



Edic Baghdasarian

A History of the Armenian Science and Technology



Mkhitar Heratsi

**By
Edic Baghdasarian
In Two Volumes
Volume 2**

History of the Armenian Science and Technology

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I dedicate this book to my beloved grandson:
Alexander Baruyri Baghdasarian
On the occasion of his birth on February 20th, 2024

Dr. Edie Baghdasarian, Author
May 30, 2024

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Abbreviations

AD	Anno Domini (in the year of the Lord), After Christ, CE (Common Era)
ASSR	Armenian Soviet Socialist Republic
BC	Before Christ
C.	Century
CC	Centuries
EA	Eastern Armenia
GA	Greater Armenia
LA	Lesser Armenia
RA	Republic of Armenia
WA	Western Armenia
WWI	First World War
WWII	Second World War

Armenian Alphabets

Աւ	Aa	as in Part
Բբ	Bb	Boy
Գգ	Gg	Good
Դդ	Dd	Door
Եե	Yy, Ee	Yard, pet
Զզ	Zz	Zoo
Էէ	Ee	Egg
Ըը	e'	as in Turn
Թթ	Tt	To
Ճճ	Zh	as in Pleasure
Իի	Ii, ea	as in Peak
Լլ	Ll	Look
Խխ	Kh	as X in Russian
Ծծ	ds	as in dsar in Armenian meaning Tree

Կկ	hard k	as in Krak in Armenian meaning Fire
Հհ	Hh	House
Ձձ	dz	as in dzoo in Armenian meaning Egg
Ղղ	gh	as in R in French or german
Ճճ	tch	Armenian Tchut meaning chicken
Մմ	Mm	Mom
Եյ	Yy	Yes
Նն	Nn	No
Շշ	Sh	Show
Ոո	Vo,Oo	More
Չչ	Ch	Chair
Պպ	P'	Hard P as in Piti in Armenian meaning Must
Ջջ	Jj	Jerm
Ռռ	RR	Rock
Սս	Ss	Sick
Վվ	Vv	Verb
Տտ	Th	Hard T as in Thun in Armenian meaning house
Րր	Rr	Room
Յյ	Ts	Hertz
Աւ ու	U in	Urmia
Փփ	Pp	Put
Զզ	Kk	Kit
Եվ և	Yev	Revision
Օօ	Oo	Or
Ֆֆ	Ff	Foot

Introduction

The rich historical past of Armenia and the Armenian people is marked by exceptionally fruitful, original and multifaceted activities in the field of science, culture and education.

Archaeological finds of high culture of the third millennium BC, the stone-making observatories of Karahunj (Zorats-kar) and Medsamor, rock paintings of the ancient inhabitants of Armenian caves, cuneiform records, engineering structures of the Araratian (Uartian) period of Armenian history, highly cultural monuments of Hellenism in the country, an epic rich in heroism and philanthropy of the Armenian people "David of Sasun", Christian architectural monuments, ancient manuscripts with fascinating miniatures are material evidence of the high culture of the Armenian people.

In the 5th century, an event of exceptional importance for the development of scientific thought, literature and art took place in Armenia. *Mesrop Mashtots* created a distinctive, original alphabet, which Armenians use to this day, with the addition of only two new letters.

After the creation of Armenian writing at the beginning of the 5th century by *Mesrop Mashtots*, numerous schools were opened throughout Armenia, literary works, treatises on history, philosophy, linguistics, works on the natural sciences, geography, astronomy, mathematics, etc. were written. The most prominent representatives of this era, called **the golden age of Armenia** are the historian *Movses Khorenatsi* (5th century), philosopher *David Anhakht* (6th century), geographer, astronomer and mathematician *Anania Shirakatsi* (7th century), poet and philosopher *Grigor Narekatsi* (10th century).

In 1051, the great enlightener *Grigor Magistros* translated Euclid's geometry into Armenian from the original.

First-class universities were created in Armenia - **Ani** (XI century), **Gladzor** (XIII century), **Tatev** (XIV century), **Sanahin Academy** (XII cen-

tury), etc., where, along with theology, secular disciplines were taught: history, philosophy, grammar, mathematics, medicine, music, etc. Subsequently, Armenian universities and scientific centers were created in various countries of the world. In 1717, a monastery was founded on the island of *St. Lazar* in the Gulf of Venice, whose monks began large-scale research on the history of Armenia, Armenian literature and language. In 1815, the *Lazarian Institute of Oriental Languages* was founded in Moscow, which became the largest center of Russian Oriental studies. In 1874, the *Gevorgian Theological Seminary* was founded in **Ejmiadsin**, which, along with training highly qualified church ministers, began collecting and researching ancient manuscripts. During the years of the first Republic of Armenia, in 1919, the Yerevan State University was temporarily founded in **Alexandrapol** (Leninakan, originally Gumayri, Now Gyumri), which was soon moved to Yerevan, which became the largest center of culture, education and science of the republic, where, along with the training of highly qualified personnel, scientific research was begun, representing interest from the point of view of the national economy, history and culture of the republic.

Further, numerous research institutes, laboratories, and centers conducting scientific research were created. On the basis of these research institutions, the Armenian branch of the USSR Academy of Sciences was created in 1935. In a short period of time, the Armenian branch of the Academy of Sciences became one of the largest scientific centers in the country. Using the experience accumulated over centuries, first-class results were obtained in various fields of science. In 1943, the Academy of Sciences of the Armenian SSR was created on its basis.

The famous historian, orientalist, Armenian scholar, academician *Hovsep Abgari Orbeli*, was elected the first president of the Academy of Sciences of Armenia (1943-1947). In 1947, a talented world-famous scientist, the founder of theoretical astrophysics, *Victor Hamazaspi Hambarzumyan*, was elected president of the Academy of Sciences of Armenia (until 1993), and in 1993, a prominent organizer of science and scientific production, *Fadey Tachati Sargsyan*. (until 2006) then, the

Academy has been headed by *Radik Martirosyan (2006-2021) former president of YSU, and Ashot Saghyan (since 2021)*.

Since 1935, the flourishing of Armenian science began. Science developed not only in the Academy of Sciences, but also in universities and research institutes of various departments of the republic.

Over the years, Armenian scientists have obtained impressive results. Soon their own scientific schools appeared, which in many areas received independent recognition throughout the world.

Armenian science is rightfully proud of its achievements in the field of astrophysics, which have brought it worldwide fame. Thanks to its scientific achievements, *Byurakan* has become a “Jerusalem” for astrophysicists of the world.

The fundamental research of Armenian mathematicians in the theory of functions and in the theory of approximations, mechanics in the field of mechanics of deformable solids is widely known and is a significant contribution to world science.

The research of our physicists and radiophysicists - from cosmic rays to quantum electronics, from deep theoretical research to grandiose experiments, from the creation of new materials to precision instruments - was highly appreciated by the scientific community of the world and awarded high scientific prizes and awards.

Significantly new results have been obtained in the field of mathematical cybernetics and computer science. The Yerevan Research Institute of Mathematical Machines (YerNIIMM) in a short time became one of the leading centers in the USSR for the development and production of computers and special-purpose computer systems.

Armenian scientists have done a lot in space exploration. Specialists in this field are aware of the theoretical and applied research of Armenian scientists and engineers: electrical engineers, radiophysicists, astrophysicists, mechanics, etc.

The research of our geologists and geophysicists is also significant. Problems of seismology have been widely studied.

The chemical industry also developed - in the field of inorganic chemistry, organic and fine organic chemistry, polymer chemistry, chemical physics, etc.

Many topical problems of biological sciences were considered by scientists of the Academy of Sciences. Research is being conducted on plant and human genetics.

Large-scale research is carried out in the fields of botany and zoology.

Based on the fact that the republic is land-scarce, in-depth research is being conducted in the field of hydroponics. Systematic research is being conducted on the hydrobiology of high-mountain lakes and, in particular, Lake Sevan.

Thanks to the fundamental research of Armenian scientists working in various fields of the humanities and social sciences, Armenia has become a recognized center of Armenian studies in the world.

Our historians have successfully dealt with the key problems of the history of Armenia throughout the history of human civilization.

Impressive results were obtained by Armenian archaeologists. Some of the fundamental research of our philosophers has received well-deserved recognition in the world.

The economic science of Armenia has always contributed and is now contributing to the development of the national economy of the republic. Armenian literary criticism is inextricably linked with Armenian literature, which has a history of one and a half thousand years.

Armenian linguists have carried out fundamental research covering the problems of the Armenian language, the history of Armenian linguistic teachings, and current issues of general linguistics.

In the field of art history, fundamental research has been carried out and a number of major works have been created on the history and theory of Armenian architecture, music, theater and cinema, fine arts, etc. Armenian musical folklore is being studied.

Particular attention is paid to the problems of international scientific relations. Bilateral and multilateral relations are being implemented with scientific organizations and universities of foreign countries in a wide

range of sciences. Continuing the centuries-old traditions of Armenian book printers, the Academy, in rather difficult conditions, publishes monographs, collections of scientific works, academic journals, many of which are translated and published abroad. Science in Armenia is a powerful productive force capable of transforming society.

Since English readers may need to know Armenia in a bit more details, I have included a brief history of Armenia in the beginning of the book before main body of the research.

I would appreciate any comments and suggestions to my potential errors, for them I need to apologize and will do my best to improve the quality of this research for next printings.

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