829

Anthaxia auriventris Ballion, 1871

Material. **6** — withdrawn from *Abies sibirica:* 3.V.1963, Badenko A.S., 1 ex., h ~ 1500 m a.s.l., 45.39258° N, 80.40826° E, 11.VI.2016, A.T., 4 ex., 4.II.2016, A.T., 4 ex., 15.II.2016, A.T., 1 ex., 2.III.2017, A.T., 4 ex., 15.III.2017, A.T., 1 ex.

Host plants for larvae. *Abies sibirica* Ledeb (Pinaceae).

Host plants for adults. Flowers of *Ranunculus* sp. and *Potentilla* sp.

Distribution. Uzbekistan, Kyrgyzstan, Kazakhstan.

Anthaxia quadripunctata (Linnaeus, 1758)

Material. **2** — h ~ 1082 m a.s.l., 45.47124° N, 80.55165° E, 6.VI.2015, A.T., 1 ex.; Lepsinsk village, forest nursery, 45.51696° N, 080.60821° E, 13.VI.2016, A.T., 4 ex.; **7** — aspen forest with pine plantings, H~1250 m a.s.l., 45.64025° N, 80.91018° E, 15.VI.2016, A.T., 5 ex.

Host plants for larvae. *Pinus silvestris* L. (Pinaceae).

Distribution. Europe, Russia, Turkey, Kazakhstan.

Anthaxia tianshanica Bílý, 1984

Material. **8** — h ~ 1050 m a.s.l., 45.48078° N, 80.51806° E, 7.VI.2015, A.T., 2 ex.; **5** — h ~ 1400 m a.s.l, 45.20715° N, 80.03156° E, 12.VI.2015, A.T., 8 ex., h ~ 1300–1500 m a.s.l., 45.27903° N, 080.07899° E, 7.VI.2016, A.T., 9 ex., 8.VI.2016, A.T., 5 ex., h ~ 1600 m a.s.l., 9.VI.2016, A.T., 3 ex., h ~ 1500 m a.s.l., 10.VI.2016, A.T., 1 ex., h ~ 1303 m a.s.l., 45.23675° N, 80.01707° E, 11.VI.2015, A.T., 3 ex.

Host plants for larvae. *Picea schrenkiana* Fisch. et Mey. (Pinaceae).

Distribution. Kyrgyzstan, Kazakhstan, China (Xinjiang).

Chrysobothrini Gory et Laporte, 1838

Chrysobothris Eschscholtz, 1829

Chrysobothris affinis nevskyi Richter, 1944

Material. **10** — 45.27903° N, 080.07899° E, 7.VI.2016, A.T., 3 ex.

Host plants for larvae. *Malus domestica* Borkh., *M. sieversii* Ledeb. et V. Roem. (Rosaceae), *Ulmus pumila* L. (Ulmaceae).

Distribution. Iran, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan.

Chrysobothris affinis tremulae Kostin, 1973

Material. **6** — extracted from aspen, 28.VI.1963, Badenko A.S., holotype & paratype. [Kostin, 1973].

Host plants for larvae. *Populus tremula* L. (Salicaceae) [Kostin, 1973].

Distribution. Kazakhstan (south-east region).

Chrysobothris chrysostigma chrysostigma Linnaeus, 1758

Material. **5** — h ~ 1500 m a.s.l, 45.22209° N, 80.02463° E, 10.VI.2016, A.T., 3 ex.; **10** — 27.VI.1953, Kostin I.A., 3 ex., 13.VII.1953, Kostin I.A., 3 ex., 26.VII.1953, Kostin I.A., 3 ex., 27.VII.1953, Balabas, 1 ex., 9.VIII.1953, Kostin I.A., 2 ex.; Lepsy river, 11.VI.1967, Kostin I.A., Badenko A.S., 1 ex.

Host plants for larvae. *Picea schrenkiana* Fisch. et Mey, *Abie ssibirica* Ledeb. (Pinaceae).

Distribution. North Africa (Algeria, Morocco), Europe, Russia (including the European part, Western and Eastern Siberia), Turkey, India (Kashmir), Kyrgyzstan, Kazakhstan.

Melanophilini Bedel, 1921

Melanophila Eschscholtz, 1829

Melanophila acuminata (De Geer, 1774)

Material. **3** — h ~ 1303 m a.s.l., 45.23675° N, 80.01707° E, 11.VI.2015, A.T., 9 ex.; **4** — h ~ 1300–1500 m a.s.l., 45.22209° N, 80.02463° E, 7.VI.2016, A.T., 18 ex., 8.VI.2016, A.T., 5 ex., 10.VI.2016, A.T., R.K., 9 ex.

Host plants for larvae. *Picea schrenkiana* Fisch. et Mey. (Pinaceae).

Distribution. North Africa (Algeria), Europe, Russia (including the European part, West and East Siberia), Turkey, Iran, India (Kashmir), Nepal, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China (Gansu, Hubei, Shaanxi, Northern Territory, Xinjiang , Inner Mongolia, Yunnan, Xizang), Nearctic.

Agrilinae Laporte, 1835

Agrilini Laporte, 1835

Agrilus Curtis, 1825

Agrilus araxenus lopatini Alexeev, 1964

Material. **10** — 30.VII.1967, leg. Unknown, 1 ex.

Host plants for larvae. *Atraphaxis* L. (Polygonaceae), *Caragana* Fabr. (Fabaceae) [Alexeev 1964; Jendek 2016].

Distribution. Tajikistan, Uzbekistan, Kazakhstan, Kyrgyzstan [Jendek, 2016].

Agrilus fleischeri Obenberger, 1925

as *Agrilus ater* [Tleppaeva et al., 2017a–c; 2018.

Material. **7** — aspen forest, h ~ 1250 m a.s.l., 45.64025° N, 80.91018° E, 15.VI.2016, A.T., 4 ex.

Host plants for larvae. *Populus tremula* L. (Salicaceae).

Distribution. Kazakhstan, Russia (West and East Siberia, Far East), Mongolia, China (Beijing, Heilonjiang, Sichuan, Shaanxi), North Korea, South Korea.

Note. For the first time recorded for southeastern Kazakhstan and mountain system Zhetysu (Dzhungar) Alatau. Previously cited as *Agrilus ater* [Tleppaeva et al., 2017a–c].

Agrilus cuprescens cuprescens Menetries, 1832

Material. **6** — h ~ 1500 m a.s.l., 12.VI.2016, A.T., 1 ex.; **7** — 45.64742° N, 080.89111° E, 14.VI.2016, A.T., 1 ex.; **9** — 1–15.VII.1967, Badenko A.S., 2 ex.

Host plants for larvae. The park is developing in *Rosa* spp. (Rosaceae).

Distribution. Europe, Russia (European part, West and East Siberia, Far East), Turkey, Turkmenistan, Kazakhstan, Mongolia, Japan (Hokkaido), Nearctic region (introduced).

Agrilus cyanenscens cyanenscens Ratzeburg, 1837

Material. **7** — 45.64742° N, 080.89111° E, 14.VI.2016, A.T., 18 ex., aspen forest, h ~ 1250 m a.s.l., 15.VI.2016, A.T., 12 ex.; **8** — h ~ 1176 m a.s.l., 45.52125° N, 80.71629° E, 5.VI.2015, A.T., 1 ex.

Host plants for larvae. *Lonicera* spp. (Caprifoliaceae), *Rhamnus* (Rhamnaceae), *Populus* (Salicaceae) [Kostin, 1973; Bilý, 2002; Gigli, 1999]. In the National Park is collected from the buildings and fallen trees of the aspen *Populus tremula* L. (Salicaceae).

Distribution. Europe, Russia (European part, West and East Siberia, Far East), Turkey, Kazakhstan, Nearctic region (introduced).

Agrilus pratensis pratensis Ratzeburg, 1837

Material. **6** — h ~ 1500 m a.s.l., 11.VI.2016, A.T., 1 ex.; Floodplain of Lepsy river, 1–10.VII.1967, Kostin I.A., Badenko A.C., 1 ex.

Host plants for larvae. *Populus tremula* L., *P. alba* L., *P. nigra* L. [Bílý, 2002]; *Salix* [Alekseev, 1958]; *Salix purpurea* L. [Janicki, 2001] (Salicaceae).

Distribution. Europe, Russia (European part, West Siberia), Turkey, Iran, Kazakhstan, China (Hebei, Shaanxi, Xinjiang, Nei Mongol).

Agrilus subauratus subauratus Gebler, 1833

Material. **8** — h ~ 1162 m a.s.l., 45.47028° N, 80.55076° E, 8.VI.2015, A.T., 1 ex., h ~ 1050 m a.s.l., 9.VI.2015, A.T., 3 ex.

Host plants for larvae. Salicaceae, Betulaceae [Grechkin, 1951; Zagaykevych, 1987; Gigli, 1999; Bílı, 2002]. In the national park is developing in the willow (*Salix argyracea* E.L. Wolf, *S. cinerea* L.).

Distribution. Europe (except north), Russia (European part, West Siberia), Turkey, Kazakhstan.

Agrilus suvorovi Obenberger, 1935

Material. **6** — h ~ 1500 m a.s.l., 11.VI.2016, A.T., 1 ex.; **7** — 45.64742° N, 080.89111° E, 14.VI.2016, A.T., 1 ex., 15.VI.2016, A.T., 6 ex.; **9** — h ~ 1176 m a.s.l., 45.52125° N, 80.71629° E, 3.VI.2015, A.T., 8 ex.

Host plants for larvae. *Populus tremula* L. (Salicaceae).

Distribution. Europe, Russia (European part, Siberia, Far East), Turkey, Kazakhstan.

Agrilus tschitscherini Semenov, 1895

Material. **8** — h ~ 1050 m a.s.l., 9.VI.2015, A.T., 56 ex.

Host plants for larvae. *Salix* spp. (Salicaceae).

Distribution. Tajikistan, Uzbekistan, Kazakhstan.

Agrilus viridis viridis (Linnaeus, 1758)

Material. **9** — 1, 15.VII.1967, Badenko A.S., 2 ex.; 4 km SE of the Lepsinsk village, Vilinka river, 17.VI.2001, Gromov A.V., 1 ex.

Host plants for larvae. *Salix* spp., *Populus* spp. (Salicaceae).

Distribution. North Africa (Algeria, Morocco, Madeiro Archipelago, Tunisia), Europe, Russia (European part, West and East Siberia, Far East), Turkey, Iran, Turkmenistan, Kazakhstan, Mongolia, China (Beijin, Hebei, Jilin), Japan (Hokkaido).

Agrilus zigzag Marseul, 1866

Material. **3** — h ~ 1303 m a.s.l., 45.23675° N, 80.01707° E, 11.VI.2015, A.T., 22 ex.; **5** — h ~ 1400 m a.s.l., 12.VI.2015, A.T., 8 ex., H-1200 m a.s.l., 10.VI.2016, A.T., 7 ex.

Host plants for larvae. *Artemisia santolinifolia* Turcz. et Bess. (Asteraceae).

Distribution. Bulgaria, Ukraine, Russia (European part, except north), Kazakhstan.

Aphanisticini Jacquelin du Val, 1863

Cylindromorphus Kiesenwetter, 1857

Cylindromorphus popovi (Mannerheim, 1853)

Material. **5** — h ~ 1400 м, 12.VI.2015, A.T., 2 ex.; **8** — h ~ 1082 m, 45.47124° N, 80.55165° E, 6.VI.2015, A.T., 3 ex., h ~ 1162 m, 45.47028° N, 80.55076° E, 8.VI.2015, A.T., 11 ex.; **9** — 1.15.VII–1967, Badenko A.S., 5 ex., h ~ 1176 m a.s.l., 45.52125° N, 80.71629° E, 3.VI.2015, A.T., 2 ex.; **11** — 13.VI.2015, A.T., 7 ex.

Host plants for larvae. Unknown.

Distribution. Ukraine, Russia (European part, except north, West and East Siberia), Kazakhstan, Kyrgyzstan, Mongolia, China (Nei Mongol).

Coraebini Bedel, 1921

Coraebus Gory et Laporte, 1839

Coraebus elatus elatus (Fabricius, 1787)

Material. **8** — h ~ 1050 m a.s.l., 7.VI.2015, A.T., 1 ex., h ~ 1162 m a.s.l., 45.47028° N, 80.55076° E, 8.VI.2015, A.T., 1 ex.; **9** — 1–15.VII.1967, Badenko A.S., 5 ex.; **11** — 13.VI.2015, A.T., 1 ex.

Host plants for larvae. In the herbaceous plants of the family Rosaceae [Gobbi, 1986; Janicki, 2001; Bílý, 2002].

Distribution. North Africa (Algeria, Egypt), Europe (except for the north), Syria, Israel, Iraq, Russia (European part, West Siberia), Turkey, Iran, Turkmenistan, Tajikistan, Uzbekistan, Kazakhstan.

Tracheini Laporte, 1835

Habroloma C. G. Thomson, 1864

Habroloma breiti Obenberger, 1918

Material. **9** — 1–15.VII.1967, Badenko A.S., 8 ex.

Host plants for larvae. Unknown.

Distribution. Ukraine, Russia (South European part, East and West Siberia), Kazakhstan Kyrgyzstan.

Trachys Fabricius, 1801

Trachys minuta minuta (Linnaeus, 1758)

Material. **6** — h ~ 1500 m a.s.l., 12.VI.2016, A.T., 2 ex.; **8** — h ~ 1176 m a.s.l., 45.52125° N, 80.71629° E, 4.VI.2015, A.T., 3 ex, h ~ 1050 m a.s.l., 45.48078° N, 80.51806° E, 9.VI.2015, A.T., 3 ex.

Host plants for larvae. Mining leaves of trees and shrubs from the families Salicaceae, Betulaceae, Aceraceae, Ulmaceae, Rosaceae, Fagaceae, Convolvulaceae, Celastraceae [Kryshtal, 1959; Gobbi, 1986; Zagaykevych, 1987; Janicki, 2001; Bílý, 2002]. We collected beetles from willow *Salix caprea* L.

Distribution. Europe, Syria, Russia (European part, West and East Siberia, Far East), Turkey, Iran, Kazakhstan, Mongolia, China (north).

Discussion

Thus, 24 species and subspecies of jewel beetles from 10 genera, 9 tribes and 3 subfamilies (Chrysochroinae, Buprestinae, Agrilinae) were found in the national park Zhongar-Alatau.

By species diversity at the level of subfamilies, the jewel beetles are distributed as follows: Chrysochroinae — 3 species (12.5 %, of the total fauna identified), Buprestinae — 7 (29.7 %), Agrilinae — 14 (58.3 %).

The genera *Agrilus* (10 species), *Anthaxia* (3 species) and *Chrysobothris* (3 species and subspecies) are the most abundant in the mountain forests.

Trophically the identified species of buprestids associated with trees and shrubs from the 15 families: Aceraceae (1), Asteraceae (1), Betulaceae (1), Caprifaliaceae (1), Celastraceae (1), Convolvulaceae (1), Fabaceae (1), Fagaceae (1), Juglandaceae (1), Pinaceae (5), Polyganaceae (1), Rhamnaceae (1), Rosaceae (3), Salicaceae (10), Ulmaceae (2), Among the most preferred plant species of plants are *Populus* (7 species), *Salix* (4) (Salicaceae), *Picea* (3), *Abies* (2).

The identified species of jewel beetles are confined to six altitude belts and biotopes.

The shrub-steppe belt (800–2200 m a.s.l.). At the study area, this natural zone is well marked on the southern slopes, at the cordons Baskan, Zhalanash and Sarkan, in a slightly modified form under the cultural apple orchards, it is also present in the Osinovaya cordon. It is characterized by the rich herbaceous plants with a predominance of cereals and wormwood. Shrubs are presented by ephedras (*Ephedra intermedia* Schrenk et C.A. Mey., *E. lomatolepis* Schrenk), felted cherry (*Cerasus tianschanica* Pojark.), dog-rose (*Rosa beggeriana* Schrenk ex Fisch. et CA Mey., *R. laxa* Retz., *R. platyacantha* Schrenk.), meadowsweet (*Spiraea hypericifolia* L.), goat's-wheat (*Atraphaxis* spp.), cotoneaster (*Cotoneaster melanocarpus* Fisch. ex A. Blytt), honeysuckle (*Lonicera microphylla* Willd. ex Roem. et Schult.), red currant (*Ribes heterotrichum* CA Mey.), juniper (*Juniperus sabina* L.). Totally, in this altitude belt 5 species and subspecies (20,83 % of the entire detected fauna) are found: *Agrilus araxenus lopatini, A. cuprescens cuprescens, A. zigzag, Cylindromorphus popovi, Habroloma breiti*.

Mining and flood plain forests. Azonal mountain ecosystem is well expressed in the territories of all the examined cordons. In the tree storey, various species of willow (*Salix* spp.), thalassic poplar (*Populus talassica* Kom.), aspen (*Populus tremula* L.), elm (*Ulmus pumila* L.), birch (*Betula pendula* Roth, *B. pubescens* Ehrh.), maple (*Acer negundo* L.) are prevailed. In the underbrush zone, the buckthorn (*Rhamnus cathartica* L.), bird-cherry (*Padus racemosa* (Lam.) Gilib.), guelder rose (*Viburnum opulus* L.), hawthorn (*Crataegus altaica* (Loud.) Lange, *C. songarica* K. Koch), dog-rose (*Rosa acicularis* Lindl., *R. laxa* Retz.), honeysuckle (*Lonicera tatarica* L.), German tamarisk (*Myricaria bracteata* Royle), cotoneaster (*Cotoneaster melanocarpus* Fisch. ex A. Blytt), blackberry (*Rubus caesius* L.) are common. In total, 12 species and subspecies (50.0 %) of buprestids were identified in this ecosystem: *Dicerca aenea validiuscula, D. obtusa, Poecilonota variolosa variolosa, Chrysobothris affinis nevskyi, C. affinis tremulae, Agrilus fleischeri, A. cyanenscens cyanenscens, A. tschitscherini, A. viridis viridis, A. subauratus subauratus, A. pratensis pratensis, Trachys minuta minuta*.

Deciduous-fir-forest belt (900–1400 m a.s.l.). It is expressed on the northern slopes in the territory of all the examined cordons. In the tree storey, Siberian fir (*Abies sibirica* Lebed.), aspen (*Populus tremula* L.), elm (*Ulmus pumila* L.), birch (*Betula pendula* Roth, *B. pubescens* Ehrh., *B. tianschanica* Rupr.), maple (*Acer negundo* L.), hawthorn (*Crataegus altaica* (Loud.) Lange, *C. songarica* K.Koch), apple tree (*Malus domestica* Borkh.Nom., *M. sieversii* (Ledeb.) M. Roem.), buckthorn (*Rhamnus cathartica* L.), bird-cherry (*Padus racemosa* (Lam.) Gilib.), plum (*Prunus domestica* L.), mountain ash (*Sorbus tianschanica* Rupr.) are prevailed. In the underbrush zone, guelder rose (*Viburnum opulus* L.), dog-rose (*Rosa acicularis* Lindl., *R. alberti* Regel, *R. laxa* Retz., *R. spinosissima* L.), honeysuckle (*Lonicera karelinii* Bunge, *L. tatarica* L.), cotoneaster (*Cotoneaster melanocarpus* Fisch. ex A. Blytt), blackthorn (*Prunus spinosa* L.), blackberry (*Rubus caesius* L.), raspberry (*Rubus idaeus* L.), currant (*Ribes meyeri* Maxim.) are common. On the forest edges and forest canopy the forest and meadow motley grasses are developed. Total in this vertical belt is revealed 13 species and subspecies (54.2 %): *Dicerca aenea validiuscula, D. obtusa, Poecilonota variolosa variolosa, Anthaxia auriventris, A. quadripunctata, Chrysobothris chrysostigma chrysostigma, C. affinis tremulae, Agrilus fleischeri, A. cyanenscens cyanenscens, A. tschitscherini, A. suvorovi, A. viridis viridis, A. pratensis pratensis*.

Coniferous forest zone (1400–2500 m a.s.l.). It is expressed on the northern slopes in the territory of all the examined cordons. In the tree storey, spruce (*Picea schrenkiana* Fisch, et Mey.) with birch impurities (*Betula pendula* Roth, *B. tianschanica* Rupr.), mountain ash (*Sorbus tianschanica* Rupr.), aspen (*Populus tremula* L.) are dominated. In the underbrush storey, currant (*Ribes meyeri* Maxim.), dog-roses (*Rosa alberti* Regel, *R. spinosissima* L.), honeysuckle (*Lonicera karelinii* Bunge), raspberry (*Rubus idaeus* L.) are common. On the forest edges and forest canopy the forest and meadow motley grasses are developed. Totally, in this altitude belt 5 species and subspecies (20.8 %) are revealed: *Anthaxia auriventris, A. quadripunctata, A. tianshanica, Chrysobothris chrysostigma chrysostigma, Melanophila acuminata*.

Medium herbaceous meadows (1000–2700 m a.s.l.). An independent ecosystem within the fir-leaf and spruce belts distinguished by a rich meadow motley grass. Total in this ecosystem 3 species and subspecies (12.5%) are revealed: *Anthaxia quadripunctata, A. tianshanica, Coraebus elatus elatus*.

Subalpine meadows (2500–2800 m a.s.l.). Vertical belt with a variety of high-mountain vegetation in combination with creeping juniper (*Juniperus pseudosabina* Fisch. et C.A.Mey., *Juniperus communis* L.) and shrubby willows (*Salix* spp.). Total in this vertical belt îná species (4.2 %), *Anthaxia tianshanica,* is revealed.

Thus, the most richly populated are mountain-flood (50.0 %), deciduous-spruce-wood belt (54.2 %), the bush-steppe (20.83 %), coniferous wood (20.83 %) and middle mixed grass meadows (12.5 %). One species of jewel beetles found in subalpine meadows (4.2 %).

For the southeastern Kazakhstan, *Agrilus fleischeri,* was recorded for the first time. *Agrilus fleischeri* and *Trachys minuta minuta* are registered for Zhetysu (Dzhungar) Alatau mountain system for the first time.

Conclusions

The arid semi-desert belt is not represented in the territory of the Dzhungar-Alatau Nature Park, where, traditionally for Central Asia, the jewel-beetles are most numerous, especially from the genera *Acmaeoderella*, *Capnodis*, *Sphenoptera*, which are not found in other mountain belts. Therefore, the species composition of the jewel-beetles in the national park is relatively poor, but rather peculiar with the predominance of species from the «forest» genera *Agrillus*, *Anthaxia*, *Dicerca*. It should be noted the occurrence in the fauna of the Zhetysu (Dzhungar) Alatau mountain system of such species as *Poecilonota variolosa*, *Agrilus fleischeri, Trachys minuta minuta*, which are typical for the northern mountain systems of Altai and Saur-Tarbagatai. Also in the territory of the natural park was found the mountain Middle Asian species *Dicerca obtusa*, which was not previously recorded, for the mountain system of the Dzungar Alatau. Analysis of the altitude-belt distribution of the jewel-beetles showed the prevalence of buprestids in the forest ecosystems (mountain-flood-plain forests, fir-leaf belt).

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