



## Bridges and bottlenecks: Andrei Sher's role in the development of international collaboration in Beringian science

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### ABSTRACT

Andrei Sher played a leading role in the development of international cooperation and exchange of ideas in Beringian science. The Cold War created great tensions between the USSR and the NATO countries, as the Bering Strait region became one of the front lines of potential military conflict. However, through the persistent efforts of such people as Andrei Sher in Russia and David Hopkins in the USA, scientists were able to overcome political obstacles to attend international Beringian conferences, visit each other's militarized zones to do fieldwork, and collaborate on joint projects.

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### 1. Introduction

There are many ways of acknowledging the lasting achievements of the late Russian scientist Andrei Sher, ranging from personal memoirs to more scholarly assessments. A website created after his death in 2008 has done just that, attracting a welter of comments and anecdotal reflections from friends and colleagues in English and Russian (<http://av-sher.narod.ru/>). This is an entirely appropriate state of affairs for a man who did much to advance research into Beringia, the ancient un-glaciated region of northeastern Siberia and North-Western North America periodically connected via the Bering Land Bridge during the Pleistocene. It is widely acknowledged that this land bridge provided a pathway for the first human crossings to the American continent. Sher always emphasized that the exposed continental shelf regions that connected the two continents were part and parcel of Beringia, together forming a great land which he termed 'Beringida'.

In this paper, we show how Andrei Sher played an essential role in the post-1945 academic development of the study of Beringia. His career highlights two fundamental qualities: a willingness to build bridges with North American colleagues and a capacity to circumvent bottlenecks implicit within the political system of the Cold War era Soviet Union (see the reflections of Kneen, 1984; Fortescue, 1987). In so doing, we reflect on how Beringian Science was fundamentally shaped by political barriers, such as the

restrictions posed by Cold War antagonisms, but also enabled by personal and group networking across the Bering Strait. As scientists on both sides of the divide recognised, developing a better understanding of the ancient history of Beringia necessitated some form of exchange, whether it be trading ideas and/or fossil specimens. As Sher readily recognised, scientific meetings and international networking were critical for the advancement of this intellectual field (specifically with regard to scholarly exchanges between US and Soviet scientists, see Lubrano, 1981; Richmond, 1987).

Before exploring Sher's career trajectory further, it is also worth recording that the Soviet era was highly significant in terms of the development of field sciences including Geography and Geology (Armstrong, 1958). Some of the earliest senior administrators of the Soviet Academy of Sciences were geologists (e.g. Karpinski and Fersman) and some were even considered to be popular heroes, such as V. I. Vernadskii (Bailes, 1989). By the 1950s, the Soviet Union was producing more geologists than any other country. This discipline, and the field sciences more generally, were widely perceived by the Russian people and government to be the embodiment of the pioneering, adventurous and selfless spirit that was later attributed to cosmonauts. The Arctic and the Soviet Far East were considered to be exactly the type of remote and challenging environments in which these kinds of qualities could be enacted (McCannon, 1998). The heroic nature of field science was part of Soviet popular culture, including film. Geologists and field scientists feature in popular films such as *Unsent Letter* (1959) and *The House in Which We Live* (1957) (Baron, 2009). While there is

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plenty of evidence to suggest that field sciences were lionised during the Soviet era, there were also drawbacks, such as a reluctance of the scientific hierarchy to accept the theory of plate tectonics (Wood, 1980).

## 2. Beginnings of Arctic fieldwork: 1960s and 1970s

After finishing his studies at Moscow State University, Sher graduated in geography with a particular specialism in geomorphology (see Kuzmina et al., in this issue). He was a committed field scientist even though he had problems throughout his adult life with poor vision. As one of the best students in his cohort, Sher was selected for doctoral work attached to the Academy of Science and initially worked with the Chukotka Hydrogeology Expedition where he combined laboratory work in Moscow with extensive periods of field activity. Between 1962 and 1965, he helped to map and investigate the Chukchi Peninsula and collected fossil bones found in abundance on flood plains. All geological fieldwork in this far-eastern region of the USSR came under the auspices of the Russian military, and when Andrei Sher was 21 years old, one of his first tasks in the early 1960s was to do geomorphic mapping on the Chukchi Peninsula, with the aim of determining whether the ground was sufficiently firm to support the weight of American tanks, should a military invasion ever come across the Bering Strait from Alaska. Such a scenario may seem implausible today, but the Cold War might have turned 'hot' during such tense times as the 1961 Berlin Crisis and the 1962 Cuban Missile Crisis.

Sher's first trip to the Soviet Far East was an extremely important time in his career, as it sparked his life-long passion for Arctic palaeontology. In the aftermath of his doctoral research, Sher worked with the Geological Institute of the Academy of Sciences. His first article was published in Russian in 1967 and entitled 'Early Quaternary mammals of the extreme North East of the USSR and the problem of the continental connections of Asia and America and fossil saiga in northeastern Siberia and Alaska'. What is noteworthy is the reference to 'Alaska' and Sher's understanding of the linkage between this US state and the ancient history of north-eastern Siberia. His appreciation of Alaskan science was made possible by his ability to read English-language books and papers. This was facilitated in the Soviet Union through a system called VINITI (The All-Union Institute of Scientific and Technical Information) that provided Soviet scientists limited access to 'approved' Western scientific literature (Parrott, 1981).

By 1969, working under the direction of Vladimir Menner, Sher finished his doctoral research in the fields of palaeontology and stratigraphy and his dissertation was published in Russian in 1971 under the title, 'Fossil Mammal Remains and their Importance for Stratigraphy and Correlation of the Pleistocene Deposits of the Far North Eastern USSR and North America'. His work was recognized in 1972 with the award of Moscow Society of Naturalists Prize. The dissertation work was later translated into English and published as 'Pleistocene Mammals and Stratigraphy of the Far North East USSR and the North America Interior'. By the early 1970s, therefore, Sher was reading and writing in English and this was to be catalytic in terms of future contact with North American scientific colleagues. He was always a highly energetic scientist, with a talent for cultivating students. Soon he had created a group of young Soviet scientists called the 'Confederation of Young Officers,' determined to advance the field of Beringian palaeontology, and to promote public understanding of Beringian science through museum displays and exhibitions. With regard to the latter, Sher visited museums in East Germany and Poland to exchange ideas with other curators and scientists. Field-led science has always been sponsored by museums in Russia. Russian universities have taken a much smaller role in this kind of science than universities in some other parts of the world.

## 3. Start of international cooperation

From the 1970s onwards, evolving personal and intellectual networks profoundly shaped the production and sharing of knowledge concerning Beringia (for another comparison in the field of lunar science, see Doel, 1992). The exchange of ideas was absolutely essential to the development of the discipline. This process began in 1969, when David Hopkins was allowed to make an extended visit to Moscow to confer with Russian colleagues. In retrospect it seems remarkable that an employee of the U. S. government (the U. S. Geological Survey) who had done extensive fieldwork in the militarily-sensitive Alaskan side of the Cold War should have been granted permission by his own government, or by the Soviet authorities, to visit Russian scientists. However, once the exchange of ideas began, it led to great things.

Sher's emergence as a researcher and his position at the Palaeontological Institute of the Academy of Sciences was integral to this internationalization. North American-based scholars such as David Hopkins, Charles Schweger and John Matthews, and on the Soviet side, Oleg Petrov, Boris Yurtsev and Alexey Vas'kovskiy were instrumental alongside Sher. These men also helped to create the impetus for landmark international meetings in Khabarovsk (1973, 1979), and the Burg Wartenstein Conference in Austria (1979). These conferences offered opportunities for North American and Russian scientists to freely discuss Beringian paleoenvironments. Sher also facilitated Russian participation in many other meetings, such as a Beringian workshop held in Colorado, USA in 1997.

## 4. Major Beringian meetings and publications

The 1973 All-Union symposium was entitled, 'The Beringia Land Bridge and its role for the History of Holarctic Floras and Faunas in the late Cenozoic'. Following from the earlier INQUA Congress Beringian symposium in Boulder, Colorado, it witnessed the participation of North American scientists including David Hopkins, and Sher was responsible for providing simultaneous translation. He also helped edit the symposium's final volume. Russian language scientific papers were brought into the volume alongside English-language abstracts of the North American presentations. Six years later, some of the same Soviet and North American scientists gathered again under the auspices of the XIV Pacific Science Congress. Once more, Sher was at the heart of the organization and led some Soviet and foreign colleagues to the Kolyma Lowland, a so-called 'closed zone' due to its perceived strategic sensitivity. Indeed, this field visit was something of a coup given that much of the Soviet Far East was considered to be highly politically sensitive, given its relative proximity to Alaska and the Bering Strait. The entire far-eastern region was inaccessible to everyday Soviet citizens, much less to foreigners.

Visits by westerners to Russia always faced the roadblock of visas. The Soviet government was generally reluctant to grant visas to Western scientists. Foreigners from Western countries always had to have an official letter of invitation from a Russian institution. Russian scientists also had to obtain visas to visit Western countries, through much the same procedure, but with the added barrier that the Soviet government would not grant passports to most of its citizens. When travelling abroad, Soviet scientists were pushed by their government to talk about the advantages of Soviet life. When Western scientists visited the Soviet Union, they were not allowed to spend much time alone with their Russian colleagues. The government always arranged for 'minders' to be present. These people were purportedly also scientists, but in reality were government informants, there to make sure no secrets were betrayed, and that the Russian scientists were maintaining the 'party line' in their conversations with foreigners. But the greater

the amount of international cooperation, the more difficult it became to maintain this 'us vs them' mentality of scientists from across the Iron Curtain. Most Russian scientists were not particularly concerned with whether a person was a member of the Communist Party, and Andrei Sher chose not to join it. Russia proudly declared itself a communist state, but party membership was a means to an end for many people (most scientists are not political zealots). However, membership in the Communist Party was grounds for dismissal from many American institutions. Although Sher did not participate in Communist Party politics, he was always keenly interested in the political situation.

Andrei Sher did his best to get scientists from East and West together. The trip he organized to the Kolyma lowland in 1979 was a real breakthrough for East–West cooperation. Some Russian scientists brought their families along on this trip, so that they could meet some real Americans. This was a rare opportunity, and the beginning of a series of scientific visits across the Bering Strait. While the political and military tension between the superpowers continued unabated until the end of the Cold War, Beringian scientists easily came to the realization that their counterparts on the other side of the Iron Curtain were much the same kind of people as they themselves were.

It is clear that Andrei Sher played a pivotal role in establishing and maintaining these cross-national connections, both organizationally and personally. One example of a more personal interaction is his contact in the 1970s with the Canadian scientist, John Matthews (Geological Survey of Canada). Sher's overture to

Matthews was stimulated by his ongoing interest in the Kolyma region and the Chukochya River basin. While investigating Pleistocene small mammal remains, Sher also found fossil insects. No one in Russia was working on Pleistocene insect fossils at that time, but since Sher was aware of Matthews' research, he sent fossil remains to Canada for Matthews to investigate. In so doing Sher helped to build a long-term relationship between Russian and Canadian Quaternary entomologists. This was supplemented by the emergence of new Russian insect researchers including Sergei Kiselyov and later Svetlana Kuzmina, both trained by Sher.

By the 1980s, Sher was based at the A N Severtsov Institute of Ecology and Evolution and had amassed a substantial fossil collection. His fieldwork continued in northeastern Russia, in the Kolyma Lowland and Yana-Indigirka Lowland. Other Russian colleagues have noted his exceptional prowess in the field, not only scientifically but also in terms of living in extreme conditions (see Kuzmina et al., in this issue). His outgoing personality, coupled with enthusiasm for his research, made a lasting impact on Russian colleagues and foreign visitors, as did his ability to organise field trips to parts of the Soviet Union largely out of bounds to foreigners. In that respect the ending of the Cold War was timely, as it allowed further exchanges to occur and helped to 'open up' the Soviet Far East (cf. Lubrano, 1981; Richmond, 1987). A scientific form of *glasnost* began to materialise and Sher spearheaded field visits to the Kolyma Lowland, allowing scientists to begin the process of comparing Eastern and Western Beringia in earnest, as they gained access to previously prohibited sites on the 'other side' of the Bering

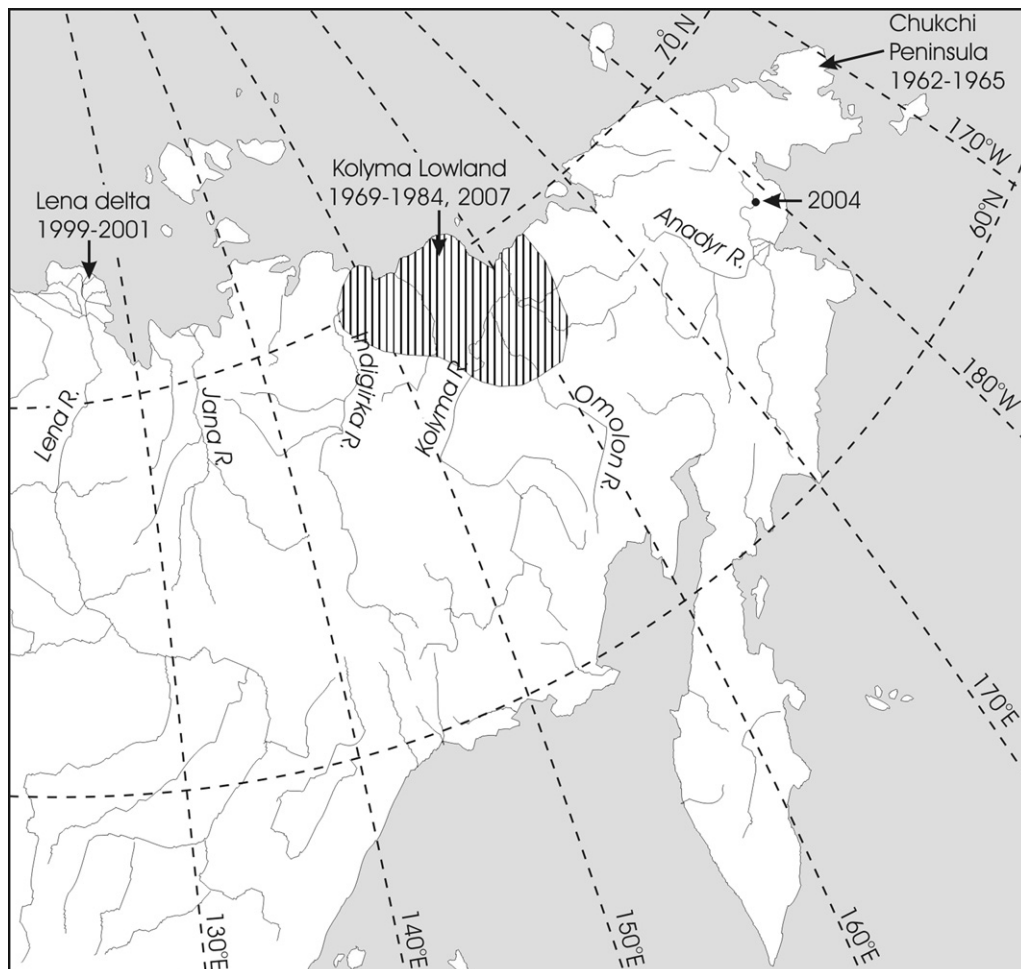


Fig. 1. Map of northeastern Russia, showing the principal regions where Andrei Sher conducted fieldwork between 1962 and 2007.

Strait. In 1991, as a consequence, Sher was invited to become a visiting professor at the University of Alaska at Fairbanks. He had previously visited Fairbanks near the end of the Cold War, but this time with the benefit of a secondment of six months, he was able to network and visit North American and German colleagues including Heidi Kassens from GEOMAR based at Kiel, Germany. This was later to stimulate an invitation for Sher to join a new project on the 'Laptev Sea system' and become a member of a research group based at the Alfred Wegener Institute. His participation in a field trip based near the Lena River delta had to be postponed due to ill health. After hospitalization for heart surgery in 1996, he was able to participate in a number of Arctic field trips and expeditions to Alaska, the Yukon Territory Chukotka and the Kolyma Lowland (Figs. 1 and 2).

### 5. Western connections via East Germany

Starting in 1963, Hans-Dietrich Kahlke, a Quaternary vertebrate palaeontologist from Weimar, East Germany, started organizing international meetings at his institute. These meetings were called the Weimar Palaeontological Colloquia. At the first meeting, vertebrate palaeontologists from East Germany, the USSR, Poland, Hungary and Czechoslovakia were able to meet and exchange ideas with colleagues from West Germany, Great Britain, Spain and Belgium. For many of the Eastern Bloc country participants, this was their first opportunity to meet scientists from the West. Three more colloquia were held at Weimar during the 1960s and 1970s. Andrei Sher took part in these meetings, greatly enjoying the opportunity to meet non-Russian scientists and exchange ideas with them. In Sher's (2004) paper commemorating these meetings (Fig. 3), he stated that the Weimar research program and regular meetings 'pulled together people from the East and West, whichever time – "warmer" or "colder" – was on the political clocks. That was especially important for the Soviet scientists, more firmly isolated from the outside world than their Eastern European "brothers in the socialist country camp".' One of the initiatives taken by Kahlke at these meetings was to encourage Russian scientists to write their papers in a language other than Russian – something that was rarely done up to that point in the Soviet era.



Fig. 3. Photo of Andrei Sher giving a talk at the sixth international palaeontological colloquium in Weimar. Photo by Ralf-Dieter Kahlke, used with permission.

And not only were scientists invited from Moscow and Leningrad, but also from some more distant (and therefore even more scientifically remote) locations, such as Kishinev, Tbilisi, Novosibirsk, and Ulan-Ude (Sher, 2004). For most young Soviet scientists, this was their first and sometimes only chance to travel outside the Soviet Union. Sher concluded by saying that the Weimar Colloquia 'radically changed the life of many individual scientists locked into the "Soviet" system'. Thus Sher and others were able to develop contacts with Western scientists that were to become pivotal in future collaborative research, including Beringian studies.



Fig. 2. Photo of Andrei Sher and David Hopkins (with a Soviet official) in Chersky, Siberia in 1979. Photo by Svetlana Kuzmina, used with permission.

In 1997 one of us (SE) invited Andrei Sher to participate in a Beringian Workshop in Colorado. Andrei readily agreed to come, and, surprisingly, sent his frequent flier number for the airline chosen to bring Russian scientists from Moscow to Denver. Here was a clear indication of Andrei's globe-trotting lifestyle! As usual, he also put in a huge effort to help other Russian colleagues to attend. At the meeting, Sher acted as simultaneous translator for several of his Russian-speaking colleagues, a role he filled at many international meetings. His willingness to translate talks into English greatly increased the self-confidence of several Russian speakers, allowing them to focus on the content of their presentations, rather than struggling with their limited English vocabulary and pronunciation.

Through his field visits, personal networking, museum experience and rich fossil bone collection, Sher was able to not only to perform as a respected scientist but also help to encourage international networking and public outreach. In his last year, he remained busy further developing these activities: attending a workshop in Slovakia, working with colleagues in North America and Denmark, and planning a two-year Fellowship with long-term collaborator Adrian Lister at the Natural History Museum in London. His untimely death prevented those plans from coming to fruition.

## 6. Conclusions

Andrei Sher's life and achievements demonstrate how Russian Beringian Science was fundamentally shaped by Cold War politics, the militarization of the Soviet Far East and the academic culture of the Soviet Union (see Graham, 1975, 1998). While this political environment threw up considerable obstacles, Sher was able to use his academic standing and personal networking skills to facilitate cross-Beringian contact with scientific colleagues in North America. An academic culture shaped by the Academy of Sciences, alongside the bureaucratic politics of the Communist Party, did not prove to be insurmountable. Andrei Sher showed that even when working in one of the most strategically sensitive parts of the Soviet Union, it was not only possible to carry out field research, but also to maintain an impressive array of personal relationships with North American and European colleagues. He was a pioneer and deserves to be recognised as a guiding force in the development of this area of research. His spirit and intellectual reach lives on through the countless graduate students and academic colleagues who encountered him and his published work. His life's achievements provide an opportunity to investigate how individual scientific actors worked within both national and disciplinary boundaries to establish Beringian science as a coherent scientific field.

Andrei Sher's work in Beringian science reveals an aspect of Soviet science that is perhaps not so well publicized in the West. Alongside Soviet politically-driven programs to develop atomic

weapons in the 1950s or win the 'Space Race' in the 1960s, there were less dramatic efforts to promote pure science. Thus the Soviet state facilitated the construction of scientific institutions, the formation of scientific communities, the spread of scientific literacy, and the fostering of cross-national scientific relations (see Solomon, 2008 for a more general discussion). Andrei Sher was a part of that system, not an outsider, in spite of his lack of membership in the Communist Party.

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