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## 50 Years Mongolian-German Biological Expeditions and Their Future = Fifty Years Mongolian-German Biological Expeditions and Their Future

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## 50 years Mongolian-German Biological Expeditions and their future<sup>1</sup>

M. Stubbe, R. Samjaa & A. Stubbe

In 2012 we celebrate the 50<sup>th</sup> anniversary of the Mongolian-German Biological Expeditions. The roots can be found in the old German-Russian scientific relationships in the history of the University Halle-Wittenberg in connection with August Hermann Francke (1663–1727) and his Foundations (founded in 1698). It's a long tradition, dating back to the 18<sup>th</sup> century when early researchers as Georg Wilhelm Steller (1709–1746) or Peter Simon Pallas (1741–1811) reached the northern border of Mongolia. Other sources of close connections between Halle and Russia are given by persons as the physician Friedrich Hoffmann (1660–1742), the mathematician Christian Wolff (1679–1754) and the botanists Alexander Bunge (1803–1890) and Dietrich Franz Leonhard von Schlechtendal (1794–1866). Peter the Great (1672–1725) founded in 1724 in Petersburg the “Academy of Sciences and Arts”, which was organizing expeditions in all parts of the Russian empire. The physician Laurentius Blumentrost (1692–1755), who has studied in Halle, Oxford, the Netherlands and Paris, was appointed as the first president. Peter I and Katharina II (1729–1796) (princess of Anhalt-Zerbst, not far from Halle) have supported the exploration of Siberia and the Far East decisively.

In the 19<sup>th</sup> century up to the middle of the 20<sup>th</sup> century Central Asia was in the focus of famous Russian, Swedish and American explorers. We have to add that Sven Hedin (1865–1952), one of the well known explorers of Central Asia, has written his dissertation at our Alma mater. From these first steps of exploration of Mongolia we will do a great jump forward to the second half of the 20<sup>th</sup> century. In 1942 the University of Ulaanbaatar and in 1961 the Mongolian Academy of Sciences were founded. That was the beginning of a long and hard way of independent development of Mongolian Sciences. German and especially Russian scientists accompanied this successful way of education and formation of Mongolian sciences.



Fig. 1: Participants of the International Symposium “Biodiversity Research in Mongolia”, 25.03.–29.03.2012 at the Martin-Luther-University Halle-Wittenberg (Germany).

<sup>1</sup> Results of the Mongolian-German Biological Expeditions since 1962, No. 312.



Fig. 2: River oasis Bulgan-gol, one of our main investigation areas between 1978 and 2002.



Fig. 3: First expedition team 1973 at Bulgan-gol; from left: Balžijnjam, N. Dawaa and M. Stubbe.



The first very successful Mongolian-German Biological Expeditions started in 1962 and 1964 and were organized by the Academies of Sciences of the GDR and Mongolia by the initiative of the Institute of Crop Plant Research in Gatersleben/Saxonia-Anhalt (Director Prof. Dr. Hans Stubbe). Zoologists from the Martin-Luther-University Halle and of the University Ulaanbaatar were called into the expedition teams. These expeditions into South- and Westmongolia laid the foundation for extremely valuable scientific collections yielding innumerable herbarium specimens and a wide range of zoological material which are still kept in Germany and especially in Mongolia. We welcome with great respect the pioneers of the first expeditions, which take part in this conference.

As a result of this cooperation the Universities of Halle and Ulaanbaatar signed based on the initiative of Prof. Dr. D. Tsevegmid (Rector of the University Ulaanbaatar), Prof. Dr. A. Dašdorž and N. Davaa (Department of Zoology of the University Ulaanbaatar) as well as Prof. Dr. E. Poppe (prorector and later rector of the University Halle) and Prof. Dr. R. Schubert (Institute of Geobotany) a contract on cooperation in research programmes, education and training of academic youth in 1967. Since that time more than 70 Mongolian students and scientists are “alumni” of the University Halle and more than 50 German and Mongolian students are “alumni” of the Mongolian-German Biological Expeditions. The importance and efficiency of these efforts resulted in more than 300 publications and in the joint editing of the journal “Exploration into the biological resources of Mongolia”. The expedition team of zoologists has to thank Prof. Dr. J.-O. Hüsing and Prof. Dr. J. Schuh, the former directors of the Institute for Zoology in Halle, for their support in the first 30 years of the cooperation.



Fig. 4: Participants of the international symposium on biological researches in Mongolia in Moscow 1986; from left: L.S. Lavrov, V.A. Romashov, J. Schuh, V.S. Lobatchev, V.E. Sokolov, M. Stubbe.

After the international conferences in 1983 and 1992 in Halle and further scientific congresses in Moscow, Irkutsk Kyzyl, Bratislava, and of course in Ulaanbaatar we come here together again with a lot of well known authorities of researchers on biodiversity of Central Asia. We estimate the

great research programmes of our Russian colleagues in Moscow, Petersburg, Kirov, Jaroslavl, Novosibirsk, Kyzyl, Irkutsk, Ulan-Ude, Magadan and all other foreign institutions which are working in the Mongolian ecosystems. We welcome the great input of the foreign scientists of the Universities Marburg, Greifswald, Göttingen, Kassel, Rostock, Hamburg, Osnabrück, Mainz, Berlin and all the other institutions as the International Academy of Nature Conservation Isle of Vilm, the Senckenberg Museum of Natural History in Görlitz, the Helmholtz Centre of Environmental Research with the branch in Magdeburg, the Leibniz Institute of Plant Genetics and Crop Plant Research in Gatersleben. We don't forget the high financial support of the German institutions as the GIZ, DAAD, DFG, VW-Foundation, UFZ Leipzig/Halle and other sources.

But last not least we are very grateful for the participation of our Mongolian colleagues and institutions which demonstrate the high progress and standard of Mongolian Biosciences. We also have to include valuable results by the efforts of ecotourists and taxonomic specialists all over the world. All together it's a wonderful international network with our Mongolian scientists and institutions as "the spider in the centre of the net".

At this place we have to remind also on our colleagues, which were going away in the last few years, so Prof. Dr. A. Bold, Prof. Dr. O. Shagdarsuren, Dr. Siegfried Huneck and Dr. Dietrich Heidecke. We also assess the great merits of Prof. Dr. A.G. Bannikov, Prof. Dr. V.I. Grubov, Prof. Dr. N. Dawaa and Prof. Dr. V.E. Sokolov.

Here, in the opening session of our conference we only can summarize some activities and results of our zoologists and botanists of the University Halle in cooperation with our Mongolian partners. A central topic in the last 50 years was the research on the biological inventory of nature reserves, on the ecology of endangered species, their conservation and management. Here are included the projects on the Central Asiatic Beaver *Castor fiber birulai* and the Wild Ass *Equus hemionus hemionus* as well as various species of raptors, bats and jerboas, augmented by complex programmes in biodiversity research. You will have in our conference reports and in the volumes 9 and 10 of our journal "Exploration into Biological Resources of Mongolia" more details in these topics.

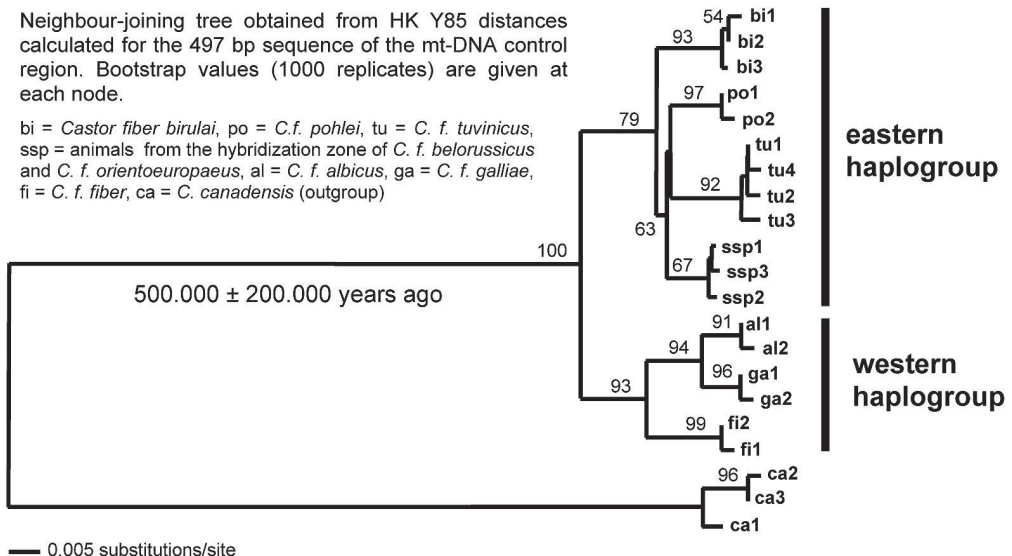


Fig. 5: One of the main results of the beaver research – the genetic variation and phylo-geographical pattern of the Eurasian beaver, *Castor fiber* (Molecular Ecology 2005).

Special focus was also put on the vertical zonation of vegetation, flora and fauna in high mountains of western and southern Mongolia, in the Charchiraa and Ich-bogd massifs. In Westmongolia our colleagues investigated the change of plant associations and animal communities in the conversion of natural steppes to areas of agriculture.

The experimental rearing of economically relevant small mammals as *Alticola* species and the endemic Steppe vole *Microtus brandtii* in our laboratory in Halle formed the basis for a wide range of studies which resulted in several diploma thesis and dissertations.



Fig. 6: Dean Prof. Dr. Rudolf Schubert was the head of the defense of Dr. Naniragijn Dawaa's habilitation treatise 1986 in the Institute of Zoology of the Martin-Luther-University Halle-Wittenberg.

During all expeditions the transfer of methods and the academic qualification of students and young scientists was a central issue. That is an ongoing process of and in our cooperation. In the last years a very effective network between German and Mongolian Institutions was established and it is one aim of this anniversary conference to make these connecting yet closer. In the last years we and other German institutions organized with great success special field trainings and research programmes for students and young alumni.

Let us look forward. Mongolia is a country of great future and with rich biodiversity from the taiga up to the desert. We have to protect this richness of landscapes, flora and fauna in harmonic context with industrial development, agriculture and mining as well as the planned power-lines of energy and traffic infrastructure. In this context the international community must and can help in the conservation of fantastic ecosystems and their biodiversity. It's a great challenge for all branches of biosciences. We need long-term projects and monitoring at a high level of ecological understanding under aspects of global climate change and the revolution and avalanche of all influences on landscapes and ecosystems.

In the establishment of a Centre for Biodiversity Research in the network of the Universities Halle, Leipzig and Jena we should use the great chance for education and research programmes in the Central Asiatic ecosystems on the basis of the present successful and trustful cooperation. It could be for a lot of students a possibility for the development of their own personality. At the other hand our Mongolian partners should have the chance for more postdoc studies and academic qualifications in our centres for biodiversity, nature conservation, technology of environmental protection, eco-politics as well as in law and order of all environmental questions.

In the struggle against environmental crime and pollution we need a high qualified cadre pool, more field stations with working capacity, high technological standard and assured financial support. In that direction we have to mobilize a world of environmental compatibility. We should never forget that the network of species, populations and communities is the motor for the function of the biosphere. This filigree network is the result of a year millions evolution and human being is only one member in this sensitive system. This message we have to transfer again and again to our authorities in policy and economy.

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