Analyses d'ouvrages / *Book reviews*

Dransfield J., Uhl N. W., Asmussen C. B., Baker W. J., Harley M. M. & Lewis C. E. 2008. — *Genera Palmarum. Evolution and Classification of the Palms* (ed. 2). Royal Botanic Gardens, Kew, 744 p., line drawings and colour photos.

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Palms are back: New and improved *Genera Palmarum*: The evolution and classification of Palms.

In the world of palm research *Genera Palmarum* (Uhl & Dransfield 1987) or "GP" represents the most important guide to classification for all palm biologists. As a young undergraduate student I first heard of this second edition of GP at an annual EUNOPS meeting (European Network of Palms Specialists; www.eunops.org) held in Montpellier, France in 2002. I remember being quite excited about this second edition and listened attentively to John Dransfield expose the layout of the book. It took an important international collaboration and over six years to produce it. During those six years I must have asked John and co-author Bill Baker some 50 times "Is GP2 ready yet?" I would generally get the answer "Uhhhh almost". I am glad that today my question is obsolete.

As it is clearly indicated in the first edition of GP the idea of a *Genera Palmarum* started over 50 years ago with Liberty Hyde Bailey followed by the works of Harold Moore. In 1973, Moore published the outline of *Genera Palmarum*. After his passing in 1980, Natalie Uhl and John Dransfield continued the work and published GP in 1987 (Uhl & Dransfield 1987). Twenty one years later we can confidently say that this first edition did indeed provide an important source of knowledge and inspiration to a generation of palm biologists. However, as for anything in science, and especially in the field of botany, the gathering of new information and new techniques of data analyses led to new classifications and a better understanding of the biology of palms. This new edition arrived spot on time.

Genera Palmarum 2 is an entirely new book and not just an update of the first one. There are 732 colour pages packed with information, and with a new classification of the palm family following Dransfield *et al.* (2005). At the back of the cover page we can find a list of all generic names ever published with reference to the page numbers. This is extremely practical and I am glad it was retained from the first edition. The structure of the book is essentially the same as the first edition being divided into several chapters covering all aspects of palm biology from pollen to biogeography, passing by an account of fossil records for the family, and ending with the new classification. In addition, you will find a wonderfully well illustrated glossary of general botany and more specialized palm terms, by means of numerous photos and line drawings.

Each of these chapters presents a clear and wide overview of the field and abounds with references. Most of these chapters (or subjects) were treated to some extant in the first edition but are here entirely rewritten, updated and significantly expanded (e.g., pollen or fossil record chapters). One very nice feature of these chapters is the abundance of tables synthesizing the text, allowing a quick access to references or data. For example, distribution of leaf types (table 1.5) or genera with spicate inflorescences (table 1.8).

The last chapter of the book, "Classification of palms", is of course the longest and provides a description of all currently recognized genera. There are 17 fewer genera recognized than in the first edition (183 versus 200). Several genera were reduced into synonymy (e.g., three genera into *Attalea*). In contrast six new genera were described, the most recent one being the spectacular *Tahina* from Madagascar (Dransfield *et al.* 2008).

The in-depth exploration of Madagascar's palm flora has shed much light "on one of the real mysteries remaining in the palm family" (Dransfield & Beentje 1995) representing the most significant advancement at the floristic level when compared to the first edition.

Indeed, half of the new genera described between GP1 and GP2 are from Madagascar (*Voanioala*, *Lemurophoenix* and *Tahina*). At the systematic level several rearrangements were undertaken when compared to GP1, generally supported by strong molecular evidence. The most striking change concerns the inclusion of the Caryoteae tribe with pinnate leaves (formerly placed within the Arecoideae) within the generally palmate Coryphoideae subfamily (Hahn 2002; Asmussen *et al.* 2006). Additionally, the tribe Chamaedoreeae was relocated from the Ceroxyloideae to the Arecoideae, whereas the subfamily Phytelephantoideae was transferred to the rank of tribe within the Ceroxyloideae. Finally several subtribes were fused with others (e.g., Butiinae with Attaleinae).

Detailed generic descriptions are accompanied by information on distribution and ecology, anatomy, relationships, common names, taxonomic accounts, information of fossil records as well as general notes and remarks. Each of these descriptions starts with a short overview of the most important morphological characters found in the genus. This new addition proves to be very useful for a quick reference to the genus in question.

Descriptions are accompanied by wonderful colour photos (including the author of the photos), line drawings of flowers, fruits and seeds (same artistic style as the first edition) as well as distribution maps and pollen slides. The addition of distribution maps for each genus (lacking from the first edition) is much welcomed and very useful. All this information is to be found on the same pages as the descriptions, which is again a great new addition.

I have but very few critical points to make for this book. One would regret the absence of a total number of palm species currently recognized, although there is a table detailing the number of genera and species per major and minor region. Of course this number is not fixed in time but an estimation would have been very nice and useful. Based on the numbers given for each genus, I calculated 2458 species (give or take a dozen). I also spotted a few minor mistakes such as the presence of old subtribe names instead of the newer ones. Finally, the sheer size of this work (*c.* 4 kg!) does not allow you to carry it into the field unless you feel like sacrificing most of your water and food reserves. Then again this wasn't the intention.

The publication of this book shows that palm research has not only grown exponentially during the last decades, but that this growth has been done in perfect synergy between research teams around the world. I strongly believe that this collaboration is the key to the success of this new edition, a situation seldom encountered in other plant families of this size and importance. All in all, this book is a masterful achievement not only at the level of the data it assembles but also in the way it is presented and laid out.

One can wonder what *Genera Palmarum* 3 will bring us in a few decades. Several important taxonomic questions remain and will hopefully be addressed such as the taxonomy of the largest but polyphyletic genus in the family *Calamus* (Baker *et al.* 2000). I would also think that the gathering of more DNA sequence data, especially at a genomic level, will allow the generation of a fully resolved and well supported phylogenetic tree of the Arecaceae, even though the soon published supertree of the family already provides a huge step in that direction (Baker *et al.* in press). Such a tool will undoubtedly generate a flow of new research in several fields of evolutionary biology. Numerous species level phylogenies shall be generated shedding significant light on the infrageneric relationships which might be worth reviewing. We could imagine a chapter devoted to the evolution of morphological characters in turn explaining the cause of the wonderful diversity of forms encountered in this family. Finally, in a more futuristic view, one could even imagine a chapter on the evolution of genes and their functions or the evolution of genome size within the family (Roser 2000).

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Zhengyi W., Raven P. H. & Deyuan H. (eds) 2007-2008. — *Flora of China*, vol. 12, *Hippocastaneaceae through Theaceae.*

Text: 534 p.
ISBN 978-1-930723-64-1.
Format: 28.5 × 22.5 × 4 cm. Price: 125 $.
Illustrations: 475 p., 450 figs and 1 colour plate (frontispiece).
ISBN 978-7-03-023019-5/Q.2177.
Format: 28.5 × 22.5 × 3.5 cm. Price: 125 $.

The appearance of these both recent volumes is a good occasion for introducing in detail a much uncommon venture in botanical publishing. They are in fact the fruits of a daring collaboration between Chinese and non-Chinese botanists, coordinated by the Missouri Botanical Garden and the Chinese Academy of Sciences.

The aim of this Flora of China Project is primarily to translate into English and to update the previous *Flora Reipublicae Popularis Sinicae* (FRPS, since 1959), in order to make available an accurate documentation about an area encompassing *c.* 31 000 species, i.e. one eighth of the whole vascular plants on Earth. This tremendous richness results at once from the unique climatic continuum between northern and southern China, where longitudinal plant migrations were never hampered by severe obstacles such as continuous high mountain ranges or sea.

The Introduction (pages x, xi) provides a concise and fairly convincing explanation of the editorial policy. By comparison with the FRPS, rearrangement of family order was kept at the most reasonable rate. Space constraints led to short description for familial, generic, specific and infraspecific ranks, varieties being usually described in a telegraphic style. However significant data, such as phenology, distribution, and even chromosome numbers, are never neglected, and even biological details may be found: for example, in the description of Hippocastanaceae (p. 1) the authors (Xia Nianhe, Nicholas Turland and Paul Gadek) emphasized the male character of the upper flowers of the thyrse. Literature refers to works dealing with China and neighbouring countries only, from which are cited basionyms and synonyms. A peculiar care was brought to build the determination keys, most often artificial, but easy to read and use. In e.g., the Malvaceae key (p. 265), diagnostic features between closely related genera such as *Alcea* and *Althaea* or *Malva* and *Lavatera*, are unambiguously set out.

Illustrations volumes are published subsequently, but follow the same numbering.

The three final indexes (Chinese names, Pinyin transliteration and scientific names) are invaluable tools, and result from an outstanding editorial and even linguistic effort.

However the emphasis on identification and the consequent conciseness led to somewhat annoying problems.

Although the Flora of China Project involves *c.* 33 herbaria, it is striking that no sheet reference is given for types, except when some new endemic species previously described are validated (e.g., for *Actinidia*, p. 354, 355). Consequently no lectotypification is made, and several nomenclatural problems remain unsolved, as in e.g., p. 278 where the identification of *Abutilon guineense* (Schumacher) E.G.Baker & Exell, a species growing in Africa and Australia, is questioned. Such uncertainties are obviously unavoidable for widely distributed species. Moreover no link is proposed with a database of the material studied, at least a selection

of it. On the other hand a great attention was devoted on the conservation status of species.

Consequently this flora will be very useful for floristics, ecology and economic botany, including horticulture and pharmacology, but of a rather limited use for the usual herbarium work.

The plates are finely drawn, often with a cautious combination of hatching and stippling. Especially successful are the plates devoted to the Actinidiaceae family (p. 288-318). The lack of bar scale in the major part of plates may be bothering, but not a severe drawback, as sizes are well detailed in the text.

In the 25 planned volumes (including a first introductory volume, and two volumes dedicated to Pteridophyta), 16 were published since 1994. At this rate, the whole flora is expected to be printed in less than 20 years, perhaps an encouraging information for a future World Flora. It is thus understandable that the authors were to focus on determination of species, and did not want to tackle at once with complex nomenclatural questions, whose solving may spend a lot of time.

This renewed *Flora of China* is undoubtedly a highly significant contribution to the knowledge of the plant resources of our planet, and we have to congratulate wholeheartedly all the authors, artists, and editors to have undertaken it.

Thierry Deroin

Les forêts sèches de Madagascar. *Malagasy Nature* 1, 2008, Association Vahatra, BP 3972, Antananarivo 101, 189 p., 38 figs, 42 tableaux.
ISSN 1998-7919.
Format : 29,6 × 20,8 cm. Pas de prix indiqué.

Il est particulièrement agréable d'annoncer ici la naissance d'une toute nouvelle revue internationale d'histoire naturelle, entièrement consacrée à Madagascar et aux archipels les plus proches (Seychelles, Comores et Mascareignes).

La préface de ce premier volume, rédigée par la rédactrice en chef Marie Jeanne Rahelilalao, en fixe les grandes orientations éditoriales : essentiellement des publications à caractère le plus souvent monographique, l'accent étant mis sur la diffusion des travaux effectués par les chercheurs malgaches, notamment les jeunes, ainsi que sur les informations les plus utiles à la compréhension et à la conservation de la biodiversité.

Le présent volume traite des forêts sèches, un biotope dont la connaissance est encore beaucoup trop fragmentaire dans la Grande Île, où l'attention des naturalistes s'est davantage portée sur la forêt orientale, d'ailleurs plus accessible et plus immédiatement menacée. Bien que les articles proposés dans ce premier numéro soient plutôt zoologiques, ils apportent des éléments de réflexion importants pour le botaniste, car ils représentent la quintessence d'informations contenues dans plusieurs rapports d'activités, relativement peu diffusés.

Le rôle des formations ripicoles est tout particulièrement souligné dès le chapitre introductif : celles-ci ont été successivement des refuges et des centres de dispersion, en fonction des oscillations climatiques. De fait, les centres d'endémisme occupent les intervalles entre les grands bassins versants, et incluent les bassins moyens des fleuves, mais aussi les embouchures des rivières de basse altitude.

D'autre part, les récentes avancées archéologiques permettent de dater avec précision les débuts (env. – 350 avant notre ère) et les progrès de l'anthropisation des milieux naturels de Madagascar (réduction de la mégafaune à partir du IIIe siècle de notre ère, bétail abondant à partir du VIIIe siècle).

Douze centres d'endémisme, délimités par 13 bassins de retraite-dispersion, sont définis. Les 19 sites inventoriés de formations sèches sont ensuite caractérisés à l'intérieur de ce cadre : position géographique, dates d'étude, climatologie, géologie et hydrologie, pédologie (lorsqu'elle est connue), enfin physionomie et état de la végétation. Un historique détaillé de l'exploration naturaliste de ces sites est exposé dans le chapitre 2, puis quatre chapitres sont consacrés à divers groupes de vertébrés et les trois derniers aux problèmes spécifiques de la conservation des forêts sèches, spécialement dans la région occidentale. Celle-ci, outre les pressions traditionnelles dues à la culture sur brûlis, à l'extension des pâturages et au trafic d'espèces rares, voit se développer les prospections minières, notamment pour le saphir. La mise en place d'aires protégées et leur efficacité exigent alors la prise en compte de tout le contexte socio-économique et culturel local.

Les cartes, graphiques et tableaux occupent une place de choix. Le grand format et les doubles colonnes permettent une présentation aérée d'une information

plutôt dense, et toujours intéressante. Enfin, un index des noms scientifiques complète ce beau volume, publié avec le soutien financier de la John D. & Catherine T. MacArthur Foundation.

Ce périodique répond à un véritable besoin de la communauté des naturalistes de l'océan Indien, et est appelé à prendre une importance comparable à celle du *Journal of East African Natural History.*

On ne peut donc que féliciter la dynamique équipe éditoriale pour ce coup d'essai et lui souhaiter : « *Mahereza amin'izay ho tohiny* » (bon courage pour la suite).

Thierry Deroin