



Terrestrial Molluscs of the Genus Pseudonapaeus and Chondrulopsina of the Buliminidae Family in Mirzachol

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ABSTRACT

The article is based on the results of many years of research, and the area and population density of land molluscs of the family Buliminidae in Mirzachol, the genus Pseudonapaeus and Chondrulopsina, are scientifically justified. Ecological-taxonomic structure, distribution, biology and processes of change in them, as well as economic importance of gastropod molluscs of Mirzachol natural geographical region were studied. Each of the gastropod molluscs has its own biological characteristics.

Keywords:

Mirzachol, family, clan, natural, country, gardens, farm, river, altitude, region, population, density.

One representative of the genus Pseudonapaeus and Chondrulopsina of the Buliminidae family: Ps. albiplicatus and Ch. intumescens species are found, they have a Central Asian range, and in the studied area, the density of the population is 5-10, distributed around the rock piles near the Amur Temur Cave and Khojamushkent.

Pseudonapaeus albiplicatus, Leucozonella mesoleuca, Xeropicta candaharica and Candaharia rutellum species are widespread in Mirzachol natural geographical region, each of them has its own biological characteristics. For example, the life cycle of Pseudonapaeus albiplicatus: spring (March-April) – laying eggs; spring-summer (May-June) - hatching and hibernation; autumn (October-November) - waking up from summer sleep and leading an active life and intensive development; autumn-winter (the third decade of November) is divided into stages of hibernation.

Copulation, number of eggs, egg development and viability of L.mesoleuca depend mainly on air temperature, and it was found that the optimum temperature is 19oC.

The life cycle of L. mesoleuca species consists of the following stages:

1. Waking up from winter sleep - middle and end of March.
 2. Preparation for copulation by active feeding and the copulation stage - the first ten days of April.
 3. Egg laying and its development - late April and early May.
 4. Hatching is the first ten days of May.
 5. Hibernation and hibernation - end of May, June - mid-October.
 6. Winter sleep - mid-November-March.
 7. Waking up from winter sleep and active life, formation of the shell - March-May.
 8. Summer sleep - from the end of May to the middle of October.
 9. Waking up from summer hibernation and actively feeding, the shell is fully formed and matures - mid-October and early November.
- Xeropicta candaharica is a representative of the Hygromiidae family that is widespread throughout Central Asia and is found mainly in the hilly and desert regions.
- The biology of X. sandaharica species has been studied for many years in specially prepared terrariums in laboratory conditions during the months of March-April-May, while in the natural environment it is observed throughout the year,

and the general activity of *X. candaharica* is manifested in the range of air temperature from +50C to +230C. Sexual activity of molluscs was observed between +50S and +190S, and egg-laying process between +10S and +210S. It was found that the most favorable period for the development, reproduction and spawning of these molluscs is the period of spring activity.

Candaharia ruteium wakes up from hibernation in the second ten days of March in the hill region and starts preparing for reproduction by feeding intensively until the middle of April. Clams that are ready to reproduce begin by searching for a mate like other molluscs. After finding a mate, the "game" of mating in molluscs begins. The mating process takes place in 4 stages.

C.rutellum's mating "game" and mating takes a total of 2.5-3 hours. Under natural conditions, molluscs begin to lay eggs 15-17 days after addition, when the average air temperature is 18-19oC. They lay 25 to 65 eggs in their own "egg chamber" (2-2.5 cm deep) in the soil, under the roots of plants and under stones. Egg size is 1.5 - 2.5 mm. is, it has an elliptical or spherical structure.

Land molluscs of Central Asia differ sharply from other regions due to the variety of species and the large number of endemic species, and the process of species formation continues intensively even now. It should be emphasized that variability is important in the process of formation of species.

Variation of the conchological characteristics of the studied land molluscs is mainly manifested in shell color, size, shape and shell mouth fittings.

In studied land molluscs, the shell color changes from north to south. For example, *Ch.* who lives at 40o north latitude. *intumescens* has a dark brown shell, while molluscs from 38o N latitude have a pale gray color. The main reason why the color of the shell changes from north to south is due to the sunlight.

Shells can be large or small, depending on the habitat of the molluscs. We can observe this process not only among different ecological groups, but also in populations belonging to the same species.

Shell enlargement or enlargement is one of the characteristic features of molluscs living in dry climates, and molluscs with large shells are mainly adapted to live in open areas in arid regions. As an example, *Ps.* living in open and dry biotopes. *albiplicatus*, *Ch. intumescens*, shells of *L. mesoleuca* species can be shown. It should be noted that the larger the mollusk shell, the more moist air is collected inside it, and this moisture ensures the active movement of mollusks during the dry season.

As a result of the study of the variability of conchological characters, it became clear that in the course of evolution, the variability of conchological characters is aimed at preventing dehydration in the body of molluscs, and the variability of sexual organs is also important in this process.

In representatives of the genera *Pseudonapaeus* and *Chondrulopsina*, the variability of the genital organ was manifested in the reduction of the internal structure of the penis and the penile appendix, and in the representatives of *Leucozonella*, in the shape of the stylophore and papilla, as well as in the size of the flagellum.

Morphological evolution in dry molluscs is manifested in one or another reduction of the reproductive organ, and the reduction of these organs is more characteristic of molluscs living in arid landscapes. The reduction of one or another part of the genital organ leads to a reduction in the mating time of molluscs in the reproduction process, which is important in dry continental climates.

Xeropicta candacharica is considered to be the species most prone to damage by helminth larvae among Central Asian land molluscs and acts as an intermediate host for *Dicrocoelium lanceatum*, *Brachylaemus mesostomus*, *Protostrogylus* sp.nov., *Muellerius sapilaris*, *Cystocaulus ocreatus*.

The results of the research will serve as the main local resources for animal husbandry specialists, veterinarians, in the development of control measures against helminthic diseases and plant pests, and information on variability in the transition of the relevant topic from evolutionary theory.

Used literature

1. Пазиллов А., Гаибназарова Ф., Саидов М. Закономерности вертикального распространения наземных моллюсков Узбекистана и сопредельных территорий. Ташкент: Фан, 2014. Б-11
2. Pazilov A., Gaibnazarova F. Geographical variability of conchological features of the terrestrial mollusk *Pseudonapaeus aptechus* // Proceedings of the VIII International Scientific and Practical Conference.- Krasnodar, 2014.- pp. 128-130.
3. Gaibnazarova F. The nature of the variability of the signs of the sexual apparatus of *Pseudonapaeus albiplicata* From the Chatkal, Kuraminsky Ridges - Guliston Davlat Aksborotnomasi University, No. 3. 2015 Б-21
4. Gaibnazarova F., Pazilov A. On the fauna of terrestrial mollusks (gastropods, Puymonata) of the Kugitangtau ridge. Proceedings of the conference "Ecology, Evolution and systematics of animals" November 13-16, 2012 Б-13-16
5. Gaibnazarova F., Pazilov A. Conchological variability of terrestrial mollusks Nanosignals of gibbulinopsis of Turkestan and Zarafshan ridges. Zoological studies of the regions of Russia and adjacent territories materials for the III International Scientific Conference. Nizhny Novgorod - 2014.
6. Pazilov A. Gaibnazarova F., Karimova H. Complexes of terrestrial mollusks in various biotopes of the Zarafshan ridge JOURNALNX - Interdisciplinary peer-reviewed journal ISSN: 2581-4230, Website: journalnx.com, June 18-19, 2020.
7. Pazilov A., Gaibnazarova F., Karimova x alien species *Monacha carthusiana* (Mollusks, gastropods, pulmonary) as a new intermediate host of the nematode *cystocaulus ocreatus* in uzbekistan. Naukoviy visnik Uzhhorod universitetu Seriya Biologiya, Vipusk 40, 2016: Б 83-85.
8. Gaibnazarova F., Karimova H., Mukhammadiev Z. "Geographical and ecological analysis of dry mollusks in Uzbekistan and adjacent regions" 2021. Б-14
9. Gaibnazarova F., Karimkulov A. Composition and distribution of terrestrial mollusks in vertical landscape zones and biotopes. - Journal of Publications Novateur JournalNX - Interdisciplinary peer-reviewed journal ISSN NO.: 2581 - 4230 VOLUME 7, ISSUE 3, March - 2021 - p177-182.
10. Gaibnazarova F. The nature of the variability of the signs of the sexual apparatus of *Pseudonapei albiplicate* from the Chatkal and Kuramin ranges. Biological Sciences of Kazakhstan No. 3, 2014.
11. Gaibnazarova F. Biological diversity of terrestrial mollusks of the Surkhan-Sherabad valley and its surrounding mountain ranges // Naukovi zapiski Ternopil National Pedagogical University im. Volodimira Gnatyuk. Ser. Biologiya Ternopil : TNPU, 2012. - Vip. 2 (51), Spec. vip. : Moluski: results, problems and prospects doslizhen. - pp. 54-57-- Bibliogr. in kinci art.
12. Pazilov A., Gaibnazarova F. Conchological variability of the terrestrial mollusk Signature of gibbulinopsis from the Baysuntau, Kugitangtau and Babatag ridges. "Ecology, evolution and systematics of animals". Ryazan -2012 Materials of the international scientific and practical conference
13. Pazilov A., Gaibnazarova F. Species composition and variability of terrestrial mollusks of the genus *Cochlicopa* of Uzbekistan and adjacent territories / Ecological features of biological diversity: proceedings of the 5th International Conference - Hadjent, 2013 - pp.96-97.
14. Pazilov A., Shoibnazarova F. Population variability of conchological features of the terrestrial mollusk *Pseudonapei secalin* from the Turkestan ridge// Theory and practice of current research. Materials of the VI International

- Scientific and Practical Conference.- Krasnodar, 2014. pp. 45-47.
15. Goibnazarova F., Pazilov A. Conchological variability of terrestrial mollusk *Nanosignals of gibbulinopsis* in Turkestan and Zarafshan ridges//Zoological studies of the regions of Russia and adjacent territories. III International Scientific Conference.- Nizhny Novgorod, 2014. pp.35-37.
 16. Shileyko A., Pazylov A., Abdulazizova Sh. Another surprise from *Bradybaenidae* (gastropods, pulmonary) // *Rutenika*, 2020, volume 30, No. 4: 217-221. Published online on October 1, 2020.
 17. Abdulazizova Sh.K. Complexes of terrestrial mollusks related to various biotopes of the Kugitangtau and Babatag ranges// *AKADEMIKA: International Interdisciplinary Research Journal*. Volume 10, Issue 7, 2020. From 699-704.
 18. Abdulazizova Sh. Terrestrial mollusks of the Surkhan State Reserve// *Bulletin of the Khorezm Academy of Mamun*, November 2020, 14-17 b.
 19. Gaibnazarova F., Karimova H. A variety of dry mollusks common in the regions of Uzbekistan and adjacent to it // *Annals of R.S.C.B.*, ISSN: 1583-6258, Volume 25, Issue 6, 2021, pp. 2233-2242. Received April 25, 2021; Accepted May 08, 2021.
 20. Гаибназарова Ф.П., Каримкулова.А.Т . Процентное распределение наземных моллюсков в различных местообитаниях. вып. 7 № 1 (2022): Тематический зоологический журнал
 21. F Gaibnazarova. A variety of dry shellfish is common in the regions of Uzbekistan and adjacent to it. *Annals of the Romanian Society for Cell Biology* 25 (6), 2828-2834
 22. Gaipnazarova Feruza. Distribution of land snail by vertical zones and biotopes of *Pseudonapaeus* species in Fergana, Chatkal and Kurama mountain range // *European science review*. – 2016. – №. 1-2. – pp. 3-4.