

CAUCASUS HISTORY – Innovations

Overview

Since the earliest ages, like in other civilizations, the peoples of the Caucasus discovered technics to make tools to use in hunting and fishing to be able to survive. Other inventions followed based on what people needed: the invention of the wheel was a revolution in transportation; building an irrigation system to help supply water to people. With the invention of the alphabet literacy increased. Then, people opened printing houses to publish books, leaving valuable information behind about the history of the Caucasus. With the development of scientific studies, people found themselves in a race to make their appearance on the world stage.

ANCIENT PERIOD



South Caucasus: Stone age people developed new technologies to make different types and sizes of stone tools, such as the spears and arrows they used to hunt. Acheulian handaxes were found on the Javakheti Plateau, Georgia.

Late Bronze age people invented the wheel to use for both the potter's wheel, as well as creating a revolution in transportation. In a burial site in Georgia, archeologist discovered two chariots, each with four wooden wheels from the late 15th century BCE.

Pottery fragments of ceramic jars recovered from the sites of Gadachrili Gora and Shulaveris Gora carried residues showing that the production

of wine dates back 9.000 years.



Invention of the Georgian alphabet:

According to Georgian chronicle *The Lives of the Kings of Kartli*, the proto-Georgian script *Asomtavruli* was invented in the 4th century BCE by King Parnavaz I of Iberia. According to the Georgian chronicler Leonti Mroveli, King Parnavaz spread the Georgian language and created Georgian *mtsignobroba*, "script" or "literacy".

The oldest inscriptions (5th century) were found in the church of *Bolnisi Sioni* near Tbilisi.

Lelo burti: It was an ancient football that had some notable similarities to rugby played with a field ball.

Armenia:

First Unified State: The Kingdom of Van was established in the 9th century and it was the first unified state on the territory of the Armenian Plateau which existed from the till the 6th centuries BCE.



Alphabet: The early inscription used by the Urartian Kingdom was the Assyrian cuneiform and the language of the Urartu known as *Urartian* did not belong to Indo-European language family.

With the adoption of Christianity in the 4th century, the creation of the Armenian alphabet by Mesrop Mashtots in the 5th century was a pivotal invention in the development of Armenian history and national identity.

Irrigation system: Artificial irrigation system was created by carving tunnels in solid rock. 70 km-long irrigation canal was built by the king Menua in the 9th century from the Hoşap Valley to Van.

Duduk: The *Duduk's* history in Armenia was dated to 1st century BCE. Besides Armenia, the *Duduk* can be found in the whole Caucasus.

Azerbaijan: Between the 2nd and the 1st millennium BCE, Mannaeans established the most powerful state in the south of Azerbaijan. They had knowledge on the medicine, astronomy and geometry. Around Lake Urmia, they constructed irrigation channels.

North Caucasus: Bronze age people in the North Caucasus created copper and tin deposits and used metals for their tools as found in Baksan River Gorge, Kabardino-Balkaria.

Wheeled wagons were also discovered in the Northern Caucasus during the second half of the 3rd millennium BCE.

In the 4th millennium BCE, a metal spear *the Khalkhan* and *the Ghagha* were used for personal defence.



Discussion/Questions

1. What do the new discoveries tell us about the development of ancient technologies?
2. In what different fields did the invention of the wheel have an impact?

Reading

- 1- Chernykh, E., *Nomadic Cultures in the Mega-Structure of the Eurasian World*, Academic Studies Press, 2017.
- 2- Grousset, R., *The Empire of the Steppes, A History of Central Asia*, Rutgers University Press, 2002.
- 3- Palumbi, G., "The Early Bronze Age of the Southern Caucasus", <https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199935413.001.0001/oxfordhb-9780199935413-e-14>
- 4- Owen, J., "4,000-Year-Old Burial with Chariots Discovered in South Caucasus" <https://www.livescience.com/46513-ancient-chariot-burial-discovered.html>
- 5- Jaimoukha, A., *Chechens A Handbook*, Routledge, 2005.

POST-CLASSICAL PERIOD

SOUTH CAUCASUS

GEORGIA:

Christianity: Kartli was converted to Christianity in the 4th century and Christianity became the state religion. Conversion of the country into Christianity was followed by the translation of the Old and New Testament into the Georgian language.

***Sitkvis kona*:** The Georgian scholar Sul Khan-Saba Orbeliani created the first dictionary of the Georgian language, *Sitkvis kona* in the 17th century.

Chonguri: This musical instrument which dates back to the 12th century was a strummed bowl-lute chordophone like a panduri. Unlike the three-string Panduri, the Chonguri has 4 strings.

Irrigation system: In the 13th century, a complex irrigation network of 53,000 hectares of land was built in Samgori and the Alazani .

Alphabet: Based on the chronicles, the Georgian alphabet was created by King Parnavaz of Georgia in the 3rd century. The development of the Georgian script went through three major stages: Asomtavruli (Mrglovani) was the oldest script from the 5th century. Nuskhuri (Khutsuri) was used in the 9th century. The third alphabet, Mkhedruli dating back to the 10th century, is used currently.

ARMENIA:

Alphabet: The invention of the Armenian alphabet by Mesrop Mashtots in the 5th century under the Arshakuni dynasty marked the beginning of the Golden Age of Armenian culture and was a major metamorphosis in Armenian history. Armenian historian Movses Khorenatsi's book *History of Armenia* is the earliest known historiographical work written in Armenian alphabet.

Mesrop Mashtots also was the first to open schools in Armenia where education was conducted in the Armenian language. In the 11th century, the hamalsarans (universities) opened in Armenia.

There were many Armenian philosophers such as Paruyr Haykazn, Yeznik Koghbatsi and Davit Anhaght from the 5th century and Hovhannes Imastaser from the 11th century.

Christianity: Zoroastrian Armenians converted to Christianity in the 4th century, and they were the first Christian nation in the world. Christianity created the philosophical or ideological foundations for the centralized state and it strengthened the position of the monarchy by placing the king at the top of the sociopolitical strata. The Armenians were one of the first nations to translate the Bible into their own language, Armenian.

Khachkars (cross-stones): A medieval national form of art are the khachkars created in Armenia like those at Momik (14th century) and Kiram (16-17th centuries).

AZERBAIJAN:

Islam: In the 11th century, with the arrival of the Seljuks and Sunni Islam, the ethnic composition was changed in Azerbaijan . However, the conversion of Azerbaijan to Shia Islam happened under the Safavid Empire in the 16th century.

Mugham: Mugham belongs to the system of modal music and may have derived from the Persian musical tradition. In the 16th–17th centuries the art of mugham evolved from a folk genre to become a musical form played in the palace. In this period a dastgah (Persian musical modal system) form starts to develop in the structure and forms of mugham.

Nuzhe: This is an Azerbaijani stringed instrument. The nuzhe was made on the basis of the cheng and qanun (instrument). The nuzhe was invented by the prominent music expert Safi al-Din al-Urmawi in the 13th century.

Carpet Weaving: This art was originally developed in Guba, Shirvan, Ganja, Gazakh, Karabakh and around Baku. Carpet weaving dates back to the 2nd millennium BCE. Geometric designs, and pictures of vegetative patterns decorate Azerbaijani carpets.



NORTH CAUCASUS

CHECHNYA:

Phandar: The phandar is an old traditional, three-string plucked musical instrument made of walnut wood with a stretched body, a flat top and a curved lower deck.



Carpet Weaving: The weaving of carpets dates back to ancient times. The Istang was a thin felt carpets distinguished with their peculiar pattern. People hang the Istang horizontally on the walls of the guest-room and the master's chamber.



Chechen Alphabet: The first Cyrillic-based Chechen alphabet was created and introduced in Tbilisi in 1862 by the Chechen Qedi Dosov (Kedy Dosoyev) and Peter von (Karlovič) Uslar.

First Chechen School: To increase literacy in Chechnya, the first ethnic Chechen school was opened in Grozny in the 1860s by Peter Karlovich Uslar. Uslar and Dosov compiled the first Chechen textbooks.

Vainakh tower: To avoid the threat of invasions by nomadic hordes, the Vainakhs built their first defense towers in the 13th – 14th centuries. This was a kind of multi-floor structure that was used for dwelling or defense (or sometimes both).



Questions:

1- How did the adoption of Christianity contribute to the development of the cultures of the Caucasus?

Readings:

- 1- Khachikyan, A., *History of Armenia*, Edit Print, Yerevan, 2010.
- 2- Mikaberidze, A., *Historical Dictionary of Georgia*, The Scarecrow Press Inc., 2007.
- 3- Zardabli, I., *The History of Azerbaijan*, Rossendale Books, 2014.
- 4- Jaimoukha, A., *Chechens A Handbook*, Routledge, 2005.

EARLY MODERN PERIOD

SOUTH CAUCASUS

GEORGIA:

Dasturlamali: King Vakhtang IV compiled a law code called the *dasturlamali*, which ranked citizens by blood price between 1704 and 1708.

Quartuli ghrammatika: King Vakhtang IV wrote this grammar textbook in 1753.

First Modern Poetic Treatise on Versification: Mamuka Baratashvili wrote the first poetic treatise *Chashniki anu leksis stsavlis tsigni* in 1731. It was an innovation that employed the use of medieval Georgian meters and themes.

Typography: In 1709, the first typography was founded in Tbilisi in 1709 by Antimoz Iverieli. His student Michael Ishtvanovich also led an organization to establish typography houses on the right bank of the river

Mtkvari. In this printing house the epic poem *The Knight in the Tiger's Skin* by Shota Rustaveli was printed for the first time.

The books that were published in Tbilisi in the second half of the 18th century mostly covered general subjects and religion.

First Chemistry book: King Vakhtang VI of Kartli wrote *The Book on Mixing Oils and Making Chemistry* containing 72 pages.

First Dictionary of Georgian Language: Georgian diplomat, scientist and writer Sul Khan-Saba Orbeliani (1658–1725) created the first dictionary of the Georgian language, *Sitkvis kona*.

Geographical Atlas: The *Geographical Atlas* written by Vakhushti Batonishvili was the first complete study of Georgian territory.

ARMENIA: The *Dictionary of Haikazian (Armeian) Language* was first published in Venice in the middle of the 18th century.

Printing house: The Catholicos Simeon of Yerevan in Etchmiadzin founded the first printing house and paper mill in Armenia in 1771. Many books were published in this printing house. The first Armenian periodical *Azdarar* (Herald) was published in Armenian in Madras, India, in 1794.

AZERBAIJAN:

Carpet Weaving: In 18th century one of the most important innovation was the carpet weaving. There were factories in Shamakhi producing silk cloths.

Nuzhe: The *nuzhe* is a string instrument based on the çeng and qanun, and was invented by the prominent music expert Safi al-Din al-Urmawi.¹

NORTH CAUCASUS

CHECHNYA:

Arbas: In the 18th century, a two wheeled Chechen cart was invented to carry captives.

Questions:

1- Why were most books written in Armenian language not published in Armenia, but in other countries?

Readings:

- 1- Khachikyan, A., *History of Armenia*, Edit Print, Yerevan, 2010.
- 2- Mikaberidze, A., *Historical Dictionary of Georgia*, The Scarecrow Press Inc., 2007.
- 3- Zardabli, I., *The History of Azerbaijan*, Rossendale Books, 2014.
- 4- Jaimoukha, A., *Chechens A Handbook*, Routledge, 2005.

19TH CENTURY

SOUTH CAUCASUS

GEORGIA:

Bagrat Batonishvili: In 1807 and 1818, with his veterinary treatises, among them *Samkurnalo tskhenta da skhvata pirutkvta*, Bagrat Batonishvili laid the foundation for veterinary science in Georgia.

Petre Melikishvili: As a scientist of organic chemistry, Melikishvili developed *Stereochemical Theory* and discovered one class of organic compounds called *Glycidacids* (named after him).



ARMENIA: Until the 19th century, Classical Armenian (5th century) or *Grabar* was the language used in the Armenian literary works. The *Michitarists* simplified Classical Armenian and compiled a new vernacular grammar.

The Armenian philologist, Khatchatur Abovian also made radical changes in the grammar of Classical Armenian. His first historical novel, *Verk Haiastani* (Wounds of Armenia), was written in this newly created (Yerevan) dialect.

AZERBAIJAN:

Movlizada Mahammad Hasan Ismayil oglu Shakavi: He was a religious leader who was the sixth Sheikh ul-Islam (Islamic Leader) of the Caucasus. He was known for his translation of the Quran into the Azerbaijani language.

Hesen Bey Melikzâde Zerdâbî: In 1875, Zerdâbî published a newspaper called *Ekhinchi* which marked the beginning of the Azerbaijani press.

Tar: The long-necked plucked lute, the *Tar* went through some renovations in the second half of the 19th century. The musician Mirza Sadiq Asad changed the traditional Persian tar structure by increasing the number of its strings to 11.



Khurshidbanu Natavan: Natavan was the woman who founded the first literary society, the *Majlisi-Uns* (Society of Friends), in Azerbaijan.

NORTH CAUCASUS:

CHECHNYA:

Discovery of Oil: Oil was discovered near Grozny in 1893.

A New Written language: The Vainakhs had no alphabet until the 19th century. In 1862, the first Cyrillic-based Chechen alphabet was created and published in Tbilisi in 1862 by Qedi Dosov (Kedy Dosoyev) and Baron Pyotr Karlovich Uslar. Uslar played a significant role in promoting literacy in the Chechen language by opening the first ethnic Chechen school in Grozny in the 1860s.

Dzhemal-Eddin Mustafin, Akhmatkhan Tramov and Edyk Bocharov created the first Chechen elementary school book in 1866.

20TH CENTURY

SOUTH CAUCASUS:

GEORGIA: The *Georgian Academy of Sciences* was established in February of 1941. Physiologist Academician I. Beritashvili was one of the founder of the Institute of Physiology in 1935. There were

discoveries in physical-chemical biology: discovery of isoprene emission from plants by G. Sanadze in the *Institute of Botany Georgian Academy of Sciences* in 1956; and the creation of differential scanning microcalorimetry to study thermodynamic characteristics of biological macromolecules in the *Institute of Physics Georgian Academy of Science* in 1965.

ARMENIA:

Ellipsoid method: Ellipsoid algorithm (polynomial-time algorithm) invented by Leonid Khachiyan was an iterative method for minimizing convex functions to solve linear programs.

Mergelyan's theorem: It is an analysis on the uniform approximation of functions of one complex variable by polynomials introduced by the mathematician Sergei Mergelyan in 1951.

Markarian galaxies: Astrophysist Benjamin Markarian discovered ultraviolet light from far galaxies.

BTA-6 Large Altazimuth Telescope: It is a 6 metre optical telescope was designed by Bagrat K. Ioannisiani in 1959 and placed at the *Special Astrophysical Observatory* in the Zelenchuksky District.

Cosmic Biology: Cosmic Biology was founded by Biochemist Norair Sissakian who made contributions to the biochemistry of sub-cell structures and technical biochemistry.

AZERBAIJAN:

Balaban: It is cylindrical-bore, double-reed wind instrument that was first used in Azerbaijan orchestra, when the *Orchestra of Folk Instrument* was established in Azerbaijan in 1931.

Meykhana: It is a literary and folk rap tradition appeared in 1920, including an improvised song performed by one or more people.

Neft Daslari: The oil platform *Neft Daslari* was built at 1,100 metres beneath the Caspian Sea in 1949 and it was the world's first offshore oil platform.

Questions:

1- Why did science and innovation in the countries of the Caucasus lag behind many other countries in the 20th century?

Readings:

- 1- Khachikyan, A., *History of Armenia*, Edit Print, Yerevan, 2010.
- 2- Mikaberidze, A., *Historical Dictionary of Georgia*, The Scarecrow Press Inc., 2007.
- 3- Zardabli, I., *The History of Azerbaijan*, Rossendale Books, 2014.
- 4- Jaimoukha, A., *Chechens A Handbook*, Routledge, 2005.