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MALACOFAUNA OF THE BAISUNTAU RANGE

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Abstract: The article covers the population density and diversity of terrestrial mollusks, as well as their distribution in different biotopes and vertical belts on Baisuntau.

Keywords: Malacofauna, Adyr, vyshota, Baisuntau ridge, land mollusks, belt, chul, tau, biotope, geomorphology

Introduction

The longest south-west branch of the mountain range of the fortress-the Zoroastrian. It is located mainly in Boysun, partly in the territory of Sariosia districts of the surkhandarya region. It extends from the north-east to the south-west by 150 km. The highest place is 4425 m (Khujapiryukh mountain). Some parts of the Zoroastrian are called by different names: Kushtang (3723 m) (from the north-east to the south-west), Ketmonchopti, Sarimas (1886 m), anhydrous (2124 m). Middle height 2500–3000m. Syroboddarya and Sorkhondarya submerged in the Muslim Ridge. There are high passes (Belovti -3712 m, Gaza -3018 m) from 3000 m in the Moslems. The south-eastern slopes of the moose are steep and Cambar, and the Northwest is QIA. Jan.the climate of the eastern slope is rather mild (up to 3000 m) and sernam. At an altitude of 1200-1500 m above sea level, the temperature in the summer is 25°, in winter 0°, at an altitude of 2500-3000 m, in the summer 17°, in winter -6°. The minimum temperature at a height of 750-1800 m is -17°, at a height of 1800-2800 m - from 17° to -25°. The average annual precipitation is 445 mm in Boysun, 2000 m in height 800 mm. The kup of the Muslim begins with singsuv dare and shadows Machaydarya, Qayraksoy, Khodjaipok, Muslumsoy, Shotutsoy, Palgar, etc.).

A characteristic orographic feature of xp. Baisuntau – its extension from northeast to southwest.

It is characterized by geomorphological processes caused by high temperatures:

chemical weathering, especially intense in the low-mountain zone and on the foothill plains, and physical weathering associated with a lack of moisture in the lower tiers of the relief.

Vertical distribution of terrestrial crustaceans Baisuntau was studied in the river basin. Tentaxai. The vertical profile runs from the left bank of the river. Tentaksai, in the vicinity of the village of Karlyuk to the northwest to the right tributary Dugabasai, further west to the village Dugab up the river. Karangisai and up to the Yaylau belt яйлаyin the upper reaches of the river. Dugabasai.

Natural conditions of vertical hr profiles. Baisuntau is more diverse than ridges Kugitangtau and Babatag. The vertical belts of Chul, Adyr, and tau were examined here. The belting scheme was adopted according to the data of KZ. Zakirova (1955).

A wide variety of natural conditions The Baisuntau of territories causes highly complex forms of distribution within its borders, both of individual species and of entire faunal complexes [1]. In this aspect, terrestrial mollusks are a very interesting group to study and define, due to their ability to inhabit a wide variety of biotopes and landscapes. Mollusks, which are primiparous secondary invertebrates with a soft, non-segmented, often asymmetrical body protected by a more or less developed shell, are rightfully considered one of the richest animal types in terms of content. High abundance, wide distribution, great species diversity, low mobility and a slight ability to overcome geographical barriers, ease of

specimen collection and sensitive response to changes in the external environment makes this group vulnerable biogeographical and ecological studies [2], and with a good persistence shells in sediments from different geological eras, shellfish can serve as a powerful basis for the reconstruction of the ways of formation of the fauna of the regions under study [3].

Chul. Пояс The Chul belt covers a plain in the southeastern part of the region. Baisuntau. The soil is light and typical gray soils. Most of the territory is used for irrigated agriculture-orchards, vegetable gardens, alfalfa plantations, cotton and industrial crops.

Malacofauna is studied in biotopes: along ditches among grasses, among thicket of grasses, in the grass of undeveloped lands.

The following species were found among grasses along the aryks обнаружен: Cochlicopa nitens (7), Vallonia costata (6), Zonitoides nitidus (3), на берегах арыков среди зарослей трав - Pupilla muscorum (10) on the banks of aryks among grass-Xeropicta candaharicathickets, and Xeropicta candaharica (13) in undeveloped land.

In the undeveloped land biotope, Xeropicta candaharica forms very dense populations in grass [40].

Thus, чужь5 species of land mollusks were found in the Chul belt.

Адыр. Пояс The Adyr belt, as in other mountain ranges, covers all the hilly-undulating foothill space. Within the limits of The Baisuntau Adyr belt stretches from northeast to southwest and is located at altitudes of 500-1200 m. above lv. m.

The адырfollowing types and plant formations are distinguished in the Adyr belt: rank- формация (PhlomidetaPhlomideta,- ирисовая (rank-irisрангово-краснопольнная, Artemisieta scorariae, rank-wheatgrass-ephemeraElytrigieta, Amygdaleta, Amygdaleta and others.

Typical biotopes for mollusks in the Adyr belt are among the shrubs at the foot of the Adyrmountains, along ditches, and moist places.

Sphyradium doliolum Sphyradium doliolum(10), Gibbulinopsis signatagimbulinopsis signata (17), Pseudonapaeus sogdiana (3), Ps. albiplicata (4), Chondrulopsina intumescens Chondrulopsina intumescens(7), Xeropicta candacharica (13), Candacharia roseni (3), c. kaznakovi (4).

Along the ditches, among the grass and under the stones revealed: Cochlicopa nitens (11), C. lubrica (8), Vallonia costata (13), V. pulchella (9), Pupilla muscorum (16), Zonitoides nitidus (5).

A total адыр of 14 species were studied in the Adyr belt (see Table 21). This complex of species consists of Palaearctic and Holarctic-6, Central Asian and Near Asian – 3, as well as European and Upland Asian – 1 species each.

Tau. Natural-historical conditions change with altitude. Brown and brown mountain-forest soils predominate here. Height from 1200-1500 to 2700-2800 m. above lv. m.

Economically, tau is a valuable acreage for cereals and legumes, as well as haymaking (partly pasture) land. In addition, the woody and shrubby vegetation of this belt provides the population with fuel, building materials, and fruits (nuts, apples, rosehips, and barberries).

Based on natural-historical conditions. Baisuntau, as in other mountain ranges, can be divided into two – lower and upper tau. The belt type of vegetation-xerophytic junipers-has been preserved in massifs remote from populated areas, in areas that are small or inaccessible.

Juniper woodlands have been used as pastures for centuries. And if grazing cattle to some extent harmed the juniper tree, then shepherds burned juniper for cooking and heating without a choice. Partly juniper trees were uprooted for plots for agriculture. In fact, juniper is not dying out, but is being destroyed by humans, which affects the ecology of the animals living there.

In addition to junipertrees, there are small plantings of pistachios, almonds, бояркиhawthorn, maple, rose, barberry, and honeysuckle in tau.

In the tau belt, the following biotopes are typical for mollusks: woody and shrubby

vegetation, rocks and scree, banks of streams and springs.

Interzonal species such as *Cochlicopa nitens* (15), c. On the banks of streams and springs, which are overgrown with dense grassy vegetation, live. виды: *Cochlicopa nitens* (15), *C. lubrica* (9), *C. lubricella* (11), *Vallonia costata* (12), *V. pulchella* (11), *Pupilla muscorum* (13), *Zonitoides nitidus* (6).

In the wood-shrub biotope, among decaying plant remains, we found: *Acanthinula aculata* (3), *Sphyradium doliolum* (13), *Candacharia roseni* (5), c. *kaznakovi* (2).

Gibbulonopsis signata (21), *G. nanosignata* (13), *Pupilla triplicata* (11), *Pseudonapaeus sogdiana* (6), *Ps. albiplicata* (5), *Ps. otostomus* (3), *Ps. guttula* (5), *Ps. kasnakovi* (2), *Chondrulopsina intumescens* (6), *Chondrulopsina fedtschenkoi* (7), *Phenacolimax annularis*(3).

On rocks and scree under rocks *Leucozonella retteri* (3), *L. angulata* (5), *Macrochlamys turanica* (1), *M. sogdiana* (3), *M. schmidti* (2).

A total of 27 species have been recorded in the tau belt (see Table 1). This complex of species consists of Central Asian endemics -12, its main faunal core is supplemented by Palearctic and Holarctic species – 7, European and Near Asian-3, Highland Asian and Mediterranean-1 species each.

Terrestrial mollusks in this belt inhabit the following biotopes: banks of small streams, rocks and rocky scree.

Along the banks of streams among thickets of grass under rocks live: *Cochlicopa nitens* (10), *C. lubrica* (7), *C. lubricella* (5), *Vallonia costata* (12), *V. pulchella* (9), *Pupilla muscorum* (11), *Zonitoides nitidus* (6).

На скалах и в осыпях, среди растительных остатков обнаружены: *Pupilla triplicata* (16), *Pseudonapaeus miser* (4), *Turanena scalaris* (3) were found on rocks and in scree, among plant remains *Turanena scalaris*.

Thus, яйлаonly 10 species of terrestrial mollusks were found in the Yailau belt,

consisting of 3 zoogeographic groups: Palearctic and Holarctic -7, Central Asian – 2, and European-1 species. Of the 10 discovered species, the most numerous are *Vallonia costata*, *Pupilla muscorum*, *P. triplicata* (see above).

As a result of research on the malacofauna of the cr. БайсунтауWe have collected 30 species of land mollusks in Baisuntau.

So a total of in xp. In Baisuntau, we studied 12 biotopes and recorded 30 species of land mollusks(Table 1).

Our study shows that the density of terrestrial mollusks varies by biotope. For example, biotopes have the highest density of land mollusks: the banks of streams and springs are overgrown with dense grassy vegetation and at the roots of plants and in stony-gravelly soil per square meter. from 77 to 82 instances were found (Figure 1).

The lowest density of land mollusks is observed in biotopes: among grass thickets (chul belt), on rocks and scree (tau belt), which are found, 10-14 exm.m2(Fig. 1).

The greatest diversity of species composition is observed in the tau belt – 27 species.

The richness of the species composition and the high population size of individual species are associated with the diversity of biotopes, since tree and shrub vegetation (forest) alternates with open rocky slopes. Therefore, both mesophilicand xerophilic mollusks find optimal conditions here.

A greater degree of ecological plasticity is shown by species living in two and three plant belts. There are 10 species found in two belts, 2 species in three belts, and 5 species in all four plant belts. 13 species are strictly confined to only one altitude zone .

In БайсунтауWhen comparing малокомплексовsmall complexes of different biotopes in pairs, it was found that in more than half of the cases, the similarity coefficient is the lowest and is equal to 0 (see Table 2). A high level of similarity of the species lists is observed in biotopes: the banks of streams and springs among overgrown with dense grassy vegetation, as well as among thickets of grass

under rocks. Here, the coefficient of species similarity is from 71% to 85%.

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with dense grassy vegetation and at the roots of plants and in stony-gravelly soil per square meter. from 77 to 82 instances were found (fig.). The lowest density of terrestrial mollusks is found in biotopes: among the thickets of grasses (chul belt), on rocks and scree (tau belt), which are found, 10-14 exm.m2 (fig.). The greatest diversity of species composition is observed in the tau belt – 27 species. shrubby vegetation (forest) alternates with open rocky slopes. Therefore, both mesophilic and xerophilic mollusks find

optimal conditions here. A greater degree of ecological plasticity is shown by species living in two and three plant belts. There are 10 species found in two belts, 2 species in three belts, and 5 species in all four plant belts. 13 species are strictly confined to only one altitude zone.

Table 1

Distribution of terrestrial mollusks in the vertical belts of the ridge Baisuntau

№	Name of the types	Belts											
		Chul Belts			Advr			Tau			Яйлау		
		1	2	3	4	5	6	7	8	9	10	11	12
1.	<i>Cochlicopa nitens</i>	+	-	-	-	-	+	+	-	-	-	+	-
2.	<i>C. lubrica</i>	-	-	-	-	-	+	+	-	-	-	+	-
3.	<i>C. lubricella</i>	-	-	-	-	-	-	+	-	-	-	+	-
4.	<i>Spiradum dolioium</i>	-	-	-	+	-	-	+	-	-	-	-	-
5.	<i>Acanthinula aculata</i>	-	-	-	-	-	-	+	-	-	-	-	-
6.	<i>Vallonia costata</i>	+	-	-	-	-	+	+	-	-	-	+	-
7.	<i>V. pulchella</i>	-	-	-	-	-	+	+	-	-	-	+	-
8.	<i>G. signata</i>	-	-	-	+	-	-	-	+	-	-	-	-
9.	<i>G. nanosignata</i>	-	-	-	-	-	-	-	-	+	-	-	-
10.	<i>Pupilla triplicata</i>	-	-	-	-	-	-	-	-	+	-	-	+
11.	<i>P. muscorum</i>	-	+	-	-	-	+	+	-	-	-	-	-
12.	<i>Ps. sogdiana</i>	-	-	-	+	-	-	-	-	+	-	-	-
13.	<i>Ps. albiplicata</i>	-	-	-	+	-	-	-	-	+	-	-	-
14.	<i>Ps. miser</i>	-	-	-	-	-	-	-	-	-	-	-	+
15.	<i>Ps. otostomus</i>	-	-	-	-	-	-	-	-	+	-	-	-
16.	<i>Ps. guttula</i>	-	-	-	-	-	-	-	-	+	-	-	-
17.	<i>Ps. kasnakovi</i>	-	-	-	-	-	-	-	-	+	-	-	-
18.	<i>Chondrolopsis intumescens</i>	-	-	-	+	-	-	-	-	+	-	-	-
19.	<i>Ch. fedtschenko</i>	-	-	-	-	-	-	-	-	+	-	-	-
20.	<i>Turanea scalaris</i>	-	-	-	-	-	-	-	-	-	-	-	+
21.	<i>Phenacolinax annularis</i>	-	-	-	-	-	-	-	-	+	-	-	-
22.	<i>L. retteri</i>	-	-	-	-	-	-	-	-	-	+	-	-
23.	<i>L. angulata</i>	-	-	-	-	-	-	-	-	-	+	-	-
24.	<i>X. candacharica</i>	-	-	+	-	+	-	-	-	-	-	-	-
25.	<i>C. roseni</i>	-	-	-	-	+	-	-	+	-	-	-	-
26.	<i>C. kasnakovi</i>	-	-	-	-	+	-	-	+	-	-	-	-
27.	<i>Macrochlamys turanica</i>	-	-	-	-	-	-	-	-	-	+	-	-
28.	<i>M. sogdiana</i>	-	-	-	-	-	-	-	-	-	+	-	-
29.	<i>M. schmidt</i>	-	-	-	-	-	-	-	-	-	+	-	-
30.	<i>Zonitoides nitidus</i>	+	-	-	-	-	+	+	-	-	-	-	-

1 - along the irrigation ditches among the grasses; 2 - sarol amongher herbs; 3 - undeveloped land on the grass; 4 - on gravelly

areas among the bushes; 5 - at the foot of the hills among dwarf shrubs; 6 - along the river, among the grass and under rocks; 7 - on the banks of streams and springs among overgrown with dense vegetation; 8 - among trees and shrubs on rotting plant debris; 9 - at the roots of plants and rocky-gravelly soil; 10 - on the rocks and scree under stones; 11 - on the banks of streams among the thickets of grass under the rocks; 12 - on the rocks and scree, among plant residues.

Table 2
Coefficient of species similarity of small complexes of different biotopes

Baisuntau

To	2	3	4	5	6	7	8	9	10	11	12
1	0	0	0	0	50	42.2	0	0	0	33.3	0
2		0	0	0	16.6	14.2	0	0	0	20	0
3			0	33.3	0	0	0	0	0	0	0
4				0	0	0	12.5	25	0	0	0
5					0	0	40	0	0	0	0
6							0	0	0		0
7							85.7	0	0	57.1	0
8								0	0	71.2	0
9									0	0	0
10										0	0
11											0

1 - along the irrigation ditches among the grasses; 2 - sarol amongher herbs; 3 - undeveloped land on the grass; 4 - on gravelly areas among the bushes; 5 - at the foot of the hills among dwarf shrubs; 6 - along the river, among the grass and under rocks; 7 - on the banks of streams and springs among overgrown with dense vegetation; 8 - among trees and shrubs on rotting plant debris; 9 - at the roots of plants and rocky-gravelly soil; 10 - on the rocks and scree under stones; 11 - on the banks of streams among the thickets of grass under the rocks; 12 - on the rocks and scree, among plant residues.



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