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REGIONAL AND GEOGRAPHICAL AREAS OF DISTRIBUTION OF ERECT WINGS

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Annotation: According to the geographic range of orthoptera insects of Central Uzbekistan, it belongs to 9 groups: Trans-Palaeartic species 24, European-Siberian species 7, European-Kazakh species 10, European-Central Asian species 6, Kazakhstan - West Mongolian species 5, Kazakh-Mongolian species 5, Central Asian Kazakhstani species 10, Central Asian species 32, Central Asian species. There are 12 species in Asia and Kazakhstan.

Key Words: Orthoptera, family, generation, species, grasshopper, agrobiotsenoz, landscape, coordination

Introduction. According to their systematic status, the erect-winged insects belong to the class of insects (Insecta: Orthoptera).. More than 20,000 species are known, of which 520 species and subspecies are widely distributed in the Republic of Uzbekistan and other Central Asian countries, which are divided into 2 subspecies and 3 large families [2, 3, 10, 11]. Of these, more than 250 species of the largest locust family are distributed on the territory of our Republic. Although the distribution, biological properties and ecology of Orthoptera, was studied more widely than other types, these data are incomplete and, given natural and anthropogenic changes over the past 20-30 years, and given the incomplete definition of a structure of the kind up to this time, it is important to study the Orthoptera of the territory [5, 6, 7].

Purpose of research. It consists of studying the distribution of areas of erect-winged insects at regional and geographical latitudes.

Method of research. The collection of insect samples was based on General entomological methods and methods developed specifically for subspecies [7]. The following measures were taken to determine the distribution and density of species: that is, if 1-3 insects were collected per hour using an entomological pen, their number was "very low", if 4-10 insects were collected per hour, "low", as well as "permanent species" (11-20 insects per hour), "common but not swarming species" (20-100 insects per hour). The collected insect samples were placed on mattresses and marked with the name of the place where the work was carried out, the duration, and a brief description of the landscape. The collected samples were processed in the entomology Laboratory Of the Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan, divided into stages of their development, the samples were initially examined and their taxonomic status was determined. Insect detectors were

used to determine the taxonomic status of locusts, grasshoppers, and crickets [3, 9]. collection materials were prepared from samples of certain species.

To group species by lifestyle, we Used the method proposed By M. F. Pravdin [7]. Based on this, it was proposed to group insects by their morphological characteristics and types of identified groups of biotopes.

Zoogeographic description of certain species is based on the works of M. E. Sergeev[9], F. Pravdin, L. Mishchenko [8], and I. K. Lopatin [4]. The division of insect fauna elements into latitudes and longitudes is determined by the nature of the area in which they are distributed, soil conditions, and continental climate.

Zoogeography is an integral part of biogeography and studies the laws of animal distribution on Earth. The main object of zoogeography is fauna. A fauna is a population of a particular animal species formed as a result of the historical development of a particular geographical environment - the biogeocenosis. Any zoogeographic study begins with determining the species composition of the fauna of a particular region.It is important to identify elements of fauna within the boundaries of the territory, to have information about the features of its formation, to determine the area occupied by these elements, their number and changes in them. Studying the species composition of

the animal world is a more difficult and time-consuming task. Although studies of the species composition of animals began in the eighteenth century, they have not yet been completed. If the study of vertebrate species composition is nearing completion, then the study of invertebrate species composition is just beginning.The species composition of some insect taxa has been studied from 20 to 40%, and a number of tasks have yet to be solved [3].

A habitat is an area or aquatarium that is home to a particular animal species or population of other taxa that are distributed around the globe. The second Chapter of the dissertation provides information about the distribution of each of the studied species of erectus. For a broader view of this data, species were grouped by latitude and longitude ranges. This analysis was studied using the method of M. G. Sergeev [8].Accordingly, the distribution of 111 species and subspecies identified in the region by latitude and longitude is shown (table 1 and table 2). According to the data found in the study area and the study of habitats, there are 11 polyzonal species (10.0%), 14 steppe species (12.6%), 4 Northern steppe species (3.6%) and 14 Southern steppe species (12.6%). %), 23 semi-desert species (20.7%), 44 desert species (39.7%), and one southern desert species (0.9%). These data by type are shown in table 1.

Table 1-Grouping of erect-winged insect species in Central Uzbekistan by geographical latitude.

№	Geographical latitude	Type	Amount
1		<i>Decticus verrucivorus</i> , <i>Grullatalpa grullatalpa</i> ,	11

	multi-zone	<i>Grullatalpa unispina, Gryllotalpa orientalis Tetrix bolivari, Tetrix subulata, Chorthippus (s.str.) albomarginatus karelini, Glyptobothrus meridionalis, Euthystira brachyptera Chorthippus (s.str.) dichrous, Chorthippus (G.) apricarius</i>	10,0%
2	Prairie	<i>Gryllus bimaculatus, Melanogryllus desertus, Modicogryllus frontalis, Modicogryllus pallipalpis, Pteronemobius gracillis, Pezotmethis tartarus tartarus, Pezotmethis ferghanensis, Pezotmethis nigrescens, Conophyma semenovi semenovi, Conophyma sokolovi modestum, Conophyma sokolovi decorum, Oedaleus decorus, Oedaleus senegalensis, Oedipoda caerulescens,</i>	14 12,6%
3	Northern Steppe	<i>T.caudata, T.Viridissima, Platycleis intermedia, Phaneroptera falcata</i>	4 3,6%
4	Southern Steppe	<i>Modicogryllus bordigalensis, Turanogryllus lateralis, Eyprepocnemis plorans, Truxalis eximia, Mecostethus alliaceus turanicus, Epacromius tergestinus, Aiolopus thalassinus, Locusta migratoria migratoria, Oedipoda miniata, Dociostaurus (s.str.) kraussi, Notostaurus albicornis, Eremippus simplex simplex, Oxya fuscovittata, Dociostaurus (S.) kraussi nigrogeniculatus</i>	14 12,6%
5	Semidesert	<i>Decticus albifrons, Tartarogryllus tartarus, Gryllodinus kerkennensis, Velarifictorus bolivari, Oecanthus turanicus, Tetrix tartara tartara, Egnatius apicalis, Acrida oxycephala, Pyrgoderma armata, Mioscirtus wagneri, Acrotylus insubricus, Sphingonotus nebulosus, Sphingonotus nebulosus discolor, Sphingonotus salinus, Sphingonotus maculatus maculatus, , Hyalorrhapis clausi, Hyalorrhapis turcmena, Leptopternis gracilis, Ramburiella turcomana, Dociostaurus (s.str.) tartarus, Kazakia tarbinskyi, Mesasippus kozhevnikovi kozhevnikovi, Dericorys tibialis</i>	23 20,7%
6	Desert	<i>Glyphonotus alactaga, Eremogryllodes semonovi, Melanotmethis fuscipennis, Asiotmethis heptapotamicus, Pyrgomorpha bispinosa deserti, Chrotogonus turanicus, Atrichotmethis semenovi, Thrinchus desertus, Thrinchus turcmenus, Thrinchus campanulatus, Strumiger desertorum desertorum, Diexis varentzowi, Dericorys albidula, Tropidopola</i>	44 39,7 %

		<i>turanica turanica, Tropidopola turanica iliensis, Anacridium aegyptium, Calliptamus turanicus, Calliptamus italicus italicus, Heteracris littoralis littoralis, Heteracris adspersa, Heteracris pterosticha, Egnatioides desertus desertus, Egnatioides desertus iliensis, Gonista sagitta, Ochridia hebetata kazaka, Ochridia hebetata hebetata, Duroniella gracilis, Duroniella kalmyka, Hilethera turanica, Oedipoda fedtschenkoi, Sphingonotus halocnemi, Sphingonotus halophilus, Sphingonotus miramae, Sphingonotus elegans, Sphingonotus octofasciatus, Sphingonotus rubescens rubescens, Sphingonotus satrapes, Pseudosphingonotus savignyi, Helioscirtus moseri, Leptoternis iliensis, Ramburiella foveolata, Dociostaurus (s.str.) maroccanus, Dociostaurus (s.str.) plotnikova, Glyptobothrus biguttulus</i>	
7	Southern-desert	<i>Calliptamus barbarus cephalotes</i>	1 0,9%

According to the results of zoogeographic grouping of species of erect insects of Central Uzbekistan by longitude geographical areas, they were divided into 9 groups (table 2).

Table 2-Grouping of erect-winged insect species in Central Uzbekistan by geographical longitude regions

№	Geographical longitude	Type	Amount
1.	TRANS-Arctic	<i>T.viridissima, Decticus verrucivorus, Phaneroptera falcata, Ruspolia nitidula, Gryllus bimaculatus, Pteronemobius heydeni concolor, Pteronemobius gracillis, Grullatalpa grullatalpa, Grullatalpa unispina, Gryllotalpa orientalis Tetrix bolivari, Tetrix subulata, Eyprepocnemis plorans, Mecostethus alliaceus turanicus, Euthystira brachyptera, Aiolopus thalassinus, Locusta migratoria migratoria, Chorthippus (s.str.) albomarginatus karelini, Oedaleus decorus, Oedaleus senegalensis, Glyptobothrus meridionalis, Glyptobothrus biguttulus, Dericorys albidula, Oxya fuscovittata</i>	24 21,6%
2.	European Siberian	<i>T. caudata, Platycleis intermedia, Modicogryllus bordigalensis, Modicogryllus frontalis, Gryllodinus kerkennensis, Calliptamus barbarus cephalotes, Epacromius tergestinus.</i>	7 6,3%
3.	The European-	<i>Melanogryllus desertus, Turanogryllus lateralis,</i>	10

	Kazakhstan	<i>Calliptamus italicus italicus</i> , <i>Oedipoda miniata</i> , <i>Oedipoda caerulea</i> , <i>Acrotylus insubricus</i> , <i>Ramburiella turcomana</i> , <i>Dociostaurus</i> (S.) <i>kraussi kraussi</i> , <i>Dociostaurus</i> (S.) <i>kraussi nigrogeniculatus</i> , <i>Notostaurus albicornis</i>	9,0 %
4.	Europe-Central Asia	<i>Modicogryllus pallipalpis</i> , <i>Decticus albifrons</i> , <i>Tropidopola turanica turanica</i> , <i>Tropidopola turanica iliensis</i> , <i>Anacridium aegyptium</i> , <i>Dociostaurus</i> (s.str.) <i>maroccanus</i>	6 5,4 %
	Europe-Central Asia	<i>Tetrix tartarata</i> , <i>Sphingonotus rubescens rubescens</i> , <i>Sphingonotus salinus</i> , <i>Eremippus simplex simplex</i> , <i>Leptoternis iliensis</i>	5 4,4 %
5.	Kazakhstan - Western Mongolia	<i>Sphingonotus elegans</i> , <i>Sphingonotus nebulosus</i> , <i>Sphingonotus nebulosus discolor</i> , <i>Leptoternis gracilis</i> , <i>Mesasippus kozhevnikovi kozhevnikovi</i>	5 4,4 %
6.	Central Asia-Kazakhstan	<i>Glyphonotus alactaga</i> , <i>Tartarogryllus tartarus</i> , <i>Oecanthus turanicus</i> , <i>Pyrgomorpha bispinosa deserti</i> , <i>Chrotogonus turanicus</i> , <i>Asiotmethis heptapotamicus</i> , <i>Calliptamus turanicus</i> , <i>Hilethera turanica</i> , <i>Mioscirtus wagneri</i> , <i>Pyrgoderma armata</i>	10 9,3 %
7.	Central Asia	<i>Velarifictorus bolivari</i> , <i>Eremogryllodes semonovi</i> , <i>Melanotmethis fuscipennis</i> , <i>Atrichotmethis semenovi</i> , <i>Dericorys tibialis</i> , <i>Diexisvarentzowi</i> , <i>Conophyma sokolovi modestum</i> , <i>Conophyma semenovi semenovi</i> , <i>Conophyma sokolovi decorum</i> , <i>Gonista sagitta</i> , <i>Ochrilidia hebetata hebetata</i> , <i>Duroniella gracilis</i> , <i>Duroniella kalmyka</i> , <i>Oedipoda fedtschenkoi</i> , <i>Sphingonotus halophilus</i> , <i>Sphingonotus miramae</i> , <i>Heteracris adspersa</i> , <i>Heteracris pterosticha</i> , <i>Acrida oxycephala</i> , <i>Truxalis eximia</i> , <i>Sphingonotus satrapes</i> , <i>Ramburiella foveolata</i> , <i>Ochrilidia hebetata kazaka</i> , <i>Pseudosphingonotus savignyi</i> , <i>Dociostaurus</i> (s.str.) <i>plotnikova</i> , <i>Pezotmethis tartarus tartarus</i> , <i>Pezotmethis ferghanensis</i> , <i>Pezotmethis nigrescens</i> , <i>Thrinchus desertus</i> , <i>Thrinchus turcmenus</i> , <i>Thrinchus campanulatus</i> , <i>Strumiger desertorum desertorum</i>	32 31,0 %
8.	Central Asia, Kazakhstan	<i>Heteracris littoralis littoralis</i> , <i>Egnatioides desertus desertus</i> , <i>Egnatioides desertus iliensis</i> , <i>Egnatius apicalis</i> , <i>Sphingonotus halocnemi</i> , <i>Sphingonotus octofasciatus</i> , <i>Sphingonotus maculatus maculatus</i> , <i>Helioscirtus moseri</i> , <i>Hyalorrhypis clausi</i> , <i>Hyalorrhypis turcmena</i> , <i>Dociostaurus</i> (s.str.) <i>tartarus</i> , <i>Kazakia tarbinskyi</i>	12 10,1%

There are 24 TRANS-galactic species (21.6%), and the ranges of the species included in this group are distributed over a large part of the poleartic. These include genera common in the regions of Eurasia, such as Gryllotalpa, Locusta, and Chorthippus. European-Siberian species 7 (6.4%), European-Kazakh species 10 (9.0%), European-Central Asian species 6 (5.4%), Kazakh-West Mongolian species 5

(4, 4%), Kazakh-Mongolian species 5 (4.4%), Central Asian - Kazakh species 10 (9.3%), Central Asian species 32 (31.0%), Central Asian, Kazakh species 12 (10.1%). Distribution the right-winged birds of Central Uzbekistan by latitude and longitude are shown in table 3. According to this, straight-winged birds are divided into 7 groups by geographical latitude and 9 groups by geographical longitude.

Table 3 - distribution of Central Uzbekistan's erect wings by geographical latitude and longitude.

No	Groups and types	number of species	%
by geographical latitude:			
1	multi-zone	11	10,0
2	Prairie	14	12,6
3	Northern Steppe	4	3,6
4	Southern Steppe	14	12,6
5	Semidesert	23	20,7
6	Desert	44	39,7
7	Southern-desert	1	0,9
By geographical longitude:			
1	Transparenciese	24	21,6
2	European Siberian	7	6,4
3	The European-Kazakhstan	10	9,0
4	European-Central Asia	6	5,4
5	Kazakhstan-Western Mongolia	5	4,4

6	Kazakhstan-Mongolia	5	4,4
7	Central Asia Kazakhstan	10	9,3
8	Central Asia	32	31,0
9	Central Asia, Kazakhstan	12	10,1

By geographical longitude range, the species of erect-winged insects of Central Uzbekistan belong to 9 groups: TRANS-Paleartic species 24 (21.6%), European - Siberian species 7 (6.4%), European - Kazakh species 10 (9.0%), European-Central Asian species 6 (5.4%), Kazakhstan - West Mongolian species 5 (4.4%), Kazakhstan-Mongolian species 5 (4.4%), Central Asian-Kazakh species 10 (9.3%), Central Asian species 32 and (31.0%), Central Asian, Kazakhstan species 12 (10.1%).

According to the results of the study, the most common species of straight-winged insects in Central Uzbekistan by geographical area were Central Asian species, TRANS-Paleartic species, and Kazakh species.

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