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**Xusniddin T. BOYMURODOV,**

*DSc, professor,*

*Samarqand davlat veterinariya meditsinasi, chorvachilik va biotexnologiyalar universiteti, Samarqand, O‘zbekiston*

*E-mail: boymurodov1971@mail.ru, Orcid 0000-0002-9732-011X,*

**Jonibek R.SAIDQULOV,**

*Fundamental, ijtimoiy-gumanitar fanlar” kafedrasida katta o‘qituvchi. “SAMBHRAM University” Jizzax, O‘zbekiston*

**Azamat N. EGAMQULOV,**

*PhD, Samarqand davlat veterinariya meditsinasi, chorvachilik va biotexnologiyalar universiteti, Samarqand, O‘zbekiston*

*SamDU professori, b.f.d. Z.Izzatullayev taqrizi asosida*

### OQDARYO SUV EKOTIZIMLARIDA TARQALGAN UNIONIDAE, CORBICULIDAE, LYMNAEIDAE MOLLYUSKALARI FAUNASI VA EKOLOGIYASI

Annotatsiya

Tadqiqotning asosiy maqsadi Oqdaryo suv ekotizimlarida tarqalgan Unionidae, Corbiculidae, Lymnaeidae mollyuskalari faunasi va ekologiyasini o‘rganishdan iborat. Qurg‘oqchilikning kuchayishi tabiiy suv havzalari biologik xilma-xilligining qisqarishi hamda suv ekotizimlarining o‘zgarishiga olib kelmoqda. Oqdaryo daryosida mollyuskalarning 15 turi va 1 kenja turining tarqalganligi o‘rganildi. Oqdaryoning Chelak shaxri yaqinidagi hududida 12 ta va Oqdaryo suv omboridan keyingi qismida 13 turning yashashi aniqlandi. Oqdaryo daryosi biotoplarida tarqalgan mollyuskalarni yashash joyiga qarab ekologik guruhlarini tahlil qilganimizda peloreofil, pelolimnofillar, reofil, fitofil, telmotofil va fitoreofil guruhlari uchrashi o‘rganildi.

**Kalit so‘zlar:** Unionidae, Corbiculidae, Lymnaeidae, mollyuskalar, fauna, Sinanodonta orbicularis, Sinanodonta puerorum.

### FAUNA AND ECOLOGY OF MOLLUSKS OF THE FAMILIES UNIONIDAE, CORBICULIDA, AND LYMNAEIDAE COMMON IN AQUATIC ECOSYSTEMS OF THE AKDARYA RIVER

Annotation

The primary objective of this study was to investigate the fauna and ecology of mollusks of the families Unionidae, Corbiculidae, and Lymnaeidae common in the aquatic ecosystems of the Akdarya River. Increased dry periods lead to a decrease in biodiversity in natural water bodies and changes in aquatic ecosystems. The distribution of 15 mollusks species and one subspecies in the Akdarya River was studied. Twelve species were found in the Akdarya region near the town of Chelak, and 13 species were found in the lower reaches of the Akdarya Reservoir. When analyzing the ecological groups of mollusks common in the Akdarya River biotopes based on their habitats, the presence of peloreophiles, pelorymnoophiles, rheophiles, phytophiles, telmotophiles, and phytoreophiles was studied.

**Keywords:** Unionidae, Corbiculidae, Lymnaeidae, mollusks, fauna, Sinanodonta orbicularis, Sinanodonta puerorum.

### ФАУНА И ЭКОЛОГИЯ МОЛЛЮСКОВ СЕМЕЙСТВ UNIONIDAE, CORBICULIDAE, LYMNAEIDAE, РАСПРОСТРАНЕННЫХ В ВОДНЫХ ЭКОСИСТЕМАХ РЕКИ АКДАРЬЯ

Аннотация

Основная цель исследования – изучение фауны и экологии моллюсков семейств Unionidae, Corbiculidae, Lymnaeidae, распространенных в водных экосистемах Акдарьи. Увеличение засушливых периодов приводит к снижению биоразнообразия природных водоемов и изменениям в водных экосистемах. Было изучено распространение 15 видов и 1 подвида моллюсков в реке Акдарья. 12 видов были обнаружены в районе Акдарьи вблизи города Челак, а 13 видов – в нижнем течении Акдаринского водохранилища. При анализе экологических групп моллюсков, распространенных в биотопах реки Акдарья, по их местообитаниям, было изучено присутствие пелореофилов, пелоримнофилов, реофилов, фитофилов, тельмотофилов и фитореофилов.

**Ключевые слова:** Unionidae, Corbiculidae, Lymnaeidae, моллюски, фауна, Sinanodonta orbicularis, Sinanodonta puerorum.

**Kirish.** Yer sharida qurg‘oqchilikning kuchayishi tabiiy suv havzalari biologik xilma-xilligining qisqarishi hamda suv ekotizimlarining o‘zgarishiga olib kelmoqda. Daryolar suv ekotizimlarida tarixan shakllangan mollyuskalar turlari alohida ahamiyatga ega bo‘lib, antropogen va texnogen omillar ta‘sirida ular biotoplarining o‘zgarishi mollyuskalar noyob turlarining transformatsiyasiga olib kelmoqda. Antropogen ta‘sir hududidagi mollyuskalar populyatsiyalaridagi o‘zgarishlarni aniqlash va muhofazaga muhtoj turlarini saqlab qolish muhim ahamiyatga ega. Oqdaryo suv ekotizimlarida tarqalgan Unionidae, Corbiculidae, Lymnaeidae mollyuskalari faunasi va ekologiyasini o‘rganish dolzarb muammolardan biridir.

**Mavzuga oid adabiyotlar tahlili.** Daryolar suv ekotizimlari mollyuskalar sistematikasi, ekologiyasi va ularni muhofaza qilish bo‘yicha A.Bogan (2010) A.Teixeira, R.Sousa, (2011), H. James (2011), H.Maria, D. Graf (2011), K. Cummings, O. Klishko (2012), M.Lopes-Lima, E.Froufe (2013), L.Vasiliev (2018), M.O.Son (2009,2010), A.L.Rijinashvili (2009), A.V.Sintyurina, A.B.Bigaliev (2009, 2010), L.N.Yanovich (2013), V.V.Bogatov (2014), D.V.Kuzmenkin (2015, 2016), Z.I. Izzatullaev (2019, 2022, 2025), X.T.Boymurodov (2020, 2021, 2026) lar tadqiqotlar olib borishgan [3,4,8,7,9].

**Tadqiqot metodologiyasi.** Oqdaryo suvlaridan material terishda Rijinashvili (2005,2028); Storobogatov, Izzatullaev (1989, 1990), Izzatullaev, Boymurodov, (2022, 2025) metodlaridan foydalanildi. Oqdaryo suv ekotizimlarida 2020-2025 yillar davomida tadqiqotlar olib borildi 212 ta dan ortiq mollyuskalar namunalari o‘rganildi. Turlarni aniqlash va zichligini taxlil

qilishda Alyoxina G.P. va bosh., 2007, Izzatullaev Z.I. (2019, 2022), Boymurodov X.T. (2022, 2025) ishlarida keltirilgan uslublar bilan taxlil qilindi [1,2,5,6].

**Tahlil va natijalar.** Oqdaryo daryosi - Zarafshon daryosidan suv oladi. Oqdaryoni uzunligi – 131 km, suv sarfi 230 m<sup>3</sup>/sek. Oqdaryodan 23 ta ariq suv oladi. Shundan 12 tasi o'ng qirg'oqda Qurbonobod – 9, 6 km, Yangikent – 34 km va boshqalar, 10 tasi esa chap qirg'oqda Shahob – 17 km, Fazara – 26,8 km, Chelak – 9 km va boshqalar. Adabiyotlarni tahlil qilish shuni ko'rsatadiki bizgacha daryo mollyuskalar faunasi maxsus to'liq o'rganimagan. Mollyuskalarni o'rganish uchun Oqdaryoning ikki nuqtasida Chelak shaxri yaqinidagi hududida va Oqdaryo suv omboridan keyingi qismida doimiy ko'zatislar olib bordik. Oqdaryoda Chelak shaxriga yaqin koordinatli N 39.69477167145121, E 67.05410957336427 qismida 12 turga mansub mollyuskalar tarqalganligini aniqladik (1 – jadval).

Chelak shaxri yaqinidagi hududida Unionidae, Corbiculidae va Lymnaeidae oilalariga kiruvchi mollyuskalar tarqalgan bo'lib ikkipallali mollyuskadarning Uonionidae oilasi *Sinanodonta* urug'idan *Sinanodonta gibba* 1,7, *S. orbicularis* 1,5, *S. puerorum* 1,4 tadan tarqalgan bo'lib ular asosan 0,4-2,3 metr chuqurliklarda loyli biotoplarda uchraydi. Suv ekotizimlarida *Sinanodonta* urug'i turlari zichligining kattaligi bilan ustunlik qiladi.

1-jadval

Oqdaryoda mollyuskalarning biotoplarda tarqalishi va ekologik guruhlari (n= 10, m<sup>2</sup>/dona)

№	Turlar	Oqdaryo daryosi		Biotoplari			Ekologik guruhlari
		Chelak shaxri yaqinidagi hududi	Oqdaryo suv omboridan keyingi hududi	to'shloq yerlar	qumloq yerlar	loylar	
Ikkipallali mollyuskalar (Bivalvia) sinfi Unionidae oilasi							
1	<i>Sinanodonta gibba</i>	1,7±0,3	1,2±0,2	-	-	+	Peloreofil
2	<i>Sinanodonta ruerorum</i>	1,5±0,3	1,3±0,2	-	+	-	Peloreofil
3	<i>Sinanodonta orbicularis</i>	1,4±0,2	1,4±0,2	-	-	+	Peloreofil
4	<i>Colletopterum ponderosum volgense</i>	-	0,9±0,1	-	+	-	Pelolimnofil
Corbiculidae oilasi							
5	<i>Corbicula cor</i>	0,7±0,1	-	-	+	-	Peloreofil
6	<i>Corbicula fluminalis</i>	-	-	-	+	-	Peloreofil
7	<i>Corbicula purpurea</i>	0,9±0,1	-	-	+	-	Peloreofil
8	<i>Corbiculina tibetensis</i>	1,7±0,3	1,6±0,3	+	-	-	Peloreofil
9	<i>Corbiculina ferghanensis</i>	1,5±0,2	1,4±0,2	-	+	-	Peloreofil
Qorinoyoqli mollyuskalar (Gastropoda) sinfi Lymnaeidae oilasi							
10	<i>Lymnaea stagnalis</i>	0,9±0,1	1,2±0,1	+	-	-	Fitofil
11	<i>Lymnaea truncatula</i>	-	1,4±0,2	-	-	+	Telmatofil
12	<i>Lymnaea thiessea</i>	1,0±0,3	1,3±0,1	-	-	+	Reofil
13	<i>Lymnaea oblonga</i>	0,6±0,1	1,1±0,1	-	+	-	Fitofil
14	<i>Lymnaea subangulata</i>	-	0,4±0,1	-	-	+	Fitofil
15	<i>Lymnaea auricularia</i>	1,0±0,1	1,5±0,2	-	-	+	Fitoreofil
16	<i>Lymnaea bactriana</i>	1,1±0,1	1,4±0,1	-	+	-	Fitofil
<b>Jami turlar soni</b>		<b>12</b>	<b>13</b>	<b>2</b>	<b>8</b>	<b>6</b>	

Daryoning sekin oqar qismi qumli biatoplarda Sorbiculidae oilasidan *Corbicula cor* 0,7, *C. purpurea* 0,9, *Corbiculina tibetensis* 1,7, *C. ferghanensis* 1,5 uchraydi. Bu turlar daryo atrofidagi baliqchilik xo'jaliklari hovuzlarida mollyuskalar nisbatan ko'p bo'lib, ularda doimiy suv mavjudligi, loy bosgan va mokrofitlar ko'p o'sgan joylar nisbatan ko'plab uchraydi. Hudud kanallari va ariqlari suvlarida qorinoyoqli suv mollyuskalari Lymnaeidae oilasidan *Lymnaea stagnalis* 0,9, *L. thiessea* 1,0, *L. oblonga* 0,6, *L. auricularia* 1,0, *L. bactriana* 1,1 tadan uchrashini aniqladik. Ushbu hudud mollyuskalari faunasi daryoning boshqa qismlari faunasidan zichligining kattaligi bilan farq qilishi ko'zatisildi.

Oqdaryo suv omboridan keyingi N 40.01696639570046, E 65.9517002105713 koordinatli qismida jami 13 ta tur mollyuskalar tarqalganligini aniqladik. Bu hududda turlar xilma-xilligiga Oqdaryo suv omborining ta'siri katta sababi suv omborida doimiy suv bo'lishi suv bilan boshqa suv ekotizimlariga turlarning tarqalishiga o'z ta'sirini ko'rsatadi. Loyli biotoplarda Uonionidae oilasidan *Sinanodonta gibba* 1,2, *S. orbicularis* 1,4, *S. puerorum* 1,3, *C. ponderosum volgense* 0,9 uchrashini aniqladik. Suv ekotizimlarida *Solletopterum kokandicum* turi uchramadi.

O'zbekiston Qizil kitobiga kiritilgan Sorbiculidae oilasidan *Corbicula cor*, *C. fluminalis* va *C. purpurea* turlari suv ekotizimlarida tarqalmagan. Qumli biotoplarda *Corbiculina tibetensis* 1,6 va *C. ferghanensis* 1,4 tarqalganligini aniqladik. Suvda yashaydigan *Corbiculina tibetensis* va *C. ferghanensis* lar uchun suvning shurligi, tiniqligi, loyqaligi, mineral tuzlarning tarkibi va boshqalar ko'pligi cheklovchi faktor sifatida o'z ta'sirini ko'rsatadi. Daryoning Oqdaryo suv omboridan keyingi qismi suv ekotizimlari qorinoyoqli mollyuskalarning tarqalishi uchun qulay bo'lgan suv tipi bo'lib ular 1 m<sup>2</sup> joyda Lymnaeidae oilasi *Lymnaea* urug'idan *Lymnaea stagnalis* 1,2, *L. truncatula* 1,4, *L. thiessea* 1,3, *L. oblonga* 1,1, *L. subangulata* 0,4, *L. auricularia* 1,5, *L. bactriana* 1,4 tadan tarqalganligini aniqladik.

**Xulosa va takliflar.** Oqdaryoning Chelak shaxri yaqinidagi hududida 12 ta va Oqdaryo suv omboridan keyingi qismida 13 turning tarqalganligini aniqladik. Oqdaryo daryosi biotoplarda tarqalgan mollyuskalarni yashash joyiga qarab ekologik guruhlarni tahlil qilganimizda peloreofil, pelolimnofillar, reofil, fitofil, telmatofil va fitoreofil uchrashi o'rganildi. Daryo sohili suv ekotizimlarida oqar suvlar loylarida yashovchi peloreofil va o'simliklarda yashovchi fitofil ekologik guruhiga kiruvchi turlar

boshqa turlarga qaraganda dominandlik qilishi aniqlandi.

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