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Ecological-Faunistic Analysis of Longhorn Beetles(Coleoptera: Cerambycidae)of Fergana Valley

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Annotation: The article gives information on the ecological analysis of the fauna of the longhorn beetles in the Fergana Valley.There are 81 species and subspecies belonging to the 30 genera of 6 subfamily of longicorn's in this territory. Of these, 21 (25.9%) species belonging to 13 genera of the subfamilies – *Prioninae, Cerambycinae and Lamiinae* were recorded for the first time in the Fergana Valley. Of those above, 1 subspecies is considered to be endemic to the fauna of Uzbekistan.14genera (46.7%) of longhorn beetles are monotypic, 7 genera (23.3%) are bitypic, 4 genera(13.3%) are trityptical, 2 genera (6.7%) are tetratypical and 3 genera (10%) are polytypic.

Out of the identified insects, *S.minutusP.margelanicum, S.cardinalis, A.sarta, X.namanganensis, T.pilosum, T.bicoloricornis ferganensis*are stated to bedominants in the fauna. The identified longhorn beetles feed on 36 species of fruit and ornamental trees and shrubs in the valley. According to the trophical specialization of beetles, polyphages consist of 8 species (9.9%), oligophages – 9 species (11.1%) and monophages– 7 species (8.6%). The abundance of orchards, alleys of ornamental trees and alleys in the Fergana Valley allowslonghorn beetles to constantly multiply and reproduce and spread in different directions massively, stably and randomly.

Introduction.

The *Cerambycidae* family is the largest group of the Coleoptera.Today, more than 36000 species of this family are registered officially[17].Beetles are widespread in Central Asian countries of Uzbekistan, Tajikistan, Kyrgyzstan, Turkmenistan and Kazakhstan. About 50 species of this family have been identified in Uzbekistan, more than 20 of which are dendrophilousand feed and live on the trunks, branches and roots of ornamental and fruit trees[12, 13, 14, 15, 16].

There has been information about the occurrence of beetles of economic importance in the scientific sources regarding the etnomofauna of the Central Asian and the territory of Uzbekistan[11, 18, 19, 20]. This data tells us that they are met in Fergana valley. In particular, the diversity of species in agrocenoses is expanding due to the introduction or influx of harmful species into our country and the specialization of crops, which are now spreading around the world under the influence of natural and anthropogenic factors[20, 21, 24]. This, in turn, requires extensive research on the coleopterafaunaof the Fergana Valley. Therefore, the fauna of longhorn beetles of the Fergana Valley was studied ecologically.

Materials and methods of research.

Entomology and generally accepted coleopterological methods [1, 4, 5, 6] were used in the study fauna and ecology of beetles during the course of years 2016-2020. During the study, 3657 insect specimens in the larval and imago state were collected and studied elaborately. Collections were prepared from several images of important species. The collections included 23 – Lepturinae, more than 14 – Spondylidinaes,57 –Apatophyseinae, 62 – Cerambycinae and67 species – Prioninae.

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A modern XSP 500 SMtrinocularmicroscope was used to identify the type and morphology of the beetles. The collected samples and collections are stored in the Laboratory of Experimental Biology of Fergana State University.

The results of the research and detailed discussion.

Faunisticanalysis shows that the fruit and ornamental trees of the Fergana valley contain 30 genera, 81 species and subspecies of longhorn beetles belonging to 6 subfamily of the Cerambycidae[2, 3;4; 7;8, 9, 10](Table 1)**.**

According to the taxonomic composition of the coleopterophaunalonghorn beetles, the number of genera belonging to the subfamily Lamiinaeis slightly lower (6, 20% of the total genus), but the number of them leads in terms of species weight (33 species, 40.7% of the total species). This situation can also be explained by their prevalence in nature. In particular, there are 16 species of the genus named *Phytoecia*Dejean in the subfamily in the Fergana valley,that is an overwhelming number over all other genera. Another large genus is *Agapanthia*Audinet-Serville,

where beetles belonging to this genus consist of 9 species (11.1%).

(Table 1)

Distribution of longhorn beetles by subfamily, genus and species

The name of small subfamilies	Number of genus	Totalshare in relation to genus (%)	The number of species	Percentage of total species (%)
Prioninae	9	30%	21	25,9%
Lepturinae	1	3,3%	1	1,2%
Spondylidinae	1	3,3%	1	1,2%
Apatophyseinae	1	3,3%	4	4,9%
Cerambycinae	12	40%	21	25,9%
Lamiinae	6	20%	33	40,7%
Total:	**30**	**100**	**81**	**100**

The subfamily such as Prioninae and Cerambycinae come next in terms of the weight of species. In particular, 9 (30%) genera of the subfamily Prioninae included 21 species (25.9%) and 12 (40%) genera of the Cerambycinaeincluded 21 species (25.9%). Of the above mentioned genera, only the genus *Psilotarsus*Motschulsky, belonging to the subfamily of Prioninae, had 8 species (9.9%) of longhorn beetles, while all other genus included only 4 species.

The high proportion of the listed large genus (*Psilotarsus*Motschulsky, *Agapanthia*Audinet-Serville, *Phytoecia*Dejean) in the fauna has also been reported by other world-renowned researchers [2, 3, 6; 8].

It should be noted that several species such as *Aeolesthessarta, Xylotrechus (Turanoclytus) namanganensis, Xylotrechusgrumi, Turaniumpilosum* are the most common species in the Fergana valley and cause serious damage to trees.

Studies have shown that while 4 species (4.9%) of the Apatophyseinae can occur in the valley, only 1 species (1.2%) of the Lepturinae and Spondylidinae are reported to be met in the valley.

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The presence of longhorn beetles belonging to 30 genera was observed in the trees and shrubs found in the valley. 14 genera of them are monotypic and it accounts for 46.7% of the total genera. 7 genera are bitipyc and it accounts for 23.3% of the total. 4generaare tritypic accounting for 13.3%. 2 generaare tetratypical and it accounts for 6.7% of total. 3 generaare polytypic that combine many (8, 9, and 16 species) species accounting for 10%.

As a result of the study, 21 (25.9%) species of longhorn beetles belonging to 13 genera of the subfamilies Prioninae, Cerambycinae and Lamiinae were recorded

for the first time in the Fergana Valley. Their description is given below.

Subfamily: PRIONINAE

Genus:*Psilotarsus* Motschulsky,1860. This genus combines 5 species in the Europe, Palearctic, Central Asia, and Northeast Asia. Of these, 4 species are found in the fauna of Uzbekistan [5,25].

***Psilotarsushirticollis*Motschulsky, 1860.**

Studied samples and living areas: 40 18'11"N, 71 40'48"E, AkbilalFergana,Uzbekistan: Apricot garden (25.04.2010) ♀2 ♂1; 40 30'02"N, 71 14'07"E, A.Navoi, Baghdad:Wheat field(6.05.2012) ♀2 ♂1.

Genus:*Lobarthron* Semenov, 1900. This genus includes 39 species in Kyrgyzstan, Kazakhstan and Uzbekistan. There are 2 species in the fauna of Uzbekistan [5]. Out of these, *Lobarthronbalassogloi*(Jakovlev, 1885) is endemic to Uzbekistan. ***Lobarthronbalassogloi* (Jakovlev, 1885).**

Studied samples and living areas:40 24'26"N, 71 42'05"E, Satkak, Fergana, Uzbekistan(16.05.2013).Host plantsunknown.

Genus:*Stenocorus*Geoffroy, 1762. This genus includes about 20 species in Italy, Azerbaijan, Armenia, Moldova, Spain, Mongolia, Georgia, Russia, Ukraine, Iran, Turkey, Kazakhstan, Uzbekistan. There are 4 species in the fauna of Uzbekistan [4]. 2 species were found in the territory of valley.

***Stenocorusminutus*(Gebler, 1841).**

Studied samples and living areas:40 27'17"N, 71 11'38"E, Samarkand, Baghdad, Uzbekistan: Diamond Garden and the surrounding meadow (12.06.2015) ♀3 ♂5; 40 26'40"N, 70 52'33"E,Beshkapa, Uzbekistan dist.:Pastures (23.05.2016) ♀1 ♂1.

Genus:*Stictoleptura* Casey, 1924. This genus includes about 47 species in North Africa, Armenia, Azerbaijan, Belgium, Bulgaria, Denmark, France, Germany,

Georgia, Greece, Italy, Romania

Spain, Russia, Switzerland, Ukraine, Iran, Kazakhstan, Iraq, Israel, Lebanon, Syria,

Turkey. There are 1 species in the fauna of Uzbekistan.

***Stictoleptura cardinalis* (K. Daniel & J. Daniel, 1898).**

Studied samples and living areas:40 31'38"N, 72 04'40"E, May,Kuva, Uzbekistan:*Salixalba*(05.05.2015) ♀5 ♂9; 40 18'11"N, 71 40'48"E, Akbilal, Fergana, Uzbekistan:*Populus alba* (06.05.2015) ♀1 ♂1.

Subfamily: CERAMBYCINAE

Genus: *Turanium* Baeckmann, 1923. This genus includes 13 species in China, Russia, North Kazakhstan, Kyrgyzstan, Uzbekistan. There are 3 species in the fauna of Uzbekistan[5] and 2 species of them meets in the Fergana valley.

Turanium pilosum (Reitter, 1891).

Studied samples and living areas:40 53'04"N, 71 27'25"E,Akhsikent, Mingbulak, Namangan: Tugai (21.05.2017) ♀6 ♂4; 40 26'52"N, 70 33'51"E,

Hapalak, Besharik, Uzbekistan:Apple tree (12.06.2017) ♀1♂1; 40 27'43"N, 70 51'46"E,Jaloer, Ferkat, Uzbekistan: Juglans garden (27.06.2018) ♀1♂1.

Turanium scabrum Kraatz, 1882.

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Studied samples and living areas:40 33'12"N, 71 16'02"E,Khamzaobod, Altiarik, Uzbekistan: Grapes garden(17.06.2016) ♀0 ♂1;

Genus: *Ropalopus* Mulsant, 1839. This genus includes 22 species in France, Russia, Ukraine, Turkey, Kazakhstan, Uzbekistan, Kyrgyzstan[1]. There are 2 species in the fauna of Uzbekistan [5] and 1 species of them meets in the Fergana valley. *Ropalopus nadari* Pic.

Studied samples and living areas:40 26'40"N, 70 52'33"E,Beshkapa, Uzbekistan distr., Fergana, Uzbekistan:Host plants unknown(22.07.2016) ♀1 ♂0;

Genus: *Chlorophorus* Chevrolat, 1863.

This genus includes about 130 species in Iran, Iraq, the Middle East, western Kazakhstan, Uzbekistan, Kyrgyzstan[1]. There are 3 species in the fauna of Uzbekistan [5] and 1 species of them meets in the Fergana valley.

Chlorophorus elaeagni Plavilstshikov, 1956.

Studied samples and living areas:40 18'11"N, 71 40'48"E,Akbilal, Fergana, Uzbekistan:*Eleagnus* (11.05.2012) ♀6 ♂11; 40 53'04"N, 71 27'25"E,Akhsikent (Tugai),Mingbulak, Uzbekistan:*Eleagnus*(23.06.2012) ♀11 ♂7;40 50'41"N, 71 56'48"E, Polvon-kul, Balikchi, Andijan, Uzbekistan(28.06.2014) ♀3 ♂1;

Genus:*Trichoferus* Woolaston, 1854. This genus includes about 28 species inLithuania, Russia, Iran, Iraq, western Kazakhstan, North Africa[5]. There are 3 species in the fauna of Uzbekistan [1].

Trichoferus campestris(Faldermann, 1835).

Studied samples and living areas:40 31'35"N, 72 04'15"E,Tolmozor, Kuva, Uzbekistan: Mulberry plantation. (15.06.2016) ♀9 ♂5; 40 26'10"N, 70 53'20"E,Yakkatut, Uzbekistan distr., Uzbekistan: Mulberry tree(11.07.2016) ♀2 ♂1;40 53'19"N, 71 27'44"E,Joja, Mingbulak, Uzbekistan: Diamond Garden(29.07.2016) ♀2 ♂1;40 53'04"N, 71 27'25"E, Akhsikent,Mingbulak, Uzbekistan: Tugai(20.07.2017) ♀7 ♂5.

Genus:*Trichoferus* Woolaston Fabricius, 1793. This genus includes about 13 species inRussia and the southern and central zones of Europe, the North Caucasus, North America, Iran, Kazakhstan, Mongolia, China, the Korean Peninsula, Japan[1].There are 3 species in the fauna of Uzbekistan [5] and 1 species of them meets in the Fergana valley.

Molorchus (Caenoptera) heptapotamicus Plavilstshikov, 1940.

Studied samples and living areas:40 25'25"N, 71 58'22"E, Kuvasay, Fergana, Uzbekistan:*Salix alba* (02.07.2016) ♀1 ♂1; 40 18'11"N, 71 40'48"E,Akbilal, Fergana, Uzbekistan; Apple tree(13.07.2017) ♀3 ♂0.

Genus:*Cleroclytus* Kraatz, 1884. This genus includes about 7 species in Kyrgyzstan, Kazakhstan, Uzbekistan.1 species of them meets in Uzbekistan[5]. *Cleroclytus semirufus semirufus* Kraatz, 1884

Studied samples and living areas:40 45'15"N, 71 43'23"E, Ok-oltin, Ulugnor, Uzbekistan:Apple tree (11.06.2015) ♀2; 40 48'20"N, 70 55'30"E,Gurumsaroy, Pop, Uzbekistan: Around appricot garden (15.07.2016) ♀1 ♂2. 40 18'16"N, 71 50'00"E,Avval, Fergana, Uzbekistan: *Platanusorientalis*(15.07.2016) ♀1 ♂3.

Subfamily: LAMIINAE

Genus:*Agapanthia* Audinet-Serville, 1835. This genus includes about 73 species inAustria, Czech Republic, France, Germany, Georgia, Greece, Hungary, Italy, Moldova, Netherlands, Poland, Slovakia, Spain, Russia, Switzerland, Ukraine, Yugoslavia, Kazakhstan, Uzbekistan. There are 7 species in the fauna of Uzbekistan [4] and 2 species of them meets in the Fergana valley. *Agapanthia dahli alaiensis* Kratochvíl, 1985

Studied samples and living areas:40 24'31"N, 71 47'21"E, Joydam, Fergana,

Uzbekistan; Helianthus fields (06.07.2015) ♀11 ♂21; 40 26'10"N, 70 53'20"E,
Yakkatut, Uzbekistan distr., Uzbekistan: around corn fields (17.08.2015) ♀12♂7;40 53'19"N, 71 27'44"E, Joja, Mingbulak, Uzbekistan: corn fields (18.08.2016) ♀5 ♂1; 40 20'55"N, 70 40'12"E, Rapkan, Besharik, Uzbekistan: corn fields(29.08.2016) ♀13 ♂11.

Agapanthia laleucaspis Steven, 1817

Studied samples and living areas:40 24'26"N, 71 42'05"E,Satkak, Fergana, Uzbekistan:around wheat field (22.05.2018) ♀1 ♂0;

Genus:*Phytoecia* Dejean, 1835. This genus includes about 135 species inAzerbaijan, Albania, Armenia, Austria, Bosnia and Herzegovina, Bulgaria, Belarus, Croatia, Czech Republic, Georgia, Greece, Hungary, Italy, Macedonia, Moldova, Portugal, Romania, Slovakia, Slovenia, Spain, Russia, Switzerland, Switzerland, Yugoslavia, Iran, Kazakhstan, Syria, Tajikistan, Turkmenistan, Uzbekistan[1].There are 16 species in the fauna of Uzbekistan [4] and 4 species and 2 subspecies of them meets in the Fergana valley.

Phytoecia circumdata Kraatz, 1882

Studied samples and living areas:40 10'48"N, 71 43'13"E,Vodil, Fergana,
Uzbekistan: around cotton field(17.06.2017) ♀2;

Phytoecia varentzowi Semenov, 1896

Studied samples and living areas:40 18'11"N, 71 40'48"E,Akbilal, Fergana,
Uzbekistan: *Juglans regia* (13.05.2016) ♀1♂1;

40 28'12"N, 70 51'47"E,Kaldushon, Ferkat, Uzbekistan: *Juglans regia*(26.07.2016) ♂1; 40 16'14"N, 71 54'28"E,Loghon, Fergana, Uzbekistan: *Juglans*
regia(30.05.2017) ♂2;40 50'41"N, 71 56'48"E,Polvon-kul,Balikchi dist.,
Uzbekistan: *Juglans regia* (30.05.2017) ♀1;

Phytoecia pallidipennis Plavilstshikov, 1926

Studied samples and living areas:40 18'11"N, 71 40'48"E,Akbilal, Fergana, Uzbekistan: Appricot garden (host plants unknown) (23.08.2017) ♂1.

Phytoecia acridula Holzschuh, 1981

Studied samples and living areas:40 25'25"N, 71 58'22"E,Kuvasay, Fergana, Uzbekistan: Park. host plants unknown (27.07.2017) ♀1.

Phytoecia pustulata pustulata Schrank, 1776

Studied samples and living areas:40 27'17"N, 71 11'38"E, Samarkand, Bagdad, Uzbekistan: Around cotton fields(12.09.2016) ♀1♂2;

Phytoecia virgula virgula Charpentier, 1825

Studied samples and living areas:40 10'48"N, 71 43'13"E,Vodil, Fergana, Uzbekistan: *Ferula*(12.05.2012) ♀1.

Genus:*Saperda* Fabricius, 1775. This genus includes about 28 species in Russia, Azerbaijan, Albania, Armenia, Austria, Bulgaria, Belarus, Croatia, Czech
Republic, Estonia, Finland, France, Germany, Georgia, Greece, Hungary, Italy,
Latvia, Lithuania, Moldova, Norway, Poland, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey, Ukraine, Iran, Kazakhstan, Uzbekistan, Mongolia[1].There are 2 species in the fauna of Uzbekistan [4] and Fergana valley.

Saperda populnea populnea Linnaeus, 1758

Studied samples and living areas:40 26'40"N, 70 52'33"E,Beshkapa,
Uzbekistan distr., Uzbekistan: *Populus nigra*(04.04.2012) ♀2 ♂7; 40 26'25"N, 70 33'46"E, Namuna, Besharik, Uzbekistan: *Populus nigra*(12.05.2016)
♀1♂3;40 53'04"N, 71 27'25"E, Akhsikent, Mingbulak, Uzbekistan: Tugai(11.06.2017) ♀5♂3;40 45'15"N, 71 43'23"E,Ok-oltin, Ulugnor, Uzbekistan:

Populus nigra(19.07.2018) ♀2.

Saperda similis Laicharting, 1784

Studied samples and living areas:40 33'16"N, 71 16'14"E, Khamzaobod,
Bagdad, Uzbekistan, Uzbekistan: *Populus nigra*(06.06.2014) ♀1♂2; 40 29'32"N, 70 50'15"E,Bekobod, Ferkat, Uzbekistan: *Populus nigra*(13.08.2016) ♀7 ♂3; 40 19'28"N, 71 00'28"E,Ukchi, Uzbekistan distr., Uzbekistan: *Populus nigra* (21.08.2016) ♀7 ♂3.

Here it should be noted that ***Lobarthron*** Sam. genus ***Lobarthron balassogloi balassogloi*** (Jakovlev, 1885) is considered to be a subspecies endemic to the fauna of Uzbekistan.

Also, the presence of autochthonous, alloxtonand adventive species in the fauna may be the product of significant changes in the complex changes of nature in recent years. Although the species *Polylobarthronmargelanicum* (Thery, 1896) and *Tetropsbicoloricornisferganensis*were first known to be in the valley area [5], their registration on high mountains was also recent.

In this regard, it is natural that the valley's fauna differs from the general fauna of Uzbekistan. This, in turn, requires a separate inventory of species specific to each region of the country.

The identified longhorn beetles are permanently associated with 36 species of fruit and ornamental trees and shrubs in the valley area. Of these, 14 species lived on fruit-trees and 22 species lived on ornamental trees and shrubs(Table 2).

In addition, beetles have also been observed in 20 species of herbaceous
plants, most of which are not primary food plants.

Studies show that 7 species (*G.pratensis, A.sarta, X.namanganensis, T.pilosum, R.nadari, M.heptapotamicus, T.bicoloricornis ferganensis*)of beetles belonging to 7 genera were identified in apple-fruit trees. This accounts for 8.6% of the fauna of longhorn beetles, respectively. It was noted that the rate of occurrence of longhorn beetlesis the same in almost all apple trees. Only in intensive apple orchards were no longhorn beetles recorded. The role of walnuts in the valley region is of particular importance for the reproduction and living of the longhorn beetles. 6 species (7.4%)(*P.turkestanicus, P.heydeni heydeni, S.cardinalis, A.sarta,*

T.pilosum, P.varentzowi)belonging to 5 genera of 3 subfamilies of the longhorn beetles are pests on representatives of a single walnut (*Juglans*).

While 4 species of longhorn beetles are recorded on the trunks of almond, apricot and cherry trees, they occupied fruit trees and shrubs such as pear, peach, cherry, plum and others.

While 2 species of longhorn beetles were found in quince and mulberry, only 1 species *(Aeolesthessarta)* was found in dates and figs.

By analyzing the nutrient spectrum of longhorn beetles, they can be divided into the following groups according to their trophic specialization in fruit and
ornamental trees and shrubs.

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Polyphages. The proportion of polyphagous species is slightly lower than the total fauna (8 species) in the Fergana Valley, accounting for 9.9% of the total fauna. However, due to the polyphagous nature, the larvae of the urban long-mustached beetle (A.sarta) can be noted as a polyphagousin terms of nutritional properties. During the research, it was noted that the urban longhorn beetles feed on 23 species of trees and shrubs (including 14 species of fruit, 9 species of ornamental trees).

The nature of polyphagous longhorn beetlesof the region Namangan

(X.namanganensis) is different and their size is twice less than that of *A.sarta* (12 species). There are also 15 species of *Turonbeetle (T.pilosum)* (6 of them live on fruit trees, 9 of them live on ornamental trees). There are 6 species of*bicoloricornisferganensis,* 6 species of polyphagous as well in this area.

Scientific sources provide information on the type of these insects among the species with a wide range of distribution according to Plavilshchikov (1936). The fact that this species arefound in apple trees, pear trees, quince trees, apricot trees, peach trees, cherry trees in the valley. The mulberry beetle lives in the Fergana Valley in ornamental and fruit trees namely oak, black and white poplars, appletrees, figs, cherries according to Esanboev(2019). The authors note that these species feed on walnuts, poplar, willow and slate trees.

Oligophages.There are the following types: *M. angustatus* (saxaul, sugarcane), *P. hirticollisauliensis* (oak, chestnut, acacia), *P. brachypterus* (sugarcane, nectar), *X. hecate* (biota, spruce), *D.*

baeckman (pine, Schrenk spruce, camel, biota), *T.staudingeri* (pine, Schrenk spruce, camel, biota), *D.mystacinummystacinum* (spruce, fir), *O.oculata* (willow, poplar),*S.populneapopulnea* (willow, poplar) (9 species in total, 11.1%) can be

recorded as oligophages. Monophages. In the fauna, 7 species (*P.heydeni heydeni, P.tschitscherini, S.cardinalis, G.pratensis, X.grumi, M.heptapotamicus, P.varentzowi, T.elaeagni shapovalovi*)of monophages (8.6%) feed on fruit trees, while only 3 species (*M.schmidti, M.heptapotamicus, S.similis)*of beetles have been recorded on ornamental trees.Longhorn beetles can be divided into the following groups according to the diversity of trees and shrubs they live in. This grouping has been studied in other insect families in the Fergana Valley[21; 23].

A group of trees and shrubs with a high diversity of specieslonghorn beetles. This group conditionally included longhorn beetles living on trees with more than 6 species on each plant. In particular, 8 species of beetles live in the Fergana Valley and 6 species in the walnut tree, 10 species in the willow tree, 7 species livein the poplar, and 8 species in the ornamental trees such as pine. It should be noted that trees and shrubs belonging to this group were found to suffer

more damage and death than other plants.

One of the main reasons for this is the long-term planting of apples and walnuts in the Fergana Valley, and the high demand for poplar, pine and willow in construction.

A group of trees and shrubs with a stable diversity of species. This group includes a list of trees and shrubs with 3 to 5 species. That is, in 7 species of fruit trees (pear, quince, almond, apricot, peach, cherry), and in 9 species of ornamental trees (camel, biota, fir, birch, maple, oak, chestnut, acacia), pests are constantly

present. They maintained stability.

A group of trees and shrubs with low diversity rate of species. This group includes trees and shrubs such as palm, fig, mulberry, maple, elm, turan,

sugarcane(table 2).

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Table 2

Biocenotic relations of longhorn beetles and host plants

Host plant	Taxonomic units			
	Subfamily	Genus	Total species	Dominants
Fruit trees and shrubs				
Malus	4	8	8	4
Pyrus	3	4	4	
Cydonia	2	3	3	1
Diospyros	1	1	1	
Juglans	3	5	6	4
Amygdalus	2	4	4	
Armeniaca	3	5	5	2
Persica	3	4	4	
Cerasus avium	3	5	5	
Cerasus	2	4	4	
Prunus	1	2	2	
Ficus	1	1	1	1
Morus	1	2	2	2
Elaeagnus	1	2	2	1
Ornamental trees and shrubs				
Pinus	4	6	6	1
Biota, Thuja	3	3	3	
Picea	5	8	8	
Abies	3	3	3	
Salix	4	10	10	
Populus	3	7	7	5
Platanus	1	1	1	5
Betula	2	4	4	
Acer	2	3	3	
Quercus	2	5	5	
Castanea	2	3	3	
Ailantus	2	4	4	
Robinia	2	3	3	
Ulmus	2	2	2	1
Populus	1	2	2	
Calligonum	1	2	2	

Of the identified insects, *S. minutus P. margelanicum, S. cardinalis, A. sarta,*

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H. namanganensis, T. pylosum, T. bicoloricornisferganensis are dominant in the fauna.

Among the species living in apples, *S. minutus, A. sarta,H.namanganensis, T. pilosum species* predominate, while *S.cardinalis, A.sarta, H.namanganensis, T. pylosum* species have the largest share in nuts. The predators of apricot and mulberry trees are dominated by the urban long-mustached beetle*(A.sarta)* and the Namangan long-mustached beetle *(X.namanganensis*). In quince and figs only *A. sarta* has a large share, while the *monophagous species Xylotrechusgrumi* is

dominant in mulberry.

Although the number of dominants in the overall fauna scale of ornamental trees and shrubs is not large, species such as *Stictolepturacardinalis, Gnathacmaeopspratensis, Aeolesthessarta, Xylotrechus (Turanoclytus) namanganensis, Turaniumpilosum* are high in poplar and willow. Only one dominant species *(A. sarta*) is found in pine and elm.

The distribution, quantitative distribution and frequency of encounters of long-mustached beetle fauna in the Fergana Valley were studied on the basis of methods proposed by LG Ramensky (1971) and M. Bigon, J. Harper, K. Townsend (1989). Accordingly, the longhorn beetles were divided into 3 groups.

Although the number of beetles in the group of endangered species is 6, which is lower than the total fauna, it is characterized by a high quantitative density of insects during the season. They are characterized by a constant presence of high quantitative densities in trees and shrubs, although they are common in various biogeocenoses. This group of beetles can cause serious damage to food plants in the spring and early summer(For example:*S.cardinalis, G.pratensis, A.sarta, X.namanganensis, X.grumi, T.elaeagni shapovalovi*). This same group oflonghorn beetlescan also be found in orchards, which can drastically reduce yields.

After analyzing the distribution rates of fruit and acclimatized tree and shrub beetles by quantitative ratios in the subspecies, we have discovered that 1 from the subfamilyPrioninae, Lepturinae and Lamiinae and 3 representatives from the subfamilyCerambycinae are common species. This condition has also been found in other insect species living in acclimatized trees and shrubs[11].

The share of species with moderate distribution in the fauna is 16%(13 species). Observations show that the frequency of beetles belonging to this group in different entomocenoses is not high, however, their quantitative densities are also easily distinguished by the fact that most of them are moderate. This group includes species such as *P.tschitscherini, P.margelanicum, S.minutus, D.baeckmanni, T.staudingeri, T.pilosum, T.scabrum, R.nadari, T.campestris, O.oculata, P.varentzowi, S.similis, T.bicoloricornisferganensis.*Although these beetles are relatively rare, they can multiply rapidly when environmental conditions are right and can cause significant damage to forage plants. This condition is more common in the species such as *Stenocorus (s. Str.) Minutus, Turaniumpilosum,Turaniumscabrum, Trichoferus campestris, Tetropsbicoloricornisferganensis,Polylobarthronmargelanicum of longhorn beetles.*

The occurence of rare species is low, with 62 species recorded over the years of the study. Their high proportion is due to the fact that the share of randomly encountered species and species observed in herbaceous plants is higher than in other groups. Representatives of rare species recorded in the Fergana Valley include *Molorchus (Caenoptera) heptapotamicus, Cleroclytussemirufussemirufus, Saperdapopulneapopulnea, Psilotarsusheydeniheyden and others*.

Conclusion

There are 81 genera and 30 subspecies of 30 genera belonging to 6 subspecies of the family Cerambycidae ***i***n the dendroflora of the Fergana Valley, The Lamiinae subfamily of the longhorn beetles is the highest in terms of the number of species, with 33 species distributed widely. In each of the subfamilies Prioninae and Cerambycinae 21 species damage fruit and ornamental trees. Although the number of identified dominant species are few(S.minutusP.margelanicum, S.cardinalis, A.sarta, X.namanganensis, T.pilosum, T.bicoloricornis ferganensis), their quantitative density is high and they are characterized by the intensity of the mass reproduction feature.

The majority of longhorn beetles are monotypic, with a small number of genera combining two or more species, while polytypes have only 3genera. From this statement it can be concluded that the

climatic conditions and diversity of food resources in the region have led to a high proportion of unsustainable species.

21 (25.9%) species of longhorn beetles belonging to 13 genera were recorded for the first time in the Fergana Valley. Out of these, the subspecies

Lobarthronbalassogloibalassogloi (Jakovlev, 1885) is endemic to the fauna of Uzbekistan.

The identified longhorn beetles feed on 36 types of fruit and ornamental trees and shrubs in the valley. Out of these, 14 species are fruit and 22 species are ornamental trees and shrubs. In addition, beetles have also been observed in 20 species of herbaceous plants, most of which are not primary food plants.

According to the trophic specialization of beetles, polyphages consist of 8 species (9.9%), oligophages consist of 9 species (11.1%) andmonophages consist of 7 species (8.6%).

The abundance of orchards, alleys of ornamental trees and alleys in the Fergana Valley allows longhorn beetles to constantly multiply and spread in different directions massively, stable and randomly.

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