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THE INTERPRETATION OF AMU DARYA AND ARAL BASIN FISHING IN THE SOURCES OF BERUNI

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Abstract. *This article analyzes the hydrographic, zoological, pharmaceutical, and ethnographic data regarding the Khorezm oasis, the Amu Darya (Jayhun) river, and the Aral Sea basin found in the encyclopedic works of the great scholar Abu Rayhan Beruni, such as 'Al-Athar al-Baqiya' and 'Kitab al-Saydana'. Based on Beruni's source studies and natural-scientific views, the research highlights the characteristics of the Amu Darya ichthyofauna up to the 11th century, the fishing culture of the local population, the traditions of protecting water resources and fish stocks, as well as the medical role of fish products.*

Keywords: *Abu Rayhan Beruni, Al-Athar al-Baqiya, Kitab al-Saydana, Khorezm, Jayhun (Amu Darya), Aral Sea, ichthyofauna, fishing ethnography, hydrology, ecological restrictions.*

INTRODUCTION

The culture of utilizing water bodies and their biological resources occupies a fundamental position in the history of Central Asian civilization. The socio-economic and cultural life of the Khorezm oasis was intrinsically tied to the hydrological system of the Amu Darya and the Aral Sea (*Kukcha Tengiz*). In his encyclopedic treatises, the 11th-century polymath Abu Rayhan Beruni documented invaluable empirical observations pertaining to biogeography, hydrology, and ichthyology. His seminal works, "*Kitāb al-Āthār al-Bāqiyah*" ("*The Remaining Signs of Past Centuries*") and "*Kitāb al-Saydanal-Fi 'l-Tibb*" ("*Pharmacognosy in Medicine*"), constitute primary written sources for investigating the ethno-ecological conditions and fishing culture of the Khorezm oasis during the early Middle Ages.

1. Ichthyofauna and Ethno-Biological Observations of the Amu Darya–Aral Basin

In "*Al-Āthār al-Bāqiyah*", Beruni provides detailed descriptions of the macro-ichthyofauna inhabiting the lower reaches of the Amu Darya (Jayhun) and the Aral Sea, focusing on their morphological characteristics and behavioral patterns. He records the presence of giant fish species ("*Ajab balīgh*" / "*Pahlavōn balīgh*"), reaching several *gaz* (exceeding one meter) in length and exhibiting substantial body mass.

Crucially, Beruni integrates morphological taxonomy with ethnographic and utilitarian analyses:

- **Material Culture and Craftsmanship:** The indigenous population of Khorezm utilized fish bones and skins in artisanal production, fashioning household implements, domestic vessels, and structural components of weaponry (e.g., scale armor and hilt mountings).



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• **Ethnomedicine and Pharmacognosy:** In "*Al-Saydana*", Beruni classifies the pharmacological temperament (*mizāj*) of fish tissue and visceral organs (fat, bile, and skeletal structures), providing a rationalized basis for their therapeutic application in medieval ethnomedicine.

2. Geo-Ecological Analysis: Hydrological Dynamics and Ichthyic Migration

Demonstrating an advanced comprehension of hydrological mechanics, Beruni thoroughly examined the historical avulsion and shift of the Amu Darya's course (its alternating discharge into the Caspian and Aral basins).

His observations highlight key ecological phenomena:

- Seasonal surges in river discharge and current velocity served as environmental triggers for anadromous/potamodromous fish migrations from the Aral Sea to the upper reaches of the Amu Darya for spawning (*nerest*).

- Channel migration and shifts in the hydrological regime altered aquatic habitats, driving succession and species turnover—representing some of the earliest documented observations in historical geo-ecology and biogeocenology.

3. Fishing Ethnography, Ethno-Calendrics, and Water Conservation Traditions

"*Al-Āthār al-Bāqiyah*" offers a systematic account of the traditional solar calendar and ethno-religious rituals of the Khorezmian population linked to agriculture and riparian livelihoods.

- **Ethno-Calendrics and Water Cults:** Specific dates in the Khorezmian calendar (such as "*Maljan*") were directly calibrated to annual river inundations and the formal opening of the fishing season.

- **Customary Ecological Norms:** Customary practices (*'urf*) in the Khorezm oasis enforced seasonal taboos and spatial restrictions on fishing during spawning periods to prevent overexploitation. Beruni interprets these practices as an institutionalized manifestation of ecological reverence and sustainable water management.

4. Gastronomic Culture and Food Security Fishing constituted a critical component of the subsistence economy and nutritional security in Khorezm. Beruni details indigenous food preservation technologies—including salting, sun-drying, and long-term curing—emphasizing the role of processed fish products in the regional dietary system.

Conclusion. The empirical data preserved in Abu Rayhan Beruni's "*Al-Āthār al-Bāqiyah*" and "*Al-Saydana*" serve as indispensable historical-ethnographic sources for reconstructing the 11th-century hydrobiology, ichthyofauna, and fishing traditions of the Amu Darya–Aral basin. Beruni's accounts demonstrate that fishing in historical Khorezm was not merely an extractive subsistence activity, but a highly developed ethno-ecological tradition grounded in adaptive resource management, specialized material craftsmanship, and environmental stewardship.



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