



## PLANT SYSTEMATICS WORLD

Edited by Tod F. Stuessy

### IN MEMORIAM

**M. E. L. Joseph Guého 1937–2008.** — Joseph Guého, former curator of the Mauritius Herbarium, passed away on 6 December 2008 aged 71. Joseph, one of the few botanists that Mauritius has produced, started working in the Mauritius Herbarium in 1962, in the early days of this national herbarium. He was then the scientific assistant to Dr. Reginald E. Vaughan who became his mentor. Though without a formal university botanical education, he was awarded a C. Biol. and M. I. Biol. in 1991 in recognition of the high level of his botanical work. He occupied the position of curator of the Mauritius Herbarium from 1983 until his retirement in 1996. From the 1970s until his death Joseph was one of the key persons enabling the publication of the many volumes of the *Flore des Mascareignes* (a joint project with RBG, Kew, and MNHN, Paris). Joseph organised loans, conducted extensive field collections (he was the second most prolific collector after Dr. Vaughan), contributed botanical drawings, and described many species. Even after his retirement he continued writing and proof-reading different volumes of the *Flore*, with his last contribution made in 2008. His botanical collections were essentially confined to the Mascarenes (Mauritius, Reunion and Rodrigues) although he also botanised some small far-flung islets such as Agalega and Saint Brandon. He described with J.A. Scott a new genus for Mauritius, *Monimiastrum* (Myrtaceae), recently synonymised as *Eugenia* (Neil, 2008). Joseph produced some 50



Joseph Guého in his office at MAU in the 1990s.

publications, including a book on the vegetation of Mauritius (*La Végétation de l'Île Maurice*), one on Mauritian bryology (with P. Tixier), several about medicinal plants (with A. Gurib-Fakim), and an encyclopedic work with G. Rouillard on plants

and their history in Mauritius (*Les Plantes et Leur Histoire à l'Île Maurice*). The latter remains an unavoidable bible for botanists and historians interested in the region. Joseph was called to serve for many years on several national committees related to native biodiversity and their conservation. He relocated several endemic plants, which until then were thought to have gone extinct. These include *Trochetia boutoniana* Friedmann (Malvaceae), a species not seen for over a century, and which was later selected as the Mauritian National Flower when the country acceded to the status of Republic in 1992. Another important relocation made by Joseph, together with L. Bernardi, was that of the endemic *Hibiscus genevii* Bojer ex Hook. (Malvaceae), which directly prompted the creation in Mauritius of the first private nature reserve. Joseph

has three species named after him. Behind his reserved personality and polio sequels, Joseph was very perseverant and passionate, with a deep sense of duty, always ready to help on any botanically related issue, and suffering from seeing the native forest of Mauritius eroding away under alien species invasion. He will be remembered as one of the greatest Mauritian botanists, together with Louis S. Bouton (1799–1878). — Claudia Baider, Mauritius Herbarium, Reduit, cbaider@msiri.intnet.mu

### DIGITIZATION OF THE DEHRADUN HERBARIUM (DD; INDIA)

Large stores of primary biodiversity data lie relatively inaccessible in herbarium collections around the world. Specimens in herbaria serve a variety of useful purposes, such as (1) preparing floristic accounts, (2) revisions of taxa, (3) data on distribution or occurrence of plants, (4) proper assessment of variations in morphological characters, and (5) data from

notes accompanying the specimens. Digitization is being done primarily to meet the needs fulfilled by notes on labels, and to save actual specimens from avoidable handling. With proper planning and suitable software, digitization can produce many very useful 'by-products'.

One such collection is the Forest Research Institute Herbarium at Dehradun, Uttarakhand, India, more than 100 years old (Fig. 1). Our objective is to digitize the most important elements of this unique collection and make the data available to a



Fig. 1. View of the range (A) and representative cabinets (B) in the Dehradun Herbarium.

world-wide audience via the Web. This will enhance access to the Herbarium as a learning resource for all. The plan spans a period of five years.

The Herbarium of the Forest Research Institute, internationally known as the Dehradun Herbarium (DD), was established in 1908 by the amalgamation of the Forest School Herbarium founded by J.S. Gamble in 1890 and the Saharanpur Herbarium started in 1816. The herbarium's total holdings number around 330,000 specimens, and include angiosperms, gymnosperms, bryophytes and pteridophytes. It includes 1,400 type specimens (Fig. 2). The oldest specimen dates to 23 October 1807.

The herbarium maintains a regional focus on the states of Uttar Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh and Delhi. Other significant collections come from other parts of the country and a large number of specimens from outside the country. Some of the collections worth mentioning are of J.E.T. Aitchison, K.N. Bahadur, N.L. Bor, D. Brandis, C.B. Clarke, J.F. Duthie, H. Falconer, J.S. Gamble, H.H. Haines, R.S. Hole, J.D. Hooker, W. Jameson, U.N. Kanjilal, A.E. Lowrie, A.E. Osmaston, R.N. Parker, C.E. Parkinson, M.B. Raizada, J.F. Royle, K.C. Sahni, R.R. Stewart, J.E. Stocks, and of several present workers of the Herbarium. Currently, 4,000–5,000 specimens are added to the collections



Fig. 2. Specimen from the type collection in the Dehradun Herbarium.

each year through herbarium-led forays, donations, and exchanges.

**Development of herbarium database in the Forest Research Institute.** — Digital herbaria (virtual herbaria) are digital images of herbarium specimens, plus information from labels, in an organized database. This concept of a Digital Herbarium came into existence during mid-1970s when certain herbaria in Australia and England started databasing herbarium label data. Herbarium databasing is a computational method, where information about herbarium specimens is digitized using database software in such a way that it is easily accessible with the help of a computer, internet or Worldwide Web. Having this information available through the Web often obviates the need to borrow specimens or travel to the institution to examine them. The result is information de-



Fig. 3. Screenshot of homepage of the Digital Herbarium System for the Dehradun Herbarium).

livered to an international audience more quickly and with less expense and potential damage to unique materials.

Being the second largest herbarium of the country, the collections offer a unique glance into the flora of the Indian subcontinent. To make these herbarium data available to taxonomists worldwide, the need for developing a database was clear.

Efforts to digitize the herbarium specimens first began in early 2007 through a joint effort between the IT Cell and the Systematic Botany Discipline of the Forest Research Institute (Fig. 3). A Client Server Based Architecture Herbarium database software has been prepared in MySQL database. During the last year, data entry was limited mostly to type specimens and small families, such as Dilleniaceae and Calycanthaceae. Certain large families, however, such as Ranunculaceae, Magnoliaceae, Menispermaceae, etc., have also been entered into the database. In the last 1.5 years more than 15,000 herbarium specimens were entered into the database. Species details such as correct name, synonym, vernacular/local names, English/trade name, common name, habit, habitat, flower colour, distribution (statewise within India, and country outside India), etc., are also being entered into the database. During the same period, approximately 50,000 specimens have been photo-

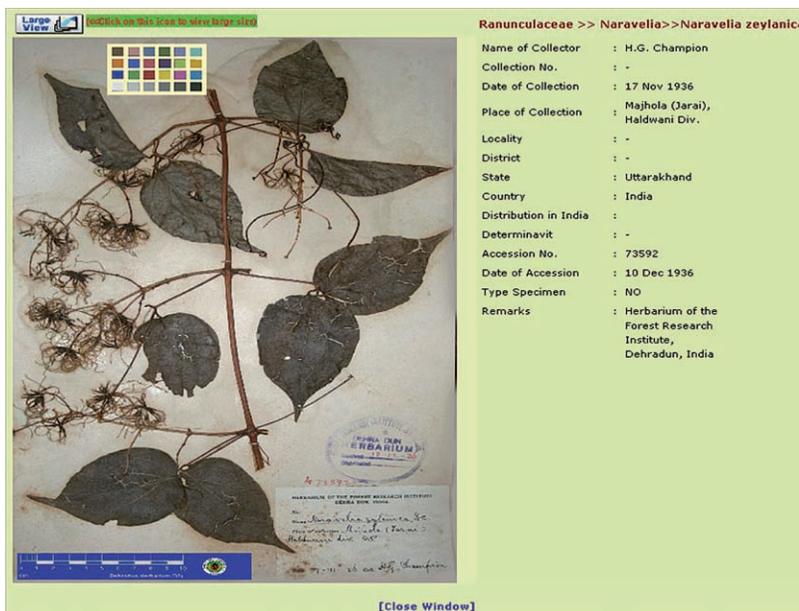


Fig. 4. Example of digital image of *Naravelia zeylanica* DC. (Ranunculaceae) contained in the Digital Herbarium System of the Dehradun Herbarium.

graphed, including all vascular types (Fig. 4). The images of the herbarium specimens are entered in two sizes: thumbnail, and large view.

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## UNIVERSITY OF HAWAII HERBARIUM NAMED IN HONOR OF J.F. ROCK

Joseph F. Rock was born in Vienna, Austria in 1884. He arrived to Honolulu in 1907 at the age of 23, where he became the Territory's first botanist. He was appointed to the University of Hawai'i faculty in 1911 and was responsible for creating the first university herbarium. He served as the curator from 1911–1920, and quickly became an authority on the local flora. Though his botanical knowledge was largely self-taught, Rock's contributions to Hawaiian botany were significant. He was responsible for planting more than 500 species on the grounds of the Mānoa campus, and many of these trees are still flourishing.

In the twelve years he spent exploring Hawai'i and plant collecting, he published 56 papers and described many new plant species. In 1920, he left the University of Hawai'i to spend the next three decades in active exploration and research for the National Geographic Society, studying the flora, peoples and languages of China, Tibet, Burma, and Thailand. Rock is considered by many to be the father of Hawaiian botany. In April 1962, the University of Hawai'i honored him with a Doctor of Science degree. He died in Honolulu on 7 December 1962, at the age of 79.

Today, the herbarium started by Dr. Rock is part of the University Museum consortia, and houses a collection of about 50,000 dried and preserved plant specimens. Since its foundation, the herbarium has been the official university repository for botanical specimens. The mission of the herbarium is to maintain and expand the collection to make a thorough representation of Hawaiian and Pacific Island flora, with particular emphasis on vascular plants. The collection is used for teaching, research and public service, and voucher specimens from student and faculty research projects are deposited and preserved in the herbarium. Students and faculty conducting ecological studies and floristic inventories use herbarium specimens to help identify unknown plant specimens collected in the field. Students also use the collection to learn local and regional plant species, to facilitate identification of plants, and to study the morphological comparison of plant species. The herbarium is located in room 401 of the Harold St. John Plant Science Laboratory Building.

Dr. Rock's tremendous contributions to the field of botany and reputation as a pioneering botanist and plant explorer are recognized locally, nationally and internationally. Naming the herbarium for him acknowledges his scholarly achievement and contributions as well as his many direct contributions to the Botany Department and the Mānoa campus. — Al Keali'i Chock, Honolulu, Hawai'i, alchock@hawaii.edu