



## **RARE AND ENDANGERED SPECIES OF TERRESTRIAL MOLLUSK THE FAMILY OF *BULIMINIDAE* IN UZBEKISTAN**

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### **ABSTRACT**

*It is presented new data on rare and endangered species of terrestrial mollusks-representatives from the family Buliminidae.*

**KEY WORDS:** *landscape, factor, mollusk, habitat, naturally rare species*

### **DISCUSSION**

Peculiar landscape in Central Asia including the one of the studied territory formed in condition of extremely arid climate has unusually high sensitivity to external influences. Even minor human disturbances in the structure of ecosystem call their fast degradation leading to irretrievable loss of biological potential.

It should be noted that especially strong influence on the nature of the studied region began in the 50-60<sup>th</sup> of the last century when extensive methods began to prevail in farming affairs.

Plowing vast plain territories in steppe and desert zones, sharp reductions of areas of mountain, valley and desert forests and also deforestation of trees and shrubs and cattle overgrazing led to destruction of habitats of a lot of creatures including terrestrial mollusk. In the result of it the areal and the number of the species of many creatures decreased, a number of species fully died out, whole complexes of animals and plants became rare or endangered and so did mollusk.

Terrestrial mollusk is one of the most vulnerable groups of all living beings. If we consider that there are 35 thousand species, 422 of them and no less 1,5% currently has died out.

Nowadays many species of terrestrial mollusk dwelling in the territory of Central Asia need protection, but the states in Central Asia including Uzbekistan don't pay enough attention to this matter in comparison with western countries where annually

hundreds of works on this subject are published. For instance, in Poland 74 species from known 175, and in Check 91 species from known 162, and in Uzbekistan only 2 species of terrestrial mollusk from more than 180 species discovered in the Republic are included to Red Book.

Besides that in above mentioned countries total number of terrestrial mollusk and endemics in fact less than they are in Uzbekistan. It must be noted, by number of species of malacofauna in Central Asia, including Uzbekistan takes the second place following the Caucasus, but by the number of endemics takes the first place.

Therefore, taking into account above mentioned we are going to provide new data about rare and endangered species of terrestrial mollusk-representative family Buliminidae. While researching the population state it was based on the thoroughly worked out criteria created for the Red list of International Union for Conservation of Nature (IUCN).

### **1. *Pseudonapaeus (Pseudonapaeus) errans* (Westerlund, 1891).**

Status. 2(VU:R): Vulnerable, naturally rare, endemic species.

State: Naturally rare species occupying limited areas in little disturbed natural habitats. In the Chatkal ridge it is found the least areas in remote places.



Ecological preference of the species is growing narrower. The number is very low, 1-2 individuals in 50 sq.M.

Threatening factors: Destruction and transformation of habitats, deforestation of shrubby vegetation, carrying out forestry activity, economic development in foothill area, including plowing, excessive recreation.

Protection measures: It is necessary to implement security regime in the habitats of the species where it will be forbidden any kind of constructional and forestry activities including «Sanitary-Wellness», excessive recreation. Habitat: It can be discovered in foothills and middle zones of the mountains. It lives under stones and plants in the areas of shrubs, and also on open slopes among talus.

Propagation: in Uzbekistan, the Chatkal ridge and in Kyrgyzstan. (the Fergana ridge.)

### **2. *Pseudonapaeus (Pseudonapaeus) zaureshae*** Schileyko et Rymzhanov, 2013.

Status: 3(NT): Nearly endangered, narrow area endemic species.

State: Nearly endangered, occupies small areas in limited number in little disturbed natural habitats, mainly among shrubs and large talus. The quantity is known from a small number of finds.

Threatening factors: Destruction and transformation of habitats; deforestation and degradation of shrubs, including the export of separate stones (reduces habitable space in the cavities among stones), fragmentation and reduction of biotope areas for earth roads, excessive recreation

Protection measures: It is necessary to implement security regime in the habitat of the species, where it will be forbidden to cut down shrubs, transport travels outside functionally necessary roads, limited recreation.

Habitat: It can be found in the mountain areas. It lives among small stones, grassy vegetation and shrubs.

Propagation: the Chatkal ridge.

### **3. *Pseudonapaeus (Pseudonapaeus) sinistrorsa*** Pazilov, 2004.

Status: 1(CR): Endangered endemic species.

State: Rare endemic occupying the smallest areas among shrubs and under stones. For the last 20 years it has been found only 1 example of living individual.

Threatening factors: Destruction and transformation of habitats, deforestation and degradation of shrubs, afforestation of initially woodless desert and rocky places, cattle overgrazing and, fragmentation and decreasing of areas for biotope earth roads, pollution, excessive recreation.

Protection measures: It is necessary to implement security regime in the habitats of the species where it will be forbidden forestry activity, construction, stone mining and exportation, limited recreation, cattle overgrazing, plait the grass.

Habitat: It can be found in mountain areas. It lives among shrubs, under stones, on grass stalks.

Propagation: North-eastern part of Turkestan ridge.

### **4. *Pseudonapaeus (Siraphorus) entoptyx*** (Lindholm, 1925).

Status: 2 (VU:R): vulnerable, naturally rare

State: Extremely rare mountain species, occupying small areas in two locations of the Ugam and Pskem ridges among shrubs. The quantity is 3-4 individuals in 10-15 sq.M.

Threatening factors: Destruction and transformation of habitats; deforestation of tress and shrubs, cattle overgrazing, fragmentation and reduction of biotope areas for earth roads, excessive recreation.

Protection measures: It is necessary to implement security regime in the habitat of the species, where it will be forbidden any kind of construction and forestry activity including «Sanitary-Wellness», limited recreation.

Habitat: It can be discovered in mountain areas. It lives among shrubs and thickets of grass.

Propagation: In Uzbekistan the Ugam ridge, in Kyrgyzstan (the Fergana ridge).

### **5. *Pseudonapaeus (Chondrulopsis) urgutensis*** (Kobelt, 1902).

Status: 1(CR): Endangered endemic species. It is included to Red Book of Uzbekistan under the status 2 (VU:R).

State: very rare species, known only from typical locations in the suburbs of Urgut. (northern slope of the Zarafshan ridge.) The number is too few, for the last 30 years we have found only one example of living individual.

Threatening factors: Destruction and transformation of habitats, stone mining including exportation of separate stones (decreases worthy for dwelling space in the places among rocks and stones), fragmentation and reduction of biotope areas for earth roads, excessive recreation.

Protection measures: It is necessary to implement security regime in the habitats of the species where it will be forbidden to plow steppes, afforestation, construction, stone mining and exportation, pollution, besides that transport travel



beyond functionally important roads; recreation limit, cattle overgrazing, plaiting grasses.

Habitat: It can be found in foothill zones. It lives stony places and shrubs.

Propagation: The suburbs of Urgut, northern slope of the Zarafshan ridge.

### **6. *Turanena inversa*** Schileyko et Moisseeva, 1995.

Status: 2 (VU:R): Vulnerable, naturally rare, endemic species.

State: Rare mountain endemic species occupying the smallest areas in 3 remote and rocky habitats of the Chatkal ridge. The quantity is 1-2 individuals in 20-25 sq.m. The number is 1-2 individuals in 20-25 sq.m.

Threatening factors: Destruction and transformation of habitats, active construction, afforestation in primarily treeless steppe and rocky places, rock mining, including exportation of separate stones (decreases worthy for dwelling space in the places among rocks and stones) and excessive recreation.

Protection measures: It is necessary to implement security regime in the habitat of the species, limitation of afforestation, construction mining and exportation of stones, limitation of recreation and cattle overgrazing. пространство в полостях среди скал и камней), чрезмерная рекреация.

Habitat: It lives on rocky stones where shrubs grow. (rock cracks)

Propagation: It is found only in two places of the Chatkal ridge.

### **7. *Mastoides albocostatus***

(Westerlund, 1896)

Status: 1(CR): Endangered endemic species.

State: State: Rare forest species occupying small areas in a limited number in little disturbed natural habitats, especially in the walnut forests with plenty of dead wood. The quantity has been found little for the last 50 years and in 1990 a living species was found by A. Pazilov.

Threatening factors: Destruction and transformation of habitats, cutting down natural forests, going in for forestry activity in existing forests, cattle overgrazing, fragmentation and reduction of biotope areas for earth roads, excessive recreation.

Protection measures: It is necessary to implement security regime in the habitat of the species, where it will be forbidden any kind of

construction and forestry activity including «Sanitary-Wellness», excessive recreation.

Habitat: It can be found in mountain areas. It lives among shrubs and in gravelly with tall grass in walnut forests.

Propagation: The Ugam ridge in Uzbekistan. In Kyrgyzstan (the Fergana fidge).

Thus, having studied the population state of representatives of Buliminidae family we can draw the following conclusions:

For the three species nature conservation status is rated as – VU:R: *P. errans*, *P. entoptyx*, *T. inversa*. For three species - CR: *P. urgutensis*, *P. sinistrorsa*, *M. albocostatus* and for one species- NT: *P. zaureshae*.

### **LITURATURE**

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