

# Biological Diversity of Slains Spread in Agro-Landscapes of Jizzakh Region (In the Sample of Gallaaral and Farish Districts)

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**Abstract:** Currently, there are more than 150 species of snails in the world fauna, including 24 species in Central Asia and 18 species in Uzbekistan, whose biodiversity has not been fully explored not only in Uzbekistan but also in the whole Central Asian region. In agro-landscapes of some districts of Jizzakh region there were found 3 types of snails of the family Parmacellidae of the Candahariaspecies: *Candaharialevanderi*, *C. Aethiops* and *C. Rutellum*, *C. Aethiops* is a new type for the fauna of the studied region. *C. levanderi* population density and *C. Rutellum* distribution are dominant types.

**Keywords:** rudiment, mesophile, hygrophil, population, mante, biotope

## 1. Introduction

In a particular family of abdominal molluscs, the shell has been reduced and retained in a rudimentary form - a small plate, and the shell does not appear. Due to the invisibility of the shell on the body and the removal of large mucus from the body in the moving position, these members of the abdominal class are known as snails [1].

Currently, there are more than 150 species of snails in the world fauna, including 24 species in Central Asia and 18 species in Uzbekistan [2], whose biodiversity has not been fully explored not only in Uzbekistan but also in the whole Central Asian region.

Therefore, the study of snails is of great importance both in theory and in practice. The reason is that they consist of a heterogeneous group of animals, and they play an important role in studying the evolution of groups that are systematically distant from each other. Secondly, most of snails are herbivorous polyphagous animals, which feed on a wide variety of grains, vegetables and melons that are vital to human life, while other species serve as intermediate hosts for the spread of exoparasitic diseases in livestock. Therefore, it is important to study their biodiversity across a region.

The study area is Galla-aral and Farish districts of Jizzakh region, bordering Farish district in the north, Jizzakh in the east, Bakhmal district in the south, Samarkand region in the west. Farish district occupies the north-western part of Jizzakh region. It borders on Jizzakh, Arnasay, Dustlik and Mirzachul districts to the north and north-east with Kazakhstan, and Gallaaral district to the south.

## 2. Materials of the Research

Karakuyli, Kashkabulak, Chuvulloq, Sugunboy, Gallakor, Lalmikor and Karapchi villages of Gallaorol district; It was harvested from the agrarian landscapes of Farish district of Bekat, Egizbulak, Anamuna, Oktepa, Yangikishlak, Osmonsoy, Band and Old Forish villages.

**Obtained results and their analysis:** According to the results of the research, the following types of snails are distributed in some regions of Jizzakh region.

*Candaharialevanderi* (Fig. 1). The color of the body varies depending on the habitat; it is slightly darker than the back and sides of the mantle. Feet are colorless, but the upper part is a little yellowish.

The body length is 80-100 mm during movement. 45-60 mm when shortened. According to A. Pazilov [3], the length of the body of the representatives of the Babatag ridge is 110-120 mm during movement, and 70-80 mm when contracted.

### Ecology

*Mesophyllus* is a species mainly found in plains and foothills. It lives among the native plants, under various grasses along the ditches.



**Figure 1:** *Candaharialevanderi* among the grass in Karakuyli village (Gallaorol district).

### Dissemination and population density

It is common in Zarafshan, Turkestan, Nurata, Kuhitangtov, Baysuntov, Gissar and Bobotog mountain ranges. According to I.M. Likharev and A.Y. Viktor [1], it also occurs in North Afghanistan.

The density of this species depends on the temperature and humidity, and according to Sh.Abdulazizova [4], during the

high humidity years the density of the population varies from 70 to 80 per 1m<sup>2</sup>.

In the study area: the density of grasses in the ditches in Karakuyli, Kashkabaluk villages of Gallaorol district is 15-20 in 1m<sup>2</sup>, and in apple gardens in Lalmikor and Karapchivillages the indication is 7-8. There are 5-6 occurrences in Anamuna village gardens of Farish district, and between 10 and 12 per 1 m<sup>2</sup> in Osmonsay and Band villages near populated areas.

According to K.K.Uvalieva [5], snails feed with sprouted melons and various plant leaves that cause great damage to agricultural crops.

**Candahari aethiops** (Fig. 2). The body can be variable color, black or yellow. Feet are always white. There are always two well-developed thick lines on the neck. The upper part of the mantle is covered with a thick pigment, and to the left, these pigments are so well developed that it can even form a line. Similarly thick pigments develop on the right.

Its body length is 65 mm during movement. And when shortening it is 45 mm.



**Figure 2:** *Candahariaethiops* among the heaps in the village of Band (Farish district)

**Ecology:** *Hydrophilus* is a rare species and can sometimes be found in the hilly areas. It lives in rocky biotopes close to the water.

**Dissemination and population density.** They are spread besides Uzbekistan mountain ranges such as in Korjontov, Ugom, Fergana and Gissar ranges, but also are spread across the Darvaz mountain range [2]. It is noted for the first time from the study area: agro-landscape and undeveloped areas of Bekat and Band villages of Farish district are common among agrarian landscapes and rocky hills with different population densities. For example, the density of grass in the vicinity of the apple gardens near Bekat village is 5-6 in 1m<sup>2</sup>, compared to 9-10 in the undeveloped areas near Band Village.

***Candaharia rutellum*** (Fig. 3). The body is yellowish. In the mantle, there are two lines drawn along the sides of the body. Length of the body is 45-50 mm during movement. 30-35 mm when shortened.



**Figure 2:** *Candahariarutellum* among stones of Old Farish (Farish District)

**Ecology:** 1200-2000 m above sea level in hilly and mountainous areas at high altitudes. It lives among the various grasses that are close to the ponds.

**Population.** It is spread in Zarafshan, Gissar, Baysuntov, Nurata mountain ranges and in the mountainous areas of Afghanistan.

*Candaharia rutellum* species is more prevalent in the study area than the above species, and in the Karakuyli, Kashkabaluk, Chuvullak, Sugunboy, and Karapchi villages of Galla-aral District, agrarian and undeveloped landscapes of Bekat, Egizbulak, Anamuna, Aktepa, Yangikishlak, Osmonsay, and Old Farish areas of Farish district. The population density is 5-6 in 1m<sup>2</sup>, in Kashkabaluk and Chuvullak villages near the ditches in the undeveloped areas around Karakuyli village of Galla-araldistrict can be met 8-10, the population of the same biotopes in Sugunboy and Karapchi villages is 15-17.

*Candaharia rutellum* is common in Farish district, mostly in undeveloped areas, with a population density of 7 to 8 on the undeveloped land adjacent to the cultivated areas near the village of Osmonsay, and between 9 and 10 among the rocks near the agro-landscape in Old Farish area.

Based on the results of the research, the following **conclusions** can be made:

In the agrarian landscapes of Jizzakh region, three species of *Candaharia* of Parmacellidae family were identified: *Candaharialevanderi*, *C. Aethiops* and *C. Rutellum*, and recorded as a new species for the *C. aethiops* study area fauna.

*C. rutellum* has been recognized as the dominant species according to *C.levanderi* density in the population and the range of distribution.

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