sion, FRI), Importance of Authentic Identification of Species and Herbarium Methodology; Dr Sas Biswas (Head, Botany Division, FRI), Recent Trends in Planning Management and Integration of Herbaria; Dr. L.B. Chowdhary (Scientist National Botany Research Institute, Lucknow), Principles of Molecular Taxonomy, Case Study of the Genus *Astragalus* L., Species Concepts; Dr. S.P.S. Kushwaha, Importance of Remote Sensing in Taxonomic Studies; Dr. Sarita Arya (Scientist E, Tissue Culture Discipline, Botany Division, FRI), Role of Tissue Culture in Conservation of RET Plants; Dr. Paramjit Singh (PLO, FRI), Role of Herbaria in Research, Education and Extension; Dr. Paramjit Singh Channa, The Latest International Code of Botanical Nomenclature; Dr. Veena Chandra, Typification, Naming of Plants (Rejection and Retention of Names, Effective and Valid Publication, etc.).

Field visit to Mussoorie during the Training Programme in Plant Taxonomy.

During the training period two field trips were organized to Mussoorie for field identification of plant species along altitudinal variation and to the Lachhiwala forest for plants in different ecosystems. On the spot identification characters were explained to the participants.

Workshops were organized for herbarium methodology such as collection of different kinds of plants, their pressing, mounting, stitching, etc. A classroom workshop was conducted for identification of plants using keys. A bamboo identification workshop was held in the Bambusetum of FRI.

The valedictory function was chaired by Shri S.P. Rayal, Acting Director, FRI, who distributed certificates to the participants. — Veena Chandra, Dehradun

UTRECHT: RISE AND FALL OF A GREAT HERBARIUM

From June 2008 the Utrecht Herbarium (U) has been closed by Utrecht University, rendering the collections inaccessible for scientific research. Future access to the collections is as yet uncertain. This short communication reviews some highlights in the rich history of a great herbarium and ponders on the future of world class biological collections in the care of universities.

A botanical garden as well as a professor teaching Botany have been present at Utrecht University since 1636, the founding year of the university. Between 1743 and 1758 E.J. von Wachendorff, professor of medicine, botany and chemistry, arranged the botanical garden according to his own system, which predated the Linnaean system. His work can be seen as the start of plant systematics in Utrecht. The herbarium was founded in 1816 when a collection of about 3,000 plants (with plant collections of a.o. J.D. Hahn, M.W. Schwenke and S.J. van Geuns) was bought from the professor of botany M. van Geuns (1735–1817). For the complete collection, including the cabinets, 400 Dutch guilders was paid (c. € 180). One of these cabinets, the "*Hortus Siccus*", stood in the library of the institute until closure. At the beginning of the 19th century there was not much botanical activity and the herbarium was rarely used. The first botanist to make a substantial impact was F.A.W. Miquel (1811–1871). He was appointed Professor in Utrecht in 1859. By building up collections and through his international connections, Miquel seriously started plant taxonomy at Utrecht. When Miquel was also appointed director of the Rijksherbarium ("State Herbarium") in Leiden (1862), he was no longer allowed to have a private herbarium. His collections were therefore bought by Utrecht University and thus became the real foundation of the collection of the present herbarium. Among them were many specimens from Surinam, sent to him on a regular basis by the collector Focke. Miquel described many new species from that material which resulted in 1850 in his *Stirpes Surinamenses Selectae*, the first outline of what was later to become the *Flora of Surinam*. Also, type collections of South American plants constitute an important element of Miquel's herbarium and many of these were the primary material for Martius' *Flora Brasiliensis.*

The next important contributions to the herbarium were made when the famous Dutch botanist F.A.F.C. Went (1863–1935) brought back many herbarium specimens when he visited Surinam on a commission from the Dutch Government to conduct an inventory of plant diseases. Thus, attention became increasingly focused on Surinam and adjacent areas in tropical South America. August A. Pulle (1878–1955) was the first to

again study the material of the herbarium thoroughly. He was the first professor of plant systematics at Utrecht University and also held the post of director of the Herbarium. His thesis (written under supervision of Went) entitled *An Enumeration of the Vascular Plants Known from Surinam…* is the basis of the later *Flora of Surinam* of which many volumes appeared under his editorship. Under his direction the rather small collection grew to be one of the best herbaria for the Northern South American region. After Pulle retired in 1949, the *Flora of Surinam* project was continued by J. Lanjouw (1902–1984) who expanded the institute and extended the scope of the research, now to include cytotaxonomy, palaeobotany and vegetation ecology, fields that later gave rise to separate research groups.

made available on the web by the IAPT and IDC some years ago (http://tl2.idcpublishers.info/).

In the beginning of the 1980s the staff of the herbarium was reduced due to repeated budget cuts. Therefore, it was decided to focus all monographic efforts in the institute on one family: Annonaceae. At the beginning of the project monographic studies of selected genera and morphological character analyses were the main focus. More recently, the focus has shifted towards the reconstruction of (molecular) phylogenetic relationships, the timing of divergences and associated character evolution of selected genera and species of Annonaceae. The project still flourishes but the coordination of the project has moved to the Wageningen branch of the National Herbarium of the Nether-

Views of the collection ranges in the Utrecht herbarium.

After the Second World War Lanjouw hosted the first important post-war meeting of plant systematists: the symposium "Botanical nomenclature and taxonomy". At this meeting proposals were formulated for an international organisation of plant systematists (now the IAPT). Together with F. Verdoorn (1906–1984) Lanjouw suggested the establishment of an international journal for plant taxonomy. This proposal was greeted with enthusiasm and in 1950 at the International Botanical Congress in Stockholm, the International Association for Plant Taxonomy was founded, with its bureau at Utrecht University, followed by the creation of *Taxon* in 1951.

Frans Stafleu (1921–1997) set the stage for *Taxon* to become a leading journal in plant taxonomy and nomenclature. A series of publications, at first called "handbooks", for the use of taxonomists began in 1952 under the name *Regnum Vegetabile*. Among the first were the *International Code of Botanical Nomenclature*, the famous *Index Herbariorum* and *Index Nominum Genericorum*. Between 1973 and 1998 Stafleu himself co-authored *Taxonomic Literature* 2 (*TL-2*) and its supplements, that summarises ca. 37,600 publications by thousands of authors. It was

lands. Also, in 1984 the scope of the *Flora of Surinam* project was widened to *Flora of the Guianas* of which the editorship still resides in Utrecht. Notwithstanding the turmoil, in the last decades of the 20th century Utrecht was a widely acknowledged centre of plant systematics and host to a number of successful international meetings.

Systematic wood anatomy merits special attention here. Alberta M.W. Mennega, appointed in 1946, used the collections made by Stahel as a starting point to build the Utrecht University Wood Collection, now one of the most important collections of (neo)tropical woods in the world. She assembled an active team of wood anatomists around her and the International Association of Wood Anatomists choose Utrecht as its administrative centre from 1981–1990. The extensive collection of microscopic wood slides was the first in the world to be made available on internet (on www.nationaalherbarium.nl, and later also on http://insidewood.lib.ncsu.edu/search/).

The late 1990s saw the development of the National Herbarium of the Netherlands (NHN) as a decentralized merger of the three major herbaria in the Netherlands (L, U & WAG), leav-

ing the three universities as main funding agencies, with an additional financial input from the Dutch government. The NHN was the first major herbarium in the world to digitize all its type collections and make them accessible on-line. For Utrecht not only the types but also historically important (Schomburgk) and taxonomically and geographically focal collections (Annonaceae; Guianas) were digitized. These efforts enabled the NHN-Utrecht to better serve its traditional users and also opened up new areas of research for biodiversity assessment. Currently digitized collection data, together with plot inventories are very successfully used for ecological modelling in the Guianas and the Amazon basin by H. ter Steege and co-workers, whose work has meanwhile been moved from the Herbarium to the Plant Ecology and Biodiversity group of Utrecht University. Digitized label data are also a rich source of information for the work on medicinal plant use in Surinam by T.R. van Andel. Another major change in the 1990s was the introduction of molecular methods into systematics, and Utrecht became world leader in molecular phylogenetics of Annonaceae thanks to the work of L.W. Chatrou and his students.

The official formation of the NHN in 1999 had reversed the misfortunes of the Utrecht Herbarium, which had even been asked to abandon all monographic and cladistic studies in 1992 by the Biology Faculty of Utrecht University and in the same year saw its status reduced to a project group in the Plant Ecology department. Paul J.M. Maas, extraordinary professor of Plant Systematics, successfully supervised a number of MSc and Ph.D. students and postdocs, and once again monographic studies on the Annonaceae and the Flora of the Guianas flourished. In the beginning of the new millenium NHN-Utrecht organized its complete collection according to the new APG classification.

An unexpected but fatal blow came in 2004, when the Faculty of Biology announced that it wished to withdraw from the multilateral agreement under which the NHN could enjoy sustainable core funding. Negotations, including the offer of more favourable financial terms for NHN-Utrecht were to no avail. As an alternative strategy the NHN Board embraced a plan to work towards one large centre for collections and advanced biodiversity research, combining the NHN and the Zoological Museum of Amsterdam University with the National Natural History Museum *Naturalis* to form the Netherlands Centre of Biodiversity (NCB) in Leiden. Initially Utrecht University was an enthusiastic partner on the roadmap towards the NCB, it but impatiently withdrew last year and announced to put the collections behind lock and key as from the 1st of June this year. All our hopes are now focussed on the speedy establishment of the NCB, which will also have space to once more make the unique Utrecht herbarium and wood collection accessible for international research, and which foresees in the continuation of the Dutch editorship of the *Flora of the Guianas* project. A last minute online petition "Save the Utrecht Herbarium" resulted in over 6,500 worldwide protests. Very prestigious botanists and organisations have protested the unprecedented closure of a major international research facility. Questions in parliament have led to the promise by the Minister of Education, Science and Culture to mediate between Utrecht and Leiden University, to make sure that the collections can be moved to Leiden, even before the full funding and buildings of the new NCB will be available, so that open access to the collections can be guaranteed once again. Meanwhile the demise of the Utrecht Herbarium is a personal tragedy for its staff, active (now laid-off or moved to another research group) or retired (but still very active in an honorary capacity). It is a sad reminder that in cash-strapped universities major collections often are no longer on the priority list. For biological systematics this is truly tragic, because systematics flourishes best in the heart of "the world of learning". In countries with successful centres of taxonomy and collections outside universities (e.g., the U.K. and the U.S.A.) one often hears the complaint that systematics has very nearly disappeared from the university curricula. Major collection institutes, however, have little choice: they simply cannot rely on universities for sustainable funding.

The founder of the Utrecht wood collection Alberta Mennega (right) and Imogen Poole (left) in the famous xylarium.

The case of the Utrecht Herbarium is a very sad reflection on the goals of the Convention of Biological Diversity (Rio World Summit 1983) and its Global Taxonomy. The CBD recognized the great value of biological collections and taxonomy to underpin conservation and sustainable use of natural resources, and committed all signatories to providing open international access to biodiversity information held within its borders on species from other countries. The Utrecht Herbarium was exemplary in its contribution to the CBD goals, not only in actively providing open access to its collections, but also in capacity building by teaching an enthusiastic young generation in its famous annual international course on Neotropical Plant Families. For Utrecht University and Dutch systematics in general its closure is a black day in history. — Roy H.J. Erkens[1] & Pieter Baas[2], [1]Utrecht University, Institute of Environmental Biology, Section Plant Ecology and Biodiversity, Sorbonnenlaan 16, 3584 CA Utrecht, The Netherlands (R.H.J.Erkens@uu.nl), [2]Leiden University branch of the National Herbarium of the Netherlands, P.O. Box 9514, 2300 RA Leiden, The Netherlands

[Roy Erkens was the last Ph.D. student of the Utrecht Herbarium with taxonomy as part of his thesis; Pieter Baas is the former Director of the National Herbarium of the Netherlands. — ed.]