150-летию В.Л. Комарова посвящается

ИССЛЕДОВАНИЯ

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Vladimir Leontyevich Komarov: a short biography

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The article describes the main events in the biography of Vladimir Leontyevich Komarov, scientist, explorer, organizer of science, and President of the USSR Academy of Sciences from 1936 to 1945. His main scientific contributions are also briefly characterized. It is concluded that Komarov's activities should be studied further in the context of the development of Russian science and society in the late 19th — first half of the 20th century.

Keywords: Vladimir Komarov, Russian botany, Soviet science, the USSR Academy of Sciences.

Vladimir Leontyevich Komarov was an outstanding Russian botanist, explorer, science manager and, in some way, could be regarded as an iconic figure for Russian botany, particularly during its Soviet period. The leading botanical research institution in Russia with its 300 year-long history, the Komarov Botanical Institute of the Russian Academy of Sciences, was named after Komarov. From 1936 to 1945, he served as President of the USSR Academy of Sciences.

There are a lot of publications about Komarov in Russian (e.g. Vavilov, 1939; Meshchaninov, Chernov, 1945; Tolmachev, Fedorov, 1969; Lipschitz, 1972; Kamelin, 2017, etc.). Many of these are devoted to Komarov's anniversaries and are laudatory but still they often contain important biographical information. At the same time, there has not been a truly scientific account of Komarov's biography with mandatory references to the relevant published and archival sources. His biography, published as part of the so-called academic series (Pavlov, 1951), reflects the main stages of his scientific and science-organizing activities but, unfortunately, does not contain a full list of references and individual links are scattered throughout the text. Besides, this book bears the stamp of ideological concepts

of the time. It is only recently that several attempts at critical analysis of Komarov's work as President of the USSR Academy of Sciences have appeared (e. g. Savina, 2005; Vorontsova, Rybkina, 2016; Bogatov, Urmina, 2020).

This review presents (presumably, to English-speaking audience) an outline of Komarov's biography as well as his scientific legacy, and is based on the available literature and materials from the archives: the Archive of the Russian Academy of Sciences (Moscow) (ARAS), St. Petersburg Branch of the Archive of the Russian Academy of Sciences (SPbB ARAS), and Central State Archive of Historical and Political Documents of St. Petersburg (CSAHPD SPb). It is noteworthy that Komarov`s archive collection in ARAS is available online (http://www.ras.ru/lvkomarovarchive/about.aspx).

Origins and childhood

Vladimir Komarov was born on October 13 (October 1 in O.S. — Julian Calendar), 1869. His farther, Leontii Vissarionovich Komarov (1841–1871), was a professional military officer. He took part in the Russian military operations in Middle Asia where he was wounded. He died when Vladimir was less than two years old. In 1873, his mother, Elizaveta Mikhailovna Komarova (née — Lindenbaum) married Pavel Vikentievich Kukharsky who worked at the Ministry of Railways. She died in 1885 when Vladimir was 15. He was brought up in a family of his uncle, Vissarion Vissarionovich Komarov, since 1883, even before his mother's death, presumably because of his conflicts with his stepfather (Bubyreva, Byalt, 2020). Vladimir attended the 6th State Gymnasium of St. Petersburg, where natural history was scarcely taught; however, he recalled that, from the age of 14 (Pavlov, 1951: 6) he became increasingly more interested in the books on natural history .

Vladimir usually spent his summer vacations at the Rovnoye-Mikhailovskoye estate (Borovichi Uyezd of the Novgorod Governorate), owned by his grandfather, Mikhail Karlovich Lindenbaum. This estate was located in the area where the River Msta passes the Carboniferous Limestone strata to form a scenic landscape known as "Mountainous Msta" (fig. 1). After Komarov became interested in natural history, he made his first botanical excursions, collecting herbarium and fossil specimens (fig. 2).

Fig. 1. Valley of the Msta River near Rovnoe, a place of Komarov's first natural history excursions. Modern photo, from www.mpv-video.ru

Рис. 1. Долина р. Мсты около пос. Ровное — место юношеских природоведческих экскурсий В.Л. Комарова. Современный фотоснимок, с сайта www.mpv-video.ru

Fig. 2. Komarov on excursion in Rovnoe (ARAS. F. 277. Op. 6. D. 3. L. 1)
Рис. 2. В.Л. Комаров на экскурсии в Ровном (АРАН. Ф. 277. Оп. 6. Д. 3. Л. 1)

Student at St. Petersburg University. First expeditions (1891–1894, 1898–1899)

In 1890, Komarov graduated from the Gymnasium with very mediocre grades. He applied for the Natural Sciences Division of the Physico-Mathematical Faculty at St. Petersburg University; as he later recalled, this decision had not been approved by his relatives.

At the time, St. Petersburg University had an outstanding faculty of professors. The Botany Department was chaired by A.N. Beketov[1] who enthralled students with his

[1] Andrei Nikolayevich Beketov (1825–1902) was a botanist (morphology, floristics, taxonomy, botanical geography), popularizer of science, and public figure. From 1861, he worked at Imperial

interesting lectures, especially on plant geography. He was a leader and patron of an informal society (circle) known as "Little botanists". Komarov was deeply involved in its activities. In 1938, he recalled (cited from Richter et al. (2018: 4)):

> We gathered alternately with the more affluent members of the circle, read essays, discussed controversial issues, and after the business part we proceeded to tea drinking and a fun conversation.

In the first year of his studies at the University, Komarov became fellow of the Imperial Russian Geographical Society (IRGS) and St. Petersburg Society of Naturalists. The support from these societies enabled him to go on expeditions. In the summer of 1891, he continued his studies on the flora of the Novgorod Governorate and, in 1892/1893, he traveled to Middle Asia to explore the highland areas of the River Zeravshan basin (modern Tajikistan and Uzbekistan). He collected the specimens of about 900 species (vascular plants and fungi) and carried out barometric leveling, described the glaciers, and gathered the specimens of some minerals. He prepared a brief description of the vegetation of the Mountainous Zeravshan (Komarov, 1893) and made a list of parasitic fungi from that area (Komarov, 1895).

In the papers published in the Soviet time (e.g. Pavlov, 1951: 29), both Komarov himself[2] and his biographers mentioned that, when a student at the University, he was involved in the students' illegal Marxist circles and was placed under secret police surveillance (which could have resulted in the restrictions on choosing a place of residence) and even under investigation of the St. Petersburg Judicial Chamber. This information, however, has not been confirmed by any documents. Moreover, Bubyreva & Byalt (2020) discovered in the archive a so-called "certificate of loyalty" that was issued to Komarov upon his request in 1894.

On March 18, 1898, after his Far East expeditions (see below), Komarov was "left [at St. Petersburg University] to prepare for a professorship" (without a stipend). On May 17, 1899, he got another position at the University, also unpaid – that of a "supernumerary keeper of the Botanical Cabinet" (effectively, a collection manager)[3]. In 1902, he received his Master's degree from St. Petersburg University.

Far East expeditions (1895–1897)

In 1894, Komarov graduated from St. Petersburg University and received a proposal from the government department responsible for exploring the planned route for the Amur railway (Russian Far East). His duties involved exploring the territories adjacent to the future railway route.

Several Komarov's biographers wrote that his decision was forced because he failed to get a position in St. Petersburg due to his political disloyalty (see above). However, it is clear

St. Petersburg University whose Rector he was in 1876–1883. The teacher of many famous Russian botanists and translator of the important botanical textbooks into Russian.

[2] ARAS. F. 277. Op. 2. D. 33. L. 15.

[3] ARAS. F. 277. Op. 2. D. 34. Ll. 2–4.

now that this decision was deliberate and well-motivated. Komarov certainly wanted to start his carrier with exploring poorly known areas and was quite satisfied with this proposal.

In 1895, Komarov left St. Petersburg for his new place of duty. He travelled by sea from Odessa via the Mediterranean, the Suez Canal and across the Indian and Pacific Oceans. In May 1895, he arrived in Khabarovsk and set to work. There were two soldiers on his team. Part of the travel had to be done by boats specially hollowed out of large trunks of Siberian pine (Komarov, 1901: 27). He investigated the Amur River and some of its tributaries from Khabarovsk to Blagoveshchensk where he stayed over the winter, preparing his reports that were rather concerned with agricultural economics than with pure botany.

In early 1896, it became clear that the Amur railway project was abandoned and the explorations stopped. Komarov applied to the IRGS for support to explore Manchuria and Korea. The IRGS granted his request and he also obtained all necessary permissions and letters of support. In June 1896, Komarov started his expedition that continued into the next year. He described the course of his 1896 trip in a special paper (Komarov, 1898) that provided information about not only the terrain, flora and vegetation but also about the indigenous people's life and occupations. He collected a total of 1,270 species and returned to St. Petersburg with these abundant materials late in 1897 (fig. 3). He immediately started processing the collected specimens and working on his "Flora of Manchuria".

Fig. 3. V.L. Komarov in Vladivostok in 1897 (Photoarchive of the Komarov Botanical Institute)
Рис. 3. В.Л. Комаров в 1897 г., Владивосток (Фотоархив БИН РАН)

Imperial St. Petersburg Botanical Garden (1899–1917)

On November 1, 1899, Komarov began to work as assistant curator for the Imperial St. Petersburg Botanical Garden (ISPbBG), the oldest Russian botanical institution known now as the Komarov Botanical Institute of the Russian Academy of Sciences.

At the time, ISPbBG included the following departments: Horticulture (living collections), Herbarium, Museum, Seed Testing Station, Central Phytopathological Station, etc. Formally, the curators were not strictly assigned to a particular department but, in reality, they gave more attention to the Herbarium. The curators were expected to work with both the living and herbarium collections ("scientific ordering"). According to the 1900 report (Izvlechenie..., 1901), Komarov identified 528 "numbers" of living plants and "put in order" the Cyperaceae from the "Russian herbarium" and filed the specimens of various families. In 1902, he was appointed senior curator.

Komarov maintained a penchant for working with herbarium collections throughout his entire life. Even when holding high administrative positions, he found time to work with the herbarium, which was a kind of recreation and relaxation for him (Ilyinsky, 1944). The Herbarium of the Komarov Botanical Institute has many specimens whose labels are written in his easily-recognizable handwriting (fig. 4).

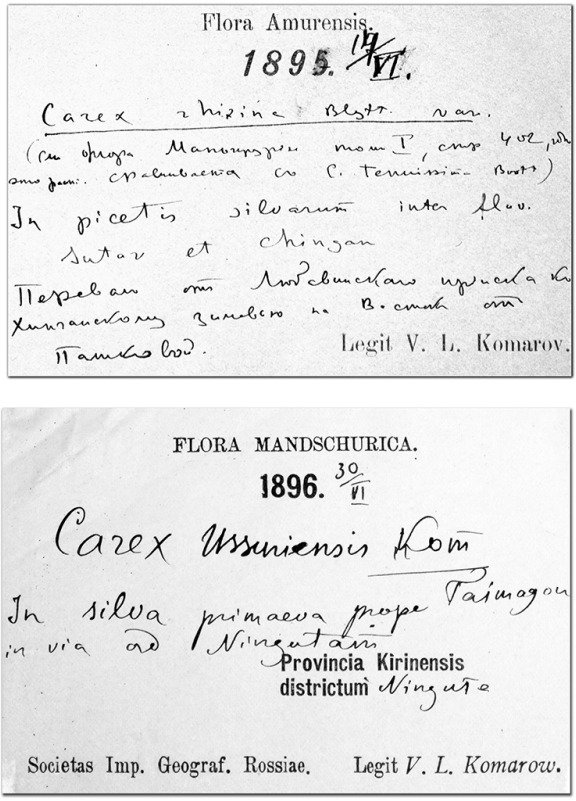

Fig. 4. Herbarium labels written by V.L. Komarov (from the Herbarium of the Komarov Botanical Institute)

Рис. 4. Гербарные этикетки, написанные рукой В.Л. Комарова (Гербарий БИН РАН)

Almost from the beginning of his plant collecting and research work, Komarov mainly focused on plants from the East and Central Asia[4] (China, Mongolia, Korea and Japan), which comprise the "Japanese-Chinese herbarium". The determination and processing of the specimens proceeded in parallel with the preparation of the monumental "Flora of Manchuria" (Komarov, 1901, 1904, 1907). Komarov also gave much attention to the materials from the famous Russian expeditions to Central Asia (led by N.M Przewalsky, G.N. Potanin, V.I. Roborowsky, and others) and later published the itinerary of Przewalsky's and Potanin's expeditions (Komarov, 1920, 1928).

Later on, Komarov became interested in the flora of Siberia and the Russian Far East. In 1902, he conducted a field study in the Sayan mountains (South Siberia) and, in 1908/1909, led the botanical part of a complex expedition to the Kamchatka Peninsula (fig. 5), sponsored by F.P. Ryabushinsky via IRGS[5]. This expedition's extensive gatherings formed the basis for the "Flora of the Kamchatka Peninsula" (Komarov, 1927, 1929, 1930). In 1913, Komarov investigated the Primorye (southern part of the Russian Far East) with the support from the Resettlement Administration[6]; Komarov and his team collected up to 10,000 specimens of about 1,000 species.

Fig. 5. Komarov during the Kamchatka expedition (ARAS. F. 277. Op. 6. D. 7. L. 1)
Рис. 5. В.Л. Комаров в экспедиции на Камчатке (АРАН. Ф. 277. Оп. 6. Д. 7. Л. 1)

Komarov played an instrumental role in moving herbarium specimens to the new building in June—August, 1914, although the preparations started in 1912, also with his active participation. As a result, about 2,500,000 specimens had been moved; however, in addition to moving the materials, this work involved significant re-ordering: specimens were arranged according to the new Engler system (by numbers as per Dalla Torre and Harms system) instead of the Endlicher system; 6,800 bundles of specimens were disaggregated

[4] According to Russian geographical tradition, Middle Asia (modern Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan), also known as Turkestan, was distinguished from Central Asia (the desert areas of China and Mongolia).

[5] For the description of this expedition and its botanical part, see Komarov (1912).

[6] Resettlement Administration was established by the Russian Government in 1908 as part of Agrarian Reform to stimulate the movement of peasants from European Russia to poorly populated areas of Siberia and the Far East. To select the areas suitable for the colonists, special pedological and botanical expeditions were organized. Botanical materials from these expeditions were to be sent to the ISPbBG herbarium.

into almost 20,000 new bundles (Otchet, 1915). Several innovations in geographical arrangement had also been introduced.

These events were vividly described by A.P. Ilyinsky (1944, 19):

> Having come to the Herbarium at the end of June 1914 to see Vl. L. [Komarov], I was amazed at the rapid pace, amazing order and enormous amount of physical labor expended by Vl. L. in this job. I found Vl. L. on the 4th floor of the Herbarium. Moving quickly, he carried several bundles of herbarium specimens, quickly rose with them on the stepladder, quickly laid out the bundles on the shelves, and hurried off again to pick another load. When I asked him some scientific question, Vl. L. jokingly replied that he was no longer a scientist, but a coolie.

A.P. Ilyinsky (1944) had correctly noted that, had there been a slightest delay in moving the herbarium, the new building would have been occupied by a hospital because of the recently started World War I, and, most probably, would have been lost for the botanists forever.

Komarov had obvious managerial skills and A.A. Fischer von Waldheim[7], Director of the ISPbBG, placed him on several *ad hoc* commissions despite his not being the head of any department. Thus, in 1913, he was a member of a special jubilee commission for the 200th anniversary of ISPbBG. In 1914, he took part in a meeting organized by the Department of Agriculture to discuss the ambitious program for ISPbBG development (that had not been realized because of the War). Komarov was decorated with the Order of Saint Stanislaus of the 3rd (1903) and the 2nd class (1910), the Order of Saint Anna of the 3rd (1906) and the 2nd (1913) class, and the Order of Saint Vladimir of the 4th class (1916), which was traditional for civil servants of the Russian Empire.

With the beginning of World War I, Komarov began to give much attention to the studies on medicinal plants, which became crucially important, as Russia traditionally purchased significant amounts of drugs from Germany. In 1915, ISPbBG recommended Komarov to the Academy of Sciences' Commission for the Study of the Natural Productive Forces, which later had an important role in the development of Russian science.

Principal Botanical Garden of the RSFSR/USSR (1917–1931)

After the 1917 February Revolution, ISPbBG lost the word *Imperial* from its official name. In October 1918, it was designated Principal Botanical Garden of the RSFSR[8] (PBG).

Just after the Tsar's abdication, the Director of PBG Fischer von Waldheim left for holidays and subsequently resigned. The Provisional Government appointed

[7] Aleksander Alexandrovich Fischer von Waldheim (1839–1920) was a botanist, phytopathologist, science manager. Director of the Warsaw University Botanical Garden (1869–1896), Director of ISPbBG (1896–1917).

[8] Glavnyi Botanicheskii Sad RSFSR (Главный ботанический сад РСФСР), also translated as Main Botanical Garden of the RSFSR. In 1927, it was given the status of All-Union Importance and named Principal/Main Botanical Garden of the USSR. Initially in the jurisdiction of the People's Commissariat of Agriculture, it was moved under the jurisdiction of the USSR Academy of Sciences in 1930.

B.L. Isachenko[9] as the new director although the PBG gardeners held rallies demanding to establish a "workers' administration" (Geltman, Andreev, 2014). Komarov was elected as deputy director (later this position was sometimes called "assistant director") in June 1917 and held this position till October 1931. Since mid-1917, he also *de facto* headed the Department of Living Plants (Horticulture) and, in April 1918, was officially appointed to this position. He published the first Soviet guide to PBG (Komarov, 1919), established the Division of Experimental Morphology in this Department, and organized a greenhouse for his own experiments and observations (Pavlov, 1951; Geltman, 2020).

During the years of the revolutions and civil war, PBG suffered heavy losses but managed to preserve a significant part of its collection of living plants. However, during certain periods from 1918 to 1921, the situation in PBG and, on the whole, in Petrograd was comparable to that during the Siege of Leningrad (see N.V. Shipchinsky's memoires published by Geltman, Andreev, 2014). Komarov had to devote a lot of time to organizational issues, including some very prosaic ones such as the search for financial resources, fuel, etc. He must have been popular among the gardeners because they elected him honorary member of the Gardeners Trade Union, which was a very influential organization[10].

We do not know enough about Komarov's political views during that period. As a representative from the Russian Geographical Society, he took part in the State Conference in Moscow (August, 12(25)–15(28), 1917)[11],[12]. This meeting was negatively commented on in the Soviet historiography and Komarov's participation in it has never been mentioned in his biographies.

In March 1920, Komarov decided to run for the Director of PBG position (to be elected by its Council) but failed to receive the majority of votes, and Isachenko remained its Director till 1930. However, at the next Council meeting Komarov was elected Deputy Director by an overwhelming majority (Geltman, 2020).

Botanical Museum of the Academy of Sciences (1920–1931)

In 1824–1931, the Botanical Museum of the Academy of Sciences was the second most important botanical institution in St. Petersburg/Petrograd/Leningrad. It was initially based on the botanical collections of the Kunstkammer, the first museum in the Russian Empire. In the 19th century, its staff was very limited and usually consisted of an Academy's full member (Academician) who was a botanist, and a few of his assistants. It was only in the early 20th century that the number of the museum staff was increased, mainly due to the efforts of its Director, I.P. Borodin[13]: thus, in 1924, its staff comprised 15 positions,

[9] Boris Lavrentievich Isachenko (1871–1948) was a botanist, microbiologist, and seed biologist. In St.Petersburg: Assistant Curator, Head of the ISbBG Seed Testing Station (1902–1917), Director of PBG (1917-1930); later in Moscow: Director of the Institute of Microbiology of the USSR Academy of Sciences (1939–1948), Full Member of the USSR Academy of Sciences.

[10] ARAS. F. 277. Op. 2. D. 7. L. 2.

[11] A political forum convened by the Provisional Government to inform Russian citizens about the political situation in the country and to consolidate the society.

[12] ARAS. F. 277. Op. 2. D. 16. L. 1.

[13] Ivan Parfenievich Borodin (1847–1930) was a botanist (specializing in physiology, anatomy, and taxonomy), public figure, and pioneer in nature conservation in Russia. Director of the Botanical Museum of the Academy of Sciences (1902–1930).

including 9 scientific positions (Geltman, 2014, 2020). The Museum's Herbarium totaled about 1.5 million specimens but there was no exhibition open to the public. The work of ISPbBG (PBG) was similar to that of the Museum and their relationship had the elements of both collaboration and competition. Some scientists worked for both institutions; in the 20th century, PBG and the Museum launched their respective projects, "Flora of Asiatic Russia" and "Flora of Siberia and Far East". Both projects had never been completed.

In 1920, Komarov was elected Full Member of the Russian Academy of Sciences (since 1925, the USSR Academy of Sciences), which led to his rapprochement with the work of the Botanical Museum. In 1925, the Museum Council decided to invite Komarov to its meetings and, the same year, he served for several months as Acting Director of the Museum although, formally, he was not on its staff. In May 1930, after Borodin's death, Komarov was appointed Director of the Botanical Museum.

Botanical Institute of the USSR Academy of Sciences (1931–1945)

Since parallelism in the work of the Botanical Garden and Botanical Museum was obvious, the discussion about coordinating their activities and even possibly merging (at least merging their collections) began shortly after the end of the Civil War, when the new government set out to prepare an inventory of scientific institutions it had inherited. There had been several such attempts but the Academy of Sciences always found reasons for impeding such a merger or at least referred to bad timing and unpreparedness (for details, see Geltman (2014)). Komarov (who worked for both institutions) employed the same approach although he might have agreed to the merger had he been offered the position of Director of the joint institution. He proposed a "Botanical Institute" as a new kind of consortium of several organizations (including PBG and the Museum) while maintaining their organizational and budgetary independence. The proponents of the complete merger were Academician B.A. Keller, Director of PBG[14] (appointed in early 1930), and V.P. Savich, PBG's Academic Secretary[15] (Geltman, 2014).

After the events that occurred in April 1931, the unification could no longer be postponed and, when it happened, it followed the worst-case scenario (ending in a single institution with the completely merged collections). The Academy of Sciences' General Meeting on April 27, without any discussion, resolved to merge the Botanical Garden and the Botanical Museum into the Botanical Institute. Apparently, even after this decision, there were some attempts to prevent the complete merger of the two institutions. Keller wrote later:

[14] Boris Aleksandrovich Keller (1874–1945) was a geobotanist, ecologist, and pedologist. Professor at Voronezh University (1913–1930), Director of PGB (1930–1931), Director of the Botanical Institute of the USSR Academy of Sciences (1931–1937), founder of the Main Botanical Garden in Moscow (1936–1945). One of the first Communist Party members to be elected to the USSR Academy of Sciences (1929).

[15] Vsevolod Pavlovich Savich (also known as Savicz) (1885–1972) was a specialist in cryptogamic plants, mainly a lichenologist. ISPbBG / Curator (1913–1920), Assistant Director (1922–1925), Academic Secretary (1925–1931) of PBG, Deputy Director (1932–1937) and Department Head (1932–1963) at the [Komarov] Botanical Institute.

At the end of 1931, despite fierce resistance of the Corresponding Member of the Academy of Sciences N. A. Busch[16] and, especially, his wife, and with the obvious reluctance of Academician V.L. Komarov, we managed to implement the merger of the Botanical Garden and the Botanical Museum into a single Botanical Institute[17].

The actual merging of the Botanical Garden and the Botanical Museum began in October 1931. Komarov lost his position as Head of the Living Collections Department but was appointed Head of the Department of Plant Taxonomy and Geography (Herbarium). Officially, he held this position till his death in 1945 but, since 1935 when he moved to Moscow (see below), he was unable to give enough attention to this Department and R.Yu. Rozhevits[18] was *de facto* managing its day-to-day work.

Komarov scientific work at the Botanical Institute at the time was focused on the preparation of the monumental "Flora of the USSR", which began in 1931. He wrote the preface in which he substantiated the adopted species concept (Komarov, 1934), was the editor of vols. 1–9 (1934–1939) and did the treatments of several taxa for vols. 1, 2, 4, 5 and 7.

In October 1937, Keller left his position as Director of the Botanical Institute. Komarov was involved in the events concerning the appointment of a new director (for details see Geltman (2020)). In 1940, on the occasion of the celebration of Komarov's 70th anniversary, the Presidium of the Supreme Soviet of the USSR gave Komarov's name to the Botanical Institute[19]. However, during the meeting of the Institute's Scientific Board in April 1941 to celebrate Komarov's being awarded the Stalin Prize, he said[20]:

<...> I do not deserve at all the naming of the Institute after me. This is too much honor for me and too little for the Institute. I have worked a lot for a long time at the Institute because the job duties were exciting, and so they got me stuck to this place. I would like to continue to work and work without end but my strength is now running out and there is not much time left for working. Your support is valuable for me because you are the true creators of the Botanical Institute.

During the Siege of Leningrad, Komarov maintained the contacts with the Institute, sometimes trying to prevent some staff members' dismissal due to financial shortages. During the harshest time of the Siege (late December 1941), his telegram of support was read at the meeting of the Institute's Scientific Board. In October 1944, after the Siege was completely lifted, Komarov paid a short visit to the Institute to take part in the meeting devoted to the celebration of his 75th anniversary.

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[16] Nikolai Adolfovich Busch (1869–1941) was a taxonomist specializing in floristics and researcher of the flora of the Caucasus. Curator of ISPbBG (1902–1912), senior botanist at the Botanical Museum (1912–1931) — since 1931, at the Botanical Institute.

[17] CSAHPD SPb. F. 563. Op. 1. D. 1477. L. 96.

[18] Roman Yulievich Rozhevits (Roshevitz) (1882–1949) was a taxonomist specializing in the grass family. On the staff of ISPbG/PGB/Botanical Institute since 1911.

[19] Such practice of naming institutions after living political and public figures was common in the Soviet Union at the time.

[20] SPbB ARAS. F. 273. Op. 1 (1941). D. 21. Ll. 68–72.

Fig. 6. Komarov with his former students of women's courses in the Botanical Garden, 1924–1925 (ARAS. F. 277. Op. 6. D. 3. L. 12)

Рис. 6. В.Л. Комаров со своими ученицами — бывшими слушательницами женских образовательных курсов (АРАН. F. 277. Op. 6. D. 3. L. 12)

Teaching

In addition to his main job at ISPbBG, Komarov was lecturing at St. Petersburg University and other educational institutions. In 1903, he got a position with St. Petersburg University and lectured in several subjects. His lectures were also very popular among the students other disciplines than botany[21]. This popularity provoked his conflict with Khristofor Gobi[22], Professor and Chair of the Department of Botany. It could have been because of this conflict that Komarov chose to obtain his Doctorate from Moscow University.

In 1920, Komarov became Professor and Chair of the Department of Botany at Petrograd (later — Leningrad) University, formally retaining this position till his death in 1945, although since 1935 he led the Department mostly by correspondence and during his short visits from Moscow. He prepared several university textbooks in botany that have gone into many editions.

Komarov certainly enjoyed teaching and not only at St. Petersburg University. From 1899 to 1918 he also taught botany at several women's courses[23]. Their programs were very close to the university level, enabling Komarov to try himself as an author of botanical

[21] For Komarov's activities at St. Petersburg/Petrograd/Leningrad University, see Bubyreva, Geltman (2020) in this issue of the journal.

[22] Khristofor Yakovlevich Gobi (1847–1919) was a botanist, mycologist, and algaeologist. Professor (1888), Head of the Department of Botany at St. Petersburg/Petrograd University (1897–1919). Founder of St. Petersburg scientific school of the studies on lower plants and fungi.

[23] In the Russian Empire, it was prohibited for women to obtain higher education at the universities.

courses; several of his former students became professional botanists (fig. 6). From 1918 to 1924, he led the Department of Botany at the newly organized Pedagogical [Teachers] Institute (Yandovka et al., 2019). In 1919, Komarov played an important role in the organization and work of the Chemical-Pharmaceutical Institute as Assistant Director and Head of the Department of Botany. He continued to work for this Institute till 1922. Even the location of this Institute in the recently-built but still vacant commercial apartment houses next to the Botanical Garden's territory could have been suggested by Komarov for his convenience so that he could combine his jobs.

Leading the USSR Academy of Sciences (1929–1945)

After his election to the Academy of Sciences, Komarov became increasingly more involved in its activities. Although in the beginning, he had no apparent intention of pursuing a great career at the Academy (Savina, 2005), the process of its "sovietization" led to the circumstances in which Komarov's obvious management skills were needed.

The "great breakthrough" (*velikii perelom*) in the late 1920s that affected many aspects of life in the USSR, also affected the USSR Academy of Sciences. The Communist Party leaders were not satisfied with the work of the President of the Academy A.P. Karpinsky[24] and, particularly, of its Permanent Secretary S.F. Oldenburg[25]. Several members of the Academy were arrested as part of the so-called "Academic Case". The Party leaders had significantly stepped up their pressure on the Academy in order to introduce the Communist Party members into the Academy during the next elections.

Komarov was elected as Academician-Secretary (head) of the Academy's Physico-Mathematical Division on March 6, 1929. On October 30, 1929, after Oldenburg was dismissed from the position of Permanent Secretary at the behest of a Special Government Commission, the Academy's General Meeting asked Komarov to temporarily perform Oldenburg's duties[26]. Subsequently, on March 3, 1931, he was elected Vice-President of the Academy; this "election," however, was nothing but a formal endorsement of the decision of the Politburo of the Central Committee of the Communist Party (Savina, 2005).

It is still unclear why exactly Komarov achieved such rapid promotion at the Academy. His appointment as Acting Permanent Secretary was supported by M.N. Pokrovsky[27], one of the active proponents of "sovietization" of the Academy; he said that "Komarov has completely come over to our side" but mentioned that the Leningrad Party leaders had no particular opinion about Komarov (Esakov, 2000: 76).

It is quite probable that Komarov was perceived as a go-between personality both by the Academy and by the authorities. He had accumulated a vast management experience

[24] Alexander Petrovich Karpinsky (1847–1936) was a geologist, and mining engineer. The first elected President of the Russian Academy of Sciences / USSR Academy of Sciences (1917–1936).

[25] Sergei Fedorovich Oldenburg (1863–1934) was an orientalist, Permanent Secretary of the Academy of Sciences (1904–1929), one of the leaders of the Constitutional Democratic Party before 1917, and Minister of Public Education in the Provisional Government (1917).

[26] ARAS. F. 277. Op. 2. D. 7. L. 17.

[27] Mikhail Nikolayevich Pokrovsky (1868–1932), was a historian, head of the Marxist school in the Soviet historical science in the 1920s. One of the first Communist Party members elected to the USSR Academy of Sciences (1929).

as Deputy Director of PGB and most probably had established both formal and informal connections in the Party and Leningrad authorities[28]. As for the Academy members, he was definitely one of their own, especially when compared to the newly-elected (in fact, imposed) members of the Communist party. Kamelin (2017) has justly noted that Komarov, like no one else, knew that it was necessary to save the Academy and, to do this, one had to make compromises, often quite significant.

Komarov's duties as Vice-President of the Academy included tackling administrative and financial issues, most hated by true scientists. He chaired a number of the Academy's Commissions and Working Groups. Komarov was effectively in charge of many of the Academy's daily matters. With the Academy of Sciences relocation from Leningrad to Moscow[29], which was announced in 1934 but was actually carried out in 1935, there was more work to do.

The most important of Komarov's achievements during that period was the organization of regional institutions of the Academy of Sciences. He understood very well that the combined efforts of a few institutes in Moscow and Leningrad could not provide effective development of science in a vast country like Russia. The Transcaucasian Branch (initially in Tbilisi and Baku), the Far East Branch in Vladivostok (of which Komarov was the head), and the Ural Branch in Sverdlovsk (Ekaterinburg) of the USSR Academy of Sciences as well as the Academy's Kazakhstan Base in Alma-Ata and Tajikistan Base in Stalinabad (Dushanbe) were created as early as in 1932. The Academy's Base on the Kola peninsula (with the most northern botanical garden) and the Northern Base were established in 1934 and 1936, respectively. In 1935, Komarov was elected Chairman of the Special Commission on the Management of Branches and Bases of the USSR Academy of Sciences and held this position till his death in 1945. Subsequently, the Uzbek, Turkmen, Kyrgyz, and West Siberian Branches of the USSR Academy of Sciences were established (the last two, during World War II) with his active participation (Pavlov, 1951; Savina, 2005).

After Karpinsky's death, Komarov was elected President of the Academy during its General Meeting on December 28/29, 1936. Of course, his nomination had been approved in advance by the Politburo, and the academicians' vote (68 ayes and 2 nays) was nothing more than a formality. According to a secret memorandum submitted by the People Commissariat for Interior Affairs to Stalin, several Academy members were outraged at this almost uncontested vote and Komarov's nomination, but in the end they chose not to vote against him even though the vote was by secret ballot (Savina, 2005). In reality, Komarov remained an acceptable figure both for the powers-that-be and for the scientific community.

The job of the President of the USSR Academy of Sciences has not been a sinecure, especially for a true scientist. Komarov was obliged to approve the repressed scientists' expulsion from the Academy and was unable to object to the promotion of notorious figures such as T.D. Lysenko[30] who was supported by Stalin. Beginning in 1938, the authorities stepped up their pressure on the Academy, refusing to approve its plans and reports on the

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[28] In a memorandum forwarded to the Politburo by then-powerful N.I. Bukharin and A.V. Lunacharsky on February 23, 1930, Komarov was proposed for the President of the Academy (see Esakov, 2000: 92; Savina, 2005); the Politburo, however, decided to leave Karpinsky as President.

[29] Several institutes of the Academy, including Botanical Institute, were left in Leningrad.

[30] Trofim Denisovich Lysenko (1898–1976) was an agronomist, biologist, the leader of so called "Michurin biology" and "Soviet creative Darwinism," and a strong opponent of classical genetics. About Lysenko and Lysenkoism, see Medvedev (1969), Soyfer (1994), etc.

pretext of scientific results being remote from the needs of socialist reconstruction (Savina, 2005). In September 1938, the General Meeting of the Academy identified 33 main problems towards which the scientists' efforts were supposed to be directed. In practice, however, it turned out that the most important scientific work whose significance evaded the Party leaders and government authorities could be pursued within the framework of tackling these "problems". Thus, the preparation of "Flora of the USSR" was formally linked to the "problem of plant raw materials"[31].

As was the practice of the time, Komarov as the "face of Soviet science" was obliged to devote much of his time to sitting in numerous jubilee meetings and to press and radio appearances on various occasions (about 150 newspaper publications in 1932–1940 alone). It appears that he wrote most of these pieces by himself; these publications were well received by very different audiences. Many of those articles and speeches, naturally, contained praises of the Communist Party and Stalin personally, which was absolutely necessary at the time. On November 24, 1937, he delivered a report titled "The Science of Stalin's epoch" at the Academy of Sciences' General Meeting devoted to the 20th anniversary of the October Revolution. Unfortunately, he was also forced to sign appeals "on behalf of Soviet scientists", demanding death penalty for the defendants in the notorious Moscow trials of 1936/1937.

Komarov was elected as a delegate to the Extraordinary 8th All-Union Congress of Soviets of the Soviet Union (which adopted the new Stalin's Constitution of the USSR) and spoke at this Congress. In 1937, he was elected as a deputy of the Supreme Soviet of the USSR. He was depicted (together with Lysenko!) on a monumental panel, "Distinguished People of the Land of Soviets," prepared for the USSR Pavilion at the 1939 World Exhibition in New York.

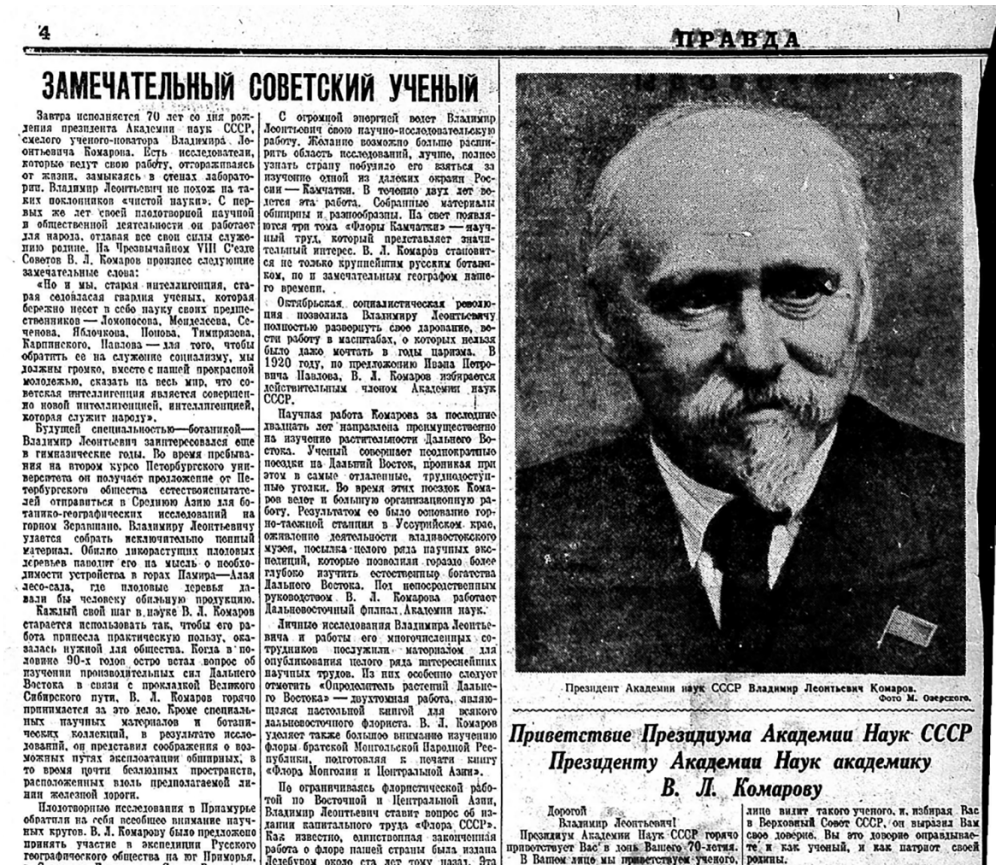
Since the early 1930s, Komarov developed serious health problems. He suffered from psoriasis almost throughout his entire life and, when the attacks got worse, he was forced to seek treatment abroad. Each of these trips (to France in 1934 and 1936) were allowed by special decisions of the Politburo (Esakov, 2000: 139, 230) and financed from government funds. In the summer of 1939, while on vacation in the Caucasus, he suffered a stroke. Since then his work was occasionally interrupted by increasingly longer periods of illness.

In October 1939, Komarov turned 70. He was awarded the Order of Lenin and his anniversary was, in line with Soviet tradition, marked by numerous meetings and appearances in the media (fig. 7). The Academy of Sciences published a collection of papers in various fields of botany, written by famous scientists (Prezidentu..., 1939); this book was devoted to Komarov.

After the jubilee events were over, Komarov's health had not improved. Apparently, his possible resignation as President of the Academy was seriously considered, which was reflected in the entries of Academician V.I. Vernadsky's diary [32] (Savina, 2005). Komarov, however, retained his position. Savina (2005: 188) justly notes that he suited the authorities exactly the way he was: "elderly, with his health deteriorating, cautious, understanding and pliant; at the same time, excellently educated, tactful with others, able to understand the specifics of scientific work and ready to respond to the current agenda".

[31] SPbB ARAS. F. 273. Op. 1(1938). D. 26. Ll. 174–176.

[32] Vladimir Ivanovich Vernadsky (1863–1945) was a scientist of broad interests (primarily, geology), founder of biogeochemistry, thinker and public figure. Founder and first President of the Ukrainian Academy of Sciences.



4 ПРАВДА

ЗАМЕЧАТЕЛЬНЫЙ СОВЕТСКИЙ УЧЕНЫЙ

Завтра исполняется 70 лет со дня рождения президента Академии наук СССР, смелого ученого-новатора Владимира Леонтьевича Комарова. Есть исследователи, которые ведут свою работу, отгораживаясь от жизни, замыкаясь в стенах лаборатории. Владимир Леонтьевич не похож на таких поклонников «чистой науки». С первых же лет своей плодотворной научной и общественной деятельности он работает для народа, отдает все свои силы служению родине. На Чрезвычайном VIII Съезде Советов В. Л. Комаров произнес следующие замечательные слова:

«Но и мы, старая интеллигенция, старая седовласая гвардия ученых, которая бережно несет в себе науку своих предшественников — Лоскотосова, Менделеева, Сеченова, Яблочкова, Попова, Тимирязева, Карпинского, Павлова — для того, чтобы обратить ее на служение социализму, мы должны громко, вместе с нашей прекрасной молодежью, сказать на весь мир, что советская интеллигенция является совершенно новой интеллигенцией, интеллигенцией, которая служит народу».

Будущей специальностью—ботаникой—Владимир Леонтьевич заинтересовался еще в гимназические годы. Во время пребывания на втором курсе Петербургского университета он получает предложение от Петербургского общества естествоиспытателей отправиться в Среднюю Азию для ботанико-географических исследований на горном Зеравшане. Владимиру Леонтьевичу удается собрать исключительно полный материал. Обилие дикорастущих плодовых деревьев навеяет его на мысль о необходимости устройства в горах Памира—Алая лесо-сада, где плодовые деревья давали бы человеку обильную продукцию.

Каждый свой шаг в науке В. Л. Комаров старается использовать так, чтобы его работа принесла практическую пользу, оказалась нужной для общества. Когда в половине 90-х годов остро встал вопрос об изучении производительных сил Дальнего Востока в связи с прокладкой Великого Сибирского пути, В. Л. Комаров горячо принимается за это дело. Кроме специальных научных материалов и ботанических коллекций, в результате исследований, он представил соображения о возможных путях эксплоатации обширных, в то время почти безлюдных пространств, расположенных вдоль предполагаемой линии железной дороги.

Плодотворные исследования в Приамурье обратили на себя всеобщее внимание научных кругов. В. Л. Комарову было предложено принять участие в экспедиции Русского географического общества на юг Приморья, в Северную Корею и Северо-Восточную Манчжурию.

Собранные в результате долгой работы коллекции впервые давали обстоятельную картину этих обширных пространств, исследованных русским ученым. Молодой ученый критически пересмотрел все имевшиеся в то время материалы по флоре Приамурья, Приморья и Манчжурии. На свет появились 3 тома капитального труда «Флора Манчжурии». Тут были даны описание и полная характеристика географического распространения свыше 1.500 видов растений, из которых 80 открыты впервые В. Л. Комаровым.

За эту работу Российская Академия наук присудила В. Л. Комарову премию им. Бара, а Международная академия ботанической географии — медаль им. Турнефора и Линнея. Ученый приобрел широкую международную известность.

Но всеобщее признание только усиливало настороженность, которую царское правительство и до тех пор проявляло к замечательному исследователю. Чиновники Российской империи не любили исследователя-новатора, прокладывающего новые пути в науке. Несмотря на свои замечательные работы, Комаров остается приват-доцентом, лекции его не обязательны для посещения студентами. Но молодая аудитория с горячим вниманием слушает интересные, взволнованные лекции В. Л. Комарова.

Шел 1905 год. Ученый, давно уже горячо сочувствовавший революционерам, посещает митинги, собрания. Дружба с большевистской партией, родившаяся в те далекие тяжелые времена, крепла с каждым годом жизни замечательного ученого.

С огромной энергией ведет Владимир Леонтьевич свою научно-исследовательскую работу. Желание возможно больше расширить область исследований, лучше, полнее узнать страну побудило его взяться за изучение одной из далеких окраин России — Камчатки. В течение двух лет ведется эта работа. Собранные материалы обширны и разнообразны. На свет появляются три тома «Флоры Камчатки» — научный труд, который представляет значительный интерес. В. Л. Комаров становится не только крупнейшим русским ботаником, но и замечательным географом нашего времени.

Октябрьская социалистическая революция позволила Владимиру Леонтьевичу полностью развернуть свое дарование, вести работу в масштабах, о которых нельзя было даже мечтать в годы царизма. В 1920 году, по предложению Ивана Петровича Павлова, В. Л. Комаров избирается действительным членом Академии наук СССР.

Научная работа Комарова за последние двадцать лет направлена преимущественно на изучение растительности Дальнего Востока. Ученый совершает неоднократные поездки на Дальний Восток, проникая при этом в самые отдаленные, труднодоступные уголки. Во время этих поездок Комаров ведет и большую организационную работу. Результатом ее было основание горно-таежной станции в Уссурийском крае, оживление деятельности владивостокского музея, посылка целого ряда научных экспедиций, которые позволили гораздо более глубоко изучить естественные богатства Дальнего Востока. Под непосредственным руководством В. Л. Комарова работает Дальневосточный филиал Академии наук.

Личные исследования Владимира Леонтьевича и работы его многочисленных сотрудников послужили материалом для опубликования целого ряда интереснейших научных трудов. Из них особенно следует отметить «Определитель растений Дальнего Востока» — двухтомная работа, являющаяся настольной книгой для всякого дальневосточного флориста. В. Л. Комаров уделяет также большое внимание изучению флоры братской Монгольской Народной Республики, подготовил к печати книгу «Флора Монголии и Центральной Азии».

Не ограничиваясь флористической работой по Восточной и Центральной Азии, Владимир Леонтьевич ставит вопрос об издании капитального труда «Флора СССР». Как известно, единственная законченная работа о флоре нашей страны была издана Лезебуром около ста лет тому назад. Эта работа давно устарела.

В составе флоры нашего Союза ориентировочно насчитывается свыше 15 тысяч цветковых и папоротникообразных растений. Описание их должно составить примерно 20 томов; 8 томов уже напечатаны и вышли в свет, остальные в значительной мере подготовлены.

Плодотворно работая как ученый-исследователь, подготовляя ценнейшие научные труды, обучая молодых ученых, В. Л. Комаров развивает кипучую деятельность в Академии наук СССР. Вместе с лучшими представителями старой интеллигенции маститый ученый работает над тем, чтобы приблизить академию к жизни, помочь ученым подойти к разрешению великих задач социалистического переустройства родины.

В 1930 году академик В. Л. Комаров избирается вице-президентом, а в 1936 году — президентом Академии наук СССР. Под его руководством происходит реорганизация академии, выборы в академию нового отряда крупнейших научных работников.

Академия наук СССР все больше превращается в подлинный штаб передовой науки.

Владимир Леонтьевич пользуется заслуженным авторитетом и горячей любовью многотысячной армии советских научных работников. Его знают и любят народы Советской страны. Он избран депутатом Верховного Совета СССР. Правительство за дающуюся научную и общественную деятельность награждает В. Л. Комарова орденом Ленина. 70-летие застает В. Л. Комарова в разгаре плодотворной научной и общественной деятельности.

Президент Академии наук СССР Владимир Леонтьевич Комаров.
Фото М. Оверского.

Приветствие Президиума Академии Наук СССР Президенту Академии Наук академику В. Л. Комарову

Дорогой
Владимир Леонтьевич!

Президиум Академии Наук СССР горячо приветствует Вас в день Вашего 70-летия.

В Вашем лице мы приветствуем ученого, для которого наука является величайшим орудием познания и переделки природы. Ваши работы, являясь богатейшим вкладом в науку, открыли широкие горизонты для практических применений на огромнейших пространствах нашей великой страны.

Владимир Леонтьевич. Ваше 70-летие застает Вас на посту главы высшего научного учреждения страны — на посту Президента Академии Наук СССР. Академия Наук, избирая Вас своим Президентом, видела в Вашем лице крупнейшего ученого руководителя, который обеспечит успешное развитие советской науки и разрешение ее задач, поставленных перед наукой грандиозным социалистическим строительством.

Велики также Ваши заслуги на поприще педагогической деятельности. Ваша работа в старейших университетах страны воспитала плеяду талантливых деятелей науки и практики, беззаветный труд которых на благо народа является одной из больших наград за Вашу педагогическую деятельность.

Советское правительство и партия Ленина — Сталина высоко ценят ученых, которые не отгораживаются от народа и служат народу. Советский народ в Вашем лице видит такого ученого, и, избирая Вас в Верховный Совет СССР, он выразил Вам свое доверие. Вы это доверие оправдываете и как ученый, и как патриот своей родины.

Награждение Вас правительством орденом Ленина — высшей наградой страны — является актом, отмечающим Ваши выдающиеся заслуги.

Ученые нашей страны и в частности мы, работающие вместе с Вами и под Вашим руководством, считаем и для себя, и для всей советской науки это награждение особым праздником. В ответ на награждение Вас работники Академии приложат все свои силы для разрешения задач, стоящих перед Академией Наук, возглавляемой Вами.

Дорогой Владимир Леонтьевич, приветствуя Вас в день Вашего семидесятилетия, мы от души желаем Вам еще много лет творческой работы на благо родины, на благо процветания передовой советской науки.

Президиум Академии Наук СССР:
академики О. Ю. ШМИДТ, Е. А. ЧУДАКОВ, А. Н. КОЛМОГОРОВ, А. Н. БАХ, Л. А. ОРБЕЛИ, П. И. СТЕПАНОВ, В. П. НИКИТИН, А. М. ДЕБОРИН, Е. С. ВАРГА, И. Н. МЕЩАНИНОВ, А. А. БОГОМОЛЕЦ, А. Я. ВЫШИНСКИЙ, Т. Д. ЛЫСЕНКО, В. Н. ОБРАЗЦОВ, А. Е. ФЕРСМАН.

Fig. 7. A page from the *Pravda* newspaper, devoted to Komarov's 70th anniversary (ARAS. F. 277. Op. 2. D. 100. L. 20)

Рис. 7. Страница газеты «Правда», посвящённая 70-летнему юбилею В.Л. Комарова (АРАН. Ф. 277. Оп. 2. Д. 100. Л. 20)

The German attack on the USSR on June 22, 1941, found Komarov on vacation in Abkhazia. Most of the Academy of Sciences' institutions as well as its Presidium were evacuated to Kazan by the Government's decision. A group of elderly Academicians, including Komarov, were supposed to go to the Borovoye Resort in Kazakhstan. However, having visited Sverdlovsk (where the Ural Branch of the Academy was located) on the way to Borovoye, he decided to stay in Sverdlovsk and organize the work to mobilize the resources of the Urals for defense needs. On August 29, 1941, Komarov chaired the first meeting of the USSR Academy of Sciences' Commission for Mobilizing the Resources of the Urals. Subsequently, Kazakhstan and Western Siberia were also included in the scope of this Commission's activities (Pavlov, 1951).

As regards actual leadership of the Academy of Sciences, there were two governing centers, the official Presidium in Kazan and Komarov's Commission in Sverdlovsk, which inevitably led to inconsistencies and conflicts. Thus, the Academy's work plan for 1942 was submitted to the Government without Komarov's consent, which incurred his displeasure. This conflict was reported to Stalin, who supported Komarov by sending him a special telegram (Savina, 2005; Safronov, 2009). In May 1942, the Academy's General Meeting was held in Sverdlovsk and the Presidium was also moved there from Kazan.

During the War, Komarov did not stay in Sverdlovsk all the time but also visited Alma-Ata, Frunze (Bishkek), Tbilisi, Baku, and Erevan. Since October 1943, he mainly stayed in Moscow where the Academy's leaders and institutions gradually began to return. He continued to actively work with the media and, from 1941 to 1945, published about a hundred articles in newspapers and popular magazines.

However, Komarov's deteriorating health took a toll on his activities. Unfortunately, as is often the case, Komarov entrusted decision-making to a circle of his assistants from the Academy of Sciences' administrative staff, who, strictly speaking, had little to do with science proper and acted primarily in their own interests and for their own benefit (Savina, 2005). The Academy's scientific community had nicknamed this group "Camarilla" (or even ***Ko***marilla)[33]. Despite some changes in this group's composition, the general trend remained the same. Unfortunately, this situation did not help in maintaining the President's authority.

In October 1944, both Komarov's 75th anniversary and 50 years of his scientific and public activities were celebrated with much fanfare. He was honored with the title of the Hero of Socialist Labor (fig. 8); ceremonial meetings were held in Moscow and Leningrad and jubilee editions were published. Komarov was showered with greetings and congratulations.

On November 13, 1944, Komarov was summoned for a talk with Joseph Stalin. This talk lasted one hour. Komarov (1945) briefly described their conversation; its record was discovered and published many years later (Esakov, 2005) although it probably does not accurately reflect the content of this conversation (Kamelin, 2017). The most important result of this meeting was Stalin's approval of Komarov's initiatives to establish the Institute for the History of Science ("Institut istorii estestvoznaniya") and to celebrate the 220th anniversary of the USSR Academy of Sciences and invite foreign scientists to the festive events.

[33] Kamelin (2017) suggested that these persons were assigned to watch the President of the Academy.

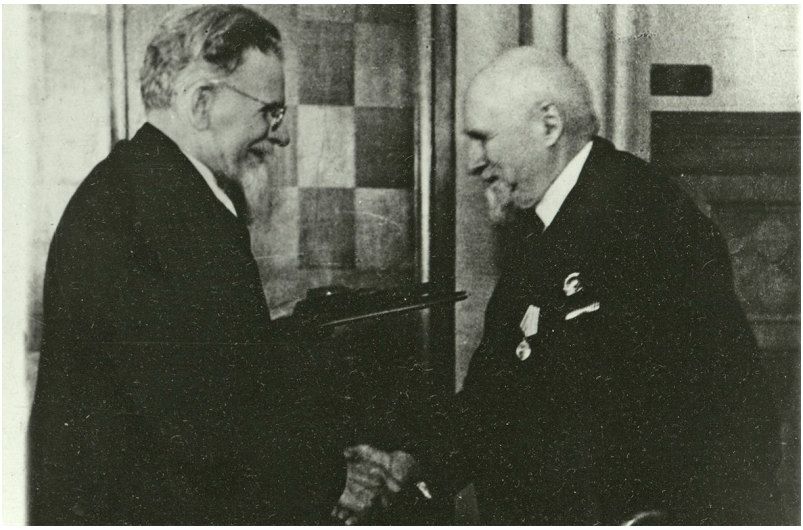


Fig. 8. M.I. Kalinin, Chairman of the USSR Supreme Soviet, presents the government award to Komarov (ARAS. F. 277. Op. 6. D. 39. L. 3)
Рис. 8. Председатель Президиума Верховного совета СССР М.И. Калинин вручает правительственную награду В.Л. Комарову (АРАН. Ф. 277. Оп. 6. Д. 39. Л. 3)

The Academy of Sciences' anniversary was celebrated extensively (as was expected of the events of such importance at the time) on June 15–30, 1945. Everything was approved at the highest level of authority: for instance, the foreign guests were transported by the Soviet military transport aircraft. The Jubilee Sessions were held in Moscow and Leningrad; on June 24, the participants witnessed the Victory Parade and, on June 30, a pompous 4-hour government reception was held. Stalin and Politburo Members attended this reception and Komarov proclaimed a toast to Stalin (Pavlov, 1951).

However, Komarov's inability to run the Academy has already become apparent and the country's leadership decided to replace him. There was talk that the last straw was when Komarov, when sitting on a meeting's panel, felt tired and dozed off. At the end of June 1945, V.M. Molotov, the First Deputy Premier of the Soviet Union, summoned a group of Academicians (Academy Members) to inform them that the President had to be replaced. Komarov himself was informed that he had to resign by I.P. Bardin, Vice President of the Academy[34], and Academician-Secretary N.G. Bruevich[35]. After this conversation, Komarov wrote his resignation letter. He was not present at the General Meeting of the Academy on July 17, 1945, that elected S.I. Vavilov[36] as new President (Savina, 2005).

[34] Ivan Pavlovich Bardin (1883–1960) was a metallurgist, Vice-President of the USSR Academy of Sciences (1942–1960), and Member of the Supreme Soviet of the USSR (1937–1960).

[35] Nikolai Grigorievich Bruevich (1896–1987) was a specialist in the field of mechanical engineering and computer technology. Lieutenant General of the Technical Service. Secretary (Academician-Secretary) of the USSR Academy of Sciences (1942–1949).

[36] Sergei Ivanovich Vavilov (1891–1951) was a physicist, founder of the scientific school of physical optics in the USSR, president of the USSR Academy of Sciences (1945–1951). The younger brother of biologist Nikolai Ivanovich Vavilov.

After his resignation, Komarov retained some organizational responsibilities; in addition, he finally became able to devote more time to scientific work. However, he was not destined to enjoy this opportunity for long: he passed away on December 5, 1945.

Komarov devoted almost 15 years to working in leading positions at the Academy of Sciences; his work as the Academy's Vice President (1931–1936) was probably no less productive than when he was its President, although not as conspicuous. During this period, the Academy has grown significantly in the number of scientists; new institutions were opened, including regional organizations. On the other hand, it was during exactly the same period that the Academy almost completely lost its independence in making decisions, sometimes even on minor issues.

Of course, Komarov was forced to make difficult compromises and, probably, to come to terms with his conscience. However, we must never forget that he led the Academy at the time when a wrong move, or even a careless word, could cost him and his closest associates their freedom or even lives. Among the Presidents of the Academy in the Soviet period, perhaps only his successor, S.I. Vavilov, was in a similar situation.

Brief characterization of Komarov's scientific legacy

Komarov's scientific legacy is extremely diverse and, surprisingly, has not been properly analyzed yet. Only its most important aspects will be mentioned here.

Komarov's *"Flora of Manchuria"* (Komarov, 1901, 1904, 1907) is his best known work that brought him wide acclaim. Komarov was very familiar with the subject from of his own expeditions and, in addition, all available collections and literature were at his disposal.

This work includes not only a list of plants growing in the region, but also a detailed description of environmental conditions, the history of research, and the analysis of relevant literature. It should be noted that all species characteristics are accompanied by very detailed and accurate comments not only on their distribution and habitats, but also on their taxonomic status, i.e. here Komarov acted not only as an expert on the flora, but also as an experienced taxonomist. In addition, substantiating the natural boundaries of the Manchurian floristic region, he took the first steps as a phytogeographer.

As noted above, back in 1905, Komarov was tasked with processing huge collection materials from China and Mongolia. By 1907, he had these materials put in order and most of them were identified. Making a critical list of plants of these territories within a short time seemed an unrealistic task[37], and therefore Komarov began with preparing an "Introduction to the Floras of China and Mongolia" (Komarov, 1908) which was accepted as his Doctoral Thesis. The main part of this work is a thorough taxonomic treatment of five genera with different distribution patterns within the study area (*Clematoclethra*, *Codonopsis*, *Epimedium*, *Nitraria*, *Caragana*). The background part contains a detailed analysis of the literature, herbaria from China and Mongolia, an outline of the geological structure, and the proposals for phytogeographic division. It should be noted that the background part is not only and not so much a solid review but contains a lot of original and fresh scientific ideas for the time.

[37] Taking into account Komarov's ability to work, it can be assumed that this work could have been completed within a reasonable time frame, if his efforts had not been diverted to other tasks.

"Flora of the Kamchatka Peninsula" (Komarov, 1927, 1929, 1930) is another important and widely known Komarov's work, prepared by him personally based on his own field studies. Like "Flora of Manchuria", this work contains an important introductory part. It is important that, in addition to meticulous characterization of plants, this book contains determination keys.

Komarov's scientific interests also embraced the territories of Siberia and the Russian Far East. Here he conducted his field studies, although these were certainly not enough to form a comprehensive idea of this vast region. He published a number of works, first and foremost, "A brief introduction to the study of the vegetation of Siberia" (Komarov, 1922), in which he provided a detailed description of vegetation cover of Siberia (including a significant part of the Far East) and identified 17 "vegetation regions" in it. He also characterized the vegetation of the Lake Baikal area.

"An introduction to the study of the vegetation of Yakutia" (Komarov, 1926a) is a very valuable work initiated after Komarov was appointed Chair of the Academy of Sciences' Commission on the Study of the Yakut Autonomous Soviet Socialist Republic, a region of Siberia comparable in size to India. Although Komarov had never visited Yakutia, he summarized the available botanical data for this region; a preliminary list of flora for this book was prepared by his students E.N. Klobukova-Alisova and A.A. Bulavkina.

Komarov made several trips to the south of the Russian Far East. Based on his early expeditions (mostly the 1913 expedition and some occasional observations from 1895–1897 and 1908), a book titled "The types of vegetation of the South Ussuri region" (Komarov, 1917) was prepared. Komarov gave special attention to vegetation dynamics affected by the increasing economic use of the area (especially, by regular fires). Subsequently he published an enumeration of vascular plants of this area (Komarov, 1923) and, later on, "A brief guide for the identification of plants of the Far East" together with Klobukova-Alisova (Komarov, Klobukova-Alisova, 1925) and two richly illustrated volumes of "A key to the plants of the Far East"[38] (Komarov, Klobukova-Alisova, 1931, 1932). According to Pavlov (1951), Komarov conceived a multivolume "Flora of the Far East" but this project had never been implemented because of his preoccupation with his work at the Academy of Sciences and his work on "Flora of the USSR".

Komarov's views on the *concept of species* deserve separate consideration. This issue has been analyzed in detail by Skvortsov (1972). Here, we will only mention the most important points. Unfortunately, Komarov's views are often regarded internationally as nothing but mere "splitting"[39], although his ideas were much deeper than that.

Komarov turned to the analysis of views on the scope and nature of plant species early in his scientific career. In the introduction to "Flora of Manchuria," he contrasts the formal (from his standpoint) concepts of species as a morphological type with the concept of geographical race (Komarov, 1901: 76):

> While we mainly associate the word "species" with the idea of outward appearance, shape of a plant, i.e. render it almost exclusively morphological meaning.... we mainly associate the

[38] Far Eastern territory existed in 1926–1938 and included all the USSR territories in the Far East.

[39] Among taxonomists, it is customary to distinguish informally «lumpers» who accept a wide concept of species and «splitters» who insist on a narrower understanding of it.

word "race" with the concept of a genetic link between the indivisibles of a given group of plant individuals and their ability to firmly and invariably transmit hereditary traits.

According Komarov (1901: 77):

<...> a race differs from a species in a lesser degree of morphological separateness of its constituent individuals and in a closed area of its distribution, although it possesses almost the same constancy in the transmission of hereditary characters as a species.

Komarov (1901: 79) concluded:

that, in floristic research, the main unit of research should be considered to be not an abstract concept of "species" but, rather, a real genetic group — a "race," or a subspecies, or a second-order species.

Komarov had repeatedly emphasized the property of a race such as "tribal life" as well as a unity of origin of all its constituents. Skvortsov (1972) has justly noted that this was one of the first steps in the transition from the typological concept to the concept of population species. This, unfortunately, failed to be acknowledged by numerous authors discussing this "eternal" problem of biology.

One would expect that, in the "Flora of Manchuria," Komarov would have adopted the narrowest possible concept of species and ended up being a splitter. In practice, however, he often adhered to a fairly broad understanding of species limits (Skvortsov, 1972).

In the "Flora of the Kamchatka Peninsula," Komarov (1927: 39) emphasizes the importance of the geographical characteristics of species:

<...> I regard as a species each complex of organisms whose morphology allows judging about their geographical distribution. A species is a morphological system multiplied by geographic definiteness.

The last quote became known in Russian science as "Kamchatka aphorism" and has been often regarded as the quintessence of Komarov's views on the problem of species, which, however, does not seem to be true.

As the work on the "Flora of the USSR" began, the concept of species for this new project had to be defined. In the preface to the first volume, Komarov (1934: 7–8) discussed the two lines of research in plant taxonomy. The first line, from his standpoint:

saw its merit in identifying kinship between organisms. The way to do it was believed to be assigning newly described forms, if possible, to already known species, subordinating them into a system of subspecies and varieties <...>

The second line of research:

tends to recognize as independent species all plants, even if very close, but possessing some hereditarily transmitted character by which they may be distinguished. At the same time, in this very designation of a plant, an indication of its kinship with other related plants is lost. If in this case, too, we want to maintain the evolutionary standpoint, we need to associate our

species, uniting them into complex species, species cycles or series of species. A genus or a subgenus is first subdivided into series and then each series [is subdivided] into species. A series kind of replaces a Linnean species, which, in the process of evolution, breaks downs into modern geographically-localized species.

Finally, the choice was made in favor of the second line of research:

as better suited to economic requirements when introducing wild plants into cultivation. At the same time, acknowledging a fluid evolutionary process makes the recognition of narrow species and species series more acceptable from the standpoint of the dialectical understanding of nature.

Thus, the most important elements in Komarov's species concept employed in the "Flora of the USSR" were both a narrow understanding of species (=geographical race) and uniting these races into series, which was given not so much a formal taxonomic but rather an evolutionary meaning. It should be noted that he had employed the concept of series in his earlier taxonomic accounts (Komarov, 1908).

In the preface to the "Flora of the USSR" Komarov no longer mentions "tribal life" and historical aspects of the emergence of species. Unfortunately, the definition of species given in "Flora..." actually gave *carte blanche* to an unjustified taxonomic spitting in several taxonomic treatments (Skrortsov, 1972).

At the end of his scientific career, overburdened with administrative work, Komarov prepared and published "The theory of species in plants" (Komarov, 1940), subtitled "A page from the history of biology". This first part of this book ("Historical background") contains a very detailed historical analysis of different views on the nature of the species. The second part ("Facts and generalizations") is concerned with several aspects of the problem, with separate chapters devoted to these aspects (species and the environment; infraspecific categories; species and hybrids; species and biochemistry; etc.).

A detailed analysis of this book is beyond the scope of this paper. It contains a great number of references, which makes it interesting even for a modern reader. Some of the ideas expressed by Komarov were innovative for his time. Thus, he clearly distinguished hybrid cycles and their derivatives as well as apomictic and agamic races from species (including hybridogenic species) and emphasized that the mechanisms of their evolution are different from those of species (Skvortsov, 1972; Kamelin, 2009, 2017). Unfortunately, his views were overlooked by the historians of the evolutionary doctrine.

At the same time, on some points, Komarov takes a step back, compared to his early works; his criticism (in the chapter "Species and formalism") of the then newly adopted method of nomenclature types (and nomenclature rules in general) also looks rather strange (Skvortsov, 1972).

It is necessary to mention Komarov's role as a historian and popularizer of science. He had published the most complete (at the time) biographies of Linnaeus (Komarov, 1923b) and Lamarck (Komarov, 1925) in Russian, and popular (but, at the same time, quite fundamental!) books on the history of biology (Komarov, 1926b) and on the origin of plants (Komarov, 1933) and cultivated plants (Komarov, 1931). Unfortunately, he left no memoirs although, according to Lipschitz (1972), he had an intention to prepare them.

Personal life

Komarov remained single for a long time. His first wife whom he married in 1913(?) was Maria Romanovna Pozdnyakova, neé Geits (1862-1929), the widow of Nikolai Ivanovich Pozdnyakov (1856–1910), a writer and famous bibliophile. After her death in 1929, Komarov married Nadezhda Viktorovna Stark (1886–1962), his former student at Lokhvitskaya-Skalon's Women's Courses, who later worked as Assistant at the Department of Botany at Leningrad University. Both marriages were childless.

Conclusion

Komarov's personality, biography, and scientific legacy certainly deserve much greater attention from the historians of science than is the case now. He had the good fortune of being able to explore some practically unknown areas of Russia and neighboring countries. The heyday of his scientific work fell on the period of Russia's rapid economic growth and rapid development of Russian science. At the time of turning points for his country, he had not been just an armchair scientist but had to interact with the authorities. At the same time, he always remained a botanist, and the greatest satisfaction and comfort to him was putting herbarium collections in order.

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Владимир Леонтьевич Комаров: краткий биографический очерк

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В обзоре, рассчитанном преимущественно на англоязычную аудиторию, затронуты важнейшие события биографии Владимира Леонтьевича Комарова — учёного, путешественника, организатора науки, президента Академии наук СССР в 1936–1945 гг. Кратко охарактеризованы его важнейшие научные достижения. Отмечена необходимость продолжения исследования деятельности В.Л. Комарова с учётом тенденций развития российского общества и науки в конце XIX — первой половине XX в.

Ключевые слова: Владимир Леонтьевич Комаров, российская ботаника, советская наука, Академия наук СССР.