

History of scientific cooperation between Indian and Czech palaeobotanists

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TWO important anniversaries of two eminent scientists were observed in the year 1991 who immensely contributed to Indian palaeobotany; hundred years of the death anniversary of the great palaeobotanist Ottokar Feistmantel and the hundredth birth anniversary of Professor Birbal Sahni, the Founder of Palaeobotany in India. I put wreaths of memories to these great scientists who laid the foundation of cooperation in the field of palaeobotany and human relations between the Indian and Czech palaeobotanists.

In the year 1977, when I attended the Fourth International Gondwana Symposium held at Calcutta, it was an agreeable surprise to learn how the Indian geologists esteem the works of the Czech scientists, F. Stoliczka and O. Feistmantel. Their scientific work and collection of fossils were richly represented on the exposition of the Symposium.

In the history of the Indian geology, Ferdinand Stoliczka (1838-1874) occupies a significant position. In 1863 he was appointed as a Palaeontologist in the Geological Survey of India. Unfortunately he died in the course of geological expedition in Murghy in the region of Karakorum Pass and his body was brought to India and buried in Leh in the Himalaya where the Indian Government erected a monument of marble to perpetuate his memory.

The vacancy caused after the death of F. Stoliczka in the Geological Survey of India was occupied (upon the invitation of Indian authorities) by the prominent Czech Palaeobotanist-Ottokar Feistmantel, son of a geologist and palaeontologist, Karel Feistmantel, the foremost expert of the Carboniferous and Permian in Bohemia.

Ottokar Feistmantel (1848-1891) completed his studies at the Faculty of medicine in Prague and during the course of his studies he was trained in geology and palaeobotany by his father. During this period he engaged himself in the investigation of Carboniferous

and Permian floras and published many papers related to these studies, amongst which his papers *Die Versteinerungen der Bohmischen Steinkohlenablagerungen* (1875-1876), and *Studien im Gebiete des Kohlengebirges in Bohmen* (1874) are most important.

Since 1873 he was working as an assistant to the famous botanist Heinrich Robert Goepfert at the University in Wroclav, Poland. In 1874 he went to Calcutta where he worked as a palaeobotanist until 1883. Then he was invited by the Technical University, Prague to hold the Chair of Mineralogy and Geology Department.

The palaeontological investigations of Gondwana flora, carried out by him during his eight years sojourn in eastern India, not only made him renowned throughout the world but also earned him the fame as an authority on the Gondwana flora.

Feistmantel summarized the results of his systematic palaeobotanical investigations in India in his paper: *The Fossil Flora of Gondwana System*, published in the *Memoirs of the Geological Survey of India* (1877-1886), in which he proposed various zones of the Gondwana System on the basis of plant fossils. Similar floral assemblages were also discovered by Feistmantel from the sediments of eastern Australia on the basis of the material sent to him for research. This has been dealt with by Feistmantel in his comprehensive treatise *Palaeozoische und Mesozöische Flora des östlichen Australia* (1878-1879), for which he was awarded the first prize at the Mondial Exhibition in Montreal. In the course of the investigation of the Gondwana flora, Feistmantel also devoted attention to the geological nature and petrographic character of sediments, and his special attention was focused on some conglomerates which, already at that time, were regarded by sedimentologists as of glacial origin. Feistmantel also supported this opinion and concluded that similar sediments on all southern continents are approximately of the same age.

Later, Feistmantel was assigned to examine the collection of fossil plants from Tasmania which he had described in Czech language in his paper: *Coal bearing formations in Tasmania* (1890) and was awarded the prize of the Bohemian Royal Society of Science. The results of Feistmantel's investigations on the floras of Australia and Tasmania are published in the paper entitled *Geological and palaeontological relations of the coal and plant bearing beds of Palaeozoic and Mesozoic age of Eastern Australia and Tasmania* (1891).

A comprehensive paper: *Eight years in India* (1887), as well as a number of geographic articles and those on travels were published by Feistmantel. He was also engaged, with pleasure, in drawing and painting Indian landscapes, architectures, so that during his sojourn in India he gathered an enormous collection of beautiful and true sketches.

The scientific activity of Feistmantel in India represents within the framework of Indian palaeobotany, the so-called classic bloom which for a long time, was followed by a time span of stagnation. The second period of bloom of Indian palaeobotany - during which some classic palaeobotanical investigations were undertaken - began after the year 1920 and was connected with the name of the famous Indian palaeobotanist Professor Birbal Sahni, founder of the Birbal Sahni Institute of Palaeobotany in Lucknow.

I would like to mention the friendly relations of Professor Birbal Sahni to the founder of Czech modern palaeobotany Professor Frantisek Nemejc (1901-1975) who was not only in purposeful contact with Professor Birbal Sahni, but also invited him as his guest in Prague in the year 1933. Professor Nemejc esteemed sincerely Prof. B. Sahni and remembered him with pleasure.

At the time of the IInd World War the direct cooperation had declined, but was renewed again in the year 1965 by Madame Savitiri Sahni, the then Head of the Birbal Sahni Institute of Palaeobotany, Lucknow. After the death of her husband, Madame Sahni assumed the leadership of the Birbal Sahni Institute, expanded the activities and fostered Palaeobotany to greater heights, nationally and internationally both.

In the course of her travel in Europe in 1965, Mrs Sahni visited Prague as our esteemed guest. Thus a sincere friendship developed between us, lasting until her death.

Mrs. Sahni, interacting with the Indian and Czechoslovak authorities achieved official cooperation in the field of palaeobotany. Under this plan Dr. M. Vavrdova and Dr. Z. Kvacek from Czechoslovakia visited the Birbal Sahni Institute in the years 1966-1967 and from India Dr. K.M. Lele and Dr. U. Prakash visited Czechoslovakia in 1972.

In the years 1961-1966, Urmila Ganguli studied palaeobotany at the Faculty of Science of Charles University in Prague under F. Nemejc and B. Pacltova. Having completed her study at Prague, Urmila Ganguli started her research at the Jadavpur University in Calcutta. In the years 1976 and 1977 I visited India, on the invitation of the Birbal Sahni Institute, to be its guest for participation in IV International Palynological Conference held at Lucknow, and later visited as a guest of the Jadavpur University in Calcutta. There I also attended the IV International Gondwana Symposium 1977 held at Calcutta.

I cannot omit to mention my participation in the International excursion guided by the prominent Indian botanist and palaeobotanist-palynologist, an inspired man, Dr. G. Thanikaimoni of the French Institute at Pondicherry. Dr. Thanikaimoni was a foremost expert in the field of flowering plants.

Long discussions, specialized as well as philosophical, during the period of excursion led to a long lasting friendship. On the day of tragic death of Thanikaimoni I received his last letter, written before his departure. The memory of 'brother Thani' remains living.

I still remember the beautiful excursion to the site of origin of the river Ganges. I was accompanied there by late Dr. S.K. Baksi with his assistant.

In the years 1977-1978 my past student scientist Dr. Urmila Ganguli-Deb from Jadavpur University, Calcutta cooperated with me for one year in Palaeontological Department of Charles University. Later in the year 1988 Dr. Archana Tripathi of Birbal Sahni Institute was our guest for one month under International Scientific Collaboration and Exchange of Scientists Programme sponsored by Indian National Science Academy (INSA). One year later, in 1989, Dr. B.S. Venkatachala, the then Director of Birbal Sahni Institute along with his colleagues Drs. P.K. Maithy, M. Shukla and Dr. V.C. Tiwari of the Wadia Institute of Himalayan Geology, Dehra Dun visited to attend the International Conference on "Origin of Life" in Prague and later paid a visit to our department. Recently Dr. J.P. Mandal from BSIP also came to Charles University and the Academy of Sciences of Czech Republic, Prague in the year 1994 under the INSA Exchange Programme.

We are grateful to a number of other Indian palynologists with whom our contact continues by exchanging literatures and specialized experience through correspondence.

It is possible to say that mutual professional contacts and the friendship between India and Czech Republic in the field of palaeobotany initiated by Ottokar Feistmantel continue to survive and getting strengthened. We wish this scientific collaboration to develop further in future.