

## Professor Aleksei Petrovich Bystrow: Recollections

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This paper is not an essay about the life of Professor A.P. Bystrow, an outstanding scientist and researcher in paleozoology, anatomy, and histology. It is also not a biography of Bystrow, a son and grandson of clergymen, whose life was, therefore, overclouded by Soviet demands on the social standard of personality. Also, it is not an attempt to analyze his work in science, which deserves a special study. For me, Bystrow is first of all a senior colleague at the department and Paleontological Laboratory of Leningrad State University. I was fortunate to know Bystrow personally for 13 years, and I clearly saw his bright intellectual personality and highly valued his literature and artistic talents, which are relatively rare among university professors.

Bystrow was born in the village of Tarasovo, Ryzan Region, at the turn of the 19th century, on Febru-

ary 1/13,<sup>1</sup> 1899 and Passed away in Leningrad on August 29, 1959, having lived through six decades that were extremely rich in dramatic events in both capitals<sup>2</sup> and the regions of Russia. I know almost nothing about Bystrow's childhood and youth. It seems to me that he avoided talking about this subject and obviously disliked the countryside and its wildlife. I learned more about this period of Bystrow's life (which I consider the most important in anyone's life) when the 100th anniversary of Bystrow's birth was celebrated at the Department of Paleontology of St. Petersburg State University

<sup>1</sup> A generally accepted format when referring to dates of that period: the dates before and after the slash are according to the Julian and Gregorian calendars, respectively; the latter was accepted in Russia in 1918.

<sup>2</sup> The capital of Russia was transferred from St. Petersburg (then Petrograd) to Moscow in 1918.

and the Paleontological Society on January 28, 1999. Undoubtedly, Bystrow always led a rich personal life, but he was reluctant to let others into it. I do not remember if we ever talked on religious subjects, but I learned for the first time that Bystrow, dedicated atheist as he was, liked religious music and sang very well. Bystrow worked on his speech since his early life; he was always attentive and careful about language; he liked and knew it. However, I do not know if he ever went to the theatre. Probably, Bystrow's inclination towards exact science even very early in his life was a contradiction with his family's spirit of religious traditions.

I first met Bystrow on the verge of 1946, soon after he left his professorship at the Naval Medical Academy and I returned to Leningrad State University after four years of geological expeditions in China, Kazakhstan, and Central Asia (Sokolov, 1991). We met as people from different worlds; looking me in the eye intently and as if with scrutiny, Bystrow almost immediately started telling me about 15000 skulls (certainly human) that he had prepared, while I amazed him with the geography of my travels and affirmative answers to the questions as to the possibility to judge the structure of the bowels of the earth based on a geological map. I knew that Bystrow, a renowned specialist in fossil vertebrates, also regarded himself as a stratigrapher to a certain degree; however, I did not understand right away the reasons why he was so astonished when he realized the possibilities of geology to reconstruct the stratification sequence. Apparently, Bystrow was not involved in field paleontological studies or excavations (as his friend I.A. Efremov was); he obviously received fossils that were already geochronologically dated.

This type of paleontologist has long since formed in the world (there are especially many of them among those who deal with fossil vertebrates, with their rare occurrence); however, at Leningrad State University, Bystrow found himself among paleontologists that came from geology. The latter were undoubtedly fortunate to have him as a colleague, because Bystrow was educated in medicine and biology, and paleontology needed biologization, even though it is so important for theoretical and practical geology. M.E. Yanishevskii, the head of the Department of Paleontology and director of the Institute of the Earth Crust of Leningrad State University, understood this well and certainly made the right choice when he invited Bystrow to head the Laboratory of Paleontology and to read lectures on the paleontology of vertebrates.

Bystrow once called me "bivalent" for my consistent combining of studies in geology and paleontology; however, he was a "bivalent" biologist himself, because his deep scientific interests lay in the fields of general biology and paleontology of vertebrates, to say nothing of military medicine. Only long afterwards did I learn that Bystrow became seriously interested in biology, the origin of mankind, the evolution of life on Earth, and related problems long before he began his higher

education. It was a piece of good luck that, in 1921, a young military officer attracted the attention of the Ryazan Committee for Recruiting Students for Medical Colleges (Iodko, 1996). In this way, Bystrow entered the Military Medical Academy in Leningrad; he did so well at the academy that, immediately upon graduation in 1926, he was offered the position of adjunct there. The St. Petersburg/Leningrad Military Medicine Academy was then remarkable, because it not only gave a wide education but also did not limit the students, as well as the professors, regarding the field of their studies. Bystrow, who was always an unfatigable worker (work addict, as he said) made good use of this freedom. He published several works on general biology and then began successful studies on human comparative anatomy (his lifelong field of interest) and histology. Soon, Bystrow excellently defended his candidate dissertation (Doctor of Philosophy theses). However, Bystrow became a professional researcher in vertebrate paleontology as early as 1933, when the Paleontological Institute of the Academy of Sciences of the Soviet Union was still located in Leningrad. Bystrow soon became interested in studying the skulls of Triassic stegocephalians, which led to his acquaintance and lifelong friendship with Efremov, an equally bright and talented paleontologist and a writer of science fiction (although there was a hard trial in store for their friendship to occur in the late 1940s) (*Ivan Antonovich...*, 1994).

Vertebrate paleontology became Bystrow's true avocation. Meanwhile, the Paleontological Institute was gradually transferred to Moscow. Bystrow had to make a choice, and he made it: in 1937, the Military Medical Academy complied with the request of the Presidium of the Academy of Sciences to transfer Bystrow to the Paleontological Institute and dismiss him from the academy. In Moscow, Bystrow and Efremov wrote an interesting monograph on the Triassic labyrinthodont *Benthosuchus sushkini* Efr., for which they were awarded the Borisyak Prize in 1945. Bystrow often gave excellent public lectures. However, the Moscow period of his work, eventful as it was, proved to be short. In September 1939, Bystrow resumed both his professorial work in Leningrad (at the Department of Normal Anatomy of the Third Leningrad Medical Institute) and his studies on the skulls of stegocephalians, with a special focus on the dental systems of crosspterygians and labyrinthodonts. This was an entirely new histological field of research in paleontology, and it developed based on a large amount of unique material. Bystrow performed outstanding work on this subject and defended it as a doctoral dissertation (Doctor of Sciences theses) at the Zoological Institute of the Academy of Sciences of the Soviet Union in 1940.

Bystrow was not only an excellent morphologist and anatomist. He was also an outstanding drawer and specialist in reconstruction who himself illustrated all of his own works as well as some other works, e.g., three volumes of Prof. V.N. Tonkov's atlas on human

anatomy. It is noteworthy that Bystrow never started writing a paper or monograph until he prepared all the necessary illustrations, which were themselves results of research. Borisyak estimated the illustrations to Bystrow's doctoral dissertation as follows: "These pictures are unrivaled in the literature known to date, and they are themselves a great scientific achievement in regard to the high-quality, detailed, and precise imaging" (Iodko, 1996). Later, I myself appreciated Bystrow's approach to morphological study when I worked on the *Introduction...* to studying the Tabulata: I discovered the solutions of many problems of their physiology, taxonomy, and phylogenetic relationships when I had spent hundreds of hours drawing sections of corals.

Although Surgeon Bystrow received a doctoral degree for a purely paleontological study, he applied as a professor of the Department of Normal Anatomy of the Naval Medical Academy in 1941, because his authority in this field has long since been generally recognized. However, the country was then on the verge of the terrible four-year war against Germany, and the academy was evacuated to Kirov (Vyatka). Studies on paleontology lost most of their importance: human skulls replaced the skulls of fossil vertebrates. It was only possible to resume proper paleontological studies after the return to Leningrad. Bystrow, who was never a military man, finally left the Navy, although he parted with neither his naval tunic nor his romantic dreams about the sea (however, he had never went out to sea, as far as I know).

I should now return to the beginning of my essay and the years of our personal acquaintance. The main reason for Yanishevskii invited Bystrow to work as the head of the Laboratory of Paleontology and a professor at the Department of Paleontology of Leningrad State University was the good reference that Yu.A. Orlov, who was then already the director of the Paleontological Institute of the Academy of Sciences of the Soviet Union in Moscow, gave him. Orlov had known Bystrow for a long time; they had met at the Military Medical Academy (where Orlov used to work as a professor) and at the Paleontological Institute. Thus, in 1946, Bystrow could focus entirely on the paleontology of vertebrates, whereas the Department of Paleontology of Leningrad State University, left by such an outstanding professor as Orlov, received a practically equivalent substitute. Indeed, both Orlov and Bystrow were born professors, both excellently knew current biological problems, and both considered the biologization of the inherently geological university paleontology a priority task.

The Laboratory of Paleontology of the Institute of the Earth Crust of the Leningrad State University, which Bystrow was invited to head, first appeared as an independent research institution back in 1935. It was established at the Pedological and Geographical Faculty of the Moscow State University on the initiative of A.P. Gartman-Veinberg, who was renowned for her

studies on pareiasaurids. Gartman-Veinberg, a very energetic person, at once brought the laboratory to the international level and organized collaboration with a narrow circle of specialists from Moscow; she considered publishing activity to be a priority task in which leading paleontologists from different countries were to participate. By 1939, Gartman-Veinberg published five volumes of *Problemy peletonologii* (Problems of Paleontology) and three issues of *Etyudy po mikropaleontologii* (Essays on Micropaleontology), which were excellently formatted in the best Western style. However, the laboratory was unexpectedly closed in 1940, for reasons that are anyone's guess, and all the materials were passed over to Leningrad State University, where Yanishevskii planned to resume the studies after a considerable revision of the area of research (Bystrow, 1949). However, the war soon began, and then Gartman-Veinberg died in Leningrad during the blockade of the city by German troops. Therefore, the plans could not be implemented until 1946, when Prof. Bystrow became the head of the laboratory. Bystrow decided that a permanent research staff was necessary. Later (in 1950), the periodical was renamed *Voprosy paleontologii* (Issues of Paleontology). About this time, the Faculty of Geology of Leningrad State University gave Bystrow the position of a professor at the Department of Paleontology.

The situation with the Laboratory of Paleontology was considerably different in Leningrad: it was restored at the university, where a separate Department of Paleontology had existed since 1919, whereas there was no Department of Paleontology at Moscow State University when the Laboratory of Paleontology was located there. The laboratory had existed for 10 years, until 1930, when it, together with the entire Faculty of Geology, was included into the newly founded Moscow Geological Prospecting Institute. Only in 1939 did the revival of the entirely new Department of Paleontology begin at the Moscow State University, irrespective of the fate of the Laboratory of Paleontology. This revival was entirely due to the initiative of the heads of the Paleontological Institute Borisyak and, especially, Orlov. Thus, Bystrow was to take on a new laboratory staff, taking into account further research activity, the type of publications, and functional relationships with the Department of Paleontology, the more so as the laboratory was located in the same building as the department was, on the 16th line, Vasil'evskii Island, Leningrad.

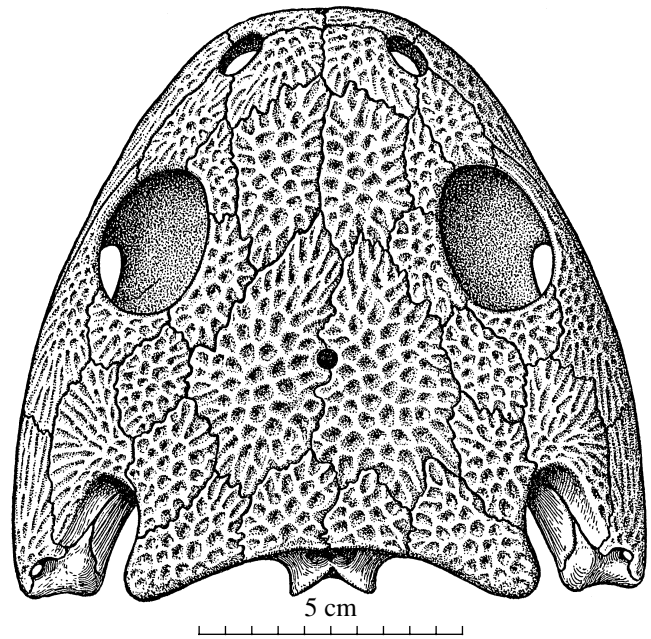
Benevolence, creativity, and intellectual freedom was always cultivated at the department headed by Yanishevskii, where several generations of paleontologists and geologists were trained. This was in accord with the democratic views and spirit of Bystrow. Therefore, any rivalry between the existing staff of the Department of Paleontology and the newly formed staff of the Laboratory of Paleontology was out of question. Moreover, it was the first time when close connections between research and training in paleontology became possible. This possibility was realized; the professors and other

personnel of the department and researchers at the laboratory have actually been working as a joined team with various research specializations until today. This is very important for students who are choosing their future specialization in paleontology.

However, all this was merely a vague idea in 1946, when Bystrow, assisted by Yanishevskii, was to employ the new staff. Initially, the staff consisted of Bystrow himself (specializing in agnathans and other groups of Paleozoic vertebrates), B.S. Sokolov (Paleozoic corals from the group *Tabulata*), A.M. Obut (Ordovician and Silurian graptolites), R.S. Eltysheva (echinoderms, especially the stems of the Ordovician Crinoidea), and V.A. Vostokova (Early Paleozoic mollusks). All of them were more or less involved in training (special courses, seminars, or supervision over students' graduation theses). At the Department of Paleontology, research was carried out by Yanishevskii (Cambrian fauna of the Baltic region, Carboniferous brachiopods, and other groups), D.L. Stepanov (Upper Paleozoic brachiopods of the Ural Mountains), E.A. Balashova (Ordovician trilobites), Z.G. Balashov (Ordovician and Silurian Nautiloidea), E.A. Modzalevskaya (Ordovician Bryozoa), A.N. Krishtofovich (Late Cretaceous flora of Siberia etc.), A.I. Turutanova-Ketova (Mesozoic flora of Central Asia and Kazakhstan), and N.D. Vasilevskaya (Tertiary flora of Badkhyz). Naturally, the staffs of both the department and laboratory gradually changed.

Another hallmark of the unity of this team was the fact that scientific sessions of the department and laboratory were always joint, even if the agenda mainly concerned students' training. This was only natural, because Bystrow was also a professor at the Department of Paleontology. His course in vertebrate paleontology was exceptionally absorbing, because Bystrow, instead of focusing on a rather dull comparative osteology, actually lectured on the evolution of vertebrates, filling it with landscape-ecological data (the influence of the Geological Faculty soon manifested itself) and illustrating the material with color slides and reconstructions that he made himself.

Earlier (before the war), I was fortunate to attend a complete course of lectures on vertebrate paleontology held by Orlov. He was a born university professor who was popular among students and always brightened up his lectures with humor, yet not at the expense of the strict texture of precise knowledge. Even if Bystrow lacked Orlov's humor and charm, his lectures and presentations were still equally attractive due to their artistry, strict and clear composition, and Bystrow's skill of emphasizing fascinating topics in the field of research. These features were especially pronounced in Bystrow's reports based on his own studies and critique of scientific fallacies. For many years, Bystrow was almost a cult figure at the sessions of the Paleontological Section of the Students' Scientific Society, which became crowded at once due to the amazing attractiveness of Bystrow's well-prepared reports. However,



Skull *Kotlassia prima* (by A.P. Bystrow).

Bystrow seldom spoke at the sessions of the Paleontological Society, distinctly preferring a young audience. Nevertheless, Bystrow was associated with the Board of the Paleontological Society and became a coeditor of its annual from the very beginning (in 1946).

In the paleontological oasis on the 16th line of Vasil'evskii Island (the Department of Paleontology and the laboratory headed by Bystrow were located in a building well away from the main building of Leningrad State University), Bystrow found himself amidst specialists in the paleontology of vertebrates and paleoflora, all of whom were geologists by education. The only exception was V.E. Garutt, a postgraduate student and an outstanding specialist in the study of elephants. Bystrow conscientiously inquired into the study of various fossil groups on which he knew little before, rapidly acquired knowledge on paleobiological problems, and often gave useful advice. However, he was careful and even suspicious about some geological problems, especially those concerning the reconstruction of the dynamics of the geological past. Our incessant discussions on stratigraphic borders amazed Bystrow; he jokingly called these searching for the border between Friday and Saturday. This, however, was rooted in Bystrow's not perceiving the geological time concept, the empirical basis of which is the sequence of paleontological records and isotope geochemistry. Similarly, Bystrow regarded the physical picture of the geological past as a mere background for biological evolution. At the same time, he undoubtedly remained a steadfast Darwinist, Mendelist, and Weismannist, believing the year 1859 to be the magic origin of evolutionary theory and was not tortured by the nightmare of Precambrian



Reconstructed appearance of *Inostrancevia*.

paleontology. I recall him saying to me the next morning after one of our discussions, "I haven't slept all night long, and I've understood that I can only yield a point of global catastrophes as a factor of evolution." The powerful intellect of Bystrow, a "pure" biologist, gradually absorbed V.I. Vernadsky's geological outlook. It was very important for me: although Bystrow appreciated my achievements in studying Paleozoic corals, he did not approve of extending my scientific interest onto the Precambrian period in the 1950s.

However, the important thing was that we had in our laboratory and department an outstanding paleozoologist, morphologist, evolutionist, and a widely educated biologist who could actively influence the biological training of geological paleontologists and the biologization of paleontological studies in general. The staff of the Department of Paleontology always realized that biologization was necessary; however, Bystrow was the first professional biologist to join this paleontological team, and as one of the permanent leaders at that. We all remember that the postwar 1940s and 1950s were terrible years for Russian biology, and not only biology: aggressive Lysenkoism corroding the entire stem of life sciences began penetrating many branches of science. This innovation affected paleontology as well: incited brains produced wild ideas of "Michurin's paleontology" and "creative Darwinism," as if Darwin himself lacked creative abilities; only the dramatic results

of the notorious session of the Lenin All-Union Academy of Agricultural Sciences (1948) was said to open limitless prospects before biostratigraphy. At that time, well-educated and courageous scientists and persons of principle who would have been able to give young researchers true scientific knowledge on genetics, evolution, ecology, etc. and criticize Lysenko's pseudoscientific views were needed. Bystrow was undoubtedly one of these scientists. He freely spoke his views protecting the listeners from uncritically perceiving the importunate propaganda led by the "People's Academician" (commonly used title of T.D. Lysenko) in his reports; speeches; and, especially, unconstrained conversations. This freedom was favored by the fact that the Department of Paleontology and Laboratory of Paleontology were located separately and were not related to the Faculty of Biology of Leningrad State University, which was the primary target of the pressure of so-called "progressive biological ideas."

Bystrow punctually attended department, laboratory, and scientific meetings; obligingly complied with the others' requests; and would meet anyone who needed his advice or consultation. However, he was seldom to be seen at a working desk in his office, and even then, he was most often reading or looking through literature. Creative research work; preparing illustrations for publications; and especially writing poetry, which also took much of Bystrow's time (certainly at nights), required a different world and quiet solitude. His home and Gil'da Yur'evna gave him this. Only there could Bystrow polish his works, find irreplaceable words, and create images of the past in Bystrow's unique graphic reconstructions. Bystrow was a rare connoisseur and master of language. All of his publications are excellent. Bystrow once made a set of all his works published in English in *Acta Zoologica*, binding several copies under the same cover. He gave me one of them with a friendly autograph, and I value this unique volume not only as a monographic collection of remarkable works of an outstanding paleontologist but also as an artistic work of a wonderful graphic artist.

About the mid-1950s, Bystrow accomplished a work that he considered to be of special importance. It was actually a summary of Bystrow's entire experience in human anatomy and vertebrate paleontology full of deep thoughts about evolution. This monograph, entitled *Proshloe, nastoyashchee i budushchee cheloveka* (The Past, Present, and Future of the Human), was actually Bystrow's "book of life," and he was eager to see it published as soon as possible. However, it took a long time to find, in that period, publishers who would accept the book with the title frightening for censors. Nevertheless, the monograph was finally published (Bystrow, 1957) and immediately aroused criticism of the orthodox Michurinian biologists, which, however, did not prevent Leningrad State University from awarding Professor Bystrow with a prize for his outstanding work in 1958. The fundamental postulate that human

evolution has long since stopped was not an obstacle for this. We, Bystrow's colleagues, have long since used to his words, "we ourselves are humans of the future" (which certainly applied to the human biological organization).

Bystrow was gifted by nature with intellect and scientific, artistic, and poetic talents. Bystrow's fine, sensitive, and vulnerable soul immediately responded to all that concerned the estimation of his work, and he never overstepped the threshold of the ethical canon in himself. Bystrow remained himself even when a bitter controversy by correspondence with his close friend Efremov suddenly broke up (*Ivan Antonovich...*, 1994) as well as during the polemics about *PNBCh* (as we abbreviated the title of Bystrow's last book, i.e., the Past, Present, and Future of the Human). Nobody can tell now how much unsaid pain accumulated in his bosom because of the obstacles on Bystrow's way to higher education, the suspicion aroused by his strive to remain away from politics (whose cruelty he could never accept), and the profanation of science by Lysenkoism. In addition, his body was never too strong, and his health was undermined by diseases; sleeplessness; and thoughts about death; which would come earlier than the creative thought would stop. Death came to Bystrow untimely; he deceased in a hospital on August 29, 1959. Bystrow was buried in the Serafimovskoe Cemetery in Leningrad.

The so-called "Professor Bystrow's Fund" is left in the St. Petersburg Branch of the Archives of the Russian Academy of Sciences, and it deserves comprehensive study. Among the numerous documents, there is a manuscript of the book *Homo sum* (I Am Human), an autobiography covering the period before 1941, including the academic period (*Ivan Antonovich...*, 1994). This book must be published.

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