

## HERBARIA AND BOTANICAL MUSEUMS IN THE U. S. S. R.

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### ABSTRACT

The paper gives a brief account of some of the impressions gathered during a recent visit to the important Herbaria and Botanical Museums of the Soviet Union located in Leningrad, Moscow, Kiev, Minsk, Tbilisi and Tashkent.

During a recent visit to the Soviet Union with a delegation of Indian Botanists, the author had the opportunity of seeing the foremost Herbaria and Botanical Museums of the Union, some of which are of world importance and which have been the centres of preparation of national and regional Floras. The impressions of these visits which are of topical interest are recorded here in brief.

#### LENINGRAD

The Leningrad Herbarium is one of the biggest in the world. It is part of the V. L. Komarov Botanical Institute of the Academy of Sciences of the U.S.S.R., Leningrad. The Herbarium is included in the Department of Systematics of Higher Plants of which Prof. A. L. Takhtajan, the well known evolutionary morphologist is the Head. The Herbarium has 6,000,000 sheets from all parts of the world including many valuable Type specimens. There are the historic collections of such well known taxonomists like Ledebour, C. A. Meyer, Trautvetter, Turczaninov, Schrenk, Karelin and Kirilov, Maximovicz, Radde, Regel, Komarov, Lipsky, Olga Fedtschenko and others. New material is being continuously added to the Herbarium through collections from botanical explorers and through exchange with other countries. The arrangement in the Herbarium is on the geogaphical basis with sections of U.S.S.R., Caucasus, Far East and China, etc. The general section has 2 million sheets and is under the charge of Prof. M. S. Kirpiznikov, the Curator. The Caucasus section is headed by Prof. Fedorov Jr. Dr. Grubov is now preparing the Flora of the Central Asian territory including large parts of western Chinese provinces, Tibet, Mongolia, etc. The Herbarium of the U.S.S.R. is the main basis on which the Flora of the U.S.S.R. is being written. Besides this major taxonomic work many other monographs, Transactions, Notulae Systematicae and other taxonomic publications are being issued from here. Prof. E. G. Bobrov is the Chief of the Laboratory of Flora. The monumental work on the Flora of U.S.S.R., was initiated in 1931 and it was thought at that time that it could be finished in 10 years. It has now taken more than 30 years and the last volume is going to the press this year. It is now known that there are more than 17,000 species of

flowering plants in the Soviet Union. The preparation of this Flora caused most extensive collections and study and has been pursued with such energy that, already, it has been found necessary to revise the earlier volumes. The Flora Laboratory of the Leningrad Institute is coordinating the work in regard to the preparation of Floras and almost all Republics of the Union have their own Flora programmes. The Leningrad Institute has the complete collection of the whole of the U.S.S.R. and has one of the finest libraries in the world for taxonomic work. Original illustrations have been prepared for the work and since the publication of the volumes is very expensive, the cost of publication is met by grants from the Government. 3000 copies of each volume are printed and the first 12 volumes are now out of print. The room in which the great Soviet botanist, V. L. Komarov worked has been maintained in its original condition with his unique personal library.

The Cryptogamic Herbarium forms part of the Department of Cryptogamic Botany of the Komarov Botanical Institute of which Prof. Hollerbach is the head. This Department was organised by the eminent Botanist, Prof. Elenkin. He was a botanist of wide interests being a specialist in Algae, Fungi, Lichens and Mosses. His main works are devoted to Lichenology. Prof. V. P. Savicz who succeeded him retired recently. This Department is publishing the Flora Plantarum Cryptogamum of U.S.S.R., Plantae Cryptogamae, Notulae Systematicae and various other publications. A very extensive collection of cryptogamic plants is maintained in this Department.

The Vegetational Cartography Laboratory is engaged in the preparation of vegetational maps under the direction of Prof. V. B. Sochava. This Laboratory is part of the Geobotanical Department of the Komarov Botanical Institute headed by Prof. E. M. Lavrenko who is also one of the Chief Editors of the vegetation map of the Soviet Union. This Laboratory coordinates the work of vegetation cartography all over the Union. A map in the scale 1 : 4,000,000 has already been published and another in the scale, 1 : 2,500,000 is under preparation. Prof. Sochava has published a book on the 'Principles and Methods of Vegetation Mapping' which includes chapters on i) General Problems of

Vegetational Cover Mapping, ii) Indicator and Phenological Maps, iii) Vegetation Mapping of Pastures and Highlands and Geobotanical subdivisions for Agricultural purposes, iv) Geobotanical and other kinds of Landscape Mapping vegetation in Geographical Atlases, v) Aerophotography in the compilation of Vegetation Maps, vi) Mounting and Editing of Geobotanical Maps and vii) Bibliography. This volume which runs into 299 pages is perhaps the most important publication of its kind.

The Botanical Museum of the Botanical Institute of the Academy of Sciences, U.S.S.R., is the biggest and the only exclusively Botanical Museum in the Soviet Union. A new building to house the mammoth collection of 60,000 specimens is now under construction in the premises of the Komarov Botanical Institute near the greenhouses. One hall is now ready and the remaining portion will soon be completed. The Museum will then be open to the public. The Museum has a long history and was established in 1823, the founder being Academician K. B. Trinius, an eminent authority on the taxonomy of Grasses. At present, there are three principal collections in the Museum, viz., Dendrological with about 10,000 specimens, Carpological with another 10,000 and the remaining consisting of useful plants and plant products. In the hall which has just been completed the vegetation of the world has been graphically displayed. The other three halls which are under preparation will house the collections relating to the Biology of Plants, History of Evolution of Plants and Useful Plants. In the hall of Vegetation of the World, specimens, photographs, maps and charts are most effectively displayed with huge wall panels and show cases. The world is divided into four major floristic regions and the characteristic vegetation types of each region are displayed. Attractive glass cases illustrate the flora of geological ages of the corresponding regions. There are panels for Palaeotropic vegetation, Monsoon plants of tropical zones, Mangrove plants, Himalayan and Mountains of Middle Asia, Forests of Equatorial belt and others. There are also sections of the flora of Andes, Siberia, Antarctica, etc. There is arrangement in this hall for giving illustrated talks to small audiences.

The Leningrad University which is a historic institution having been founded in the time of Peter the Great maintains a medium sized herbarium. Dr. A. I. Tolmatchév, the present head of the Department of Botany is a specialist in plant Geography, particularly of the Arctic and Tundra zones. He is also editing the Flora of Arctic S.S.R., the first volume of which has just been published.

#### MOSCOW

The Herbarium of the Botany Department of the Moscow University is located on the fourth and fifth floors of a new building close to the main skyscraper building of the University. The Herbarium has 500,000 sheets including some classical sheets from Erhart's Herbarium of Linnaeus. The Moscow Herbarium was started in the 17th century though it was organised only in the 18th but sheets of such famous botanists of Europe like Bauhin, Tournefort and others collected in the 17th century are present here. The Department has also the Linnaean Cryptogamic Herbarium (*Plantae Cryptogamae Linne-Fridricus Erharht, Herbarium Hannoverae-1789*). The Moscow Herbarium was founded by Sereishikov who was the author of the first Flora of Moscow and is arranged according to the system of Dal la Torre. A collection of Icones numbering about 20,000 mounted on uniform size boards and placed in large index cabinets is a unique feature of the Herbarium.

The Main Botanic Garden of Moscow was established in the year 1945 immediately on the termination of the second world war. A beginning was made in 1959 to organise a herbarium and at present there are 8000 sheets. In course of time it is proposed to build up a large collection of plants of not only the U.S.S.R. but also of other parts of the world. Provision has been made for housing 500,000 sheets.

#### KIEV

The Kiev Herbarium is part of the Botany section of the Botanical Institute of the Ukrainian Academy of Sciences. This is one of the major herbaria of the Soviet Union. The number of sheets is estimated at 700,000 including Phanerogams and Cryptogams from the territory of Ukraine in particular and the U.S.S.R. in general. The old Herbarium of Prof. Fedorovich Schmalgausea is kept separately. The Type specimens are also kept separately. The Flora of Ukraine was prepared here as also the vegetation map of Ukraine.

In the Museum of the Botany section of the above Institute there is an interesting display of specimens in show cases as well as on the walls through framed specimens. The Ukrainian, Carpathian and Crimean Flora are all displayed here in suitable sections.

#### CRIMEA

The Herbarium of the Nikita Botanic Garden in the Crimea was founded in 1914 by Prof. Wulff, a botanical geographer and author of many publications. During the second world war, the Germans who had occupied the Garden took away the specimens. They were later recovered and restored to the Garden. At present there are 90,800 specimens of Crimean, Ukrainian and other parts of the Soviet Union and of the world obtained

through exchange. In connection with the recent celebration of its sesqui-centennial, the Garden organised an exhibition which was on view at the time of our visit. Beautiful photographic enlargements in colour as well as in black and white, charts, posters, models etc., had been most elegantly and artistically exhibited which was another very good example of the modern display of botanical material in the museums of U.S.S.R. Prof. Kuznetsov who worked in the Garden prepared a monograph on the genus *Gentiana* and was also associated with the founding of the Herbarium by Prof. Wulff. The Flora of Crimea is being edited here and this work is expected to be completed in another two years and will include descriptions of nearly 2500 species. A vegetation map for Crimea is also being prepared here. In the Herbarium the specimens are arranged according to geographic areas, Crimea, Caucasus, U.S.S.R., Cultivated Plants, etc. The arrangement of the families is alphabetical and the sheets are kept in cabinets of wood, 90 cm × 65 cm with 10 shelves in two vertical rows of 5 each, each chamber being 17 cm × 32 cm. The cabinets are finished in veneer with beautiful designs.

#### MINSK

The Herbarium of the Botanical Institute of the Byelo-Russian Academy of Sciences has just been initiated and at present there are 20,000 sheets. The specimens are beautifully prepared and will be housed in a new building which is under construction. It may be stated here that the City of Minsk was almost completely destroyed during the second world war and it is now being rebuilt. This Herbarium will eventually include primarily the Byelo-Russian Flora. Dr. (Mrs.) Kozlowskaya is the Head of the Herbarium.

#### TBILISSI

The Botanical Institute of the Georgian Academy of Sciences in Tbilissi is one of the biggest Institutes for Systematics and Geobotany. The Herbarium attached to the Institute has 300,000 sheets of Georgian plants, in particular of the Caucasus. The Herbarium has special sections dealing with Algae, Lichens, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms. Mme. Kharadzé-Sakhakia is the Head of the Systematics section of the Institute and is a specialist in Compositae having collaborated in the preparation of the Flora of U.S.S.R. This Herbarium has prepared the Flora of Georgia which is published in the Georgian script in 8 volumes and describes 4000 species including 100 species new to science. A revision of the Flora has already been undertaken and this will be in 10 volumes. Monographic studies, History of the Flora of the Caucasus and a Dendro Flora are among the other publications of this Institute. There is close collaboration of the work of the Herbarium with the preparation of Geobotanical and Vegetation

maps of Georgia. Modern taxonomic studies require data from other disciplines and towards implementing this, sections of Anatomy and Palynology have been recently started.

Another institution of importance in Tbilissi is the Natural History Museum. In the botanical section of this Museum, there is a good herbarium with collections mostly from the Caucasus. This Herbarium is known as the Herbarium Musei Georgici and was started by Radde in 1852 and at present has 112,000 sheets under the charge of Mme. Popova. There are also collections from Africa, North America and other countries obtained through exchange. It was of interest to see in this Herbarium some sheets of Himalayan plants from G. King's collection. G. King was the first Director of the Botanical Survey of India. There is also a set of Hohenhacker's collection, the oldest sheet being dated 1805 and this collection includes plants from Mangalore, Canara, etc. The Herbarium has special collections from Iran, Turkey and Central Asia. The genera are arranged according to the Englerian system. A list of Type specimens present in the Herbarium has been prepared and published by Mme. Popova.

#### TASHKENT

The Tashkent Herbarium located in the University of Tashkent is one of the biggest herbaria of the Soviet Union. In this Herbarium are represented more than 500,000 sheets of wild plants of Middle Asia. This Herbarium is in fact older than the University itself of which it now forms a part of the Botany Department. Valuable collections of some outstanding taxonomists like Schrenk, Olga Fedtschenko, Demo and others are found here. In addition to the wild plants of Middle Asia, specimens obtained in exchange from other parts of the world numbering more than 100,000 are also preserved here. The arrangement is according to the Englerian System and the wooden cabinets are accordingly given the generic numbers. The Herbarium has nearly 20,000 different species represented in it. This Herbarium which has nearly 75% of the flora of Middle Asia represented in it is under the charge of Prof. V. Vydensky, one of the leading taxonomists of the Soviet Union who has collaborated in the preparation of the Flora of U.S.S.R., and who has described a large number of new species. The Tashkent Herbarium has been the centre of activity for the preparation of Floras of the Middle Asian Republics and of the vegetation map of Central Asia.

The Natural History Museum of Tashkent is located in the older section of the City of Tashkent. The Museum has a section devoted to the illustration of the evolution of plants and animals during the geological ages. In the Main Hall, the vegetation of certain selected types are attractively displayed in elaborate dioramas. These dioramas

represent the vegetation of the Kizil-kum desert, the mountains of Middle Asia including the Karatov range, the river bank of Amu-Darya river etc. Dried specimens of entire plants are attractively displayed in their respective habitats and the dioramas are very natural and instructive. In addition to the dioramic displays, specimens of fruits, seeds, etc., of characteristic native plants are also preserved.

In addition to the Herbaria and Museums which are located in the major cities of the Union as described above, there are a large number of such collections distributed in various places, even in remote forest areas or villages with ethnic, cultural and natural resources interest. These collections are intended for the display of the flora and fauna native to these localised areas or reserve forests. Even these smaller museums are very well arranged and organised and maintained in an impeccable

manner. We saw, for example, the museums attached to the Lagodekhi Reserve Forest in Eastern Caucasus, the Arkit Reserve Forest in the Kirgiz Republic of Middle Asia, the Alexander Kazbegi Museum in the town of Kazbegi in the Caucasus and the Sodoretz Reserve Forest near Tbilissi. These smaller museums impressed us very much with their extremely elegant and informative displays of the local natural resources. The Kazbegi Museum is a unique institution displaying not only the natural wealth of the neighbourhood but also the remarkable cultural and artistic talents of Alexander Kazbegi, an extraordinary man of wide interests.

#### ACKNOWLEDGEMENTS

I wish to express my sincere thanks to the Government of India for including me in the Delegation as a member and to Dr. H. Santapau, Leader of the Delegation, for many acts of courtesy.