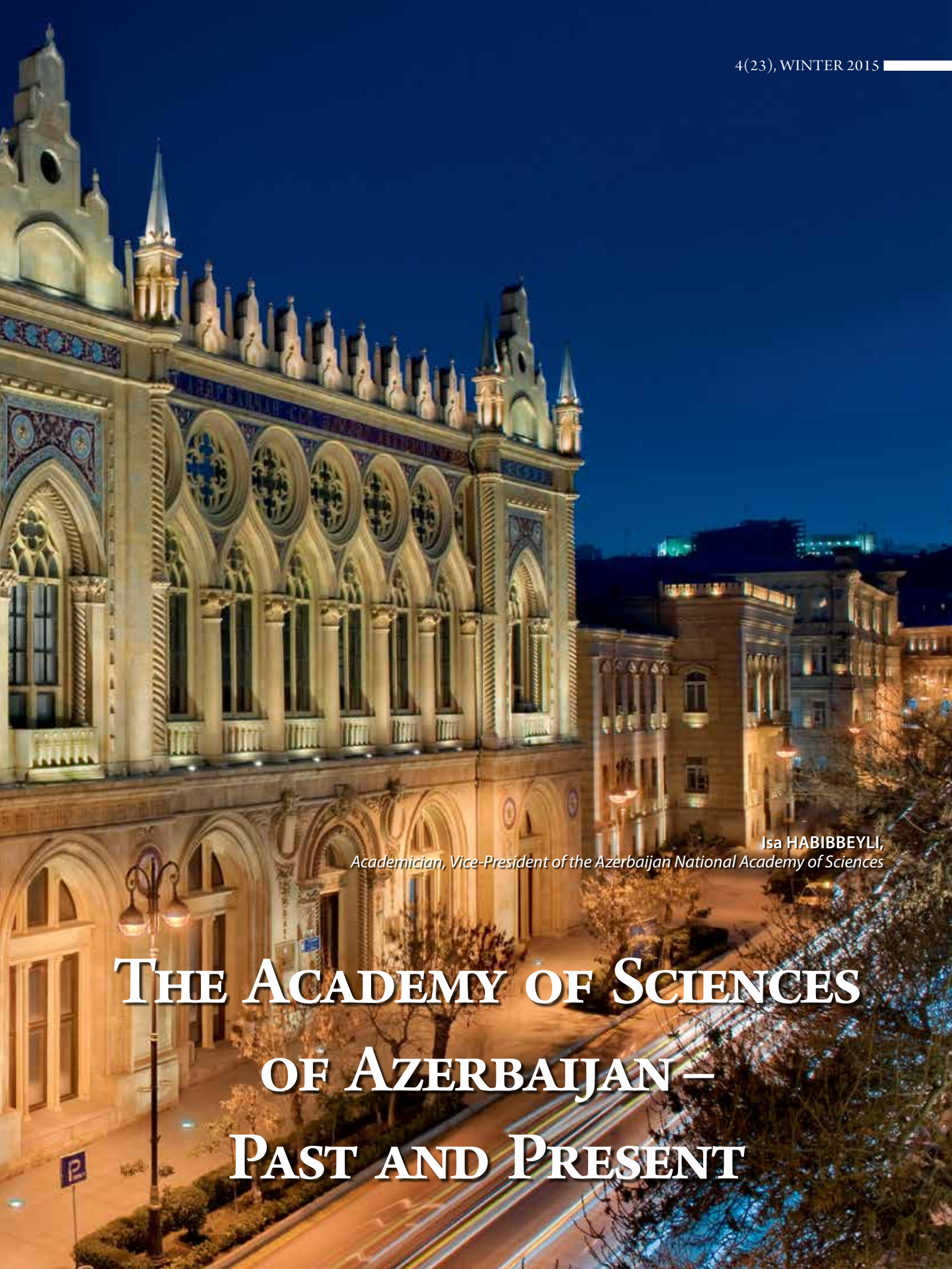


IRS History of Science

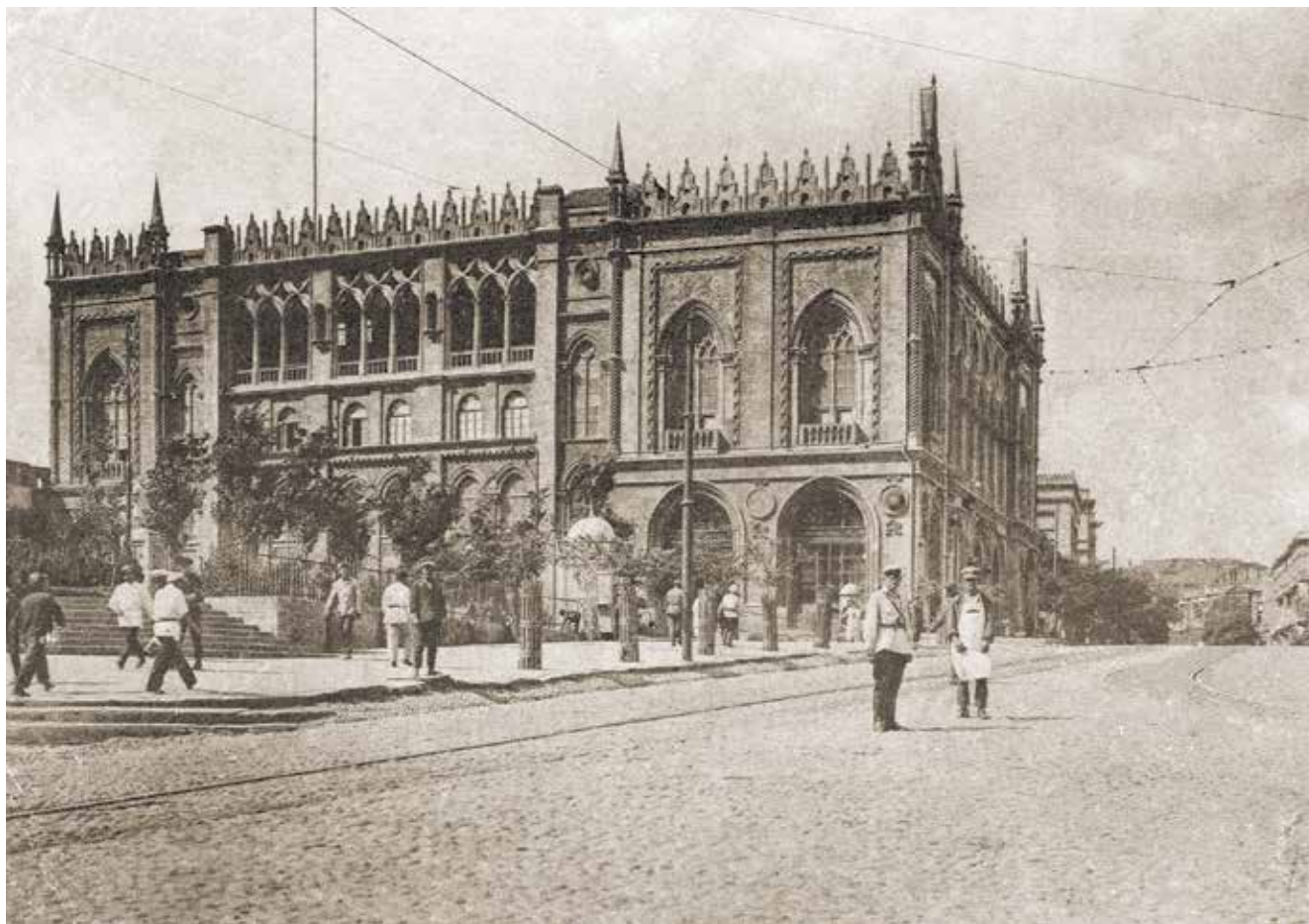




**THE ACADEMY OF SCIENCES
OF AZERBAIJAN –
PAST AND PRESENT**

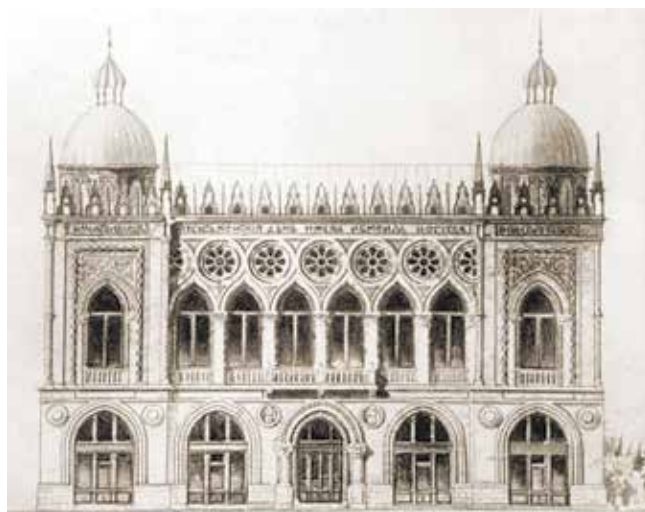
Isa HABIBBEYLI,
Academician, Vice-President of the Azerbaijan National Academy of Sciences

Presidium building. Photo of the 1930s



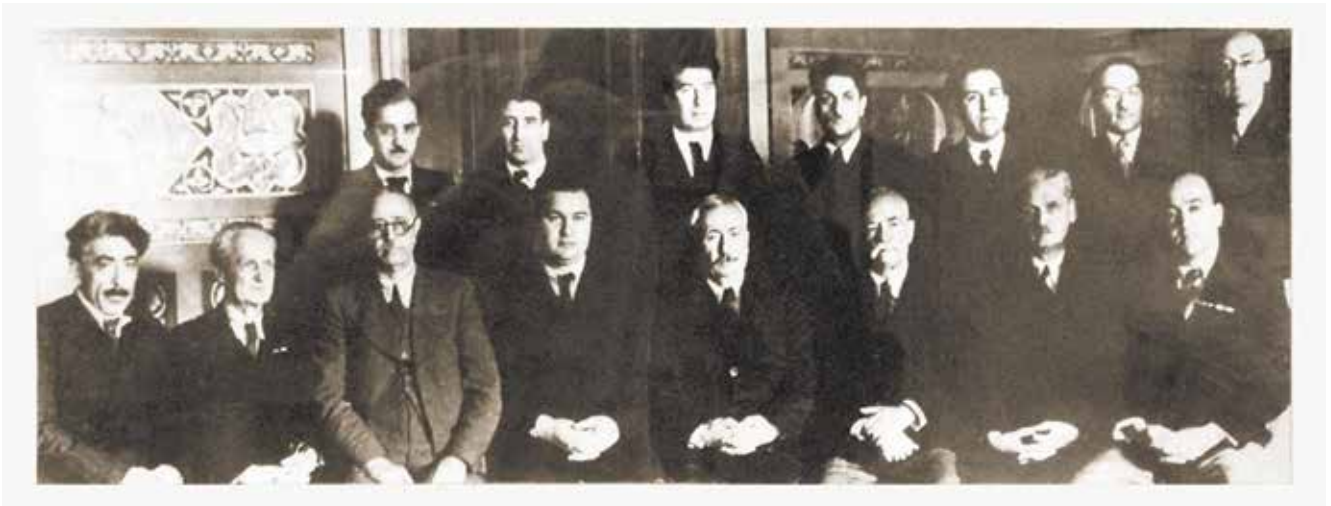
In the distant past, various organizations, academies and societies were created in various countries aiming to promote the development of science for social progress. Similarly, the Azerbaijani National Academy of Sciences appeared as an objective necessity and played an important role in the development of science, culture and other spheres of social life, in the formation and deepening of social thought and in the strengthening of the national intelligentsia. The academy served as a kind of locomotive for scientific and technological progress and as a forge of public opinion, and later took a leading position in the struggle for the state independence of Azerbaijan, actively contributing to the national awakening of the people and the growth of its identity.

The predecessor of today's Academy was **the society to explore and study Azerbaijan created in 1923**. Activities of the society aimed to give concrete guidance for scientific research and organize expeditions and scientific debates, but it was unable to implement systematic fundamental research. In 1929, the CEC of Azerbaijan established an **Azerbaijani State**



*Architectural design of «Ismailia» building. 1914.
This is where the Presidium of the Academy of Sciences was based afterwards*

Scientific-Research Institute, which was tasked to carry out studies of political and economic nature and deal with educational and methodological challenges.



First full members of the Presidium (ANAS). 1945. Lower row (from left to right): S.Vurgun, I.Esman, U.Hajibayov, A.Alizadeh, President of the Academy M.Mirgasimov, I.Shirokogorov, A.Grossgeym, M.Topchubashev. Standing: Y.Mammadaliyev, M.Ibrahimov, S.Azizbayov, G.Huseynov, Mir-Ali Gashgay, S.Dadashov, M.Useynov.

For this reason, this organization also failed to achieve a significant recovery in the scientific field. Nevertheless, it should be stated that the society to explore and study Azerbaijan and the Azerbaijani State Scientific Research Institute did a lot to concentrate scientific personnel and coordinate their work, paving the way for the future Academy of Sciences.

On 29 December 1932, **the Azerbaijani department of the Transcaucasian branch of the Academy of Sciences of the USSR was established.** Based on the scientific basis that existed at that time, the new scientific institution turned out to be more effective than its predecessors. The department had special sectors for research into individual areas, which were soon transformed into independent research institutes. The Azerbaijani department was headed at various times by such prominent scholars as Franz Levinson-Lessing (1861-1939), Ruhulla Akhundov (1897-1938), Ahad Yagubov (1908-1979), Jafar Kazimov (1897-1968), Arthur Zifeldt-Simummyagi (1889-1938), Heydar Huseynov (1908-1950), Aleksey Klimov (1894-?), Vali Khulufli (1894-1939) and Yakov Kozin (1896-1973). However, the multi-tiered system of subordination, on which academic institutions acted, made management difficult. On 25 October 1935, the Azerbaijani branch of the USSR Academy of Sciences, headed by Academician Levinson-Lessing, was created on the basis of the department. The creation of the Azerbaijani branch marked a new level of science management in Azerbaijan and was a step forward in this area. Sectors of chemistry, geology, history,

ethnography and archeology, botany, zoology, energy, physics and soil science were established at the branch. In addition, the increase in organizational status soon made it possible to establish independent institutes at the branch - geology, history, geography, oil and chemistry, language and literature. The studies carried out by scientific institutions differed for their more systematic and regular character, meeting more the requirements of socio-economic and cultural development in the country. **Important scientific results were achieved in chemistry, geology, geography, botany and energy, increasing the authority of the Azerbaijani branch all over the USSR.** Along with this, **ahead of the 800th anniversary of the great Azerbaijani poet and thinker Nizami Ganjavi, academic units for humanities and social sciences carried out great research, translation and publishing work,** which was an important event in the whole of Soviet science. During this period, a solid foundation was laid for systematic research into history, archeology, ethnography and linguistics. Among the most important research projects carried out in the early years of the Azerbaijani academic institutions are **the drawing up of the first geological map of Azerbaijan, the beginning of research into volcanology and Mesozoic history, the discovery of unique therapeutic oil in Naftalan, the publication of a three-volume collection of materials about the flora of Azerbaijan and a geographical atlas of Azerbaijan.**

In light of the aforesaid, **the establishment of the**



Building of the Presidium of the Azerbaijan National Academy of Sciences

Academy of Sciences of the Azerbaijan SSR on 27 March 1945 can be called quite natural. At the root of the Academy were leading scientists and cultural figures of Azerbaijan - Mirasadulla Mirgasimov (1883-1958), Uzeyir Hajibayov (1885-1948), Mirza Ibrahimov (1911-1993), Samad Vurgun (1906-1956), Yusuf Mammadaliyev (1905-1961), Joseph Yesman (1868-1955), Abdulkarim Alizadeh (1906-1979), Aleksandr Grossgeim (1888-1948), Shamil Azizbayov (1906-1976), Heydar Huseynov (1908-1950), Mirali Qashqai (1907-1977), Sadig Dadashov (1905-1946), Mikail Useynov (1905-1992), Ivan Shirokogorov (1869-1946) and Mustafa Topchubashov (1895-1981). **At the general meeting of the Academy on 31 March 1945, the well-known medical scientist and honored worker of science of the republic, Academician Mirasadulla Mirgasimov, was elected first president.** In his time, sectors of geology and chemistry, physical-technical sciences, oil, biology and agricultural sciences and social sciences were established at the Academy, and they included 16 scientific institutions. Along with this, scientific bases of the academy were organized in the cities of Nakhchivan,

Ganja (then Kirovabad), Khankendi (then Stepanakert) and Guba, a scientific library was established and the Zardabi Museum of Natural History was opened.

World-renowned scientist and chemist Yusuf Mammadaliyev made a great contribution to Azerbaijani academic science. He was educated in Moscow by Academician Zelinskiy and in 1943, was awarded the degree of Doctor of Science and the title of professor. Thanks to his talent and organizational abilities, Mammadaliyev won universal prestige and respect. **He discovered high-octane petrol, which played a crucial role in the victory of the Soviet Union over fascism and was widely used in aviation. For this product, the Azerbaijani scientist was nominated for the Nobel Prize,** but behind "the Iron Curtain" one could only dream of it. Instead, in 1946, the remarkable scientist was awarded the Stalin Prize "for achievements in the field of chemical industry". By the way, in the same way Academician Mustafa Topchubashov was nominated for the most prestigious award for the invention of a device that made it possible to detect shrapnel in the body, but of course, he could not expect to receive an award.



Members of the Presidium of the Azerbaijan National Academy of Sciences after 70 years (2015). From left to right, sitting: Garib Mammadov, Tofiq Nagiyev, Isa Habibbayli, Akif Alizadeh (President of the Academy of Sciences), Ibrahim Guliyev, Ahliman Amiraslanov, Nargiz Akhundova; standing: Fuad Aliyev, Nazim Mammadov, Teymur Karimli, Fakhraddin Gadirov, Dilgam Tagiyev, Ismayil Hajiyev, Rasim Aliguliyev.

Academician Mammadaliyev served as president of the Academy of Sciences of Azerbaijan twice - in 1947-1950 and in 1957-1961. This period was marked by important steps aimed at the comprehensive development of science in the republic. On the initiative and under the leadership of Mammadaliyev, **the Shamakhi Astrophysical Observatory, the Institute of Manuscripts and the Scientific Research Institute for Chemistry in Sumgayit** were created. He laid the foundations of strong and systematic oil science in Azerbaijan, carried out a lot of work on the formation and development of leading scientific petroleum institutions. **Yusuf Mammadaliyev is the founder of the Azerbaijani scientific school of petrochemistry**, which gained recognition not only in the Soviet Union, but also worldwide. Mammadaliyev made a considerable contribution to the establishment and expansion of international relations of the Azerbaijani Academy of Sciences.

The presidency of Academician **Musa Aliyev** (1908-1985), **the founder of Azerbaijani paleontology** (1950-1957), was marked by the intensification of research in earth sciences. This was **the initial period of the development of the famous Oil Rocks**, which served as a serious stimulus for the further development of Azerbaijani science. Azerbaijani scientists began to conduct search and research surveys not only in the Caucasus but also in Central Asia, Algeria and Siberia. In this period, the academic campus in Baku was built.

From 1962 to 1967, the Academy of Sciences was headed by **Academician Zahid Khalilov**. This period is characterized mainly by the development of physical and mathematical sciences. The director of the Institute of Mathematics and Mechanics, Academician-Secretary of the Department of Earth Sciences at the Academy of Sciences, Zahid Khalilov (1911-1974), is the founder of **the Azerbaijani school of mathematics**. In turn, under President Rustam Ismayilov (1909-1972), who had a doctor's decree in technical sciences, Azerbaijani academia saw a twist towards integration with industry, and the role of scientists in the creation of the petrochemical complex in Baku and Sumgayit expanded. For his contribution to the expansion of ties between science and industry, Academician Ismayilov was awarded the title of "Hero of Socialist Labor".

With the arrival of Heydar Aliyev in the leadership of the Azerbaijan SSR, state attention to the development of science significantly increased in the country and the credibility of scientists strengthened. **Academician Hasan Abdullayev (1918-1993), the founder of the Azerbaijani school of physics of semiconductors**, showed extraordinary organizational talent as president of the Academy, and under his presidency, a lot of attention was paid to the development of all areas of science, while social sciences and humanities were placed largely at the service of national interests. **Prominent Azerbaijani scientists Ziya Bunyadov, Mammad**



Head office of the Azerbaijan National Academy of Sciences

Arif Dadashzadeh, Ahmad Mahmudov, Mammad Jafarov, Alisohbat Sumbatzadeh, Hamid Arasli, Mikayil Useynov, Mammadaga Shiraliyev, Firudin Kocharli and others contributed greatly to national science and earned prestige far beyond the republic. It is largely thanks to them that the period 1970-1983 has been recognized as a golden period in the history of Azer-

baijani science. It is necessary to point out the importance of progress made in agricultural science and biological sciences in terms of improving the food security of Azerbaijan. Academician Jalal Aliyev created a new breeding scientific school. **Also important are studies in biological sciences by such well-known Azerbaijani scientists like Imam Mustafayev, Muzaffar Abutalibov, Valid Tutayuk, Vladimir Volobuyev, Rahim Huseynov, Hasan Aliyev, Adil Namazov and Ibrahim Safarov, in earth sciences - Aliashraf Alizadeh, Shafayat Mehdiyev, Akif Alizadeh, Shirali Mammadov, Budag Budagov, Subhi Salayev and Mustafa Huseynov, in physical and mathematical sciences - Ashraf Huseynov, Ibish Ibrahimov, Arif Pashayev, Magsud Javadov, Goshgar Ahmadov, Yahya Mammadov, Yohannes Seyidov, and in chemical sciences - Murtuza Nagiyev, Ali Guliyev, Izzat Orujov and Habibulla Shakhtakhtinski.** The same period saw **the creation of experimental design bureaus at the Academy of Sciences and the expansion of research work on the basis of self-financing.** Thus, the creation of the Crystal pilot plant, a special design bureau, a special engineer-

Museum of Azerbaijani Literature named after N.Ganjavi



Central Academic Library of ANAS

ing and design bureau of metal science and the Institute of Applied Physics at the Institute of Physics played an important role in shaping the engineering-technical sphere at the Academy of Sciences of Azerbaijan. At the same time, young Azerbaijani scientists began to train in the leading scientific centers of the USSR. A clear manifestation of the growing prestige of Azerbaijani academic science was that the Academy of Sciences of Azerbaijan awarded the Order of Friendship of Peoples in 1975.

Before and during the first years of the state independence of Azerbaijan, the Academy of Sciences experienced the same difficulties as the country as a whole. In the early 1990s, the public even started discussions on the liquidation of the Academy as a relic of the Soviet system. Largely due to the authority and civil position of the president of the Academy of Sciences,



Faramaz Magsudov (1930-2000), the Academy passed this painful period of transition in Azerbaijan's history with minimal losses. Later, already under President Mahmud Karimov, the academy took measures that laid the foundation of further growth.

National History Museum of Azerbaijan



Shamakhi Astrophysical Observatory named after N.Tusi

On 15 May 2001, Azerbaijani President Heydar Aliyev signed a decree to rename the Academy of Sciences the Azerbaijani National Academy of Sciences. Thus, the role of the academy in the country's history was recognized at the state level and the prestige of academic science increased. **On 4 January 2003, a presidential decree was issued "On the status of the Azerbaijani National Academy of Sciences"**, which greatly expanded the role and powers of the Academy in the conduct of scientific and technological policy, giving it the status of a lead agency in this regard. **Important steps were taken to raise academic institutions in regions of the country.** On the basis of the Nakhchivan Regional Scientific Center, the Nakhchivan Department of the ANAS was established. The Ganja branch of the ANAS and scientific centers in Sheki and Lankaran districts were created. These research institutions are making a worthy contribution to the development of science on the ground and to the acceleration of the socio-economic development of regions.

In recent years, Azerbaijan has done important work to strengthen and modernize the material and technical base of academic science. In this context, it is necessary to mention the creation of the electronic library of the ANAS and the construction and opening of a new modern building for the National Encyclopedia. After the election of Academician **Akif Alizadeh** as president of the Azerbaijani National Academy of Sciences on 24 April 2013, large-scale reforms began in the management of science. **On 11 December 2014, the new Charter of the ANAS was approved**, and it offers great opportunities for the development of the Academy as an independent scientific body. The concept of the ANAS until 2020 has been adopted to outline concrete prospects for the renewal of the Academy. Four new institutes - molecular biology and biotechnology, world politics, history of science and Caucasian studies – have been set up at the Academy. The Chemical Profile Institute revised their names and structure in order to align the work of these scientific institutions to the needs of the country's petrochemical industry. At the Institute of Physics and Biophysics, a center of smart materials has been created, which conducts studies in collaboration with well-known foreign scientists and Nobel Prize winners. An overhauled industrial pilot plant produces products under the brand of the academy. Innovative programs have been



developed for the industrial production of therapeutic Naftalan oil and luminescent diodes, processing of medicinal plants and production of resin for environmental protection. In line with the requirements of time, the former Institute of Cybernetics of Azerbaijan has been transformed into the Institute of Management Systems, and the Institute of Information Technologies has opened. On the basis of modern scientific achievements, the Academy is developing such scientific topics as mud volcanism, longevity, genetic engineering, optoelectronics, alternative and renewable energy sources, astrophysics, Islamic civilization, applied linguistics, original urban planning culture, mugam art, multiculturalism and emigre literature. **One of the priorities is the study of the history of pogroms and massacres of Azerbaijanis by Armenian nationalists in the 20th century.** ANAS scientists take an active part in the secondary development of oil fields of the Absheron peninsula, the enrichment of Dashkesan ore based on new technologies and the modernization of Azerbaijan's steel industry.

In recent years, **interdisciplinary and intersectoral research**, which promotes the integration of scientific areas and the development of new modern views, has become common at the National Academy of Sciences. In this context, the conference “Physics and lyrics: world experience and realities of Azerbaijan”, which was held on 9-10 November 2014 within the framework of the Baku Science Festival, was of great interest.

The expansion of the network of regional academic institutions contributed to the revitalization of the role of science in the implementation of government programs for the socio-economic development of regions of the country. On 5 July 2014, the ANAS and the Supreme Majlis of the Nakhchivan Autonomous Republic signed a cooperation agreement. In addition, a new Regional Academic Research Center was created in Guba and research centers in Sheki and Lankaran districts were reorganized.

During the Soviet period, all international scientific contacts were carried out in a centralized manner, i.e., under the control of the Soviet government. After in-

dependence, particularly **from 2013, the Azerbaijani National Academy of Sciences began to establish close ties with research centers and universities in a number of foreign countries**, including France, Britain, Russia, China and Japan. Azerbaijani scientists began to communicate directly with foreign counterparts and were able to keep abreast of the latest achievements of world science.

Recently, measures have been taken to enhance the prestige of academic science and promote the inflow of young people into the academy. In this regard, we can name the aforementioned Baku Science Festival, the 1st Congress of Azerbaijani Scientists, the establishment of the Nizami Gold Medal of the ANAS and the introduction of the MA course. Important work in this vein is carried out by the Council of Young Scientists and Specialists of the ANAS. Young Azerbaijani scientists have gained the opportunity to train in leading foreign research centers. All these and other measures provide serious grounds for optimism with regard to the future of Azerbaijani science. ❖

Shamakhi Astrophysical Observatory named after N.Tusi

