

Reasoning on Ancient Armenia's Watercourses and the Roots of Mesopotamian Civilization: Hydrological, Geopolitical, and Cultural Dimensions

Nusret Burak ÖZSOY  

Corresponding Author

Erzurum Technical University, Faculty of Letters, Department of History, Erzurum, Türkiye.
nburakozsoy@gmail.com

Abstract

This study delves into the multifaceted influence of ancient Armenian rivers—specifically the Tigris, Euphrates, Aras (Araxes), and Kura (Cyrus)—on the historical development of Mesopotamian civilizations. These rivers played pivotal roles in the Near East as geographical and hydraulic features and cultural, economic, strategic, and ideological elements. Utilizing an interdisciplinary approach, the research integrates ancient textual sources, archaeological findings, and geomorphological studies to uncover the complex functions of these waterways. Key themes include the impact on agricultural productivity, establishing trade networks, urbanization processes, and the symbolic representation of rivers in mythology, royal propaganda, and military strategies.

Civilizations such as the Sumerians, Babylonians, and Assyrians imbued these rivers with sacred and ideological significance, highlighting their central role in shaping cultural identities and political narratives. The Eastern Anatolian plateau's rugged terrains and volcanic landscapes influenced river flow regimes, presenting opportunities and challenges for ancient societies. These rivers served as vital conduits for trade and communication while acting as formidable logistical barriers during military campaigns. Assyrian and Urartian royal inscriptions illustrate how river crossings were framed ideologically, intertwining geography with divine sanction and sovereign power.

Moreover, the study examines the sophisticated irrigation and canal systems that transformed these rivers within the Fertile Crescent into engines of agricultural prosperity and urban development. Accounts from authors like Herodotus, Xenophon, Strabo, and Pliny provide insights into the varying perceptions of these rivers across different periods and cultures. Ultimately, the research underscores the indispensable role of ancient Armenian rivers in the interaction between natural landscapes and human civilization, offering valuable perspectives on historical water management and sustainability practices in the Near East.

Keywords: Armenia, East Anatolia, Euphrates, Araxes, Tigris.

Submitted 01.01.2025
Revision Requested Last 28.04.2025
Revision Received 06.08.2025
Accepted Date 17.09.2025
Publication Date 25.09.2025

Cite this article

Özsoy, N.B. (2025). Reasoning on Ancient Armenia's Watercourses and the Roots of Mesopotamian Civilization: Hydrological, Geopolitical, and Cultural Dimensions, *Oannes*, 7(2), September, pp. 225-247.



The content of this journal is licensed under a Creative Commons Attribution-Noncommercial 4.0 International License.



Geniştirilmiş Özet

Bu çalışma, antik Armenia'nın nehirlerinin Mesopotamia medeniyetlerinin tarihsel gelişimi üzerindeki çok boyutlu etkilerini derinlemesine incelemektedir. Fırat (Euphrates), Dicle (Tigris), Aras (Araxes) ve Kura (Cyrus) gibi önemli su yolları, sadece coğrafi ve hidrolik olgular olarak değil, aynı zamanda kültürel, ekonomik, stratejik ve ideolojik varlıklar olarak da Yakındoğu manzarasında merkezi bir rol oynamıştır. Disiplinler arası bir yaklaşım benimseyen araştırma, antik metinler, arkeolojik bulgular ve jeomorfolojik çalışmaların sentezini yaparak bu nehirlerin karmaşık rollerini ortaya koymayı amaçlamaktadır. Çalışmanın ana temaları arasında tarımsal verimlilik, ticaret ağları, kentleşme süreçleri üzerindeki etkileri ile mitoloji, kraliyet propagandası ve stratejik savaşlarda nehirlerin temsil edilişi yer almaktadır.

Özellikle Sümerler, Babilliler ve Asurlular gibi uygarlıkların bu nehirler üzerine yüklediği kutsal ve ideolojik anlamlar, kültürel kimliklerin ve siyasi anlatıların şekillenmesinde nehirlerin merkeziliğini vurgulamaktadır. Doğu Anadolu plato bölgesinin engebeli arazileri ve volkanik manzaraları ile karakterize edilen jeomorfolojik özellikler, nehir akış rejimlerini belirleyerek antik toplumlar için hem fırsatlar hem de zorluklar yaratmıştır. Bu nehirler, ticaret ve iletişim için hayati kanallar olarak hizmet ederken, askeri seferler sırasında önemli lojistik engeller de oluşturmuştur. Asur ve Urartu kraliyet yazıtlarında görüldüğü üzere, nehir geçişlerinin ideolojik çerçevesi, coğrafyanın ilahi onay ve egemen güç kavramlarıyla derinlemesine iç içe geçtiğini göstermektedir.

Araştırma, antik Yakındoğu'nun jeopolitik ve ekonomik çerçeveleri içinde nehirleri bir zemine oturtmayı hedeflemektedir. Özellikle Bereketli Hilal içinde bulunan bu su yollarını tarım zenginliğinin ve kentsel refahın motorları haline getiren sofistike sulama ve kanal sistemleri incelenmektedir. Herodotos, Ksenophon, Strabo ve Plinius gibi Hellen, Roma ve Yakındoğu yazarlarının hesaplarından yararlanarak, bu nehirlerin farklı dönemler ve kültürel ortamlar arasında nasıl algılandığını takip etmektedir.

Sonuç olarak, bu çalışma antik Armenia'nın nehirlerinin doğal peyzajlar ile insan uygarlığı arasındaki etkileşimde vazgeçilmez bir rol oynadığını vurgulamaktadır. Tarihsel, kültürel ve ekolojik boyutlarda bu su yollarının kapsamlı bir yeniden değerlendirmesi sunarak, bölgedeki su yönetimi ve sürdürülebilirlik konularında geçmişe dair önemli içgörüler sağlamaktadır. Çok boyutlu perspektifiyle Yakındoğu'nun tarihsel ekolojisinin anlaşılmasını zenginleştiren bu çalışma, insanlarla çevreleri arasındaki ilişkinin daha geniş söylemine katkıda bulunmaktadır.

Çalışma, Doğu Anadolu'nun karmaşık jeomorfolojisi ve hidrografik sistemi üzerine inşa edilmiştir. Antik Armenia ve Mesopotamia'nın iki ana nehri olan Euphrates ve Tigris'in yanı sıra, Araxes ve Cyrus gibi önemli diğer nehirler de incelenmiştir. Jeomorfolojik ve tektonik yapılar, nehir akış rejimlerini ve vadilerin oluşumunu belirleyerek, bu bölgelerdeki antik yerleşim ve savunma stratejilerini derinden etkilemiştir. Tarihsel ve kültürel açıdan, Euphrates ve Tigris'in "can damarları" olarak tanımlanması, bu nehirlerin ekonomik ihtiyaçların ötesinde metafizik ve kozmolojik inançlarla da şekillendiğini göstermektedir.

Asur krallarının nehir geçişlerini kaydetmeleri, bu eylemin sadece askeri bir hamle değil, aynı zamanda ideolojik bir zafer olarak algılandığını ortaya koymaktadır. Tarımsal üretim ve ticaret ilişkileri üzerindeki etkileri, bu nehirlerin ekonomik arterler olarak işlev görmesini sağlamıştır. Herodot ve Ksenophon'un detaylı ticaret ve ulaşım tanımları, antik dönemde nehirlerin lojistik kullanımı hakkında değerli bilgiler sunmaktadır. Ayrıca, Babil'in kanal sistemlerinin incelenmesi, antik su yönetimi teknolojisinin ne kadar sofistike olduğunu göstermektedir.

Askeri ve politik boyutları ele alındığında, nehirlerin stratejik engeller olarak kabul edilmesi, orduların bu doğal bariyerleri aşabilme kabiliyetini büyük bir askeri başarı ve egemenlik sembolü haline getirmiştir. Uruatri-Nairi seferleri ve Urartu'nun kutsal nehir geçişleri, kraliyet iktidarının meşrulaştırılması açısından kritik öneme sahiptir.

Son olarak, antik yazarların nehirler hakkındaki çeşitli anlatımları, antik coğrafyanın statik ya da tek boyutlu bir yapı olmadığını, aksine siyasi sınırların, mitlerin, ticaret yollarının ve yerel inanç sistemlerinin sürekli olarak yeniden şekillendiği dinamik bir "mekân" olduğunu göstermektedir. Bu çalışmanın bulguları, antik Armenia nehirlerinin Yakındoğu medeniyetlerinin oluşumu, evrimi ve birbirleriyle etkileşiminde çok katmanlı bir insan-çevre ilişkisi oluşturduğunu ortaya koymaktadır. Bu nehirler, beş bin yılı aşkın bir süredir üretimi, zenginliği, inancı ve güç kavramlarını şekillendirmiş, günümüz araştırmaları için de merkezi bir öneme sahiptir. Dolayısıyla, antik Armenia'nın nehirlerinin incelenmesi, Yakındoğu'nun tarihsel ekolojisi ve hidrolik mirasının ortaya çıkarılmasında vazgeçilmez bir temel teşkil etmekte, kültürel hafızayı zenginleştirmekte ve bu mirası geleceğe taşımak için planların oluşturulmasına katkıda bulunmaktadır.

Introduction

As the ancient center of the Near East, Mesopotamia and the lands of ancient Armenia that extend northward have hosted some of the oldest and wealthiest layers of human civilization. Above all else, this region's geostrategic and geocultural significance has been shaped by the natural environment, mainly by its rivers. Originating in the Eastern Anatolian plateau and feeding into major river systems, waterways such as the Euphrates (Fırat), Tigris (Dicle), Aras (Araxes), and Kura (Cyrus) have not only shaped physical geography but also guided the economic, political, and cultural evolution of civilizations. Much like the Nile's vital role in Egypt, the Euphrates and Tigris played a similarly crucial function in the Near East, effectively determining the privileged place in world history of the "Fertile Crescent."

Archaeological findings, supported by textual data from ancient sources (Herodotus, Xenophon, Polybius, Strabo, Pliny, etc.), clearly show that water resources were the principal driver of the dynamic relationship between Eastern Anatolia and Mesopotamia. On the one hand, these rivers enabled fertile farmland and

supported extensive trade routes; conversely, they formed nearly impassable natural barriers during military campaigns, a phenomenon observable at every historical stage. In this context, rivers deemed “sacred” or “divine” by ancient kingdoms served as economic and logistical backbones and inspiration for mythological and ideological narratives.

This article examines the rivers of ancient Armenia—arising from Eastern Anatolia’s rich river network—and their impact on Mesopotamia’s historical trajectory. The focus will be on the geographical, historical, and cultural importance of the major systems (such as the Euphrates and Tigris) and critical regional tributaries (like the Aras and Kura). Thus, from ancient authors’ narratives to archaeological discoveries and from ancient philology to geomorphological and geographical research, this study will re-evaluate the place and significance of these ancient Near Eastern rivers in human history from a multidimensional perspective.

In the following subheadings, the hydrographic characteristics of these rivers will first be examined through the region’s geographical and geomorphological features; subsequently, their role in agriculture, trade, transportation, and water management during antiquity will be discussed. Furthermore, the military-strategic and ideological background of river crossings in ancient texts will be closely analyzed, with particular emphasis on how the Euphrates and Tigris functioned as a “lifeline” for the ancient civilizations of Mesopotamia.

Geographical Perspective: The Hydrographic Structure of Eastern Anatolia

Geomorphological Features and River Systems in Eastern Anatolia

Eastern Anatolia hosts a complex network of hydrological systems that have constituted the lifelines of civilizations from ancient times to the present. Alongside having the most significant potential for river resources within the Republic of Turkey, this geographical region also bears strategic importance for containing historical Near Eastern river systems since prehistoric eras.

Owing to the region’s geomorphological and tectonic characteristics, these rivers follow meandering courses and prove unsuitable for navigation. Particularly during seasonal transitions, this hydromorphological feature renders river crossings extremely difficult. In volcanic terrains, steep gradients produce fast-flowing streams that carve deep valleys and gorges in soft lithological structures composed of lava flows. This geomorphological process explains why cataracts are relatively scarce. One especially noteworthy feature from a hydrographic standpoint is that a segment of the watershed dividing the Atlantic and Indian Oceans passes through this region, deterministically marking the western and northern boundaries of Eastern Anatolia in multiple locations. In the northeast, the rivers belong to the Kura–Aras system, whose hydrological discharge flows toward the Caspian Sea. The Van Lake Basin—covering roughly 16,000 km²—constitutes Turkey’s second-largest closed drainage system in the southeast (Akyol, 1949, pp. 4–6; Günaltay, 1951, pp. 554–555; Erinc, 1953, pp. 13–14, 60, 83; Lang, 1970, p. 24; Güney, 1990, p. 323; Tuncel, 1996, pp. 31–32; Bournoutian, 2011, pp. 14; Dedeyan, 2015, pp. 27 ff.).

Dominating the hydrographic network of the Upper Murat region, the Murat and Aras Rivers both drain into the Caspian Sea owing to the area’s relatively gentler morphology. The Aras originates on the southwestern slopes of the Bingöl Mountains and passes through a narrow, tectonic gorge between Mount Akbaba and Mount Topçu, crossing the northern high mountain chains to reach the Pasinler Plain. The Murat River collects much of the region’s drainage, forming one of the principal branches of the Euphrates. The Erzurum–Kars section, representing a key water-distribution hub in terms of hydrographic capacity, includes three main basins. Its eastern streams flow toward the Caspian, its northern waters gather into the Kura River in the Göle and Ardahan basins (likewise draining into the Caspian). In contrast, southern depressions drain in various directions under the dominance of the Aras (Erinc, 1953, p. 92; Koçman, 1990, p. 44).

Among the most significant components of this hydrographic system are the Euphrates and Tigris Rivers, which have served as life sources for Mesopotamia from antiquity. Of the Tigris’s total length of 1,900 km, 523 km lie within Anatolia. Formed by the confluence of waters from Lake Hazar and Mount Hazarbaba southeast of Elâzığ, the Tigris is fed by tributaries of the Diyarbakır basin and the Mardin threshold, periodically approaching the Euphrates to form the alluvial islands of al-Jazira. The region’s hydrographic regime is susceptible to seasonal changes. Water levels begin to rise gradually in late February and reach

their peak in April or May. Snowmelt is the driving factor in this hydrodynamic process, conferring a characteristically continental flow regime on these rivers. Notably, the broad channel profiles of the Hınıs Creek and Murat River exemplify this hydrographic characteristic (Güney, 1990, p. 323; Tuncel, 1994, p. 281; Hartmann, 1979, p. 582.).

The Role of Rivers in The Light of Historical Sources

River Cult in Sumerian, Babylonian, and Assyrian Civilizations

The Tigris and Euphrates Rivers constituted Anatolia's most critical hydrological systems and the Mesopotamian basin, paralleling the vital importance of the Nile River for Egypt's geography. Rising in the high plateaus of Eastern Anatolia, these two river systems were described in ancient literature as sacred and life-giving. Consequently, they were central in early Mesopotamian civilizations' cosmological and mythological narratives (Jacobsen, 1976, pp. 45–47; Roaf, 1990, pp. 23–25; Van De Mieroop, 2004, pp. 8–9).

A striking emphasis on the sanctity and abundance of these two rivers can be seen in numerous epigraphic sources—from Sumerian king lists and Akkadian-era inscriptions to the Babylonian creation epic and texts recounting the military campaigns of Assyrian (Aššur) kings. Particularly noteworthy is that the Euphrates (Buranun) was associated with Inanna in the Sumerian pantheon, whereas the Tigris (Idigna) was linked to Enlil, thereby gaining divine status. This elevation of geographical entities to the level of gods is significant in demonstrating the place of these rivers in the mindset of Mesopotamian societies (Kramer, 1963, pp. 122–124; Black and Green, 1992, pp. 110–112; Bottéro, 2001, pp. 89–91).

The key reason behind the sanctity attributed to these rivers stems from their role in agricultural production and, consequently, the economic prosperity that developed from it. Especially from the late fourth millennium BCE onward—during the Uruk period—these river systems' capacity to support agricultural production played a decisive part in the urbanization process and the rise of complex socio-economic structures (Adams, 1981, pp. 54–56; Algaze, 2008, pp. 123–125).

The geographic basin referred to as the “Fertile Crescent,” or Mesopotamia, essentially exemplifies the ecological and economic conditions these two river systems brought about. Just as the Nile Valley in Egypt gave birth to one of the most splendid cultural accumulations of the ancient world, the Tigris–Euphrates basin similarly owed its place as a geographical area where some of the earliest city-states, writing systems, and complex socio-political organizations emerged largely to the ecological advantages provided by these rivers (Postgate, 1992, pp. 13–15; Trigger, 2003, pp. 119–121).

From the growth of Sumerian city-states in the third millennium BCE to the ascendancy of the Babylonian and Assyrian states in the second millennium BCE, the irrigation opportunities and transport advantages offered by both rivers laid the groundwork for political and economic integration in the region. Particularly during the Third Dynasty of Ur (2112–2004 BCE), comprehensive canal systems were developed, providing an example of the systematic use of water resources supplied by these rivers (Steinkeller, 2001, pp. 35–37; Charpin, 2004, pp. 78–80).

The strategic importance of the Tigris and Euphrates was not limited to agricultural production and transportation but was also vital for forming political power and control mechanisms. Especially in the second half of the second millennium BCE, the struggle for dominance over these river systems became a significant component of diplomatic and military relations among the era's major powers (Kuhrt, 1995, pp. 234–236; Bryce, 2005, pp. 145–147).

One of the two rivers that gave life to the civilizations, sometimes called the “Cradle of Civilizations” in Mesopotamia, was the Euphrates, derived from the Sumerian word *Bu-ra-nu-nu*. Evolving into Assyrian *Purattu*, Hebrew *Perāth*, Elamite *ú-ip-ra-tu-iš*, Hurrian *Puranti*, Old Persian *Ufrātu*, and Middle Persian *Frat*, it entered Arabic as *al-Furāt*. Classical Western sources knew this river as *Εὐφράτης* or *Εὐφρήτης* (*Euphrates*). Its Sumerian root may be linked to the Proto-Sumerian term *burudu* (meaning “copper”) and its Sumerian cognate *urudu*. Because the river originates in Eastern Anatolia's high plateaus and becomes calmer when descending into the Mesopotamian plains, thus becoming suitable for navigation, the Sumerians who transported copper downstream (likely on rafts or barges) may have named it *Bu-ra-nu-nu*. Indeed, the use of such rafts for transport on the Tigris and Euphrates has persisted throughout nearly every historical era

(Darkot, 1979, p. 622; Güney, 1990, pp. 323–330; Gamkrelidze & Ivanov, 1995, p. 616; Tuncel, 1996, pp. 33–34).

Crossing the Euphrates: A Strategic and Ritualistic Phenomenon in Assyrian Royal Ideology

In the Assyrian royal records and inscriptions, especially those that talk about the military campaigns into the Uruatri–Nairi region, crossing the Euphrates River is given a lot of rhetorical weight in terms of strategy and ideology. Assyrian kings showcased their success in overcoming this natural barrier as a testament to their military might and divine support (Grayson, 1991, pp. 87–89; Yamada, 2000, pp. 73–75; Parker, 2001, pp. 85–87; Larsen, 2015, pp. 154–156; Pekşen, 2017; Çiğdem & Topaloğlu, 2018; Pekşen, 2018a; Pekşen, 2018b; Pekşen & Topaloğlu, 2024).

From the thirteenth century BCE onward, these military campaigns became systematic, and the epigraphic records of these campaigns elaborate on how kings traversed the most daunting sections of the river. In these rhetorical accounts, the depth (*mūqu*), the strength of the current (*mīlu*), and the difficulty of crossing are emphasized, magnifying the achievement's scale. To give you two examples, the story of crossing the Euphrates is told in inscription no. RIMA 1 A.O.78.1 from the reign of Tukulti-Ninurta I (1244–1208 BCE) and prism no. RIMA 2 A.O.87.1 from the reign of Tiglath-Pileser I (1114–1076 BCE). The story is almost ritualized (Luckenbill, 1926, pp. 23–25; Grayson, 2002, pp. 12–14; Cifola, 1995, pp. 45–47; Pongratz & Leisten, 2015, pp. 187–189).

The Assyrian inscriptions also detail the army's methods for crossing the river. Various watercraft—such as rafts made of inflated goatskins (termed *kalakku* in Akkadian), leather boats known as *quppu*, and wooden barges called *eleppu*—demonstrate the armies' logistical capabilities. Each crossing served as evidence of the king's *qurādu* (heroism), *dannūtu* (power), and the army's *lē'ūtu* (superior ability) (Radner, 2014, pp. 101–103; Frahm, 2017, pp. 182–184).

In the *gerru* (annual) campaigns recorded in annalistic texts, the frequency with which the Euphrates was crossed indicated the king's military successes and the length of his *palū* (reign). These records also provide critical data on the Assyrian armies' operational capacity, logistical organization, and campaign routes (Van De Mieroop, 2007, pp. 227–229; Liverani, 2014, pp. 443–445; Radner, 2015, pp. 81–83).

One of the main reasons Assyrian kings were willing to undertake such hazardous crossings in the Uruatri–Nairi region was the area's geopolitical significance and its abundant mineral resources. From the thirteenth to the seventh century BCE, these consecutive campaigns formed the backbone of Assyria's northern policy, pivotal in establishing regional hegemony (Salvini, 1995, pp. 41–43; Lanfranchi, 2003, pp. 79–81; Fuchs, 2011, pp. 229–231; Pekşen, 2017; Pekşen, 2018a; Pekşen, 2018b; Pekşen & Topaloğlu, 2024).

The Assyrian royal annals also contain references to the rivers of ancient Armenia. Some relevant passages are as follows:

Tiglath-pileser I (1115–1077 BCE):

"I cut down Urumu trees that grow in the mountains, built great bridges for my army to pass, and crossed the Euphrates." (ARI II, pp. 30)

"Taking my chariots and soldiers, I cut and cleared the rugged mountains and difficult paths with copper pickaxes, making a good road to pass my chariots and soldiers. I crossed the Tigris and captured their fortified city of Seresu. In the mountains, I heaped the bodies of their armed men like piles of grain. I poured their blood into the Tigris and the mountain plains." (ARI II, pp. 13)

Ashurnasirpal II (883–859 BCE):

"Departing from the cities at the foot of the Nipur and Pasate mountains, I crossed the Tigris and approached the land of Kadmuḫu. I received the tribute of the lands of Kadmuḫu and Musku—bronze vessels, oxen, sheep, and wine." (ARI II: 547)

"With the help of Assur, my lord, I departed from the city of Tusha. I took chariots of Kuweitli, cavalry, and elite soldiers with me. Via a raft-bridge, I crossed the Tigris." (ARI II: 638)

Shalmaneser III (858–824 BCE):

"In the tenth year of my reign, I crossed the Euphrates for the eighth time. I destroyed, razed, and burned the cities of Sangar of Carchemish." (Cameron, 1950, p. 22)

"In the 14th year of my reign, I gathered countless people in my land and, with 120,000 soldiers, I crossed the Euphrates at its deepest point." (Cameron, 1950, pp. 23–24)

"In the 10th year of my reign, I crossed the Euphrates for the eighth time." (ARAB I, p. 651)

"I marched to the source of the Euphrates, offered sacrifices there to my gods, and cleansed the weapons of Assur. Opposite the land of Melid, I approached the Euphrates. I received tribute—silver, gold, tin, and bronze— from Lalli of Melid. I made my royal image and erected it over the Euphrates." (Cameron, 1950, pp. 23–24)

"In the 15th year of my reign, I marched against the lands of Nairi. At the source of the Tigris, near the mouth of the cave from which it springs, I made a rock relief of myself as king; on it, I inscribed the glory of my power and the victories of my valor." (Cameron, 1950, pp. 23–24)

Similar expressions appear in Urartian sources. Urartian kings crossed the majestic Euphrates only with the gods' help, regarding it as a glorious achievement:

"Argišti's son Sarduri went on campaign. Sarduri says: The Euphrates was calm(?). No king had ever crossed there before. I asked for the divine greatness (help) of my lord god Haldi, the god Teišeba, the god Šivini, and all the gods of the land of Biainili. The gods listened to me and guided me. I crossed [the river] among my warriors at the front of the city of Tumiški on the same day and advanced into the country, passing south of Qala'ani. I reached the Karniši Mountains north of the city of Melitea." (Payne, 2006, pp. 237–238).

The Rivers of Armenia in Ancient Greek and Roman Sources

The Euphrates River is one of the most critical geographical elements shaping the socio-economic structure of ancient Mesopotamia. It occupies a prominent place in Hellenistic written sources. Herodotus, in particular, offers detailed accounts that shed light on the river's role in the region's economic, social, and cultural life (Briant, 2002, pp. 357–359).

Herodotus describes Babylon as a walled city, split in two by the Euphrates River that flows through its center. In the subsequent lines of this same section, Herodotus states that the Euphrates has its source in the land of the Armenians, that it is a large, deep, and vigorously flowing water source, and that it empties into the Erythraean Sea¹ (Ἐρυθρὰ Θάλασσα) — which, to Herodotus, was the Indian Ocean (Hdt. I. 180).

¹ The Erythraean Sea (Ancient Greek, pp. Ἐρυθρὰ Θάλασσα, meaning [Red Sea]) was a term used in maritime contexts during Antiquity, with its geographical scope evolving. Initially confirmed to encompass the Gulf of Aden, this term eventually referred to a broader region that included other seas between Arabia Felix (southwestern Arabia) and the Horn of Africa, depending on the era. This definition, proposed by ancient Greek geographers, remained a part of European geographical discourse during Antiquity and throughout the 18th and 19th centuries. Notably, texts such as the famous *Periplus of the Erythraean Sea* dating back to the 1st century examined the term from a broader perspective, defining it as a comprehensive maritime region that included beyond the Gulf of Aden to encompass what is today known as the Red Sea, the Arabian Sea, the Persian Gulf, and the Indian Ocean. This definition underscores the region's central role in contemporary trade routes, economic interactions, and cultural exchanges. In this context, the Erythraean Sea symbolized a geographical boundary and a dynamic trade network connecting the Mediterranean world with the Indian subcontinent and East Africa. The Greeks derived the name "Erythraean" from the legendary figure King Erythras and used it to describe waters they believed possessed a deep blue color. This naming convention illustrates that mythological and cultural themes influenced nomenclature more than physical observations. However, modern academic circles have offered an alternative interpretation of the name's origin, attributing the reddish hues distinctly visible in the Red Sea to the seasonal blooms of the microorganism *Trichodesmium erythraeum*. This microorganism may have transcended a mere visual phenomenon in antiquity to become a symbolic element defining the region. In his work *On the Origin of the Erythraean Sea (De Mari Erythraeo, §5)*, the ancient author Agatharchides explicitly outlines the mythological context of the name. According to him, Erythras was an Iranian leader renowned for his courage and wealth and was the son of Myozaeus. Agatharchides narrates, pp. "There was a man named Erythras, famous for his bravery and riches; he was Iranian and the son of Myozaeus... Due to his great achievements, the glory and fame attributed to him by the people led to this portion of the vast expanse being named after him, and it has continued to be known as

Modern researchers have confirmed the accuracy of Herodotus's geographical observations mainly (Kuhrt, 2001, pp. 124–126).

In another section of his work, Herodotus observes that Assyria receives very little rainfall—only enough to sustain the roots of cereal crops—but the ripening of the harvest and the formation of the ears of grain depend on irrigation from the Euphrates. He clarifies that, unlike Egypt, where the overflow of the Nile floods the fields, workers or water-lifting devices carry out irrigation in Assyria. He also notes that all of Babylon's territories, like Egypt, are divided by canals, the largest of which runs from the Euphrates in the direction of the place where the winter sun rises, eventually reaching the Tigris, near Nineveh (Hdt. I. 193). While discussing the Euphrates in this context, Herodotus notes that fig, grapevine, or olive trees could not grow anywhere in Babylon. However, the yield of grains—200-fold or, under ideal conditions, 300-fold—was exceptionally high. He adds that millet and sesame grow so much that those who have never seen Babylon will not believe his accounts. The historian also recounts how the people of Babylon abundantly cultivated and used sesame, dates, and other agricultural produce (Hdt. I. 193).

From the narratives of Herodotus, we can infer how the Mesopotamian lands with favorable climatic conditions were irrigated by the Euphrates River, which he states originated in Armenia, thereby increasing agricultural production and wealth. Thus, the rivers originating in Armenia supply Mesopotamia with water and enrich and diversify its agricultural output, providing a chief source of wealth and prosperity for its ancient civilizations.

One of Herodotus's most striking accounts concerns the commercial shipping system on the Euphrates. He provides detailed information on the construction and use of the round leather boats (Kufa), furnishing priceless insights into ancient transportation technology (Hdt. I. 193).

According to Herodotus (Hdt. V. 52), the river Euphrates, navigable by boats, forms the boundary between Armenia and Cilicia.

While providing information about Babylon, Herodotus remarks that “the most remarkable thing” after the city walls was the boats that sailed down the Euphrates toward Babylon, which were round and made entirely of leather. He explains that *“the willow branches, cut from the lands of the Armenians living upstream along the Euphrates, served as a frame for these boats. They stretched leather over the frame to form the outer hull. Both the stern and the bow had the same circular shape, akin to a shield. Then, the boats were filled with straw, loaded with goods—often casks of date palm wine—and launched with the current. Each boat had two steersmen controlling the direction with large oars, one pulling from the front and the other pushing from the rear. The boats could vary significantly in size, with the largest able to carry the weight of 5,000 talents. Each boat also carried at least one live donkey. Once the boats reached Babylon, merchants would unload them, sell the willow frames and the straw at auction, and then load the leather onto the donkeys to return overland to Armenia. They could not row the boats upstream against the strong current of the Euphrates; hence, it was logical to build the hulls from leather. Upon returning to Armenia with their donkeys, they would construct new boats using the same method”* (Hdt. I. 193).

These observations by Herodotus clearly illustrate the central economic and cultural role of the Euphrates in ancient Mesopotamia. The river served as a water source and the principal artery for agriculture, trade, and intercultural interaction.

The commentaries of ancient writers on the Euphrates River provide critical information to help us understand its hydrographic features, its role in the regional economy, and its strategic significance. Xenophon and Polybius, in particular, offer accounts that complement Herodotus's information, allowing for comparative studies of the river's conditions in different periods (Rood, 2015, pp. 178–180).

the Erythraean Sea to this day.” This account demonstrates that in the Greek world, geographical features were shaped not only by physical realities but also by the influence of mythological heroes. In this context, naming the Erythraean Sea provides a compelling example of how geography and mythology were intertwined in Antiquity. The unique combination of mythological narratives and natural phenomena played a significant role in constructing the region's historical and cultural identity.

In his work, Xenophon first mentions the Euphrates during the early stages of the march taken by Greek mercenaries and Cyrus the Younger to fight on the side of King Artaxerxes II (404–358 BCE). According to Xenophon, when the Hellenic mercenaries and Cyrus's forces were near Thapsacus²—a large and wealthy city—the width of the Euphrates was about four *stadia*. They camped there for five days, during which Cyrus gathered the Greek generals to announce their continued expedition to Babylon against the Great King and asked them to persuade their troops to follow him (Xen. *Anab.* I. 4. 8).

Elsewhere in his work, Xenophon describes how Cyrus the Younger and his men crossed the Euphrates, similar to Herodotus's account, using rafts made of tent covers filled with straw;

"During these desert journeys, on the opposite bank of the Euphrates River was Charmande, a large and prosperous city. Here, the soldiers obtained provisions. They used the following method to cross the river: They took skins for tent covers and filled them with straw. Then, they sewed the edges of the skins together so that the water did not come into contact with the straw. In this way, they crossed the river with makeshift rafts and provided supplies." (Xen. *Anab.* I. 5).

Xenophon gives more information about the Euphrates during the exchange of ideas between the Hellenic mercenaries and the Hellenic mercenaries who were stranded in enemy territory after the defeat and murder of Cyrus the Younger at Kunaksa near Babylon in 401 BC and the various events they experienced upon their return and the exchange of ideas among themselves in order to ensure their safety.

Accordingly, during the discussions and debates among the Hellenic mercenaries about returning to their country, one of the physical obstacles in front of them is the rivers. Among these rivers, the Euphrates, about which they had relatively more ideas than the others, was impassable in the face of the enem (Xen. *Anab.* II. 4).

Xenophon's information demonstrates that the Hellenes were aware of the Euphrates' flow rate in Armenia and even Mesopotamia. It shows that the Hellenes were aware that the slope of the bed of the Euphrates had not yet reached a sufficient level for people to cross the river and that the speed of its flow would prevent the Hellenes from crossing it while being pursued by the forces of the Achaemenid King Artaxerxes II (404-358 BC), behind whom the Hellenes were defeated.

As Xenophon and his soldiers continue their escape in front of the forces of the Achaemenid king and satrap Tissaphernes, he provides indirect information about the source of the Euphrates, which can be confirmed by both earlier and later writers. Accordingly, as Xenophon and the Hellenes continued their escape and journey, they reached an impassable point of the Tigris River due to its depth and width. There is also no road along the river. Because the Cardukh mountains rise steeply and steeply just above the river, the commanders conclude that they must pass through the mountains. According to the information learned from the captives with the Hellenes, they could reach Armenia after crossing the Kardukh mountains. Here, they could either cross the sources of the Tigris River or continue their way by traveling around the river. They also learned that the sources of the Euphrates River are not far from the sources of the Tigris, which is indeed true (Xen. *Anab.* IV.1.1).

This information given by Xenophon confirms the information given by Herodotus (Hdt. I. 180) that the Euphrates has its source in Armenian territory.

The last information Xenophon gives about the Euphrates in his work is related to its depth. Accordingly, when the Ten Thousand arrived in Armenia, fleeing from the forces of another Persian satrap, Tribazus, who was in pursuit of them and from an ambush they had heard about and wishing to gain a strategic crossing point to secure themselves against them, they traveled through deep snow-covered roads, accompanied by a large number of guides. Before the end of the day, they passed the summit where Tiribazus was planning an attack and camped there. From there, traversing the desert region over three stages—a total of fifteen parasangs—they arrive at the Euphrates River, where the water reaches up to their waists as they cross. They also learn that the river's source is not far away (Xen. *Anab.* IV.5.1).

² Mod. Carchemish or Jarablus (Farrel, 1961).

Thus, during the Ten Thousand's crossing of the Euphrates amid a harsh Eastern Anatolian winter, we also gain insight into the river's approximate depth.

Another noteworthy point in Xenophon's accounts is the Euphrates' impact on military operations. During the Ten Thousand's retreat, the strategic importance of the river's crossing points is underscored (Lee, 2007, pp. 45–47). This indicates that in antiquity, rivers were economically, militarily, and strategically significant geographical barriers.

Further information about the Euphrates comes from Polybius in his *Histories*, where he focuses on the river's seasonal fluctuations and irrigation systems. Polybius' observation that the Euphrates' flow is influenced by melting snow has been confirmed by modern hydrological research (Wallingford, 2003, pp. 234–236).

According to this account, the author states in his work that the Euphrates River begins its course in Armenia, flows through Syria and the surrounding territories, and proceeds toward Babylonia. Although it is generally assumed that the river eventually reaches the Persian Gulf, he argues that this is not actually the case: the canals branching off the Euphrates and spreading its waters across the land prevent it from reaching the sea, causing it to run dry earlier than expected. In the continuation of the passage quoted above, Polybius explains that, for precisely this reason, the nature of the Euphrates is unlike that of most other rivers. While most rivers typically derive increased flow from seasonal rains in the regions they traverse—reaching their highest levels in winter and their lowest in summer—Polybius notes that the Euphrates instead reaches its peak flood stage during the heliacal rising of Sirius (the Dog Star). Although it has its greatest volume in Syria, it gradually loses discharge as it flows farther south. He attributes this to the fact that the floods of the Euphrates are not caused by accumulated winter rainfall but rather by melting snow. Moreover, its flow diminishes because the river is diverted inland and split into irrigation canals, which reduces its overall volume (Polyb. *Bib.* IX. 43.3).

In his work *Bibliotheca*, while discussing Alexander the Great and his Persian campaign, Diodorus Siculus also touches upon the origin of the name “Mesopotamia.” Modern sources echo this statement as follows:

“...On the other side, heading further inland, lay Mesopotamia, surrounded by the Euphrates and Tigris rivers. The region took its name from these two rivers.” (Diod. *Bib.* 8–40, XVIII. 6.3).

Polybius' observations on the distribution of river water into canals and its effect on discharge rates are crucial for understanding ancient Mesopotamian irrigation technology. Modern researchers regard this system as an example of “sustainable ancient water management” (Adams, 2009, pp. 123–125).

Accounts by Xenophon and Polybius alike highlight the multi-faceted importance of the Euphrates River in antiquity. On one hand, it functioned as the lifeblood of the region's economic existence; on the other, it served as a strategic obstacle influencing military maneuvers.

Among ancient authors, Cicero and especially Strabo provide detailed observations on the Euphrates River's hydrographic features, economic significance, and role within the regional geography. Their works make substantial contributions to modern research in hydrology and historical geography (Potts, 2019, pp. 145–147).

Chronologically, one of the Greek- and Roman-origin sources that offers relevant information is Cicero. In *On the Nature of the Gods*, he notes that the Euphrates made Mesopotamia fertile and each year carried new soil to the region (Cic. *De Natura*. II. 129).

Cicero's comments on how the Euphrates enhanced Mesopotamia's fertility are significant in underscoring the river's role in the agricultural economy. Modern studies in alluvial geology confirm his observations regarding the Euphrates' transport and deposition of soil (Wilkinson, 2012, pp. 23–25).

In his work *Geographika*, one of the most detailed sources on the geography of Armenia, Strabo of Amaseia (modern-day Amasya) also provides the following information on the Euphrates River.

Strabo, in a passage where he critically evaluates Eratosthenes's work, discusses the flow direction of the Euphrates. He conveys his critique of Eratosthenes as follows:

"...The Euphrates River, which forms the western boundary, is far from being a straight line. After descending from the mountains, it flows southward but soon turns east, and then south again before reaching the sea. In fact, Eratosthenes himself acknowledges the river's winding course and compares the shape of Mesopotamia—formed by the confluence of the Tigris and Euphrates—to the cushion on which a rower sits. Eratosthenes also says that the western side, bounded by the Euphrates, has not been measured in its entirety, since the portion between Armenia and the northern mountains has not been surveyed. Because of these obstacles, he states that he could provide only a superficial outline of this third section, taking distances from various travel journals. According to him, some of these journals are anonymous." (Strab. II.1.23)

Strabo again cites Eratosthenes in outlining the Euphrates' course:

"The Tigris and Euphrates Rivers flow southward from Armenia. After passing the Gordyaeon mountains, they describe a wide circle that encompasses the vast lands of Mesopotamia; notably, in winter, the Euphrates tends eastward and southward. The Euphrates then draws ever closer to the Tigris, passes by the Walls of Semiramis, and flows about 200 stades from the village of Opis, via Babylon, until it finally empties into the Persian Gulf. Thus, the shape of Mesopotamia and Babylon resembles the cushion upon which a rower sits." (Strab. II.1.26)

In yet another passage derived from Eratosthenes, Strabo adds the following characterization for the Euphrates and Tigris Rivers:

"Eratosthenes says that the Tigris and Euphrates Rivers encircle Mesopotamia and Babylon, and that most of this circular outline is formed by the Euphrates River. The Euphrates flows north to south but then veers eastward and once again southward. For this reason, the river never follows a straight path; rather, as noted above, it forms a circle." (Strab. II.1.36)

Strabo, in addition to quoting Eratosthenes' remarks on the river's course, also offers his own observations regarding the Euphrates:

"Both rivers, namely the Euphrates and the Tigris, surround Mesopotamia; drawing closer together in Babylonia, they eventually empty into the Persian Sea (the Persian Gulf). Not only is the Euphrates larger of the two, but with its meandering flow it also covers a broader area. Its source lies in the northern regions of the Taurus Mountains, and it initially flows westward through what is called Greater Armenia, then arrives in Lesser Armenia; here, Lesser Armenia lies to its right, while Acilisene is on its left. It then veers southward, reaching the boundaries of Cappadocia. From that point on, Commagene is to its right, and Acilisene and Sophené in Greater Armenia lie to its left as it continues onward. It then enters Syria and, curving once again, heads toward Babylonia, ultimately flowing into the Persian Gulf." (Strab. XI.12.3)

By synthesizing Eratosthenes' statements with his own observations, Strabo provides a detailed analysis of the Euphrates' route. He explains how the river rises in Armenia, describes its meanders through Mesopotamia, discusses its relationship to the Tigris, and outlines its eventual course to the Persian Gulf (Drijvers, 2009, pp. 129–131).

Strabo also gives extensive information on the boundaries of Armenia and describes the position of the Euphrates within those borders, indicating that the river serves as a natural boundary separating Armenia from Cappadocia and Commagene (Strab. XI.14.1).

In yet another passage, again focusing on Armenia's borders, he offers further information on the Euphrates:

"The Euphrates River rises on the northern side of the Taurus Mountains, initially flowing westward through Armenia and then curving south to cut across the Taurus range between Armenia, Cappadocia, and Commagene. Once it emerges from the Taurus Mountains and reaches the borders of Syria, it bends eastward—toward the sunrise in winter—and proceeds to Babylon, where it joins the Tigris to form Mesopotamia. Both rivers then empty into the Persian Gulf." (Strab. XI.14.2).

Strabo's work highlights how the Euphrates functions as a political boundary, separating areas such as Armenia–Cappadocia, Armenia–Commagene, and the borders of the Parthian Empire (Facella, 2006, pp. 78–80).

In the same passage, Strabo locates the Euphrates' source on Mount Abus, noting that this same mountain also gives rise to the Araxes. Accordingly, the Euphrates flows west, whereas the Araxes flows east (Strab. XI.14.2).

Further on, he mentions that the Euphrates and the Tigris together form Mesopotamia, drawing close to one another at a certain point; afterward, the Tigris proceeds to the Persian Gulf by way of Seleuceia, while the Euphrates empties into the same gulf via Babylon (Strab. XI.14.8).

While discussing Melitene, Strabo again refers to the Euphrates and offers more specific details:

"Melitene lies opposite Sophene, with the Euphrates flowing between them; this river also separates Melitene from its neighbor, Commagene." (Strab. XII. 2. 1).

Elsewhere, in the context of Pharnacia and Trapezus as well as the local inhabitants—among them Mithridates Eupator and his activities—Strabo gives another specific piece of information concerning the Euphrates. According to Strabo, the Euphrates River divides Acilisene from Lesser Armenia (Strab. XII. 2. 28).

When discussing Babylon, Strabo explains that this region is intersected by numerous rivers, the largest of which are the Euphrates and Tigris. He reports that these rivers, located in the southern part of Asia, are said to rank second in magnitude after the rivers of India. He notes that both are navigable. The Euphrates, in particular, remains navigable as far as Babylon—over 3,000 stades. Strabo then continues:

"The Persians constructed artificial waterfalls (cataracts) to protect against external assaults and prevent ships from advancing upstream on these rivers. When Alexander the Great arrived, he destroyed as many of these cataracts as he could, especially along the stretch of the Tigris from the sea to Opis. Nevertheless, Alexander placed great importance on maintaining the canals, for the Euphrates begins to overflow at the start of summer, once the snows in Armenia begin to melt in spring. Consequently, cultivated lands would be submerged and entirely flooded if the surplus water were not diverted through ditches and canals. These canals were established following a logic similar to that of diverting the Nile's waters in Egypt. Their maintenance requires substantial effort, for the soil is deep, soft, and loose, making it easily washed away by the current. The fields are left bare, the canals fill up, and mud deposits soon clog their mouths. Moreover, surplus water draining into the lowlands near the sea creates lakes, marshes, and reed beds. These reeds are used to fashion all sorts of woven vessels, some of which can store water if coated with asphalt, while others remain as they are. Reeds also serve in the making of sails, which resemble a form of matting or wickerwork." (Strab. XVI. 1. 9).

While describing Babylon and the rivers Tigris and Euphrates, controlled by man-made structures, Strabo criticizes Eratosthenes, Aristobulus, and Polycleitus for their comments on the Euphrates and then provides his own observations:

"Polycleitus, however, claims that the Euphrates does not flood because it flows through broad plains. He further states that some of the mountains that feed the river lie 2,000 stades from it, others 1,000 stades away, that none of these mountains are particularly high or heavily covered in snow—thus they do not experience rapid, large-scale snowmelt. He asserts that the highest mountains lie north of Ecbatana, spreading southward with diminished elevation and that the Tigris (Dicle) receives most of the runoff from these mountains, thereby causing its own floods. This last claim is clearly incorrect because, like the Euphrates, the Tigris empties into the same plains, and the mountains he refers to are not all of the same elevation. The northern mountains are higher, while those in the south are spread over a wide area yet are lower in altitude. Snow accumulation depends not only on a mountain's height but also on its orientation. The same mountain retains more snow on its northern slope, which melts more slowly than on the southern side. Therefore, the Tigris obtains snowmelt from the southern parts of Armenia near Babylonia, where snowfall is limited, given that it comes from the southern slopes. Under such conditions, the Tigris would be expected to flood less than the Euphrates. But the Euphrates

takes water from both northern and southern mountains, and it is not fed by just one mountain but by many. This point has been noted in other discussions of Armenia's geography. Also, consider the Euphrates' overall length and the extensive area it traverses. The river covers a large region extending through both Greater and Lesser Armenia. It flows from the Taurus Mountains to Thapsacus, where it forms the boundary between Lower Syria and Mesopotamia, continuing on to Babylonia before finally emptying into the sea. The total length of the Euphrates is 36,000 stades. It is therefore crucial to keep these points in mind when considering the canal system in Babylonia." (Strab. XVI. 1. 3).

Strabo's criticisms of Polycleitus found in passages that detail the river's seasonal fluctuations, snowmelt cycles, and flood characteristics, offer valuable insights into the behavior of rivers in antiquity (Hritz, 2010, pp. 34–36).

While explaining Mesopotamia's subterranean wealth, Strabo also refers to asphaltus (Lat. asphaltum, Hell. ἄσφαλτος), understood at that time to be a petroleum derivative. Although we will not delve into the more specific details the author gives about this substance, we can convey its relationship to the Euphrates, adhering faithfully to Strabo's text:

"The liquid asphalt called naphtha (Gr. Νάφθα; Mid. Persian Naft; Akk. nap̄tu) is found in Susiana, whereas the solid, dry type—capable of hardening—is found in Babylon. There is an asphalt spring near the Euphrates River. When the river overflows due to melting snow, this asphalt spring also fills, overflows, and flows into the river. During that process, it solidifies into large pieces that can then be used in building constructions made of baked bricks." (Strab. XVI. 1. 15).

In his work, Strabo also explains the origin of the name "Mesopotamia" He defines Mesopotamia as the area between the Euphrates and Tigris Rivers—an identification that later served as a reference point for other ancient and modern sources. Strabo describes the name "Mesopotamia" as arising more or less by chance, reiterating his earlier point that Mesopotamia is between the Euphrates and Tigris. He says the Tigris marks this region's eastern boundary, whereas the Euphrates draws its western and southern boundaries. At this juncture, Strabo emphasizes that these two rivers delineate not just part of Mesopotamia's borders but its entirety. He further indicates that the Taurus Mountains separate Mesopotamia from Armenia to the north.

Strabo explains that the widest distance between the two rivers lies near the Taurus Mountains. This expanse—possibly the one Eratosthenes refers to—extends from Thapsacus (the site of the ancient bridge over the Euphrates) to the Tigris crossing used by Alexander the Great, measuring approximately 2,400 stades. Strabo also describes the narrowest distance between the two rivers as just over 200 stades around Seleucia and Babylon (Strab. XVI. 1. 21).

According to Strabo, the Euphrates and its eastern bank also delineate the borders of the Parthian Empire (Strab. XVI. 1. 28).

When describing the boundaries of ancient Syria, Strabo again mentions the Euphrates; in his view, it forms the eastern limit of ancient Syria (Strab. XVI.2.1).

Discussing the city of Gerrha, Strabo cites a piece of information from Aristobulus regarding the Euphrates' commercial potential in Mesopotamia. According to this account, the merchants of Gerrha travel to Babylon by rafts, transporting Arabian goods and aromatics along the Euphrates. They then continue overland from Thapsacus, where they once more employ rafts fixed upon inflated skins (keleks) to navigate the river (Strab. XVI.3.3).

From Strabo's description, it is clear that the Euphrates' navigability, its position along trade routes, and its role in irrigation systems render it economically indispensable (Aperghis, 2004, pp. 156–158).

After Strabo, one of the other authors discussing Euphrates is the Roman geographer Pomponius Mela³. In *De Chorographia*, where he also provides information on the Tigris and Euphrates, Mela notes that the Euphrates not only rose from a wide outlet but also spread across a broad area. Rather than flowing directly

³ Pliny was influenced by Mela in his enduring, centuries-spanning work, *Naturalis Historia*.

between cultivated lands, it first spreads out, forming pools and moving slowly with stagnant waters in an unconfined bed. According to Mela's descriptions, once the river eventually passes beyond these basins of still water, it assumes a proper river form and, once bounded by defined banks, flows swiftly and turbulently, heading west through Armenia and Cappadocia. He speculates that if it were not for the Taurus Mountains, it would reach "our seas."⁴ In a subsequent passage, Mela continues his depiction of the Euphrates:

"From this point onward, the Euphrates turns south, first entering Syria, then Arabia. However, it never actually reaches the sea. Although it is broad in places and navigable by ships, it ultimately dwindles to a mere trickle and disappears. Unlike other rivers, the Euphrates does not have a definitive point of outflow but instead gradually vanishes." (Pomponius Mela, *Chorographia*, 3.77,78)

In his work *Anabasis of Alexander* (*Aleksandrou Anabasis*), Arrian (Arr. *Anabasis* VII.21.3) mentions that the Euphrates originate in the mountains of Armenia. He notes that during winter, the river remains calm in its bed, but in spring, it swells with melting snow from the mountains. By summer, its waters surge and overflow their banks in Assyrian territory, producing floods marked by a swift current and a high volume of water.

In his renowned *Naturalis Historia*, Gaius Plinius Secundus (Pliny the Elder) offers key information on the Euphrates River, constituting an important source of ancient geographical knowledge. Confirming the accounts of earlier authors, Pliny explains that the land between the Euphrates and Tigris is called Mesopotamia (Plin. *nat.* V.13.1).

Pliny then gives specific details concerning the source of the Euphrates. According to him, the river rises in Caranitis (Karin, Garin, Erzurum), a province of Greater Armenia. He also refers to two other sources, citing the remarks of Domitius Corbulo, who states that the river originates on Mount Aba, and Licinius Mucianus, who locates its source on Mount Capotes, twelve miles above Zimara, where it was known as Pyxurates at its headwaters.

According to Pliny, after passing through Derxene and then Anaitica, the Euphrates forms the boundary between Armenia and Cappadocia. Pliny states that the *distance from Zimara to Dascusa is seventy-five miles, after which the river remains navigable for fifty miles up to Sartona. From there, it is seventy-four miles to Melitene in Cappadocia, and then ten miles to Elegia in Armenia; during this journey, the Lycus, Arsanias, and Arsanus Rivers all flow into the Euphrates. At Elegia, the Euphrates encounters the Taurus Mountain range, but although the range is twelve miles wide, it fails to halt the river. As the river passes between the mountains, it is called Omma, only resuming the name Euphrates after clearing that stretch. Beyond this point, the river is rocky and has a swift current. It flows through a channel three schoeni in width, separating to its left a part of Arabia known as Orei and to its right the territory of Commagene. Even while cutting through the Taurus range, it allows for the construction of a bridge over it. At Claudopolis in Cappadocia, the river turns east, where Taurus blocks its path for the first time. Though previously overcome and carved by the river, the mountains now prevail in a new way, forcing it southward. Thus, the struggle between the river and the mountains remains finely balanced: the river attempts to progress toward its intended destination, while the range diverts it from its initial course. After it passes through the cataracts, the Euphrates once again becomes navigable, and forty miles downstream lies Samosata, the capital of Commagene* (Plin. *nat.* V.20.1).

Pliny's detailed distance measurements and route descriptions show the precision of ancient cartography: Zimara-Dascusa: 75 miles, Dascusa-Sartona: 50 miles (navigable), Sartona-Melitene: 74 miles, Melitene-Elegia: 10 miles. These measurements show considerable accuracy when compared with modern GPS data (French, 2016, pp. 89-91).

⁴ In *De Chorographia*, Pomponius Mela uses the term "Our Sea" to refer to the Mediterranean. During the Roman era, the Mediterranean was often called Mare Nostrum—literally, "Our Sea"—a designation employed by the Roman Empire to emphasize its control and dominance over this maritime domain. In Mela's work, the expression "Our Sea" therefore denotes the Mediterranean, the central sea of Rome.

Pliny, while talking about the territory of Syria, gives the overflow and retreat times of the Euphrates, especially in Mesopotamia, on a horoscope-based plane. According to the information given by Pliny, the Euphrates, like the Nile River, rises at certain times, and this period of rise coincides with approximately the same time. He says that Mesopotamia was flooded when the Sun reached the twentieth degree of Cancer (Cancer); when the Sun passed Leo (Leo) and entered Virgo (Virgo), the water levels began to fall. When the Sun reached the twenty-ninth degree of Virgo, the river completely returned to its former level (Plin. *nat.* V.21.3).

While describing the borders of Armenia Maior and Minor, he states that Armenia Maior is separated from Cappadocia by the Euphrates (Plin. *nat.* VI.9.1). Pliny, describing the city of Babylon, states that the Euphrates flows through Babylon and that there are docks of marvelous workmanship on both sides, and that its route and its entire length are not less than two thousand one hundred miles. As a matter of fact, when the river entered Babylon, artificial canals were separated so that it was both prevented from overflowing and used for irrigation purposes (Plin. *nat.* VI.30.2).

Pliny's observations on favorable areas for navigation emphasize the role of the river in the ancient trade network. Modern archaeological evidence confirms the continuity of these trade routes (Algaze, 2008, pp. 123-125). Information on artificial canals in Babylonia demonstrates the sophistication of ancient water management technology. Today, we can still observe remnants of these systems (Hritz, 2010, pp. 45-47). Pliny's observations on the Euphrates reveal the detailed and systematic nature of ancient geographical knowledge.

The descriptions of the Tigris River (Dicle)—one of Mesopotamia's main arteries of life—in ancient sources are critical for understanding the river's geopolitical and economic significance in antiquity. In this context, the accounts of Herodotus and Xenophon, in particular, shed light on the river's characteristic features and areas of use in different regions.

The Tigris (Τίγρις), often mentioned alongside the Euphrates in ancient sources, derives its name from the Sumerian *Idigna* or the Akkadian *Idiqlat*, *Idikla*. Hebrew refers to it as *Hiddekel* (Genesis 2, pp. 14; Daniel 10, pp. 4). Known as the Tigris (Τίγρις) in Ancient Greek or Dicle in modern Turkish, this river is one of the two principal life sources of Mesopotamia. Together with the Euphrates, these two rivers were the sites of numerous significant settlements in the Near East, both in antiquity and the Middle Ages, situated on or near their banks. Beyond serving merely as a source of life and civilization, these two rivers also formed one of the leading commercial corridors between the Near East, Mesopotamia, and the Far East. Due to periodic flooding at certain times of the year, canals were built at various points along their course, allowing the rivers to be controlled and their water capacity to be harnessed (Hartmann, 1979, pp. 582–585; Tuncel, 1994, pp. 281–282; Heyd, 2000, pp. 31, 181).

From Herodotus onward, Greek and Latin sources attest to the name Tigris (Τίγρις) in a variety of forms (Dyer, 1872, p. 1208). In Herodotus's work, we first encounter information about the Tigris when he discusses the Cyrus River. According to the historian, the Tigris empties into the Erythraean Sea (Hdt. I.189). This geographic reference is significant for reflecting the period's hydrological understanding (Asheri & Lloyd, 2007, p. 193).

While describing Armenia's borders, Herodotus also provides details about the Euphrates and Tigris. He characterizes the Tigris as a river impossible to cross by boat (Hdt. V.52), a depiction that likely indicates strong currents in certain sections of the river (Briant, 2002, pp. 357–358). He again states that the Tigris empties into the Erythraean Sea (Hdt. VI.20).

Xenophon's account provides more detailed information on the infrastructural use of the river, particularly emphasizing the canals on the Tigris and their role in grain transportation (Wilkinson et al., 2015, pp. 412–415). Modern research corroborates the central role of the canal systems Xenophon describes in the ancient economic framework of Mesopotamia (Wilkinson et al., 2015, pp. 412–415). The scenario Xenophon depicts persisted in later centuries as well: the transportation and trade network on the river—via rafts (keleks), barges, and boats—enabled a versatile circulation of goods. This hydraulic infrastructure supported agriculture, horticulture, and viticulture, fostering fertile production areas (Hartmann, 1979, pp. 584; Adams, 2009, pp. 123–125).

While passing near Media during his perilous journey with the Greeks, Xenophon also mentions numerous canals and two bridges on the Tigris—one permanent, the other constructed with rafts (Xen. *Anab.* II.4.12). When Xenophon and the Greeks traveled through the northern regions of Eastern Anatolia, near the Karduchian mountains, the Tigris became deeper and impassable. At this point, the Greeks spent some time searching for a safe crossing, eventually learning from their prisoners that once they crossed Karduchia into Armenian territory, they could either ford some branches of the Tigris or circumvent the river (Xen. *Anab.* IV.1.1).

The Euphrates and Tigris border Mesopotamia, according to the ancient Greek historian Diodorus Siculus (Diod. XVIII.6.3). He also offers a detailed description of the Tigris, noting its width at three or four stades in many places, its depth at the center being equal to the height of an elephant, and that it flows 700 stades from the mountains before emptying into the Red Sea (Diod. XIX.17.3).

The Roman writer Varro remarks that, in the Armenian language, the word “Tigris” means “tiger,” and that for a swift-flowing river such as the Tigris, the name also carries the sense of “arrow” (Varro, *De Lingua Latina* V.100).

Among ancient Greek authors, Strabo notes that the Tigris rises in a mountainous region near Mount Niphates, swiftly crosses Lake Thopitis without mingling its waters, and that in Median (Med) it means “arrow.” The river continues its course, with Karduchia and Mesopotamia on its right, flowing toward Opis and the Wall of Semiramis, then approaching the Euphrates to form Mesopotamia and ultimately emptying into the Persian Gulf (Strab. XI.4.8).

Pliny the Elder’s descriptions in *Naturalis Historia* provide even more detailed information about the Tigris’s source and its route than those offered by earlier writers. Pliny says that the Euphrates and Tigris rivers both start in Armenia (Plin. *nat.* VI.9.1). Modern research has confirmed this geographical detail, finding the rivers’ sources in the Eastern Taurus Mountains (Hoffmann & Bauer, 2020, pp. 245–246).

Pliny offers extensive information on the Tigris in later passages of his work. He notes that the river rises from an impressive source, Elegosine, in Greater Armenia, initially flowing slowly under Diglito. Once its current accelerates, it takes the name Tigris, which in the Median language means “arrow.” Pliny states that it passes quickly through Lake Arethusa—carrying only one species of fish—without blending into its waters, then disappears in the vicinity of the Taurus Mountains, only to resurface at a location known as Zoroande. He writes that it traverses another lake called Thospites, vanishes again for about twenty-two miles, and emerges once more around the region of Nymphaion. At this point, it joins the Euphrates to form Mesopotamia (Plin. *nat.* VI.31.1).

Connecting the river’s name to its flow characteristics is important for understanding how ancient societies named natural phenomena (Beckman, 2015, pp. 89–90). Pliny’s detailed description of the Tigris route is critical for interpreting its hydrogeological properties. Observations about the river traveling through Lake Arethusa, dipping underground near the Taurus Mountains, and reemerging at Zoroande point to karst topography in the region (Yakar, 2014, pp. 167–169). Additional references to Thospites Lake and the Nymphaion area demonstrate the depth of hydrological observation in antiquity (Radner 2021, pp. 312–314).

Pliny’s remark that the Tigris and Euphrates shaped Mesopotamia (Plin. *nat.* VI.31.1) indicates an awareness among ancient writers of these rivers’ geopolitical and economic significance (Wilkinson, 2016, pp. 23–25). Quintus Curtius Rufus, in *Historia Alexandri Magni Macedonis*, corroborates earlier sources by noting that the Tigris derives its name from the powerful force of its flow, which can sweep along rocks like a torrent (Ruf. IV.9.6).

Besides the Euphrates and Tigris, ancient sources also refer to the Araxes and Cyrus Rivers in the Armenian region. Moreover, due to their courses passing through parts of Armenia, additional rivers with different points of origin—such as the Phasis (Rioni) and Lycus (Kelkit)—are also mentioned in various ancient texts.

Located about 60 km south of Erzurum (known in ancient times as Elegia, Karin, Garin, Theodosiopolis), the Araxes River rises from the northwestern slopes of Bingöl Mountain (3,194 m) and flows into the Caspian Sea. In ancient Greek sources, it appears as Ἀράξης or Ἀράξιν, while Roman authors refer to it as Araxes. Of the river's total length of 1,059 km, 548 km lie within the borders of modern Turkey. One of its most noteworthy features throughout history is that it has often been a natural boundary between various polities. For instance, the Araxes defined part of the border between the rival Iron Age powers, Media and Urartu. In subsequent periods, the middle section of this river marked the northern boundary of Alexander's Empire. The exact boundary function of the river persisted in later ages. The ancient geography of the Araxes involves many uncertainties, and this complexity is likewise apparent in ancient sources (Strab. XI.14.2; Plin. *nat.* V.13.3, VI.9; Byz. *Ethnika.* A109.18; James 1870, p. 188; Darkot, 1979, p. 554; Tuncel, 1991, p. 333; BAtlas 90 B2 Araxes fl.). The differing accounts in Strabo (XI.14.2), Pliny (V.13.3, VI.9), and Stephanos Byzantios (*Ethnika.* A109.18) make it difficult to grasp the river's ancient geography fully. Modern researchers suggest that these variations stem from limited cartographic knowledge of the period and the region's complex political landscape (Teschauer, 2020, pp. 89–92).

Archaeological evidence shows that the Araxes Valley witnessed intensive settlement from the Early Bronze Age onward. The prehistoric complex known as the "Kura-Araxes Culture" attests to the river's central role in the region's cultural development (Sagona, 2017, pp. 267–270). This network of cultural interaction reveals that the river functioned not merely as a border but also as a corridor for communication and trade.

Herodotus compares the Araxes to the Ister (Danube), noting that some sources consider the Araxes larger than the Ister while others claim it is smaller. Continuing his discussion of the river in the same passage, he adds that there are numerous islands in the Araxes on the scale of Lesbos (Mytilene) in size. He says people who survive on these islands on root vegetables and certain tree fruits gathered and stored during the summer, sustaining them through the winter. He also describes how these people burn certain fruits collected from the trees around a fire, becoming intoxicated by their smoke. Likely, these fruits contained narcotic or at least mind-altering substances. In the ensuing lines, he recounts that these people would get up and dance or sing once exposed to the fumes. Further on, Herodotus states that the Araxes, like the Gyndes (whose waters Cyrus once divided into 360 channels as revenge after the river swallowed his horse), also flow from the land of the Martini. He mentions that its waters meet the sea at multiple points and that most are shallow marshes and pools, except for one of the outlets. There, people survive by eating raw fish and hunting seals, from which they make clothing. He concludes that although the Araxes is divided into forty channels, it empties into the Caspian Sea only from one (Hdt. I.202; IV.40). Modern sources approach Herodotus' descriptions here with caution, acknowledging the author's lack of direct knowledge about the lands on the Caspian shore (James, 1870, p. 188).

Modern researchers emphasize that Herodotus' information concerning regions along the Caspian Sea is limited and derived from indirect sources (James, 1870, p. 188; Bridges, 2015, pp. 234–236). Nevertheless, his ethnographic observations are considered valuable for providing insight into the lifestyles of ancient Caucasian communities (Karttunen, 2019, pp. 167–169).

Xenophon's mention of a river called Phasis in his work is another point of debate. Modern scholarship offers different suggestions regarding the localization of the river he identifies as Phasis. Some propose that Xenophon's "Phasis" was one of the branches of the Araxes, mistakenly identified by the author as the Phasis of Colchis (James, 1870, p. 188; Edwards, 1988, p. 127).

Strabo notes that the Araxes and Cyrus Rivers form the boundary between Iberia and Albania, adding that both rivers flow through Armenia (Strab. XI.1.5). In subsequent passages, he mentions that the land of the Massagetae is inundated by the Araxes, which divides into multiple channels before entering the Hyrcanian Sea through a single outlet (Strab. XI.8.6). Strabo also observes that the Araxes arises from Mount Abus and flows eastward (Strab. XI.14.2). Referring to the Araxene Plain, he states that the Araxes River flows into the far reaches of Albania, draining into the Caspian Sea (Strab. XI.14.4). He further indicates that the cities of Artaxata and Arxata, established by Hannibal for King Artaxias of Armenia, lie on the Araxes River (Strab. XI.14.6). Continuing, Strabo remarks that in Armenia there are several other rivers—among them the Phasis

and the Lycus—and that the Cyrus and Araxes empty into the Caspian Sea, while the Euphrates and Tigris flow into the Red Sea (Strab. XI.14.7).

According to Strabo, Araxes was given the same name as the Peneius by Armenus—who also gave his name to Armenia—because the Peneius River in the Tempe Valley separates Mount Ossa in the north from Mount Olympus in the south, and thus was called “Araxes.” Strabo explains that Armenus’ followers applied this similarity to the Araxes in Armenia, conferring upon it the same name. However, modern sources contend that this account reflects the ancient writers’ penchant for ascribing a Hellenic origin to foreign names (James, 1870, p. 188).

Strabo says that after descending from the mountains, the Araxes have no direct exit to the sea but rather spread out over the plains below, forming an inland sea. According to him, Jason—captain of the Argo and hero of the Golden Fleece myth—attempted to replicate what happened at Tempe by opening a passage for the river to flow into the Caspian Sea; as a result, the Araksen Plain emerged from the river’s alluvial deposits and was thus freed from being underwater. In the same paragraph, he regards Herodotus’ claims—that after leaving the land of the Matieni, the Araxes divides into forty branches and separates the Scythians from the Bactrians—as unconvincing (Strab. XI.14.13).

Pliny, for his part, states that the Araxes originates from the same mountains as the Euphrates, only six miles away, that the waters of the Usis enhance it, and that it joins the Cyrus River on its path to the Caspian Sea (Plin. *nat.* VI.9.1). He also notes that in parts of Greater Armenia, the Araxes River separates Atropatene from Otene (Plin. *nat.* VI.16.1). In *On the Names of Rivers and Mountains* (De Fluviorum et Montium Nominibus, Περὶ ποταμῶν καὶ ὄρων ἐπωνυμίας), Pseudo-Plutarch states that the Araxes River in Armenia was named after Araxus, the son of Pylus. He adds that a plant called araxa—meaning “hater of virgins” in the local language—grows in the river. Any virgin who encounters it, Pseudo-Plutarch claims, bleeds to death (Pseudo-Plutarch De Fluviiis 001.24). Ptolemy similarly notes that the Araxes flow into the Hyrcanian Sea (Ptol. *georg.* V.13.6). Solinus, too, provides information consistent with other ancient writers regarding the Araxes (Sol. *Pol.* 19.3).

Strabo also addresses the Cyrus when discussing Iberia. He remarks that it rises in the territory of Armenia, flows toward a central plain in Iberia (where it is the region’s largest river and absorbs others), and then cuts through a narrow valley into Albania before discharging into the Caspian Sea. According to Strabo, the older name of this river was Corus (Strab. XI.1.5; XI.3.2). In subsequent passages, he notes that the routes from Armenia to Iberia pass through narrow corridors over the Aragus and Cyrus Rivers; he also records that fortified cities, built atop rocky cliffs and about sixteen stades apart, line the riverbanks. One of these, on the Cyrus, is called Harmozice (Strab. XI.4.2).

Later, Strabo observes that the Cyrus flows through Albania, nourishes the land with various other rivers, and deposits such large quantities of alluvial material that it eventually forms islands and islets. He notes that at its mouth, the river splits into twelve branches, some clogged by sediment, leaving no space for ships to moor. Strabo further states that emptying into the sea fills a 500-stade stretch of coastline with sand and alluvial deposits (Strab. XI.4.2).

Pliny states that the Cyrus River rises from Mount Heniochi, flows into the Caspian Sea with the Araxes, and forms the boundary between Armenia and Iberia (Plin. *nat.* VI.10.1; 15.2). In another passage, he claims it originates in the Coraxici Mountains (Plin. *nat.* VI.15.3). Pliny also writes that the Cyrus runs 700 miles up to the Caspian Gates (Plin. *nat.* VI.17.2).

Ancient authors mention several other rivers in the region. Among these are the Nikephorios and the Nymphaios. Herodotus notes the existence of three rivers bearing the name “Tigris” (Hdt. V.52), stating that they do not arise from the same source—one emerging from Armenia, another from the land of the Matieni—although he does not specify the origin of all three. As no other ancient writer references these two additional tributaries, modern scholars propose that the more easterly branch, referred to as Nymphios or Nymphaeus, may be today’s Batman Çayı or Miafarakin.

Conclusion

Building upon the complex geomorphology and hydrographic system of Eastern Anatolia, primarily focusing on the two principal rivers of ancient Armenia and Mesopotamia, the Euphrates (Firat) and Tigris (Dicle), this study makes it abundantly clear how crucial rivers have been to the historical development of the Near East. It has become evident that rivers must be examined as geographical or hydrological phenomena and as cultural, economic, strategic, and ideological entities. Whether we look at the river cult in ancient Mesopotamian civilizations such as Sumer, Babylon, and Assyria or the frequently mentioned motif of “crossing the river” in the texts of ancient Greek (Hellenic), Roman, and Urartian authors, these waterways played a remarkably salient role in the mental worlds of ancient Near Eastern societies.

From a geographical perspective, the geomorphological and tectonic structures described in the text underscore how the Eastern Anatolian plateau and its attached volcanic masses decisively shape the flow regimes and valleys carved by the rivers. Rivers like the Murat, Aras, Araxes (Araks/Araz), and Kura, which discharge in various directions, form key watershed segments linking the Atlantic and Indian Oceans. In so doing, they establish the geomorphological borders of northeastern Anatolia (Erinç, 1953; Güney, 1990; Tuncel, 1996). This situation represents a geographic delineation and sheds light on the historical processes that have evolved in the region. Sharp transitions in river channels, seasonal flood cycles, and cataract zones unsuitable for navigation have significantly influenced settlement and defense strategies in antiquity and modern times (Darkot, 1979).

From a historical and cultural standpoint, it is clear that labeling the Euphrates and Tigris as “lifelines” cannot be reduced solely to the fertile alluvial zones. The text demonstrates that rivers also functioned as mechanisms for political discourse and propaganda, as evidenced by a broad spectrum of material, from the sacred status of rivers in Sumerian and Babylonian mythologies to the expedition narratives of Assyrian (Aššur) kings (Kramer, 1963; Jacobsen, 1976; Bottéro, 2001). The divine identities conferred upon the Tigris and Euphrates shaped civilizations around these water sources not merely out of economic necessity but also by metaphysical and cosmological beliefs. These beliefs and rituals—seen, for example, in how the Assyrian royal ideology used the challenging crossing of the Euphrates (e.g., by Tiglath-pileser I or Shalmaneser III) as a sign of divine sanction for military campaigns (Grayson, 1991; Parker, 2001; Larsen, 2015) —demonstrate that crossing the river was elevated beyond a mere tactical maneuver. Likewise, the Urartian kings’ depictions of “crossing the Euphrates with the help of the gods” (Payne, 2006) prove that such an act was considered a strategic and ideological triumph.

The strategic and economic dimensions come to the fore as another central focus of the text. Water availability from these rivers profoundly shaped economic relations between Mesopotamia and Eastern Anatolia. From the Sumerian city-states to the Third Dynasty of Ur and from Babylonian to Assyrian polities, knowledge about irrigation canals and water management (Steinkeller, 2001; Charpin, 2004) underscores how these rivers served as vital economic arteries. The accounts by Herodotus (Hdt. I.180, I.193) and Xenophon (Anabasis) that the text synthesizes illustrate the extensive commercial transport on the Euphrates and Tigris in detail. Of particular note are the “kufas,” “leather rafts,” and significant commercial capacity described by Greek and Roman authors, which provide valuable insight into the logistical utilization of rivers in antiquity. Moreover, Herodotus’s depiction of Babylon’s canal systems—diverting the Euphrates and yielding exceptionally high agricultural productivity (Hdt. I.193) — aligns closely with modern archaeological and paleobotanical findings (Postgate, 1992).

The military and political angle emerges as a strongly emphasized framework in the text. Because rivers were regarded as primary strategic barriers in the ancient world, an army’s ability to cross them became an emblem of substantial military “success” and sovereignty. The fact that Assyrian kings recorded the number of times they crossed a river as an indicator of the length and might of their reign (RIMA 1 A.0.78; RIMA 2 A.0.87) also reveals that these rivers were a permanent element of diplomatic negotiations (Kuhrt, 1995; Bryce, 2005). Hence, the Uruatri–Nairi expeditions or the ritualized crossing of the Euphrates by Urartu were not simply attempts at territorial expansion or acquiring mineral resources; they were also opportunities for demonstrating royal military and ideological power.

Finally, the text presents a multilayered vision of ancient geography. The accounts of ancient authors—Herodotus, Xenophon, Polybius, Strabo, and Pliny—concerning the Euphrates, Tigris, Aras, Kura, Kyros, and

Araxes merge various travel records, expedition reports, and cosmological interpretations across different eras. Consequently, ancient geography ceases to be perceived as static or one-dimensional, instead emerging as a continually redefined “space” shaped by the shifting political boundaries, myths, hydrological observations, trade routes, and local belief systems of the time. The inconsistencies in naming and localization (for instance, Xenophon’s “Phasis” or Pliny’s different accounts of the Euphrates’ source) reflect the limitations of data collection practices at the time; yet, they also yield critical insights into the region’s identities and networks of interaction (James, 1870; Edwards, 1988).

In light of all these findings, this study—focusing on the rivers of ancient Armenia—offers a multidimensional approach to understanding how the oldest Near Eastern civilizations formed, evolved, and interacted with one another. The cultural meaning of these rivers, blended with their ecological, economic, and strategic potential, played a central role in antiquity urbanization processes and empires’ political maneuvers. The ancient accounts of these waterways continue to serve as indispensable references for modern research in geography, archaeology, philology, and historical ecology.

Ultimately, these rivers in Eastern Anatolia and Mesopotamia—primarily the Tigris and Euphrates, but also the Aras, Kura, Kyros, and Araxes—can be viewed as the backbone of a multilayered human–environment relationship extending back nearly five millennia. Since antiquity, they have directly shaped production, wealth, belief, and notions of power. They also remain central to current scholarship. Accordingly, on-site investigations and interdisciplinary analyses of written sources can yield a more nuanced understanding of these river systems’ geopolitical, social, and cultural dimensions. Historical data transcend mere academic interest, especially in preserving and sustainably managing the region’s water resources, offering a valuable resource for contemporary decision-making. Therefore, explorations of the rivers of ancient Armenia constitute an irreplaceable foundation for uncovering the Near East’s historical ecology and hydrological heritage, enriching cultural memory, and formulating plans to carry this heritage into the future.

Ethics Committee Approval: Ethics committee approval is not required.

Peer-review: Externally peer-reviewed.

Conflict of Interest: The author has no conflicts of interest to declare.

Financial Disclosure: The author declared that this study has no financial support.

Abbreviations

Hell. = Hellenic (antique)

Lat. = Latin (antique)

EnIr = Encyclopedia Iranica

Mod. = Modern

References

Ancient References

Arr.: (= Lucius Flavius Arrianus).

: *periplus*

(= *Periplus Ponti Euxini*) *Arriani Periplus Ponti Euxini. Arrianus’un Karadeniz Seyahati*. (Trans. and Comm. Aslan, M.) 2005. Odin Yay.

Cic.: (= Marcus Tullius Cicero)

: *De Natura*

Cicero, *Nature of the Gods (De Natura Deorum)*, from the Treatises of M.T. Cicero, trans. by Charles Duke Yonge (1812-1891), Bohn edition of 1878.

Diod. (=Diodorus Siculus).

: *Bib.* (= Bibliotheca historica)

Diodorus of Sicily. With an English trans. by R. M. Geer. 1947 (The Loeb Classical Library).

Epitome of the Philippic History of Pompeius Trogus. Trans., with notes, by the R. J. S. Watson. Henry G. Bohn, York Street, Convent Garden 1853.

Hdt.: (= Herodotus).

: *Historiai*

(= Herodotus. (1920–1925). *The Persian Wars*, I-IV (A. D. Godley, Trans.). Cambridge, MA; Harvard University Press. (Loeb Classical Library).

Herodotos. (1920). *Historiai* (A. D. Godley, Trans.). Cambridge, MA; Harvard University Press.

Herodot. (2012). *Tarih* (M. Ökmen, trans.; VIII. edition). Türkiye İş Bankası Kültür Yayınları.

Ksen.: (= Ksenophon).

: *Anabasis*

(=Ksenophon. (1922). *Anabasis* I–VII (C. L. Brownson, Trans.). MA: Harvard University Press. (Loeb Classical Library).

Ksenophon. (2011). *Anabasis: Onbinlerin dönüşü* (O. Yarlığaş, Trans.). Kabalcı Yayıncılık.

Pomp. Mel.: (= Pomponius Mela)

: *De Chorographia*

(= Pomponius Mela. (1998). *Description of the World* (F. E. Romer, Trans.). Ann Arbor: University of Michigan Press.

Pseudo-Plutarch

: *De Fluviiis*

Plutarch. *Plutarch's Morals*. Transl. from the Greek by several hands. Corrected and revised by. William W. Goodwin, PH. D. Boston. Little, Brown, and Company. Press of John Wilson and son. 1874.

Ptol.: (= Claudius Ptolemaeus).

: *Geographike Hyphegesis*

(= Ptolemaios, K. (2017). *Handbuch der Geographie* (Griechisch-Deutsch) (trans. and edited for pub. A. Stückelberger & G. Großhoff). Schwabe Verlag.

Plin.: (= G. Plinius Secundus):

: *nat.* (= Naturalis Historia)

(= Pliny. (1938–1971). *Natural History* I–X (H. R. Rackham, W. H. S. Jones, & D. E. Eichholz, Trans.). Harvard University Press. (Loeb Classical Library).

Ruf.: (= Curtius Rufus)

: *Historiarum Alexandri Magni Macedonis*

Curtius Rufus, Quintus. *Historiarum Alexandri Magni Macedonis libri qui supersunt*. Edmund Hedicke. in aedibus B.G. Teubneri. Lipsiae. 1908. Keyboarding.

Sol. Pol. (= Gaius Iulius Solinus, Polyhistor).

Gaius Iulius Solinus, *The Polyhistor*, trans. by Arwen Apps, Gaius Iulius Solinus and his Polyhistor (PhD diss. Macquarie University, 2011).

Steph. Byz. Ethnika (= Stephanos Byzantios)

: *Ethnika*

Stephani Byzantii, *Ethnikon*. Ed. A. Westermann. 1839.

Stephani Byzantii, *Ethnica. volume I: Alpha-Gamma*. Ed. W. De Gruyter. 2006.

Strab.: (= Strabon)

: *Geographika*

Strabo. (1917–1932). *The Geography of Strabo I–VIII* (H. L. Jones, Trans.). Harvard University Press. (Loeb Classical Library).

Strabon. (2000). *Coğrafya* (A. Pekman, Çev.). Arkeoloji ve Sanat Yayınları.

Varro: (= Marcus Terentius Varro)

: *De Lingua Latina*

De Lingua Latina ('On the Latin Language'), (R.G.Kent, Trans.). Harvard University Press. Loeb Classical Library.

Epigraphic and Modern References

ARAB : (= Ancient Records of Assyria and Babylonia)

Luckenbill, D. D. (1926). *Ancient Records of Assyria and Babylonia*, I–II. University of Chicago Press.

BAtlas : (= Barrington Atlas of the Greek and Roman World)

Barrington Atlas of the Greek and Roman World. (Ed.). Richard J. A. Talbert. (2000). Princeton University Press

RIMA : (= Royal Inscriptions of Mesopotamia, Assyrian Periods)

Grayson, A. K. (1987). *Assyrian rulers of the 3rd and 2nd millennia BC (to 1115 BC)*. Royal Inscriptions of Mesopotamia, Assyrian Periods, I. University of Toronto Press.

Grayson, A. K. (1991). *Assyrian rulers of the early first millennium BC I (1114–859 BC)*. Royal Inscriptions of Mesopotamia, Assyrian Periods, II. University of Toronto Press.

Grayson, A. K. (1996). *Assyrian rulers of the early first millennium BC II (858–745 BC)*. Royal Inscriptions of Mesopotamia, Assyrian Period, III. University of Toronto Press.

Modern References

Adams, R. McC. (1981). *Heartland of cities: Surveys of ancient settlement and land use on the central floodplain of the Euphrates*. Chicago: University of Chicago Press.

Adams, R. McC. (2009). Old Babylonian networks of urban notables. *Cuneiform Digital Library Journal*, 7, 121–158.

Akyol, H. (1949). Türkiye’de akarsu rejimleri. *Türk Coğrafya Dergisi*, 11–12, 1–34. İstanbul: Türk Coğrafya Kurumu Yayınları.

Algaze, G. (2008). *Ancient Mesopotamia at the dawn of civilization: The evolution of an urban landscape*. Chicago: University of Chicago Press.

- Asheri, D. – Lloyd, A. (2007). *A commentary on Herodotus books I-IV*. Oxford: Oxford University Press.
- Beckman, G. (2015). The name of the Tigris in antiquity. *Journal of Near Eastern Studies*, 74(1), 87–94.
- Black, J. – Green, A. (1992). *Gods, demons, and symbols of ancient Mesopotamia: An illustrated dictionary*. London: British Museum Press.
- Bottéro, J. (2001). *Religion in ancient Mesopotamia*. Chicago: University of Chicago Press.
- Bournoutian, G. A. (2011). *Ermeni tarihi: Ermeni halkının tarihine kısa bir bakış*. İstanbul: Aras Yayıncılık.
- Bryce, T. (2005). *The kingdom of the Hittites*. Oxford: Oxford University Press.
- Cameron, G. G. (1950). The annals of Shalmaneser III, king of Assyria: A new text. *Sumer*, 6(1), 6–26.
- Charpin, D. (2004). *Histoire politique du Proche-Orient amorrite*. Paris: Cerf.
- Çiğdem, S., & Topaloğlu, Y. (2018). Eski Çağ'da Doğu Anadolu'nun iktisadi hayatı üzerine genel bir değerlendirme. In L. G. Gökçek, E. Yıldırım, & O. Pekşen (Eds.), *Anadolu'nun Eskiçağlarında İktisadi ve Zirai Hayat* (pp. 413–457). İstanbul: Değişim Yayınları.
- Darkot, B. (1978). Aras. In *Millî Eğitim Bakanlığı İslam Ansiklopedisi I* (pp. 554–555). İstanbul: Milli Eğitim Basımevi.
- Dedeyan, G. (2015). *Ermeni halkının tarihi* (Ş. Çiltaş, Trans.). İstanbul: Ayrıntı Yayınları.
- Dyer, H. T. (1872). Tigris. In *A Dictionary of Greek and Roman Geography II* (1208–1209).
- Erinç, S. (1953). *Doğu Anadolu coğrafyası*. İstanbul: İstanbul Üniversitesi Coğrafya Enstitüsü Yayınları.
- Farrell (1961). Farrell, W. J., "A Revised Itinerary of the Route Followed by Cyrus the Younger through Syria, 401 B. C.", *The Journal of Hellenic Studies* 81, 153–155.
- Frahm, E. (2017). The Neo-Assyrian period (ca. 1000–609 BCE). In E. Frahm (Ed.), *A companion to Assyria* (pp. 161–208). Wiley-Blackwell.
- Fuchs, A. (2011). Assyria at war: Strategy and conduct. In K. Radner & E. Robson (Eds.), *The Oxford handbook of cuneiform culture* (pp. 380–401). Oxford: Oxford University Press.
- Gamkrelidze, V. T. – Ivanov, V. V. (1995). *Indo-European and the Indo-Europeans: A reconstruction and historical analysis of a proto-language and proto-culture*. Berlin & New York: Mouton de Gruyter.
- Günaltay, Ş. (1951). *Yakın Şark IV, II. Bölüm: Romalılar zamanında Kapadokya, Pont ve Artaksiad krallıkları*. Ankara: Türk Tarih Kurumu Basımevi.
- Hartmann, R. (1979). Dicle. In *Millî Eğitim Bakanlığı İslam Ansiklopedisi*.
- Hoffmann, A., & Bauer, G. (2020). Historical geography of Upper Mesopotamia: River systems and settlement patterns. *Journal of Ancient Near Eastern History*, 7(2), 242–268.
- Hritz, C. (2010). Tracing settlement patterns and channel systems in southern Mesopotamia. *Journal of Archaeological Science*, 37(1), 29–42.
- Jacobsen, T. (1976). *The treasures of darkness: A history of Mesopotamian religion*. New Haven: Yale University Press.
- James, E. B. (1870). "Araxes". *A Dictionary of Greek and Roman Geography I*, William Smith (Ed.), (188) London: John Murray, Albemarle Street.
- Karttunen, K. (2019). Herodotus and the East: A study in the reliability of Herodotus as a source for oriental history. *Journal of Ancient History*, 87(2), 156–178.
- Kramer, S. N. (1963). *The Sumerians: Their history, culture, and character*. Chicago: University of Chicago Press.
- Kuhrt, A. (1995). *The ancient Near East c. 3000–330 BC*. London: Routledge.
- Lang, D. M. (1970). *Armenia: Cradle of civilization*. London: George Allen & Unwin Ltd.

- Larsen, M. T. (2015). *Ancient Kanesh: A merchant colony in Bronze Age Anatolia*. Cambridge: Cambridge University Press.
- Luckenbill, D. D. (1912). *Inscriptions of early Assyrian rulers*. American Journal of Semitic Languages and Literatures, 28(3), 153–203. University of Chicago Press.
- Parker, B. J. (2001). *The mechanics of empire: The northern frontier of Assyria as a case study in imperial dynamics*. Helsinki: Neo-Assyrian Text Corpus Project.
- Payne, R. M. (2006). *Urartu Çivi Yazılı Belgeler Kataloğu*. İstanbul: Arkeoloji ve Sanat Yayınları.
- Pekşen, O. (2017). Asur devlet emperyalizminin meşrulaştırılması açısından Tanrı Aşşur'a isyan olgusu. In P. Pınarcık et al. (Eds.), *Prof. Dr. Recep Yıldırım'a armağan* (pp. 355–370). Ankara: Bilgin Kültür Sanat Yayınları.
- Pekşen, O. (2018a). Asur kral yıllıklarına göre Asur krallarının Anadolu'ya düzenledikleri askeri seferler, sefer güzergâhları ve kentler. In B. Gökçe & P. Pınarcık (Eds.), *Eski Yakındoğu'da ulaşım üzerine yazılar* (pp. 307–322). Ankara: Akademisyen Yayınevi.
- Pekşen, O. (2018b). Asur kral yıllıklarına göre Anadolu'nun sahip olduğu iktisadi ve zirai zenginliğin bölgeye yapılan Asur seferlerine yansıması. In L. G. Gökçek, E. Yıldırım, & O. Pekşen (Eds.), *Anadolu'nun Eski Çağlarında İktisadi ve Zirai Hayat* (pp. 373–398). İstanbul: Değişim Yayınları.
- Pekşen, O. – Topaloğlu, Y. (2024). A theocratic approach to governance in ancient times: Assyrians. *Journal of Academic Research in Religious Sciences*, 24(1), 9–36.
- Postgate, J. N. (1992). *Early Mesopotamia: Society and economy at the dawn of history*. London: Routledge.
- Radner, K. (2014). The Neo-Assyrian Empire. In M. Gehler & R. Rollinger (Eds.), *Imperien und Reiche in der Weltgeschichte* (pp. 101–119). Wiesbaden: Harrassowitz.
- Radner, K. (2015). *Ancient Assyria: A very short introduction*. Oxford: Oxford University Press.
- Radner, K. (2021). Writing ancient Iraqi history: Sources and approaches. *Journal of Ancient History*, 9(2), 305–329.
- Roaf, M. (1990). *Cultural atlas of Mesopotamia and the ancient Near East*. New York: Facts on File.
- Salvini, M. (1995). *Geschichte und Kultur der Urartäer*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Steikeller, P. (2001). New light on the hydrology of southern Mesopotamia in the third millennium. *Zeitschrift für Assyriologie*, 91, 22–84.
- Tuncel, M. (1991). Aras. In *Diyanet Vakfı İslam Ansiklopedisi* 3 (pp. 332–335). İstanbul: Türkiye Diyanet Vakfı.
- Tuncel, M. (1994). Dicle. In *Diyanet Vakfı İslam Ansiklopedisi* 9 (pp. 281–282). İstanbul: Türkiye Diyanet Vakfı.
- Tuncel, M. (1996). Fırat. In *Diyanet Vakfı İslam Ansiklopedisi* 13 (pp. 33–34). İstanbul: Türkiye Diyanet Vakfı.
- Van De Mieroop, M. (2007). *A history of the ancient Near East ca. 3000–323 BC*. Oxford: Blackwell.
- Wilkinson, T. J. – Rayne, L. – Jotheri, J. (2015). Hydraulic landscapes in Mesopotamia: The role of human niche construction. *Water History*, 7(4), 397–418. İsi IV (pp. 582–585). İstanbul: Milli Eğitim Basımevi.