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In memoriam

In memory of Russian paleontologist Nikolai Kuzmich Vereschagin (1908–2008)

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Professor Dr. Nikolai Kuzmich Vereschagin, a prominent Russian paleontologist, nationally and internationally known as "The Mammoth Expert" tragically died on October 27, 2008 in St. Petersburg, Russia, where he lived and worked since 1949. Dr. Vereschagin was 99 years old, three weeks short of his 100th birthday.

Nikolai K. Vereschagin, the grandchild of Nikolai Vasilievich Vereschagin, the most influential dairy expert and businessman in Russia in the 19th century, and the third cousin of the prominent Russian battle artist Vasilii V. Vereschagin, was born on November 21, 1908 in the small village Pertovka of the Vologda District. Interestingly, this area in the Cherepovets vicinity became very well known due to discovery of the "Zhidikovo Peat bog", "Sheksna River Mouth", and the "Yagorba River Mouth" sites that yielded the geologically late (and latest) mammoth remains in European Russia; the mammoth remains studies from the latter involved Dr. Vereschagin's consultation.

Animals and their biology fascinated young Nikolai. Soon after graduation from the Moscow Zootechnical Institute in 1929, Nikolai was employed by the Zhitkov Research Institute for Game and Furbearer Propagation in 1930–1934. Under its roof, he directed introductions of muskrat in the Irtysh River basin, one of the first introductions of the species in the USSR. In 1935–1940, Nikolai Vereschagin worked for the Zoological Institute, Azerbaijan SSR Academy of Sciences in Baku, Azerbaijan Republic, where in 1939 he defended his PhD dissertation devoted to nutria biology and acclimatization. Employment in the Baku Zoological Institute allowed Dr. Vereschagin to start collecting material on modern and fossil mammals of the Apsheron Peninsula and game mammals of the Caucasus Mountains. This material became the theme of his Doctor of Science dissertation that he defended in 1954 in the Zoological Institute, USSR Academy of Sciences, St. Petersburg, where he worked from 1949 until his retirement in 1995. The dissertation material eventually became a foundation of "The Mammals of the Caucasus: A History of the Evolution of the Fauna" book that was published in 1959. The richly illustrated book comprised the profound analyses of personally collected data and the material on the region's geology and paleontology accumulated during several hundreds of years, and outlined the origin, diversification, and evolution of mammals inhabiting the Caucasus Mountains and adjacent areas. The book was translated to English in 1967 and due to its encyclopedic and analytic character instantly became an international scientific bestseller and the "must have" monograph for paleontologists from all over the world. Dr. Nikolai Vereschagin successfully directed the Laboratory of Mammals from 1968 through 1974, and was the head of the Fauna's History Department from 1974 to 1995.

Dr. Vereschagin's late 1940s and 1950s were filled by numerous field seasons and trips to different part of the USSR, followed by lab work, material analyses and publication of variety of papers devoted to the Pleistocene fauna and mammals of southern Russian Plain, Crimea, Caucasus, the lower Ural River region, Siberia, Kazakhstan and Transbailkalia. His papers covered a wide range of paleontological topics, from extensive overviews and analyses of the faunistic complexes to single faunal elements important for local faunas in the former USSR.

During the 1960s, Dr. Vereschagin studied systematic and taxonomic positions of modern and extinct cats and bears. At the same time he was involved in extensive paleontological work and expeditions to archeological sites being excavated in the Ural Mountains, Western Siberia and Far East (Russian Primorie). Later, this enriched field experience and his hunting experience along with his personal observations of animal behavior allowed Dr. Vereschagin to suggest methods practiced for big game procurement by the Paleolithic hunters.

Hunting was one of the main passions of Dr. Vereschagin through all his life. His curiosity and interest in archeology and particularly to remains of animal hunted by man from Paleolithic sites, and history of human hunting was always in scope of his paleontological and archeozoological research. His enthusiasm in this area didn't have boundaries. Once, according to recollections of the senior author, Dr. Vereschagin demonstrated the "Paleolithic spear" at a professional archeological meeting in the Archeological Institute, St. Petersburg. This broke order making the unprepared audience overly excited. He had manufactured the shaft himself, but the Paleolithic spear point attached to it was original, and the tool was very functional and impressive.

Dr. Vereschagin was also very interested in biology of game birds, and particularly, grouse. Dr. Verescha-

Figure 1. Nikolai Vereschagin is identifying fossils found by the Third International Mammoth Conference participants during field trip near Dawson, Yukon, Canada. May 2003. Photo by O. Potapova.

gin often liked to talk about peculiarities of behavior and biology of the large grouse species, both in his office and during team hunting big game. When he killed hybrid of capercaillie and black grouse, which was thoroughly prepared for collection storage, it became a subject of joint study, specimen description, and resulted in a co-authored publication.

In the 1970s, Dr. Vereschagin headed paleontological expeditions to the (later) well-known "Berelekh Mammoth Boneyard" site on the Berelekh River in Yakutia Republic. There, he and his colleagues collected more than 8,000 bones, belonging to at least 140 woolly mammoths, from sand lenses formed by the River. Most of the collection was brought to the Zoological Institute in St. Petersburg, and became the basis of numerous publications and the Siberian "mammoth site" reference. This rescue expedition was performed just in time; within a few seasons the site was completely washed out by the river. Even now, this rich mammoth collection from the Berelekh attracts the scientists from all over the world.

Figure 2. Dr. Roald Potapov and Dr. Nikolai Vereschagin in the Zoological Institute, St. Petersburg. April 1982. From archive of R. Potapov.

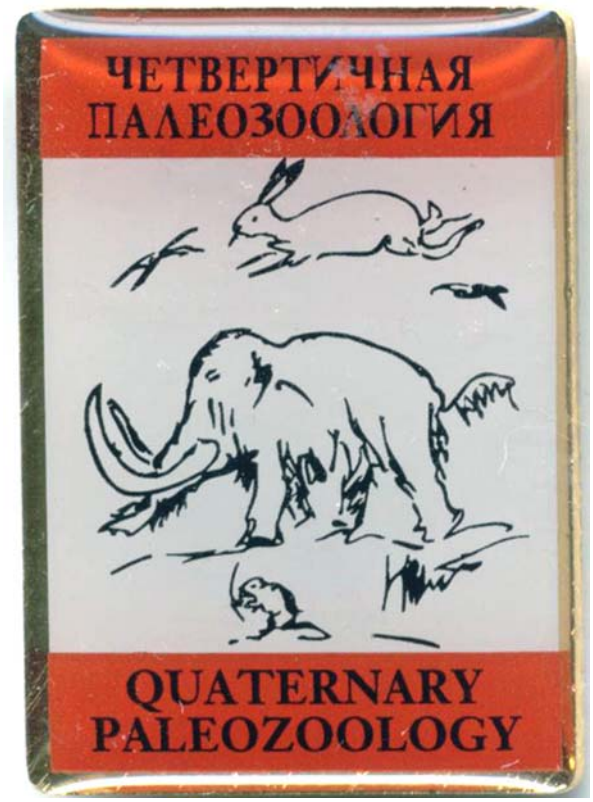

Figure 3. The pin fabricated for the Russian-Ukrainian-American Conference on study of the Quaternary Fauna (Springfield, IL). On the sketch: *Lagopus lagopus*, *Lepus tanaiticus*, *Mammuthus primigenius*, and *Ochotona* sp. Sketch drawn by Dr. N. Vereschagin. October 1992. Photo by O. Potapova.

Figure 4. From the left: Dr. Bruce McMillan (Director, Illinois State Museum, Springfiels, IL), Dr. Nikolai Vereschagin, and Virginia McMillan. Springfield, Illinois, October 1992. Photo by M. Roos.

In early 1970s Dr. Vereschagin's vision of future paleontological studies on vast territories of the USSR (especially in the north), excellent organization skills and scientific determination led him to revitalize the Scientific Mammoth Committee of the USSR (originally formed in 1948), which he headed from 1972 to 1995. After seven workshops on studies of mammoth and mammoth fauna, organized by the Committee under his strong leadership and charisma, the Committee's activity went on to the international level in 1995 organizing the 1st International Mammoth Conference (IMC). It took place in St. Petersburg attracting scientists from America, Europe and Asia. Since 1995 there have been three following International Mammoth Conferences hosted by the Natural History Museum in Rotterdam (the Netherlands) in 1999, Department of Tourism and Culture in Dawson (Yukon, Canada) in 2003, and Government of the Republic of Sakha, Institute of the Applied Ecology of the North Academy of Sciences of the Republic of Sakha (Yakutia), and Mammoth Museum in Yakutsk (Yakutia, Russia) in 2007, bringing together over 100 mammoth scientists from all over the world. Dr. Vereschagin attended all but the 4th IMC in 2007, having been the Honorary Chair at all of them, and consistently drawing special attention to his presentations. Now, the 5th International Mammoth Conference, renamed in 2007 as the "The World of Mammoths: 5th International Conference on Mammoths and Their Relatives from the Pliocene to Present-Day: Biotopes, Evolution, and Human Impact", after being combined with the International Congress "World of Elephants", will be hosted by the Department de Haute-Loireand the city of Le Puy-en-Velay, France, in August - September 2010. Dr. Vereschagin will be missed there, and his absence will be noticeable.

From the 1970 to 1990 Dr. Vereschagin consulted preparing and assembling the traveling exhibitions of mammoth and mammoth fauna abroad, organized by the Zoological Institute and the Zoological Museum. He didn't have a chance attending the exhibit opening ceremonies, or supervising any of those hosted in Japan, USA, Italy, and other countries.

In the 1970s through the 1980s Dr. Vereschagin concentrated on research focused on evolution of the Pleistocene fauna in the Palearctic. He analyzed the extensive collections of mammoth bones and tusks,

Figure 5. From the left: Eddy Clay, Dr. N. Vereschagin, Dr. Larry Agenbroad (The Mammoth Site of Hot Springs, SD), and Clara Clay. 3rd International mammoth Conference field trip, Yukon, Canada, May 2003. Photo by O. Potapova.

studied the morphology and ecology of the extinct Pleistocene horse (*Equus*), steppe bison (*Bison priscus*), and cave lion (*Pantera spelaea*), and published several papers on Pleistocene megafauna extinctions. As he explained, these resulted from the combined effects of global climate change, local biological/ecological factors affecting species, and hunting pressure of the Paleolithic man.

Dr. Vereschagin made substantial contributions to science studying skeletons and carcasses of adult and baby mammoths found in Russia. After the sensational discovery of baby mammoth Dima in Eastern Siberia by a local gold-mine worker in 1977, Dr. Vereschagin organized and led a team of international researchers studying the unique specimen, publishing a series of papers followed by the book "The Magadan Mammoth Calf" (in Russian). He also participated in excavations and studies of the Siberian Khatanga (1977) and Yuribei (1979) mammoths, and consulted other researchers on the frozen carcasses of the Jarkov (1997) and Yukagir (2002) mammoths found on Taimyr Peninsula and in Yakutia. Dr. Vereschagin was involved in studying the mummified body of the baby mammoth Masha (1999) and was consulting the international team of researchers formed for systematic studies of the most complete baby mammoth ever found, Lyuba (2007); both females from the northern Western Siberia. Dr. Nikolai Vereschagin traveled, lectured and participated in many scientific conferences in the former USSR and Russia, and only few scientific conferences abroad, including France, Yugoslavia, Japan, and USA. Being a USSR citizen with uncompromising character and apolitical

Figure 6. From the left: Dr. Valentina Ukraintseva, Bob Hodorff (Hot Springs, SD), Dr. Nikolai Vereschagin shooting target with a compound bow, Dr. Tatyana Vereschagina, and Malon Anderson (Hot Springs, SD). Hot Springs, South Dakota, September 1998. Archives of the Mammoth Site of Hot Springs, SD.

views, it was extremely hard for Dr. Vereschagin to get permission from government run agencies to travel abroad, especially overseas. His few trips abroad are worth mentioning. In September 1989 Dr. Vereschagin was invited as honorable guest to participate in the "Megafauna and Man" Symposium hosted by the Mammoth Site in Hot Springs, South Dakota, USA, a unique mammoth bonebed in North America. It was the first opportunity for Dr. Vereschagin, the seasoned Siberian mammoth boneyard researcher, and the Ukrainian mammoth bone huts consultant, to have a look at the famous Mammoth Site sinkhole trap preserving the "in-situ" remains of 44 (now, in April 2010 the count is 58) mammoths.

In 1992 Dr. Vereschagin was invited to be a symposium chair and present a paper at the Russian-Ukrainian-American Conference on the study of Quaternary Fauna hosted by the Illinois State Museum, Springfield, Illinois, USA. It was a personal triumph of Dr. Nikolai Vereschagin traveling to the USA a second time.

Dr. Vereschagin dreamed of visiting Africa, and finally, in 2007, with the help of his hunter friends he traveled to the lake Nauru National Park, and Misaim Mara National Reserve in Kenai. The purpose of this trip wasn't to hunt, which he considered not worthy if it wasn't survival necessity or needed for scientific work. Dr. Vereschagin was delighted having had a chance to see the African grasslands and savanna with his own eyes, the modern African ecosystem that so much resembled the Pleistocene ecosystems of Eurasia, described by him and his co-author in one of his papers.

Dr. Vereschagin was a member of the International Council for Archaeology and other scientific societies including honorary memberships in the All-Russian Hierological Society and the Czechoslovakia Zoological Society. Among the highest awards earned by Dr. Vereschagin were the "Honorary Scientist of Russia" and the "Honorary Member of the Peter the Great Academy of Science" (1998).

From 1970 to 1982 Dr. Vereschagin was the editor of the special paleontological series of the «Proceedings of the Zoological Institute,» a yearly volume of papers devoted to Pleistocene paleontology within the Soviet Union. He was the author of more than 280

scientific papers, popular publications and eight monographs. His publications ranged from in depth analyses of faunas, to taxonomical and taphonomical research, and to popular books, such as the "Why did Mammoths Become Extinct?" (1979), "The Memoirs of a Paleontologist" (1981), "Zoological Journeys" (1986), "Exterior of the Mammoth" (1999; English version), and "From Muskrat to Mammoth: the Life of a Zoologist" (2002). Just few months before his death, Dr. Vereschagin finished his last book "My Century; Memoirs and Science Work" (in Russian). It is sad that the author will never see the publication.

Having had a deep interest in Pleistocene Megafauna and being an experienced field collector through his science career, Dr. Vereschagin had a comprehensive approach in studying paleontological sites he was involved in. When searching for and collecting megafauna remains, he collected insects, plants, birds, and fish to build up collections for future generations of scientists. His research, papers and books were powerful, riveting and thought provoking, attracting to him many students from different parts of the USSR. Students learned much from him and his publications. Dr. Vereschagin's scientific advisor capacity and supervision of 14 PhD and three Doctors of Sciences students was tough and challenging. He significantly contributed to the success of their dissertations and future growth in their science careers.

From his full retirement at the Zoological Institute in 1995 until the very end, Dr. Vereschagin continued a very active life working in his "reserved" office at the Institute, and at home; publishing papers, attending scientific conferences, consulting the public and scientists, and sometimes, hunting big game. He also continued working for the Taimyr National Reserve, Siberia, and made his last trip there in 2002. Despite his old age, Dr. Vereschagin was always interested and eager to go to conferences related to his studies, in Russia and abroad. Due to his age permissions from officials for travel abroad were rarely granted, but he holds on fighting for every scientific trip and often won.

Being a very well-known person, even a celebrity in the paleontological world, Dr. Vereschagin was devoid of arrogance. When he had conversations with somebody, it didn't matter to Dr. Vereschagin if the person was a student or very high official. What mattered most was person's intelligence and interest in science. In Russia and abroad, Dr. Vereschagin made a long-lasting impression on many scientists and the public, who met him personally or heard his presentations. In 1997, after a presentation at the Journey Museum (Rapid City, SD, USA) the senior author was approached by several senior citizens, who wanted to know, if he indeed was working with Dr. Vereschagin. Obviously, the visit of Dr. Vereschagin to Hot Springs, SD in 1990 was a very memorable event in their lives.

Through all his life Dr. Vereschagin has been a maverick and brave fighter for his opinions and independent thoughts, and has never hesitated to tell "inconvenient truth" to administrators and officials. He made his life-long career honestly, without compromising with political authorities. The bright scientist, original thinker, teacher, talented writer, self-taught artist, and passionate game hunter will be sorely missed by all his family, friends and colleagues.

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