

## **V. RESEARCH AND PUBLICATIONS**

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**The Checklist of the flora of Cebu** by D. Bicknell is finished. It is intended to be published as a CD-ROM which will contain plates of 168 pteridophytes and 1578 spermatophytes.

For those who need to invent names for new taxa or is interested in their derivation it will be very worthwhile to invest USD 27.95 in the reprint of R. W. Brown's **Composi-**

**tion of scientific words** (Rev. ed. 1956; reprint: 2000) ii, 882 pp, Smithsonian Institution Press, Washington DC. ISBN 1-56098-848-7 (PB). W.T. Stearn called it "one of the best of its kind ever written". See also the review by R. Schmid [Taxon 49 (2000) 840].

**Flora Malesiana on CD-ROM?** — One of the points of discussion during the 5th Flora Malesiana Symposium in Sydney was the use of interactive keys for future issues of the Flora. It was generally accepted that it would be very useful to add to the paper book a CD-ROM with at least an interactive key, and preferably also with (colour) illustrations.

With the program DELTA uniform descriptions, character analyses, diagnoses, comparisons, interactive and dichotomous keys can fairly easily be prepared.

Initially a selection of the necessary characters and their states is made, additional ones can be added at any time, superfluous ones deleted. Then the matrix is filled for all taxa. The result is a set of perfectly congruent descriptions.

The basic files automatically created by the Windows DELTA Editor can be united into a single one that is accepted by the program KCONI of R. Pankhurst. This can do about everything that DELTA can, but has some added frills: a good dichotomous key can be constructed couplet by couplet selecting lead by lead in a fraction of the time needed to make one by hand.

With the Editor figures can be added, and, very important, an interactive key is available, called INTKEY. If one prefers the use of LUCID for making an interactive key, that is also possible. It is even possible to convert an INTKEY file into a LUCID file.

I hope, as general editor of Flora Malesiana, that at least the authors who are starting on a new group will use DELTA, and that as many authors as possible will add an interactive key to their manuscript for FM.

Making a CD-ROM has the great advantage that things that cannot be published in the paper book because of money constraints, can easily be published on a CD-ROM. Maps, (colour) plates for all species, slides, it all can, without much costs, be put on a CD-ROM, making the Flora treatment much more user-friendly.

I hope and expect cooperation of all authors to make Flora Malesiana in this way even more an example than it used to be. — H.P. Nootboom

**Flora of Thailand 7, 2** (2000) 251–349, illus. — Contains treatments of Callitrichaceae, Chenopodiaceae, Hydrophyllaceae, Monotropaceae, Myricaceae (K. Larsen), Oleaceae (P.S. Green), Salvadoraceae, Saururaceae (K. Larsen), and Zygophyllaceae (K. Chaya-marit).

**Malesian Seed Plants. 3. Portraits of non-tree families** (2001) by M.M.J. van Balgooy was published in October 2001. This invaluable work (for only EUR 45.00) deals with the portraits of 124 non-tree families.

The **New York Botanical Garden** has completed the electronic cataloguing of its 87,861 vascular plant types. These records are available for searching at the Gardens website: <http://www.nybg.org/bsci/hcol/vasc/> A brief history of the project, and some interesting statistics about the vascular plant type held by NYBG are now available: <http://www.nybg.org/bsci/hcol/vasc/complete.html>

Imaging of the vascular plant types continues at:

[http://www.nybg.org/bsci/herbarium\\_imaging/](http://www.nybg.org/bsci/herbarium_imaging/)

Currently approximately 15,000 images are linked to catalogue records.

In an effort to meet our obligation to protect populations of endangered species from over-collection, some of our specimen data (such as specific locality information) have been removed from those on-line records for endangered species. These data are made available to researchers on request.

We are aware that making our herbarium specimen data available involves striking a delicate balance between access to data that are important to research and the potentially reckless posting of sensitive information. To that end, we remove portions of records for species listed in the United States Federal Endangered Plant Species list and in the IUCN Red List of Threatened Plants. These two lists, however, are not comprehensive. If you are aware of other species that are better protected by limiting access to specific locality data, please contact us, and we will update our database accordingly. — B.M. Thiers

**Nordic Journal of Botany** — Dr. I. Nielsen (AAU) has taken over as editor-in-chief after Dr. K. Larsen.

In March 2001, A. Schuiteman and E.F. de Vogel published **Orchids of New Guinea on CD-ROM, Volume 1**. Among other things it contains a checklist of c. 3000 taxa, descriptions of 132 genera, generic keys, and c. 2000 images. In print this would be a book of c. 1350 pages of which 500 would be illustrations! The production of this CD-ROM was possible through the very generous financial support of the Cheng Kim Loke Foundation, the Papua New Guinea Biological Foundation, Australia and Pacific Science Foundation, and the Van Tienhoven Stichting. Volume 2, dealing with New Guinea Dendrobiinae at species level, is in an advanced state of preparation and is due to be available early 2002. CD-ROMs on the Orchids of the Philippines and of Vietnam are also scheduled to appear in 2002. These are co-authored by Schuiteman & De Vogel with Ms. M. Agoo and Dr. D.D. Huyen, respectively. All these CD-ROMs are using the Linnaeus II program developed by ETI, Amsterdam. They will run on PCs under Windows 95 and 98, as well as on Macs. Though not developed specifically for Windows 2000 or NT, the CD-ROMs should work well on these platforms, too. *Orchids of New Guinea, Vol. 1* (ISBN 90-75000-20-0) is available at the Leiden branch of the National Herbarium Nederland for only EUR 59.00 (e-mail: [zoelen@nhn.leidenuniv.nl](mailto:zoelen@nhn.leidenuniv.nl)).

The **Palms of New Guinea Project** is a collaboration involving 12 botanists from six different countries. The project, coordinated by Dr. W. Baker and J. Dransfield, Kew, aims to explore and document the palm flora of New Guinea. Around 1000 species of palm occur in the Malesian region in a bimodal distribution of diversity across Wallace's Line. The most palm-rich area in Malesia is the Sunda shelf, but New Guinea comes a very close second with more than 250 species in 33 genera. Although only two of the genera do not occur outside New Guinea, more than 90% of the species are endemic. Despite the similar numbers of species in the two regions, the New Guinea palm flora has a taxonomic composition rather different from that of the Sunda shelf, but there are also some strong links with western Malesia. For example, the rattan genus *Calamus* and the undergrowth fan palm genus *Licuala* both possess two major centres of diversity, one in the Sunda region and another in New Guinea.

So why the interest in the palms of New Guinea? The piecemeal description of the species has resulted in an advanced state of chaos in the taxonomy of the group. The great Italian botanist Odoardo Beccari (1843–1920) was the first palm expert to describe sizeable numbers of New Guinea palms based on specimens sent to him in Florence (FI) by the likes of Baron Ferdinand von Mueller and material that he collected on his own expedition to the Vogelkop. In the 1930s and 1940s, the German palm botanist Max Burret (1883–1964) made further progress, though his tendency to overdescribe and the loss of types in the bombing of the Berlin herbarium (B) in WWII has resulted in much of the taxonomic mayhem that we are dealing with today. A fresh look at the New Guinea palm flora in its entirety is desperately needed.

We know from our experiences following the publication of the highly successful book on the palms of Madagascar (Dransfield & Beentje, 1995), that the provision of expert information on the taxonomy of palms has spawned a wide range of research projects on Madagascar palms ranging from ecology and conservation to ethnobotany and sustainable utilisation. We are confident that a palm treatment for New Guinea will have a similar effect. Too few groups of vascular plants in New Guinea have received recent taxonomic attention, creating a major obstacle to research potential downstream. Palms are very conspicuous at lower elevations in New Guinea and are easily recognised by experts and laymen alike. Thus they attract attention and are ideal subjects for practical field research. They are good indicators of forest quality and are extremely important to local people providing raw materials for a host of day-to-day uses. Some groups, such as the rattans, have much potential as sustainable forest products and yet exploitation of these resources is almost impossible without an understanding of their basic taxonomy. On top of the scientific justification for palm research, there is substantial demand for palm information in the horticultural community as many New Guinea palms are popular garden subjects. One species in particular, *Ptychosperma macarthurii*, is one of the most widely used landscaping palm.

The Palms of New Guinea Project team is a unique collaboration with a strong capacity building and training element. In New Guinea itself, R. Maturbongs, J. Wanggai, and C. Heatubun (MAN) are vital counterparts in Irian Jaya, Indonesia, conducting adventurous fieldwork with their colleagues from Universitas Negeri Papua (UNIPA, formerly the Manokwari campus of Universitas Cenderawasih). Their special research interests lie in rattans, *Actinorhytis*, *Cyrtostachys*, and the endemic genus *Sommieria*. Mr. R. Banka, Assistant Curator of the National Botanic Garden at PNG Forest Research Institute, Lae, is undertaking exciting field trips, too, and is paying special attention to *Heterospatha* and *Rhopaloblaste*. At Bogor Dr. J. Mogeia and Mr. A. Keim are providing treatments of *Arenga* and *Orania*, respectively. Mr. J. Dowe at James Cook University, Townsville, Australia, is working on *Calyptrocalyx* and *Linospadix* and will also provide the account for *Livistona*. *Licuala* is being studied by Dr. A. Barfod, Aarhus, while Mr. S. Zona of Fairchild Tropical Garden (FTG) is bravely tackling *Brassiophoenix*, *Drymophloeus*, *Ptychococcus*, and *Ptychosperma*. Dransfield and Baker are revising *Areca*, *Calamus*, *Gronophyllum*, *Gulubia*, *Hydriastele*, and *Siphokentia*. Mr. S. Barrow of the Global Diversity Foundation will prepare a chapter on the ethnobotany of New Guinea palms.

The project was initiated formally in late 1999 and we expect to complete the task by the end of 2004. Currently, we are conducting fieldwork throughout the island and have

collected more than 750 new specimens since the start of the project. Funding obtained through the BAT biodiversity partnership will facilitate future fieldwork, study visits to Kew by New Guinea counterparts and a project workshop in 2003. In addition, the BAT biodiversity partnership and the UK Darwin Initiative allowed all New Guinea counterparts to attend the Flora Malesiana Symposium in Sydney, 2001.

The primary product of the project will be a book describing all taxa, including diagnostic plates for each species and numerous colour photographs. Illustrations are being prepared at Kew by the Australian botanical artist, Ms. L. Smith, thanks to a generous grant provided by the Pacific Biological Foundation. In addition, we will produce non-technical guides in Pidgin, Indonesian, and English aimed at enabling the non-expert reader to identify New Guinea palms in the field. A field guide to the genera of PNG palms has recently been published by project members Barfod, Banka, and Dowe (2001). An interactive electronic key is also a high priority to improve ease of access to complex botanical information for the widest range of users.

We are keen to hear from any readers with interests in New Guinea palms and would be glad to provide identifications for any specimens sent to Kew. Do not hesitate to contact me at the following address — Bill Baker, Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE, United Kingdom; e-mail: w.baker@rbgkew.org.uk

*References:*

- Barfod, A.S., R. Banka & J.L. Dowe. 2001. Field guide to the palms in Papua New Guinea. Aarhus Univ. Rep. 40.
- Dransfield, J. & H.J. Beentje. 1995. Palms of Madagascar. 475 pp. Kew.

**The SEABCIN project:** a first step towards a virtual herbarium of South East Asia.

The importance of database technology as a tool in (plant) biodiversity (related) research is beyond dispute. World-wide more and more effort is being put into building collection-based biodiversity databases and making such data available world-wide through Internet. A next, logical step to further improve and expand the availability of (biodiversity) data is to provide information technology solutions to combine data from separate databases into virtual databases. Examples of small-scale efforts to implement this are already available for instance from the European Natural History Specimen Information Network (<http://www.nhm.ac.uk/science/rco/enhsin>). Also, initiatives like GBIF (Global Biodiversity Information Facility) or ENBI (European Network of Biodiversity Information) strive towards creating virtual databases at a much larger scale, world-wide and European respectively.

November 2001 is the official starting date for the SEABCIN (South East Asian Botanical Collections Information Network) project. The main aim of this 2.5 year, EC-funded project is to improve and encourage the exchange of (digital) data amongst and between herbaria holding significant botanical collections originating from SE Asia. Herbaria participating in the project proposal are: BKF, BO, KEP, PNH, SAN, and SAR. The Leiden Branch of the National Herbarium Nederland (L), which holds a significant collection from SE Asia, coordinates the project while the University of Oxford is responsible for the technical implementation. Other herbaria in- and outside the region holding significant SE Asian collections will be invited to participate in the SEABCIN process.

The participating herbaria have already started digitising their collections. Some already have databases with more than 100,000 records. Although the data are of a similar type they are not fully compatible. Accordingly, the project will start with an inventory of the data and databases that exist, the collections already held in computer files and the data structures and formats in use. Questionnaires will be used to acquire this kind of information, which will then be used to establish appropriate standards and preferred data formats, in line with international recommendations. Although the project will benefit most from maximum harmonisation of the underlying databases it is unlikely this can be implemented. Consequently efforts shall be confined to changes, which can be implemented with as little difficulty as possible, carrying the full support of the herbaria. A workshop will be used to finalise data standards and prepare specifications for the central database, assess specific technical needs with respect to the implementation of the proposed data standards and reach an agreement on data ownership and data access rights.

One of the key activities of this project is to implement the data standards regionally (data editing phase), a process that will benefit each of the participating institutes and will facilitate the exchange and merging of data as proposed in this project. Towards the end of the data editing phase, dictionaries of geographic, taxonomic, and collector names will be gathered and merged to create central dictionaries. These will be used to assess progress and to guard the quality of the required data standards.

Along with data editing, each herbarium will complete data entry for a selected group of collections (e.g. a single family like Dipterocarpaceae) to allow testing of data storage, exchange, and query options. The successful implementation of the data standards will be assessed. Specific issues relating to the merging of these data sets will be analysed, for example, duplication of specimens across herbaria and variation in specimen identification. With such a data set, it will be possible to explore more fully those aspects of the project concerning data query and exchange.

A major activity of this project is to develop and implement a web-based data storage, query and exchange facility for the botanical collections and related data. Based on a review of existing web-based biological collections initiatives a central database structure and associated software will be developed to import data from external data sources, edit the database and provide necessary querying, on-line processing and downloading tools. During development priority will be given to management flexibility in the long-term and maintaining open data formats.

A suite of data editing and data checking software tools will also be developed for use by the project. The purpose of these will be to assist herbaria to upgrade their local data, to meet the project standards, and to provide filters to check data prior to incorporation into the central system. This phase will also include the development of software to compare collection data duplicated across the region and to provide, as one example, options to update specimen identifications.

The web-based facility will be programmed in a user-friendly way, so that most activities will be self-explanatory. However, a comprehensive manual will also be developed. The project will end with training of all herbaria staff. The last part of the project entails the publication of the software and data on the Internet. This will enable users world-wide (varying from conservationists, botanists, environmental economists, etc.) to query for information about SE Asian plants: names, distributions, habitat, vernacular

names, uses, descriptive notes (e.g. habit of plant, height, bark, colours, etc.). In the future the database service can be extended by inclusion of bibliographic data, synonymous names, full descriptions, and links to molecular data. — L.P.M. Willemse

**UK Darwin Initiative Papuan Plant Diversity Project** is an important new collaborative project that has recently received funding from the UK's Darwin Initiative. The project is to run for three years.

**Background** — The flora of Irian Jaya (now Papua), the western part of the island of New Guinea, is one of the most diverse yet least well known in the World. The Herbarium at the Universitas Cenderawasih, Manokwari (MAN), is the only local plant diversity reference collection in the province. It contains extensive historical collections, many of which are not duplicated elsewhere. The Herbarium is in urgent need of rehabilitation to prevent further degeneration of the collections so that it can play a more effective and much needed role in the exploration and conservation of the biodiversity of Irian Jaya. This project is intended to act as a catalyst for the restoration and expansion of the Herbarium and to fulfil its research role at international levels.

**Objectives** — To ensure that MAN can fulfil its crucial role in the study and conservation of Irian Jaya plant diversity through: herbarium renovation and development; training staff to develop best management of the Herbarium and skills in plant collection and identification; augmenting herbarium collections; developing a database of all collections at MAN; developing staff research skills through preparation of field guides; building collaboration between Irian Jaya and Papua New Guinea and the UK.

**Project activities** — Dr. J. Dransfield and W. Baker in Kew (K) and J. Wanggai and R. Maturbongs in MAN are responsible for project management. Mr. D. Hicks has just been appointed by K to work as project coordinator, spending six months a year in Manokwari and six months in Kew. As part of the project activities Mr. C. Heatubun has spent four months in K where he has worked on a monograph of *Sommieria* and has studied methods of herbarium curation, and Wanggai and Maturbongs were sponsored to attend the Flora Malesiana Symposium.

**Tree Flora of Sabah and Sarawak Volume 4** is in its final stages of editing and would be ready for publication in early 2002. The volume will contain 6 families: Aquifoliaceae (S. Andrews), Ebenaceae (F.S.P. Ng), Lecythidaceae (M. Pinard), Oleaceae (R. Kiew), Proteaceae (R.C.K. Chung), and Sapotaceae (P.P.K. Chai & P.C. Yii). The volume is edited by E. Soepadmo, L.G. Saw, and R.C.K. Chung.