PALM LITERATURE

COCONUT: A GUIDE TO TRADITIONAL AND IMPROVED VARIETIES [Cocotier, guide des variétés traditionelles et améliorées]. Roland Bourdeix, Jean Louis Konan and Yavoh Pierre N'Cho. Editions Diversiflora, Montpellier, France. 2005. ISBN: 2-9525408-1-0. Price unknown. Pp. 104.

The authors have set out to do more than simply catalogue varieties and the book includes pages on the botany and history of the coconut palm and on the ethnology of those who cultivate this "tree of life, tree of paradise, tree of a hundred uses, symbol of the tropics, the milk bottle on the doorstep of mankind."

The authors are alumni of a coconut research station that was established by the IRHO (Institut de Recherches sur les Huiles et Oléagineux) in 1949 at Port Bouet, Côte d'Ivoire [Ivory Coast, West Africa]. This was one of the research institutes now merged into CIRAD (Centre de Coopération Internationale en Recherche Agronomique pour le Développement) and the Preface to the book is by the former Director General of CIRAD, Michel de Nucé de Lamothe, who was the coconut breeder at the same station when many of the varieties here illustrated and described by his successors were being collected. Now known as the Marc Delorme research station, it is part of a facility belonging to the Ivorian Centre National de Recherche Agronomique and it still produces coconut hybrids and improved varieties coded with the PB (Port Bouet) prefix; for instance PB 121, Lamothe's first hybrid, which became available in Côte d'Ivoire in the mid-1970s. That was when the F1 Maypan was released for commercial planting in Jamaica and, today, seed gardens able to produce all sorts of coconut hybrids exist in many – perhaps most – coconut growing countries. Yet farmers are reluctant to afford these coconut varieties and the Preface, rather sententiously, hopes "that this guide will instil the decision-makers and donors involved in development oriented research with reasons to intervene" and calls for "a greater insistence upon results that favour the designated beneficiaries." It needs to be said that, as a source of improved planting material, the Marc Delorme station would be one major beneficiary.

Whether or not palm enthusiasts can also be designated as beneficiaries they certainly will hope that the descriptions and illustrations provided in this work can help resolve two recurrent problems – how to be sure of the identity of the coconut varieties offered by the commercial nurseries and how to know if what they already have is indeed true to type. There will also be government agricultural officers and plantation managers who will want to know whether the coconut palms in their care are fit for purpose: giving immature fruit to drink and fresh nuts for supermarket buyers; and have the qualities required for desiccation or for virgin coconut oil production. And palm-loving tourists and palm professional landscapers will wish to know if the coconut palms decorating their hotels and golf courses can resist lethal yellowing or other disease infections, if they are liable to suffer attack by scale insects, fruit mites or other pests, and how well they might survive a hurricane or a tsunami. Many of these matters are dealt with in this guide.

The text opens with an introduction to the coconut as the tree of life, offering such information as the fact that two-thirds of the billion coconut palms that grow world-wide are (like this reviewer) more than sixty years old and that around half of the forty billion nuts produced are consumed domestically, despite once being (within living memory) the leading source of vegetable oil on the international market. The authors would reverse this trend by replanting with carefully selected varieties and by unveiling "some of the too closely guarded secrets of coconut research" – presumably including some of their own in the process. They continue their history of the coconut with a sequential account of the initial coast-wise dissemination by floating, the world-wide dispersal by human activity and the introgression of two contrasting types to produce much of the present day diversity. For a lighter touch, they poke gentle fun at the "mild delirium" behind the tongue-in-cheek idea that the wild coconut palm might have been the "legendary tree of the Garden of Eden," but they miss the opportunity to point up a subsequent Noah's Flood scenario in southeast Asia as the origin of the domestic coconut!

Even Linnaeus is made to look a little ridiculous by a photo-montage at the start of the two pages on coconut botany but the text that follows gives a readable account of the subject and pays particular attention to the flowering patterns that are so important to a

plant that is only propagated from seed. Twenty-one photographs fill the next two pages - on coconut morphology – a topic where a picture is certainly worth a thousand words. A sequence of text and pictures over the next six pages deal with the "Ninety-nine uses for the coconut . . .," starting with oil as the most important, including "Kernel, shell, wood and husk . . . tourism and alcohol," and concluding that "the coconut palm is truly a plant of civilization." Then, reaching their own areas of specialisation at the Marc Delorme station, the authors devote six pages of alternating text and pictures to "Selection and breeding," "Cultural techniques" and "Scientific research." Especially highlighted is the international approach of COGENT (Coconut Genetic Resources Network) whose Malaysian-based staff are also acknowledged later for defining the content of the variety plates which feature on half of the remaining pages of the book.

The first of these plates, showing the range of coconut fruit colors, shapes and sizes, illustrates the beginning of the next, and major, section of the book, which is the detailed description of thirty-four named coconut varieties from eighteen tropical countries. Twelve of the selected varieties are dwarf forms (including Malayan Yellow Dwarf, Tahiti Red Dwarf, Cameroon Red Dwarf and Brazil Green Dwarf); thirteen are tall types (including Rennell Island Tall, Tagnanan Tall and Sri Lanka Tall Ambakelle); and nine are hybrids (including Maypan, PB 121 (or Mawa), and PCA 15-2 (or Matag)).

The 500-or-so words of text that accompany each plate are unavoidably repetitive because each must contain the same sort of agronomic information: the habit of the palm (stem girth, leaf length etc.); age at key events (first flowering, maximum productivity or maturity); the fruit characteristics (shape size, husk thickness, nut or kernel weight, oil content, etc.); response to diseases or pests; suitability for particular uses, geographical distribution, and so on. But, wherever possible, emphasis is placed on individualities that may help differentiate one variety from another.

By the same token, each full-page plate is composed of almost standardised color photographs that allow comparisons to be made. For each one named there is an open inflorescence, two or three bunches of developing fruit, examples of large, medium and small sized fruit (with centimetre scale) showing entire, polar- and equatorial-sectioned fruit (both fresh color and dry brown) and an entire palm, showing trunk and crown. Unfortunately, it must be said that only two of these include a human figure to indicate the scale, so dwarf palms are in closer focus than tall specimens. And, in what appears to be a publication afterthought, the caption on each plate is adorned with "eye-end" views of three dehusked nuts – a closer look is needed to see that they are different on each page. It would have been better, instead, to show the three nuts in top-, side- and 3/4-profile and with a scale. Surprisingly, there is no picture anywhere in the book that really displays the nut – the agricultural end-product.

The last pages close with the authors' brief biographies, a few contact addresses, some titles of useful books and CD-Roms, a short list of internet sites, acknowledgements for assistance with text and photographs, and the publication details. There are no bibliographic citations or end-notes to give readers access to textual sources when opinions differ. Take, for example, two of the dwarf varieties described and pictured in the guide – the Tahiti Red Dwarf and the Cameroon Red Dwarf. They were given those names when added to the Port Bouet germplasm collection, and are therefore treated separately, but are they really nothing more than selections from another population in an entirely different region? The authors suggest that Polynesian or Melanesian sailors might have introduced the red dwarf to Tahiti from Papua New Guinea because in Tahiti it is known as the "Haari Papua," literally "Papuan coconut." The Cameroon Red Dwarf, in contrast they say, is remembered there as being introduced by American priests but nobody knows from where, and the authors argue that its origin is very probably the Pacific Ocean region, "as shown by recent molecular biology studies." But these unspecified molecular biology studies merely group the two dwarf types with another, the Pemba Red Dwarf from East Africa. That variety was described by Prudhomme, a French agronomist in Madagascar, a century ago (1906) at a time when France, like other colonial administrations, was establishing coconut plantations in overseas territories. What was more likely than agricultural officers, missionaries, or travellers to the Far East going though the Suez canal or returning via the Cape of Good Hope and the Bight of Benin should pick up and ship bags of "selected" coconut seednuts at little cost and with no

quarantine restrictions, whenever their steamship stopped to take on coal? Such an action would considerably improve the chance that these notoriously poor germinating varieties would survive long distance dissemination – journey times that would have been impossible to Polynesians or to Europeans in wooden sailing ships.

So, do the descriptions and illustrations help resolve the identity of coconut specimens or populations, and show if they are indeed true to type? This guide is certainly a good and worthwhile attempt but there are so many synonymous coconut variety names that it may not entirely succeed.

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PALM LITERATURE

PALMS OF CHILE. A DETAILED INVESTIGATION OF THE TWO ENDEMIC PALMS AND A REVIEW OF INTRODUCED SPECIES. Dr. Juan Grau V. Ediciones OIKOS, Santiago de Chile. 2006. ISBN 956-7277-18-4. Price unknown. Hardcover. Pp 203. Available at www.doctorjuangrau.cl

This is lavishly produced privately printed work encapsulating the enthusiasm of the author for palms, and, in particular for *Jubaea chilensis* and *Juania australis*. It is, apparently, produced in three different language editions – Spanish, English and French.

There is a brief introduction to the palm family and characteristics of palms in general. Thereafter follow 20 pages devoted to *Juania* and 94 pages to *Jubaea*. In Section 3 of the book the author discusses ten genera of introduced palms. Section 4 deals with palm cultivation and Section 5 pests and diseases. The book ends with an epilogue, a poem to *Jubaea* and glossaries, references and an index

There are plenty of photographs, drawings and paintings throughout, including some most compelling photographs of *Jubaea* and particularly rare, photographs of *Juania* in the wild. Of considerable interest is a discussion of the extinct palm, *Paschalococos disperta* on Easter Island that Dr. Grau has no difficulty in equating with extant *Jubaea chilensis*, an assumption that this reviewer cannot agree with, while admitting that the extinct palm most closely resembles *Jubaea*. Dr. Grau proposes that *Jubaea* reached Easter Island by floating across the sea from Chile. He briefly reports experiments he performed on the buoyancy of *Jubaea* seeds in sea water and the survival of the embryos. Seed remained buoyant in sea water for four months, this allowing the author to conclude that *Jubaea* could have reached Easter Island by sea dispersal. I believe we need much more rigorous experimentation before such conclusions can be reached.

This is an attractive publication that has been produced as a labour of love.

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