Historical Background of Paleo Mega Lake of Rey

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ABSTRACT

Over the past decade, a vast ancient Lake has been discovered in the central region of Iran, known as the Paleo Mega Lake of Rey (PAMELA). Considering that the presence of water in the lake coincides with the existence of human civilizations in the region, it is expected that references to this lake may be found in ancient Iranian texts. In this paper, we aim to meticulously examine the provided data while accurately pinpointing the geographical locations, names, and relevant regions connected to this lake. For this purpose, the majority of historical texts, travelogues, city histories, royal biographies, and other available sources have been reviewed. In general, with reference to the mentioned historical texts, it becomes evident that in many ancient texts, the PAMELA has been mentioned by names like the Faraxkurt Lake and Saveh Lake. Numerous ancient sites and structures in the vicinity of the lake have been identified. Additionally, significant data related to periods when the lake was filled with water has been acquired. Consequently, there is no longer any room for uncertainty regarding the presence of the lake during the era when humans resided in the territory of Iran.

Keywords: Paleo Mega Lake of Rey, Faraxkurt Lake, Saveh Lake, Historical text, Travelogue.

1. Introduction

In this article, our primary objective is to explore the evolution of writing and calligraphy in Iran. Additionally, we will introduce the largest ancient lake in human history, recently discovered in Iran. This lake presents several intriguing facets and notable challenges, one of which pertains to its connection with the ancient people of Iran. Consequently, we are dedicated to conducting a comprehensive review of various sources, including books,
travelogues, biographies, and more, to identify individuals who have made references to this remarkable lake.

2. How the Discovery of PAMELA Lake Unfolded

Climate change and the vanishing of ecosystems present significant challenges to the countries in the Middle East region. Climate studies indicate wet periods in the history of inland lakes in these areas. The ancient Lake Re, known as the largest lake in human history, spans across Iran, Afghanistan, and Pakistan, and is considered one of the most influential climatic and ecological factors of the Holocene epoch (Figure 1). Some of the coastal sediments of this lake were initially brought to attention in Nazari studies (Nazari et al., 2010) and Berberian (Berberian, 2014; Berberian & Yeats, 2016). Ultimately, in Jarahi research (H Jarahi, 2021), it was identified as a unified mega-lake. These findings suggest that our ancestors thrived in a different climate than what we experience today.

Maghsoudi (Maghsoudi, 2021) and Nazari (Nazari et al., 2021) have also mentioned the existence of an ancient lake in the Great Desert region. However, it was in Jarahi research (Habibi, Pourkermani, Ghorashi, Almasian, & Jarahi, 2023; H Jarahi, 2021; H. Jarahi, Moghimi, Tan, Saygılı, & Karagöz, 2022a, 2022b; Najafian A., Jarahi, & Bayraktutan M.S., 2022) that the PAMELA theory was first introduced. This theory explores a vast lake, 1.7 times the size of the Caspian Sea, covering the central deserts of Iran, parts of Afghanistan, and Pakistan. Investigations reveal that this lake began filling up at the onset of the Holocene (Younger Dryas) and has existed in these regions for at least over 10,000 years. This timeframe, considering Iran's ancient history, aligns with the rule of various tribes and kings in Iran. Therefore, it is expected that historical texts mention this lake.
Figure 1: The geographical location of the ancient Lake of Rey is depicted with changing shades from dark to light blue. This lake covered parts of three countries: Iran, Afghanistan, and Pakistan (H Jarahi, 2021). Important deserts are marked in red, and ancient sites are shown in black. Purple triangles represent mill hills. The positions of the mill hills near the lake’s shore correspond entirely to ports and shallow coastlines. The given digital elevation data is accurate to 12.5 meters, obtained from the AleosPalsar satellite.

3. PAMELA in historical text

Paleo Mega Lake of Rey, recognized as one of the most pivotal environmental determinants in human existence, delineated an epoch characterized by a flourishing maritime and piscatorial industry. This article seeks to aggregate and scrutinize historical manuscripts referencing the lake, with the purpose of further scholarly exploration. Consequently, a
comprehensive selection of over 350 volumes, encompassing literature, travelogues, urban
chronicles, biographies, and more, has been meticulously culled and meticulously examined.
Given their substantial number, specific citation of these sources is omitted in this context.
Subsequently, the ensuing texts have been singled out for in-depth investigation, to be
expounded upon in subsequent sections.

The earliest known literary opus that delves into the subject matter of this lake is the
Avesta, dating back to the Achaemenid epoch (648 to 330 BCE) (Bleeck & Spiegel, 1999;
Darmesteter & Mills, 2008). Another noteworthy composition, the Bundahishn, was authored
during the Sassanid era (224-652 CE) (Hale, 2008) and has undergone recurrent revisions
(Oryan, 2021). Within these literary tomes, a myriad of archaic nomenclature and symbolism
is chronicled, some of which have faded into the annals of history. Nevertheless, certain
geographic locales and appellations endure. A salient instance is the expansive water body
known as Faraxkurt Lake (Vouro kasa). The precise geographical demarcation of this lake
remains a subject of robust scholarly discourse (Green, 2022; Oryan, 2021). Pourdavoud has
posited the possibility of it being synonymous with the Caspian Sea (Pourdavoud, 2015), Bahar
regards it as the Indian Ocean (Bahar, 2000), while Derakhshani identifies it as the Persian
Gulf (Derakhshani, 2003).

The Avesta and Bundahishn also make allusions to specific geographical and historical
sites contiguous to Faraxkurt Lake. As such, it is apparent that Faraxkurt Lake was
geographically situated at the base of the Alborz mountain range. Additionally, the Shushigan
Mountains (Kerman) and Khurasgan (Isfahan) were geographically aligned with the periphery
of Faraxkurt Lake (Figure 1). The geographic localization of these toponyms underscores their
proximity to PAMELA. Consequently, the discord amongst historians emanates from the lake's
arid state and the paucity of its remnants in the contemporary era.
Curtis (Curtis, 1990) argues that in the expansive arid expanse of the Great Desert and the Lut Desert, there once extended a vast lake. Haghighat (Haghighat, 1962), recounting the history of the city of Semnan, reports that some 2,000 years prior to the Common Era, King Tahmures erected the city of Semnan on the banks of Lake Saveh. He also elucidates the formation of the Iranian Plateau, highlighting that the southern lands of Semnan once comprised coastlines and plains. Tarih-e-Qomi (Qomi, 1934) alludes to an extensive lake spanning from Rey to Saveh during the reign of the Arsacid Kings (specifically, Goudarz in 91 BC). This perspective is further reinforced by the assertions of Strange (Strange, 1930).

Kateb (Kateb, 1458), in reference to Yazdgird II, one of the Persian monarchs (reigning from 421 to 439 CE), conveys the following:

Yazdgird commanded three generals: Mibodar, Bidar, and Eqdar. He instructed them to establish three cities. Mibodar founded Mibod, Eqdar established Eqdā, renowned for its association with the Gabars village. Bidar laid the foundations of Bidah. These three cities were served by a port known as Bargīn, located along the shores of Lake Saveh. This port was situated at a distance of 11 Farsangs (an ancient Iranian unit of length equivalent to approximately 6 kilometers) from Yazd (Afshar, 1978).

In his travelogue concerning the deserts of Iran, Hedin (Hedin, 1910) provides a more comprehensive account of the characteristics of the ancient lake that once existed in this region compared to other authors. Hedin references ancient Iranian texts indicating that during the reign of Anushiravan the Sassanid (531-579 CE), the Gara Chai River flowed into the expansive Lake Saveh. He meticulously traced the remnants of the lake's shorelines to the cities of Jandagh and Torud (Figure 1). Hedin also reveals that the city gate of Jandaq was
constructed using timber from ships that traversed the Desert Sea, located between Jandagh and Torud.

Zakariya Qazvini, in "Athar al-Bilad" and "Akhbar al-‘Ibad" (F. H. A. M. Qazvini, Browne, & Nicholson, 1330; Z. M. Qazvini, 1275), recounts, "In ancient times, there was a lake near Saveh that desiccated and transformed into arable land around the time of the birth of the Holy Prophet Muhammad (the last Prophet of Islam, 550-570 CE)."

Likewise, Siroux (Siroux, 1949) postulates that Lake Saveh had desiccated by the time of the birth of the last Prophet of Islam. Eghtedari (Eghtedari, 2022) corroborates Siroux’s assertions regarding the period of the lake’s desiccation. In the book "Tarih-e-Qomi" (Qomi, 1934), based on Okhravi and Djamal (Okhravi & Djamali, 2003), there are mentions of Lake Saveh and its desiccation. Additionally, it is reported that Lake Saveh was refilled in 1886 CE, according to a report from Sadid-o Saltaneh, an official from the late Qajar period, and this was reiterated two years later by Ein al-Dawla King (Persia, 1888).

Gabriel (Gabriel, 1939) provides invaluable insights into the details of a lake situated in the current location of the Central Desert (Great Desert). He recounts stories depicting the desert as an expanse resembling a sea with ships, ports, and lighthouses, among other elements. Other researchers have also made references to ports known by various names such as "Barghin," "Barjin," "Barajin," and "Parchin" (Pirniya & Afsar, 1991). Rajabi identifies the two cities of Jandagh and Torud as two forgotten ports in the desert (Rajabi, 2004).

4. Conclusion

In general, based on the referenced historical texts, names such as the Faraskurt Lake and Lake Saveh allude to the presence of a large lake in the central region of Iran. The geographical locations of cities and places mentioned in historical texts indicate that the lake’s water level must have been at least approximately 1000 meters higher than sea level. Therefore,
from at least 2000 years BCE until 570 CE, the lake remained filled with water. Ancient cities like Saveh, Rey, Aveh, Kashan, and others were all situated at elevations ranging from 970 to 100 meters above sea level. Consequently, during this time frame, the lake's water level was approximately 1000 meters higher than sea level. However, historical records do not provide information about the extent to which the lake's water level receded after desiccation. Moreover, in the past two centuries, historical records indicate a re-filling of the lake, at least in the eastern region (Salt Lake).

Appendix

Note about Iranian historical texts

Iran boasts a rich history dating back to ancient times. Discoveries and evidence unearthed at archaeological sites provide compelling indications of human habitation from the inception of the Holocene epoch to the contemporary era (Matthews & Nashli, 2022). In the realm of contemporary geopolitics (Studies, 2020) and across recorded history (Axworthy, 2007), Iran has consistently occupied a pivotal and distinctive role. It stands as a vibrant hub where ideas, ideologies, movements, technologies, and methodologies are conceived, developed, consumed, imported, and exported in innovative forms, often transcending the boundaries of Asia and extending into global networks of interaction.

Throughout history, Iran has played a central role in the Silk Roads (Frangipane, 2015), a role that, in a modern context, serves as a crucial bridge connecting China to the Mediterranean Sea (Griffiths, 2021). The methods of writing in ancient Iranian societies have been widely dispersed since 3000 BCE, and written artifacts have endured across a diverse array of locales and contexts. Written sources, particularly those inscribed in long-extinct languages, require specialized skills for their reading, comprehension, and interpretation (Matthews & Nashli, 2022). For archaeologists, a significant concern pertaining to these texts lies in the challenge of contextualizing them historically: who were the authors,
who possessed the ability to decipher them, and how were they employed within the field of archaeology?

Early European explorers and traders, such as Pietro della Valle in the early 17th century and Cornelius de Bruin in the early 18th century, have contributed reports and cartography documenting some of Iran's prominent locales and structures, including Persepolis (Swanick, 2012; Weerdenburg & Drijvers, 1991). The journey toward unlocking the wealth of ancient Iranian sources commenced with Georg Grotefend's identification of Achaemenid kings' names in 1802 through deciphering ancient Persian inscriptions at Persepolis (Swanick, 2012), a breakthrough that substantially enriched our understanding. An achievement that was significantly increased by Henry Rawlinson's decipherment in 1840-1840 of the trilingual Bisotun inscription (Darius the Great), near Kermanshah (Larsen, 1996; Peter, 2009; Rawlinson, 1846).

The nascent development of archaeology in Iran was intimately connected with the burgeoning Iranian nationalism during the Qajar period, particularly under the rule of Naser al-Din Shah (1846-1896) (Abdi, 2001; Goode, 2007). Consequently, the history of writing and script in Iran has been inextricably linked to an evolutionary odyssey. The texts currently at our disposal represent but a fraction of Iran's ancient heritage.

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