

ed a butter-like oil used for food and light. Another kind of palm, a wild one, grows only in the Congo, having fronds very suitable for being woven into mats, baskets and such like. From these fronds, macerated like our flax and spun, are made with great skill various kinds of cloth, some of which are as good as our plain and flowered velvets or our damasks. I remember having seen some of the strongest and most highly coloured pieces of this cloth given to His Serene Highness the Duke by some Capuchin fathers, who had returned from the Congo, and who stated that it was sometimes worn by the people of that place. A less important product, but perhaps one more worthy of regard, is the clothes woven out of coarse palms by the ancient solitaries in the holy caves of Nitria, Syria, and the Thebaid, in imitation of Paul the first hermit.

This is the information that, amongst much other, I have obtained from Khawaja Abul Gheith. The rest I do not transcribe because it is easily accessible in the works of the writers on natural history⁽¹²⁾, especially G. Bavino, who has dwelt at length on the palms.

Therefore, having nothing more to add I make Your Excellency a deep reverence, and remain

Your Excellency's Most

Humble Servant,

Francesco Redi.

From his house, 1 May 1666.

References

¹Redi, F. (1745). *Opere* pp. 185-196 Vol. VI. Hertz: Venice

²Gaub, E. (1952-3). *Botanische Reisen in der persischen Dattelregion. Ann. naturh. (Mus.) Hofmus., Wien* 59, 122

(12) For a full account of the palms see the second book of the *Astrologia*, written by G. Pontadera, the celebrated lecturer in botany at the University of Padua.—F.R.

A Note on the Pollination of Date Palms

In Redi's account of the date palm, published in *Trop. Agriculture, Trin.* 33, 207, 1956, the translator in his first note stated that this contained the first rational account he had come across in a European language of (amongst other things) the pollination of the date palm. He now wishes to add that since the translation was published he has rediscovered an earlier reference to pollination. This is in George Sandy's *A Relation of a Journey begun An. Dom.* 1610, Allott, London, 1632, in which on page 101 the author states:

'Of these [date palms in Egypt where Sandys was in 1611] there be male and female: both thrust forth cods (which are full of seeds like knotted strings) at the roote of their branches, but the female is onely fruitful: and not so, unless growing by the male, (towards whose upright growth she inclines her crowne) and haue of his seeds commixed with hers; which in the beginning of March they no more faile to do, than to sow the earth at accustomed seasons.'

The female's inclining her crown to the male is, of course, nonsense, but the reference to the cultivator's not failing to pollinate in March is accurate. The comparison of the spikelets to knotted cords is apt.

PALMS AT THE ROYAL BOTANIC GARDENS, TRINIDAD

S. BHARATH

The Royal Botanic Gardens of Trinidad are situated in the city of Port-au-Spain, about two miles north of the wharves at an elevation of a hundred and thirty to two hundred and fifty feet above sea level. They are about sixty acres in extent and were established in 1818 to introduce, propagate, and

distribute plants of economic and ornamental value. The Gardens are the oldest botanic gardens in the West Indies that have had a continuous existence. At the present time, these gardens are maintained solely as a public park and gardens.

The palms are grown mainly in an avenue some three hundred feet long, but many specimens are scattered over an area some twenty acres in extent. Nearly seventy species are represented; seeds of all the species are available on request. The tropical climate of Tri-

nidad is favorable for growing a large number of unusual species of palms not ordinarily seen in botanical gardens of subtropical areas: Some examples of these palms are the following: *Areca Catechu*; *Bactris Gasipaes* (*Guilielma Gasipaes*), *Calamus Rotang*, *Deckenia nobilis*, *Mauritia setigera*, *Maximiliana caribaea*, *Orbignya Cohune*, *Phoenicophorium Borsigianum* (*Stevensonsonia grandifolia*), *Phytelephas macrocarpa*, *Pinanga Kuhlii*, *Polyandrococos caudescens* (*Diplothemium caudescens*), *Ptychoraphis augusta* and *Scheelea Urbaniana*.

[Palms, handsome as they are to the eye, may at times be of interest in other less obvious respects. Mrs. Eileen H. Butts called attention to letters of her uncle which concern a very large beetle closely associated with *Washingtonia*. (Fig. 72). The letters with footnotes are reprinted from *Entomological News and Proceedings of the Entomological Section, Academy of Natural Sciences, Philadelphia* 10: 83-89, 1899, in the hope that they will be of some general interest and perhaps of particular interest to California members. Ed.]

Letters from the Southwest

H. G. HUBBARD*

THE HOME OF DINAPATE WRIGHTII HORN

PALM SPRINGS, CALA., February 8, 1897.

I have just returned this afternoon from a visit to Palm cañon and am somewhat sore and tired from contact with the saddle and also from my frantic exertions to find a specimen of *Dinapate wrightii*. The *Washingtonia* palms (*Neowashingtonia filifera*) in this small cañon are few in number, several hundreds perhaps strung along in a straggling line and most of them burned by the Indians who set fire to the fans as a smoke offering to their dead. There are very few young palms, as the freshets wash away most of the seed. However there are occasional clumps of not very old plants on the higher benches and these are sheathed with immense accumulations of dead fans. Every part of

this tree is so huge and tough that I, with my small hatchet, can make but little impression upon it. Even to cut through one of the handles of the dead leaves is almost beyond my strength, and where there are accumulations of leaves upon the ground, the long handles armed with knife-like points are so interwoven, that it is a severe task to overturn them. I found no living specimen of *Dinapate* in any stage, but I uncovered a dead and disintegrated specimen of this gigantic Bostrychid beetle lying between dead fans at the foot of a young palm. Many of the old palms are uprooted by the flood waters, and I saw probably 50 of these prostrate trunks upon the ground. Almost all of them are perforated all over, with round open holes, into most of which I can insert the end of my thumb. Some of the holes will however only admit the little finger.

*[These letters were addressed to the undersigned at Washington D.C., and are now, after the death of the author, published without any alterations.—E. A. SCHWARZ].