Sumer

Sumer (from Akkadian *Šumeru*; Sumerian □□□ *ki-en-ĝir*$_{15}$, approximately "land of the civilized kings" or "native land"[note 1])[1] was an ancient civilization and historical region in southern Mesopotamia, modern Iraq, during the Chalcolithic and Early Bronze Age. Although the earliest historical records in the region do not go back much further than ca. 2900 BC, modern historians have asserted that Sumer was first settled between ca. 4500 and 4000 BC by a non-Semitic people who may or may not have spoken the Sumerian language (pointing to the names of cities, rivers, basic occupations, etc. as evidence).[2] These conjectured, prehistoric people are now called "proto-Euphrateans" or "Ubaidians",[3] and are theorized to have evolved from the Samarra culture of northern Mesopotamia (Assyria).[4][5][6][7] The Ubaidians were the first civilizing force in Sumer, draining the marshes for agriculture, developing trade, and establishing industries, including weaving, leatherwork, metalwork, masonry, and pottery.[3] However, some scholars such as Piotr Michalowski and Gerd Steiner, contest the idea of a Proto-Euphratean language or one substrate language.

Sumerian civilization took form in the Uruk period (4th millennium BC), continuing into the Jemdat Nasr and Early Dynastic periods. During the third millennium BC, a close cultural symbiosis developed between the Sumerians (who spoke a Language Isolate) and the Semitic Akkadian speakers, which included widespreadbilingualism.[8] The influence of Sumerian on Akkadian (and vice versa) is evident in all areas, from lexical borrowing on a massive scale, to syntactic, morphological, and phonological convergence.[8] This has prompted scholars to refer to Sumerian and Akkadian in the third millennium as a *sprachbund*.[8] Sumer was conquered by the Semitic-speaking kings of the Akkadian Empire around 2270 BC (short chronology), but Sumerian continued as a sacred language. Native Sumerian rule re-emerged for about a century in the Third Dynasty of Ur (Sumerian Renaissance) of the 21st to 20th centuries BC, but Akkadian also remained in use. The Sumerian city of Eridu, on the coast of the Persian Gulf, was the world's first city, where three separate cultures fused - that of peasant Ubaidian farmers, living in mud-brick huts and practicing irrigation; that of mobile nomadic Semitic pastoralists living in black tents and following herds of sheep and goats; and that of fisher folk, living in reed huts in the marshlands, who may have been the ancestors of the Sumerians.[9]

The surplus of storable food created by this economy allowed the population of this region to settle in one place, instead of migrating as hunter gatherers. It also allowed for a much greater population density, and in turn required an extensive labour force and division of labour with many specialised arts and crafts.

Sumer was also the site of early development of writing, progressing from a stage of proto-writing in the mid 4th millennium BC to writing proper in the third millennium (see Jemdet Nasr period).

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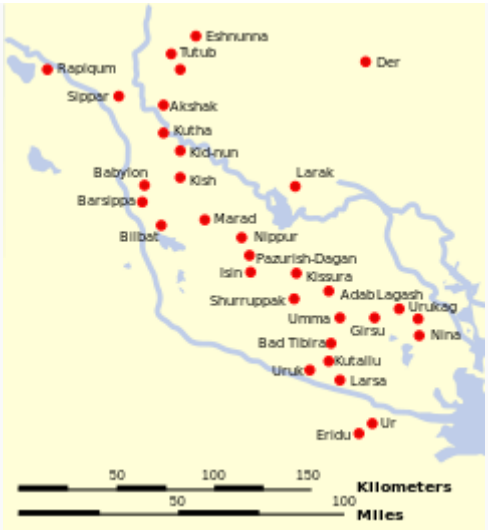
Origin of name

The term "Sumerian" is the common name given to the ancient non-Semitic inhabitants of southern Mesopotamia, Sumer, by the Semitic Akkadians. The Sumerians referred to themselves as *ùĝ saĝ gíg-ga* (cuneiform: 𒌅 𒊩 𒂵 𒄑), phonetically uŋ saŋ giga, literally meaning "the black-headed people".[10] The Akkadian word *Shumer* may represent the geographical name in dialect, but the phonological development leading to the Akkadian term *šumerû* is uncertain.[1][11] Biblical *Shinar*, Egyptian *Sngr* and Hittite *Šanhar(a)* could be western variants of *Shumer*.[11]

City-states in Mesopotamia

Further information: Cities of the Ancient Near East and Geography of Mesopotamia



Map of Sumer

By the late 4th millennium BC, Sumer was divided into about a dozen independent city-states, which were divided by canals and boundary stones. Each was centered on a temple dedicated to the particular patron god or goddess of the city and ruled over by a priestly governor (ensi) or by a king (lugal) who was intimately tied to the city's religious rites.

The five "first" cities said to have exercised pre-dynastic kingship:

1. Eridu (*Tell Abu Shahrain*)
2. Bad-tibira (probably *Tell al-Madain*)
3. Larsa (*Tell as-Senkereh*)
4. Sippar (*Tell Abu Habbah*)
5. Shuruppak (*Tell Fara*)

Other principal cities:

6. Uruk (*Warka*)
7. Kish (*Tell Uheimir & Ingharra*)
8. Ur (*Tell al-Muqayyar*)
9. Nippur (*Afak*)
10. Lagash (*Tell al-Hiba*)
11. Girsu (*Tello or Telloh*)
12. Umma (*Tell Jokha*)
13. Hamazi [1]
14. Adab (*Tell Bismaya*)
15. Mari (*Tell Hariri*) [2]
16. Akshak [1]
17. Akkad [1]
18. Isin (*Ishan al-Bahriyat*)

([1]location uncertain)

([2]an outlying city in northern Mesopotamia)

Minor cities (from south to north):

1. Kuara (*Tell al-Lahm*)
2. Zabala (*Tell Ibzeikh*)
3. Kisurra (*Tell Abu Hatab*)
4. Marad (*Tell Wannat es-Sadum*)
5. Dilbat (*Tell ed-Duleim*)
6. Borsippa (*Birs Nimrud*)
7. Kutha (*Tell Ibrahim*)
8. Der (*al-Badra*)
9. Eshnunna (*Tell Asmar*)
10. Nagar (*Tell Brak*) [2]

([2]an outlying city in northern Mesopotamia)

Apart from Mari, which lies full 330 km (205 mi) northwest of Agade, but which is credited in the king list as having “exercised kingship” in the Early Dynastic II period, and Nagar, an outpost, these cities are all in the Euphrates-Tigris alluvial plain, south of Baghdad in what are now the Bābil, Diyala, Wāsit, Dhi Qar, Basra, Al-Muthannā and Al-Qādisiyyah governorates of Iraq.

History

Main article: History of Sumer

The Sumerian city states rose to power during the prehistorical Ubaid and Uruk periods. Sumerian written history reaches back to the 27th century BC and before, but the historical record remains obscure until the Early Dynastic III period, ca. the 23rd century BC, when a now deciphered syllabary writing system was developed, which has allowed archaeologists to read contemporary records and inscriptions. Classical Sumer ends with the rise of the Akkadian Empire in the 23rd century BC. Following the Gutian period, there is a brief "Sumerian renaissance" in the 21st century BC, cut short in the 20th century BC by Semitic Amorite invasions. The Amorite "dynasty of Isin" persisted until ca. 1700 BC, when Mesopotamia was united under Babylonian rule. The Sumerians were eventually absorbed into the Akkadian (Assyro-Babylonian) population.

- Ubaid period: 5300 – 4100 BC (Pottery Neolithic to Chalcolithic)
- Uruk period: 4100 – 2900 BC (Late Chalcolithic to Early Bronze Age I)
  - Uruk XIV-V: 4100 – 3300 BC
  - Uruk IV period: 3300 – 3000 BC
  - Jemdet Nasr period (Uruk III): 3000 – 2900 BC
- Early Dynastic period (Early Bronze Age II-IV)
  - Early Dynastic I period: 2900–2800 BC
  - Early Dynastic II period: 2800–2600 BC (Gilgamesh)
  - Early Dynastic IIIa period: 2600–2500 BC
  - Early Dynastic IIIb period: ca. 2500–2334 BC
- Akkadian Empire period: ca. 2334–2218 BC (Sargon)
- Gutian period: ca. 2218–2047 BC (Early Bronze Age IV)
- Ur III period: ca. 2047–1940 BC

The Samarra bowl, at thePergamonmuseum, Berlin. The swastika in the center of the design is a reconstruction.[12]

[*disputed* – *discuss*]

Ubaid period

Main article: Ubaid period

The Ubaid period is marked by a distinctive style of fine quality painted pottery which spread throughout Mesopotamia and the Persian Gulf. During this time, the first settlement in southern Mesopotamia was established at Eridu (Cuneiform: NUN.KI), ca. 5300 BC, by farmers who brought with them theHadji Muhammed culture, which first pioneered irrigation agriculture. It appears this culture was derived from the Samarran culture from northern Mesopotamia. It is not known whether or not these were the actual Sumerians who are identified with the later Uruk culture. Eridu remained an important religious center when it was gradually surpassed in size by the nearby city of Uruk. The story of the passing of the *me* (gifts of civilisation) to Inanna, goddess of Uruk and of love and war, by Enki, god of wisdom and chief god of Eridu, may reflect this shift in hegemony.[13] It appears that this early culture was an amalgam of three distinct cultural influences: peasant farmers, living in wattle and daub or clay brick houses and practicing irrigation agriculture; hunter-fishermen living in woven reed houses and living on floating islands in the marshes (Proto-Sumerians); and Proto-Akkadian nomadic pastoralists, living in black tents.[14]

Uruk period

Main article: Uruk period

The archaeological transition from the Ubaid period to the Uruk period is marked by a gradual shift from painted pottery domestically produced on a slow wheel to a great variety of unpainted pottery mass-produced by specialists on fast wheels.

By the time of the Uruk period (ca. 4100–2900 BC calibrated), the volume of trade goods transported along the canals and rivers of southern Mesopotamia facilitated the rise of many large,stratified, temple-centered cities (with populations of over 10,000 people) where centralized administrations employed specialized workers. It is fairly certain that it was during the Uruk period that Sumerian cities began to make use of slave labor captured from the hill country, and there is ample evidence for captured slaves as workers in the earliest texts. Artifacts, and even colonies of this Uruk civilization have been found over a wide area—from the Taurus Mountains in Turkey, to the Mediterranean Sea in the west, and as far east as Central Iran.[15]

The Uruk period civilization, exported by Sumerian traders and colonists (like that found at Tell Brak), had an effect on all surrounding peoples, who gradually evolved their own comparable, competing economies and cultures. The cities of Sumer could not maintain remote, long-distance colonies by military force.[15]

Sumerian cities during the Uruk period were probably theocratic and were most likely headed by a priest-king (*ensi*), assisted by a council of elders, including both men and women.[16] It is quite possible that the later Sumerian pantheon was modeled upon this political structure. There was little evidence of institutionalized violence or professional soldiers during the Uruk period, and towns were generally unwalled. During this period Uruk became the most urbanised city in the world, surpassing for the first time 50,000 inhabitants.

Notable Sumerians **History of Sumer** • **Mythology** • **King list**	
Pre-dynastic kings:	Alulim • Dumuzid, the Shepherd •En-men-dur-ana
1st Dynasty of Kish:	Etana • En-me-barage-si • Aga of Kish
1st Dynasty of Uruk:	Enmerkar • Lugalbanda • Gilgamesh
1st Dynasty of Ur:	Meskalamdug • Mesh-Ane-pada •Puabi • Mesilim of Kish
2nd Dynasty of Uruk:	En-shag-kush-ana
1st Dynasty of Lagash:	Ur-Nanshe • Eannatum • Entemena •Urukagina
Dynasty of Adab:	Lugal-Ane-mundu
3rd Dynasty of Kish:	Kug-Bau

3rd Dynasty of Uruk:	Lugal-zage-si
Dynasty of Akkad:	Sargon • Tashlultum • En-hedu-ana •Man-ishtishu • Naram-Sin of Akkad •Shar-kali-sharri • Dudu of Akkad •Shu-Durul
2nd Dynasty of Lagash:	Puzer-Mama • Gudea
5th Dynasty of Uruk:	Utu-hengal
3rd dynasty of Ur:	Ur-Namma • Shulgi • Amar-Suena •Shu-Suen • Ibbi-Suen

The ancient Sumerian king list includes the early dynasties of several prominent cities from this period. The first set of names on the list is of kings said to have reigned before a major flood occurred. These early names may be fictional, and include some legendary and mythological figures, such as Alulim and Dumizid.[17]

The end of the Uruk period coincided with the Piora oscillation, a dry period from c. 3200–2900 BC that marked the end of a long wetter, warmer climate period from about 9,000 to 5,000 years ago, called the Holocene climatic optimum.[18]

Early Dynastic Period

The Dynastic period begins ca. 2900 BC and includes such legendary figures as Enmerkar and Gilgamesh—who are supposed to have reigned shortly before the historic record opens ca. 2700 BC, when the now deciphered syllabic writing started to develop from the early pictograms. The center of Sumerian culture remained in southern Mesopotamia, even though rulers soon began expanding into neighboring areas, and neighboring Semitic groups adopted much of Sumerian culture for their own.

The earliest Dynastic king on the Sumerian king list whose name is known from any other legendary source is Etana, 13th king of the first Dynasty of Kish. The earliest king authenticated through archaeological evidence is Enmebaragesi of Kish (ca. 26th century BC), whose name is also mentioned in the Gilgamesh epic—leading to the suggestion that Gilgamesh himself might have been a historical king of Uruk. As the Epic of Gilgamesh shows, this period was associated with increased violence. Cities became walled, and increased in size as undefended villages in southern Mesopotamia disappeared. (Gilgamesh is credited with having built the walls of Uruk).

1st Dynasty of Lagash

Fragment of Eannatum's Stele of the Vultures

Main article: Lagash

ca. 2500–2270 BC

The dynasty of Lagash, though omitted from the king list, is well attested through several important monuments and many archaeological finds.

Although short-lived, one of the first empires known to history was that of Eannatum of Lagash, who annexed practically all of Sumer, including Kish, Uruk, Ur, and Larsa, and reduced to tribute the city-state of Umma, arch-rival of Lagash. In addition, his realm extended to parts of Elam and along the Persian Gulf. He seems to have used terror as a matter of policy—his Stele of the Vultureshas been found, showing violent treatment of enemies. His empire collapsed shortly after his death. He is notable for the policy of having deliberately introduced the use of "terror" as a weapon against his enemies.[19]

Later, Lugal-Zage-Si, the priest-king of Umma, overthrew the primacy of the Lagash dynasty in the area, then conquered Uruk, making it his capital, and claimed an empire extending from the Persian Gulf to the Mediterranean. He was the last ethnically Sumerian king before the arrival of the Semitic king,Sargon of Akkad.[9]

Akkadian Empire

Main article: Akkadian Empire

ca. 2270–2083 BC (short chronology)

The Semitic Akkadian language is first attested in proper names of the kings of Kish ca. 2800 BC,[20] preserved in later king lists. There are texts written entirely in Old Akkadian dating from ca. 2500 BC. Use of Old Akkadian was at its peak during the rule of Sargon the Great (ca. 2270–2215 BC), but even then most administrative tablets continued to be written in Sumerian, the language used by the scribes. Gelb and Westenholz differentiate three stages of Old Akkadian: that of the pre-Sargonic era, that of the Akkadian empire, and that of the "Neo-Sumerian Renaissance" that followed it. Speakers of Akkadian and Sumerian coexisted for about one thousand years, until ca. 1800 BC, when Sumerian ceased to be spoken. Thorkild Jacobsen has argued that there is little break in historical continuity between the pre- and post-Sargon periods, and that too much emphasis has been placed on the perception of a "Semitic vs. Sumerian" conflict.[21] However, it is certain that Akkadian was also briefly imposed on neighboring parts of Elam that were previously conquered by Sargon.

Gutian period

Main article: Gutian dynasty of Sumer

ca. 2083–2050 BC (short chronology)

2nd Dynasty of Lagash

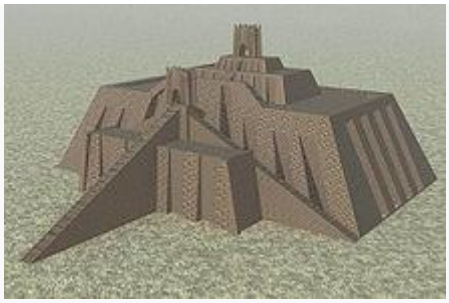
Gudea of Lagash

Main article: Lagash

ca. 2093–2046 BC (short chronology)

Following the downfall of the Akkadian Empire at the hands of Gutians, another native Sumerian ruler, Gudea of Lagash, rose to local prominence and continued the practices of the Sargonid kings' claims to divinity. Like the previous Lagash dynasty, Gudea and his descendants also promoted artistic development and left a large number of archaeological artifacts.

Sumerian Renaissance



Great Ziggurat of Ur, near Nasiriyah, Iraq

Main article: Sumerian renaissance

ca. 2047–1940 BC (short chronology)

Later, the 3rd dynasty of Ur under Ur-Nammu and Shulgi, whose power extended as far as northern Mesopotamia, was the last great "Sumerian renaissance", but already the region was becoming more Semitic than Sumerian, with the rise in power of the Akkadian speaking Semites, and the influx of waves of Semitic Martu (Amorites) who were to found several competing local powers including Isin, Larsa, andBabylon. The last of these eventually came to dominate the south of Mesopotamia as the Babylonian Empire, just as the Assyrian Empire did in the north. The Sumerian language continued as a sacerdotal language taught in schools in Babylonia and Assyria, much as Latin was used in the Medieval period, for as long as cuneiform was utilised.

Decline

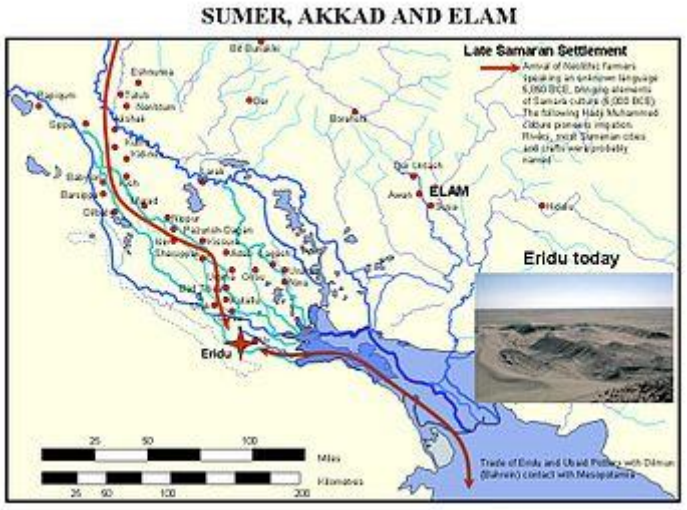
This period is generally taken to coincide with a major shift in population from southern Mesopotamia toward the north. Ecologically, the agricultural productivity of the Sumerian lands was being compromised as a result of rising salinity. Soil salinity in this region had been long recognized as a major problem. Poorly drained irrigated soils, in an arid climate with high levels of evaporation, led to the buildup of dissolved salts in the soil, eventually reducing agricultural yields severely. During the Akkadian and Ur III phases, there was a shift from the cultivation of wheat to the more salt-tolerant barley, but this was insufficient, and during the period from 2100 BC to 1700 BC, it is estimated that the population in this area declined by nearly three fifths.[22] This greatly weakened the balance of power within the region, weakening the areas where Sumerian was spoken, and comparatively strengthening those where Akkadian was the major language. Henceforth Sumerian would remain only a literary and liturgical language, similar to the position occupied by Latin in medieval Europe.

Following an Elamite invasion and sack of Ur during the rule of Ibbi-Sin (ca. 1940 BC), Sumer came under Amorite rule (taken to introduce the Middle Bronze Age). The independent Amorite states of the 20th to 18th centuries are summarized as the "Dynasty of Isin" in the Sumerian king list, ending with the rise of Babylonia under Hammurabi ca. 1700 BC.

During the third millennium BC, there developed a very intimate cultural symbiosis between the Sumerians and the Akkadians, which included widespread bilingualism.[8] The influence ofSumerian on Akkadian (and vice versa) is evident in all areas, from lexical borrowing on a massive scale, to syntactic, morphological, and phonological convergence.[8] This has prompted scholars to refer to Sumerian and Akkadian in the third millennium as a *sprachbund*.[8]

Akkadian gradually replaced Sumerian as a spoken language somewhere around the turn of the 3rd and the 2nd millennium BC (the exact dating being a matter of debate),[23] but Sumerian continued to be used as a sacred, ceremonial, literary and scientific language in Mesopotamia (Babylonia and Assyria) until the 1st century AD.[24]

Population



The first farmers from Samarra migrated to Sumer, and built shrines and settlements at Eridu.

The Sumerians were a non-Semitic people, and spoke a language isolate; a number of linguists believed they could detect asubstrate language beneath Sumerian, names of some of Sumer's major cities are not Sumerian, revealing influences of earlier inhabitants.[25] However, the archaeological record shows clear uninterrupted cultural continuity from the time of the Early Ubaid period (5300 – 4700 BC C-14) settlements in southern Mesopotamia. The Sumerian people who settled here farmed the lands in this region that were made fertile by silt deposited by the Tigris and the Euphrates rivers.

It is speculated by some archaeologists that Sumerian speakers were farmers who moved down from the north, after perfecting irrigation agriculture there [note there is no consensus among scholars on the origins of the Sumerians]. The Ubaid pottery of southern Mesopotamia has been connected via Choga Mami Transitional ware to the pottery of the Samarra period culture (c. 5700 – 4900 BC C-14) in the north, who were the first to practice a primitive form of irrigation agriculture along the middle Tigris River and its tributaries. The connection is most clearly seen at Tell Awayli (*Oueilli*, *Oueili*) near Larsa, excavated by the French in the 1980s, where 8 levels yielded pre-Ubaid pottery resembling Samarran ware. Farming peoples spread down into southern Mesopotamia because they had developed a temple-centered social organization for mobilizing labor and technology for water control, enabling them to survive and prosper in a difficult environment.[*citation needed*]

Others have suggested a continuity of Sumerians, from the indigenous hunter-fisherfolk traditions, associated with the Arabian bifacial assemblages found on the Arabian littoral. The Sumerians themselves claimed kinship with the people of Dilmun, associated with Bahrein in the Persian Gulf. Juris Zarins has suggested that they may have been the people living in the region of the Persian Gulf before it flooded at the end of the Ice Age.[*citation needed*]

Culture

Social and family life

A reconstruction in the British Museum of headgear and necklaces worn by the women in some Sumerian graves

In the early Sumerian period (i.e. Uruk), the primitive pictograms suggest[26] that

- "Pottery was very plentiful, and the forms of the vases, bowls and dishes were manifold; there were special jars for honey, butter, oil and wine, which was probably made from dates, and one form of vase had a spout protruding from its side. Some of the vases had pointed feet, and stood on stands with crossed legs; others were flat-bottomed, and were set on square or rectangular frames of wood. The oil-jars - and probably others also - were sealed with clay, precisely as in early Egypt. Vases and dishes of stone were made in imitation of those of clay, and baskets were woven of reeds or formed of leather."
- "A feathered head-dress was worn on the head. Beds, stools and chairs were used, with carved legs resembling those of an ox. There were fire-places and fire-altars, and apparently chimneys also."
- "Knives, drills, wedges and an instrument which looks like a saw were all known, while spears, bows, arrows and daggers (but not swords) were employed in war."
- "Tablets were used for writing purposes, and copper, gold and silver were worked by the smith. Daggers with metal blades and wooden handles were worn, and copper was hammered into plates, while necklaces or collars were made of gold."
- "Time was reckoned in lunar months."

There is considerable evidence that the Sumerians loved music, which seems to have been an important part of religious and civic life in Sumer. Lyreswere popular in Sumer, among the best-known examples being the Lyres of Ur.

Inscriptions describing the reforms of king Urukagina of Lagash (ca. 2300 BC) say that he abolished the former custom of polyandry in his country, by which a woman who took multiple husbands was stoned with rocks upon which her crime had been written.[27]

Though women were protected by late Sumerian law and were able to achieve a higher status in Sumer than in other contemporary civilizations, the culture was male-dominated. The Code of Ur-Nammu, the oldest such codification yet discovered, dating to the Ur-III "Sumerian Renaissance", reveals a glimpse at societal structure in late Sumerian law. Beneath the *lu-gal* ("great man" or king), all members of society belonged to one of two basic strata: The "*lu*" or free person, and the slave (male, *arad*; female *geme*). The son of a *lu* was called a *dumu-nita* until he married. A woman

(*munus*) went from being a daughter (*dumu-mi*), to a wife (*dam*), then if she outlived her husband, a widow (*numasu*) and she could then remarry.

Language and writing

Main articles: Sumerian language and Cuneiform

The most important archaeological discoveries in Sumer are a large number of tablets written in cuneiform. Sumerian writing is the oldest example of writing on earth. Although pictures - that is,hieroglyphs - were first used, symbols were later made to represent syllables. Triangular or wedge-shaped reeds were used to write on moist clay. A large body of hundreds of thousands of texts in the Sumerian language have survived, such as personal or business letters, receipts, lexical lists, laws, hymns, prayers, stories, daily records, and even libraries full of clay tablets. Monumental inscriptions and texts on different objects like statues or bricks are also very common. Many texts survive in multiple copies because they were repeatedly transcribed by scribes-in-training. Sumerian continued to be the language of religion and law in Mesopotamia long after Semitic speakers had become the ruling race. The Sumerian language is generally regarded as a language isolate in linguistics because it belongs to no known language family; Akkadian, by contrast belongs to the Semitic branch of the Afro-Asiatic languages. There have been many failed attempts to connect Sumerian to other language groups. It is an agglutinative language; in other words, morphemes ("units of meaning") are added together to create words, unlike analytic languages where morphemes are purely added together to create sentences.

Understanding Sumerian texts today can be problematic even for experts.[*citation needed*] Most difficult are the earliest texts, which in many cases do not give the full grammatical structure of the language.

During the third millennium BC, they developed a very intimate cultural symbiosis between the Sumerians and the Akkadians, which included widespread bilingualism.[8] The influence of Sumerianon Akkadian (and vice versa) is evident in all areas, from lexical borrowing on a massive scale, to syntactic, morphological, and phonological convergence.[8] This has prompted scholars to refer to Sumerian and Akkadian in the third millennium as a *sprachbund*.[8]

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Religion

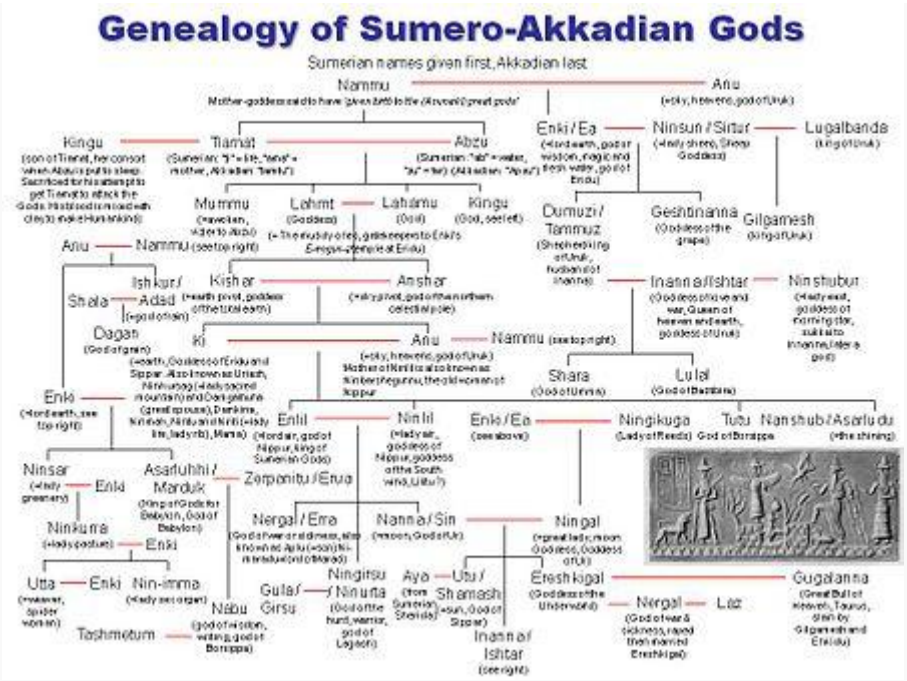
Main article: Sumerian religion

Tell Asmar votive sculpture 2750-2600 BC.

There was no empire-wide set of gods; each city-state had its own patrons, temples, and priest-kings. The Sumerians were probably the first to write down their beliefs, which were the inspiration for much of later Mesopotamian mythology, religion, and astrology.

The Sumerians worshipped:[citation needed]

- An as the full-time god, equivalent to "heaven" - indeed, the word "an" in Sumerian means "sky" and his consort Ki, means "Earth".
- Enki in the south at the temple in Eridu. Enki was the god of beneficence, ruler of the freshwater depths beneath the earth, a healer and friend to humanity who in Sumerian myth was thought to have given humans the arts and sciences, the industries and manners of civilization; the first law-book was considered his creation,
- Enlil, lord of the ghost-land, in the northern city of Nippur. His gifts to mankind were said to be the spells and incantations that the spirits of good or evil were compelled to obey,
- Inanna, the deification of Venus, the morning (eastern) and evening (western) star, at the temple (shared with An) at Uruk.
- The sun-god Utu at Larsa in the south and Sippar in the north,
- The moon god Sin at Ur.



Sumero-early Akkadian pantheon

These deities were probably the original matrix;[citation needed] there were hundreds of minor deities. The Sumerian gods thus had associations with different cities, and their religious importance often waxed and waned with those cities' political power. The gods were said to have created human beings from clay for the purpose of serving them. If the temples/gods ruled each city it was for their mutual survival and benefit—the temples organized the mass labour projects needed for irrigation agriculture. Citizens had a labor duty to the temple which they were allowed to avoid by a payment of silver only towards the end of the third millennium. The temple-centered farming communities of Sumer had a social stability that enabled them to survive for four millennia.

Sumerians believed that the universe consisted of a flat disk enclosed by a dome. The Sumerian afterlife involved a descent into a gloomy netherworld to spend eternity in a wretched existence as a Gidim (ghost).[28]

Ziggurats (Sumerian temples) consisted of a forecourt, with a central pond for purification.[29] The temple itself had a central nave with aisles along either side. Flanking the aisles would be rooms for the priests. At one end would stand the podium and a mudbrick table for animal and vegetable sacrifices. Granaries and storehouseswere usually located near the temples. After a time the Sumerians began to place the temples on top of multi-layered square constructions built as a series of rising terraces, giving rise to the Ziggurat style.[30]

Agriculture and hunting

The Sumerians adopted an agricultural mode of life as by perhaps as early as c. 5000-4,500 BC the region demonstrated a number of core agricultural techniques, including organized irrigation, large-scale intensive cultivation of

land, mono-cropping involving the use of plough agriculture, and the use of an agricultural specialized labour force under bureaucratic control. The necessity to manage temple accounts with this organization led to the development of writing (ca. 3500 BC).

In the early Sumerian Uruk period, the primitive pictograms suggest that sheep, goats, cattle, and pigs. They used oxen as their primary beasts of burden and donkeys or equids as their primary transport animal and "woollen clothing as well as rugs were made from the wool or hair of the animals. ... By the side of the house was an enclosed garden planted with trees and other plants; wheat and probably other cereals were sown in the fields, and the *shaduf* was already employed for the purpose of irrigation. Plants were also grown in pots or vases."[26]

The Sumerians practiced similar irrigation techniques as those used in Egypt.[31] American anthropologist Robert McCormick Adams says that irrigation development was associated with urbanization,[32] and that 89% of the population lived in the cities.[33]

They grew barley, chickpeas, lentils, wheat, dates, onions, garlic, lettuce, leeks and mustard. Sumerians caught many fish and hunted fowl and gazelle.[34]

Sumerian agriculture depended heavily on irrigation. The irrigation was accomplished by the use of *shaduf*, canals, channels, dykes, weirs, and reservoirs. The frequent violent floods of the Tigris, and less so, of the Euphrates, meant that canals required frequent repair and continual removal of silt, and survey markers and boundary stones needed to be continually replaced. The government required individuals to work on the canals in a corvee, although the rich were able to exempt themselves.

As is known from the "*Sumerian Farmer's Almanac*", after the flood season and after the Spring Equinox and the *Akitu* or New Year Festival, using the canals, farmers would flood their fields and then drain the water. Next they let oxen stomp the ground and kill weeds. They then dragged the fields with pickaxes. After drying, they plowed, harrowed, and raked the ground three times, and pulverized it with a mattock, before planting seed. Unfortunately the high evaporation rate resulted in a gradual increase in the salinity of the fields. By the Ur III period, farmers had switched from wheat to the more salt-tolerant barley as their principal crop.

Sumerians harvested during the spring in three-person teams consisting of a reaper, a binder, and a sheaf handler.[35] The farmers would use threshing wagons, driven by oxen, to separate thecereal heads from the stalks and then use threshing sleds to disengage the grain. They then winnowed the grain/chaff mixture.

Architecture

Main articles: Sumerian architecture, Ziggurat, and Mudhif

The Tigris-Euphrates plain lacked minerals and trees. Sumerian structures were made of plano-convex mudbrick, not fixed with mortar or cement. Mud-brick buildings eventually deteriorate, so they were periodically destroyed, leveled, and rebuilt on the same spot. This constant rebuilding gradually raised the level of cities, which thus came to be elevated above the surrounding plain. The resultant hills, known as tells, are found throughout the ancient Near East.

According to Archibald Sayce, the primitive pictograms of the early Sumerian (i.e. Uruk) era suggest that "Stone was scarce, but was already cut into blocks and seals. Brick was the ordinary building material, and with it cities, forts, temples and houses were constructed. The city was provided with towers and stood on an artificial platform; the house also had a tower-like appearance. It was provided with a door which turned on a hinge, and could be opened with a sort of key ; the city gate was on a larger scale, and seems to have been double. The foundation stones - or rather bricks - of a house were consecrated by certain objects that were deposited under them."[26]

The most impressive and famous of Sumerian buildings are the ziggurats, large layered platforms which supported temples. Some scholars[*who?*] have theorized that these structures might have been the basis of the Tower of Babel described in Genesis. Sumerian cylinder seals also depict houses built from reeds not unlike those built by the Marsh Arabs of Southern Iraq until as recently as 400 AD. The Sumerians also developed the arch, which enabled them to develop a strong type of roof called a dome. They built this by constructing several arches. Sumerian temples and palaces made use of more advanced materials and techniques,[*citation needed*] such as buttresses, recesses, half columns, and clay nails.

Mathematics

Main article: Babylonian mathematics

The Sumerians developed a complex system of metrology c. 4000 BC. This metrology advanced resulting in the creation of arithmetic, geometry, and algebra. From c. 2600 BC onwards, the Sumerians wrote multiplication tables on clay tablets and dealt with geometrical exercises and division problems. The earliest traces of the Babylonian numerals also date back to this period.[36]The period c. 2700–2300 BC saw the first appearance of the abacus, and a table of successive columns which delimited the successive orders of magnitude of their sexagesimal number system.[37] The Sumerians were the first to use a place value numeral system. There is also anecdotal evidence the Sumerians may have used a type of slide rule in astronomical calculations. They were the first to find the area of a triangle and the volume of a cube.[38]

Economy and trade

Discoveries of obsidian from far-away locations in Anatolia and lapis lazuli from Badakhshan in northeastern Afghanistan, beads from Dilmun (modern Bahrain), and several seals inscribed with theIndus Valley script suggest a remarkably wide-ranging network of ancient trade centered around the Persian Gulf.

The Epic of Gilgamesh refers to trade with far lands for goods such as wood that were scarce in Mesopotamia. In particular, cedar from Lebanon was prized. The finding of resin in the tomb of Queen Puabi at Ur, indicates it was traded from as far away as Mozambique.

The Sumerians used slaves, although they were not a major part of the economy. Slave women worked as weavers, pressers, millers, and porters.

Sumerian potters decorated pots with cedar oil paints. The potters used a bow drill to produce the fire needed for baking the pottery. Sumerian masons and jewelers knew and made use ofalabaster (calcite), ivory, iron, gold, silver, carnelian, and lapis lazuli.[39]

Military

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Early chariots on the Standard of Ur, ca. 2600 BC.

Battle formations on a fragment of theStele of the Vultures

The almost constant wars among the Sumerian city-states for 2000 years helped to develop the military technology and techniques of Sumer to a high level. The first war recorded in any detail was between Lagash and Umma in ca. 2525 BC on a stele called the Stele of the Vultures. It shows the king of Lagash leading a Sumerian army consisting mostly of infantry. The infantrymen carried spears, worecopper helmets and carried leather or wicker shields. The spearmen are shown arranged in what resembles the phalanx formation, which requires training and discipline; this implies that the Sumerians may have made use of professional soldiers.

The Sumerian military used carts harnessed to onagers. These early chariots functioned less effectively in combat than did later designs, and some have suggested that these chariots served primarily as transports, though the crew carried battle-axes and lances. The Sumerian chariot comprised a four or two-wheeled device manned by a crew of two and harnessed to four onagers. The cart was composed of a woven basket and the wheels had a solid three-piece design.

Sumerian cities were surrounded by defensive walls. The Sumerians engaged in siege warfare between their cities, but the mudbrick walls were able to deter some foes.

Technology

Examples of Sumerian technology include: the wheel, cuneiform, arithmetic and geometry, irrigation systems, Sumerian boats, lunisolar calendar,bronze, leather, saws, chisels, hammers, braces, bits, nails, pins, rings, hoes, axes, knives, lancepoints, arrowheads, swords, glue, daggers,waterskins, bags, harnesses, armor, quivers, war chariots, scabbards, boots, sandals, harpoons and beer. The Sumerians had three main types of boats:[*citation needed*]

- clinker-built sailboats stitched together with hair, featuring bitumen waterproofing
- skin boats constructed from animal skins and reeds
- wooden-oared ships, sometimes pulled upstream by people and animals walking along the nearby banks

Legacy

Evidence of wheeled vehicles appeared in the mid 4th millennium BC, near-simultaneously in Mesopotamia, the Northern Caucasus (Maykop culture) and Central Europe. The wheel initially took the form of the potter's wheel. The new concept quickly led to wheeled vehicles and mill wheels. After Egyptian hieroglyphs, the Sumerians' cuneiform writing system is the next oldest which has been deciphered (the status of even older inscriptions such as the Vinča signs and the even older Jiahu symbols is controversial). The Sumerians were among the first astronomers, mapping the stars into sets of constellations, many of which survived in the zodiac and were also recognized by the ancient Greeks.[40] They were also aware of the five planets that are visible to the naked eye.[41]

They invented and developed arithmetic by using several different number systems including a mixed radix system with an alternating base 10 and base 6. This sexagesimal system became the standard number system in Sumer and Babylonia. They may have invented military formations and introduced the basic divisions between infantry, cavalry, and archers. They developed the first known codified legal and administrative systems, complete with courts, jails, and government records. The first true city states arose in Sumer, roughly contemporaneously with similar entities in what are now Syria, Lebanon, and Israel. Several centuries after the invention of cuneiform, the use of writing expanded beyond debt/payment certificates and inventory lists to be applied for the first time, about 2600 BC, to messages and mail delivery, history, legend, mathematics, astronomical records, and other pursuits. Conjointly with the spread of writing, the first formal schools were established, usually under the auspices of a city-state's primary temple.

Finally, the Sumerians ushered in the age of intensive agriculture and irrigation. Emmer wheat, barley, sheep (starting as mouflon), and cattle (starting as aurochs) were foremost among the species cultivated and raised for the first time on a grand scale.