APPENDIX 2

PRACTICAL GUIDE TO THE PALMS

Jean-Jacques de Granville

Photo 1. Bactris circonstanciae infrutescence. *Photo Ph. Birnbaum.*

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1. List of palms

Genus *Astrocaryum*
Astrocaryum gynacanthum Martius
Astrocaryum paramaca Martius ['Counana']
Astrocaryum sciophilum (Miquel) Pulle ['Mourou-mourou']

Genus *Bactris*
Bactris acanthocarpoides Barbosa Rodrigues
Bactris aubletiana Trail
Bactris constanciae Barbosa Rodrigues
Bactris floccosa Spruce
Bactris gastoniana Barbosa Rodrigues
Bactris hirta Martius
Bactris oligocarpa Barbosa Rodrigues
Bactris rhaphidacantha Wessels Boer
Bactris simplicifrons Martius

Genus *Desmoncus*
Desmoncus sp.

Genus *Euterpe*
Euterpe oleracea Martius ['Pinot', 'Wassaïe']

Genus *Geonoma* ['Waï']
Geonoma deversa (Poiteau) Kunth
Geonoma stricta (Poiteau) Kunth

Genus *Jessenia*
Jessenia bataua (Martius) Burret subsp. *oligocarpa* (Grisebach & H. Wendland) Balick ['Patawa']

Genus *Maximiliana*
Maximiliana maripa (Correa de Serra) Drude ['Maripa']

Genus *Oenocarpus*
Oenocarpus bacaba Martius ['Comou']

Genus *Orbignya*
Orbignya sp. ['Macoupi']

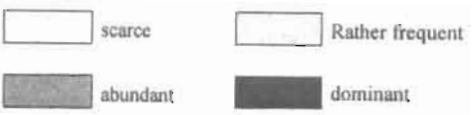
Genus *Scheelea*
Scheelea sp. ['Macoupi'

Genus *Socratea*
Socratea exorrhiza (Martius) H. Wendland ['Awara-monpè']

Genus *Syagrus*
Syagrus stratincola Wessels Boer

2. Relative abundance of palm species on the eight main trails

CAMP: surroundings of the camp
RD/RG: trails along the creek ('Rive droite' and 'Rive gauche')
C.T.1: 1st trail from camp to the southern slope of the outcrop ('Chemin des terrasses n°1 ')
C.T.2: 2nd trail from camp to the southern slope of the outcrop ('Chemin des terrasses n°2')
SOMM.: trail from camp to the top of the outcrop ('Chemin du sommet')
CASC.: trail from camp to the water falls ('Chemin des cascades')
BOUCLE: loop from camp to camp
S.C.: trail from camp to the eastern slope of the outcrop ('Chemin de la Savane Coco')



SPECIES	CAMP	RD/RG	C.T.1	C.T.2	SOMM	CASC.	BOUCLE	S.C.
Astrocaryum gynacanthum								
Astrocaryum paramaca								
Astrocaryum sciophilum								
Bactris acanthocarpoides								
Bactris aubletiana								
Bactris constanciae								
Bactris floccosa								
Bactris gastoniana								
Bactris hirta								
Bactris oligocarpa								
Bactris rhaphidacantha								
Bactris simplicifrons								
Desmoncus sp.								
Euterpe oleracea								
Geonoma deversa								
Geonoma stricta								
Jessenia bataua								
Maximiliana maripa								
Oenocarpus bacaba								
Orbignya sp.								
Scheelea sp.								
Socratea exorrhiza								
Syagrus stratincola								
Number of species per trail	2	13	9	7	9	9	6	9

3. Key to the species

1a. Trunk supported by cone of prickly stilt roots. Pinnae preamorse at tip ..... *Socratea exorrhiza*
1b. Trunk without stilt roots. Pinnae not praemorse at tip 2

2a. Palms unarmed. Margins of blades without bristles 3
2b. Palms usually more or less spiny. Margins of blade with minute, hardly visible, bristles at apex (presence detected by moving finger from tip to base of pinnae) 12

3a. Small understory palms. Trunk < 2 cm in diameter. Leaves < 1 m long. Blade simple and bifid at apex or irregularly divided into 2-6 pairs of broad segments 4
3b. Palms medium-sized to tall, either « stemless » or with trunk > 4 cm in diameter. Blade pinnate with more than 10 pinnae per side 6

4a. Blade < 10 cm in width, always simple and bifid at apex ..... *Geonoma stricta*
4b. Blade > 10 cm in width, pinnatisect, usually with 3-4 pairs of segments 5

5a. Stem 4-10 mm in diameter. Blade < 30 cm in width. Inflorescence bearing 3-6 rachillae. Leaf sheath split opposite to petiole in old leaves ..... *Geonoma deversa*
5b. Stem 8-20 mm in diameter. Blade > 30 cm in width. Inflorescence bearing 8-17 rachillae. Leaf sheath tubular in young as well as in old leaves, never split opposite to petiole ..... *Hyospathe elegans*

6a. Palms always « stemless ».(even when « adult ») 7
6b. Palms with well-developed stems (at least when adult) 8

7a. Leaf blade divided into narrow pinnae to tip. Staminate flowers with coiled anthers ..... *Orbignya* sp
7b. Leaf blade with apical pairs of pinnae usually united. Staminate flowers with straight anthers ..... *Scheelea* sp.

8a. Single-stemmed (« solitary ») palms, never suckering at base 9
8b. Muli-stemmed ('clustered') palms suckering at base 11

9. Blade green and shiny beneath. Pinnae more or less in clusters, at least toward base of rachis 10

10a. Stem usually > 25 cm in diameter. Leaf blades with more than 120 pairs of pinnae, in clusters along entire rachis ..... *Maximiliana maripa*
10b. Stem usually < 25 cm in diameter. Leaf blades with less than 120 pairs of pinnae, in clusters toward base of rachis ..... *Oenocarpus bacaba*

11a. Palms growing in swamp forest. Pinnae in..serted at regular intervals ..... *Euterpe oleracea*
11b. Palms growing in low, transition forest. Pinnae conspicuously arranged in clusters ..... *Syagrus stratincola*

12a. Palms always armed with black, strongly flattened, sometimes winged spines. Blade dull white or whitish pruinose beneath 13
12b. Palms generally armed with round or slightly flattened spines, sometimes with recurved hooks (in climbing palms). Blade green and shiny beneath 15

13a. 'Stemless' palms, armed with winged spines. Leaf blade divided into narrow pinnae to tip, the apical segments narrower than others ..... *Astrocaryum paramaca*
13b. Palms with obvious stem, armed with long, flattened (but not winged) spines. Leaf blade with apical pairs of pinnae usually united, the apical segments wider than others 14

14a. Multi-stemmed palms, with umbrella-shaped crown. Stems < 10 cm in diameter, armed with rings of black spines. Leaf sheaths not persistent..... *Astrocaryum gynacanthum*
14b. Single-stemmed palms, with funnel-shaped crown. Stem ≥ 10 cm in diameter, unarmed. Leaf sheaths persistent..... *Astrocaryum sciophilum*

15a. Climbing palms. Leaf rachis extended into a cirrus bearing retrorse hooks..... *Desmoncus* sp
15b. Stemless or erect palms, never climbing. Leaf rachis not extended into a cirrus..... 16

16a. Leaf blade pubescent on both sides..... *Bactris floccosa*
16b. Leaf blade glabrous on both sides..... 17

17a. Very small palms. Leaves < 1 m long, the blade either entire and bifid or with 2-6 segments per side..... 18
17b. Small to medium-sized palms. Leaves > 1 m long, the blade pinnate, with more than 6 pinnae per side.... 21

18a. Leaf blade simple, bifid at apex, the rachis 25-40 cm long. Sheaths and petiole densely armed with spines. Fruit setose..... *Bactris hirta*
18b. Leaf blade simple or with up to 6 pinnae per side, when simple, the rachis 2-15 cm long. Sheath and petiole unarmed or with few spines..... 19

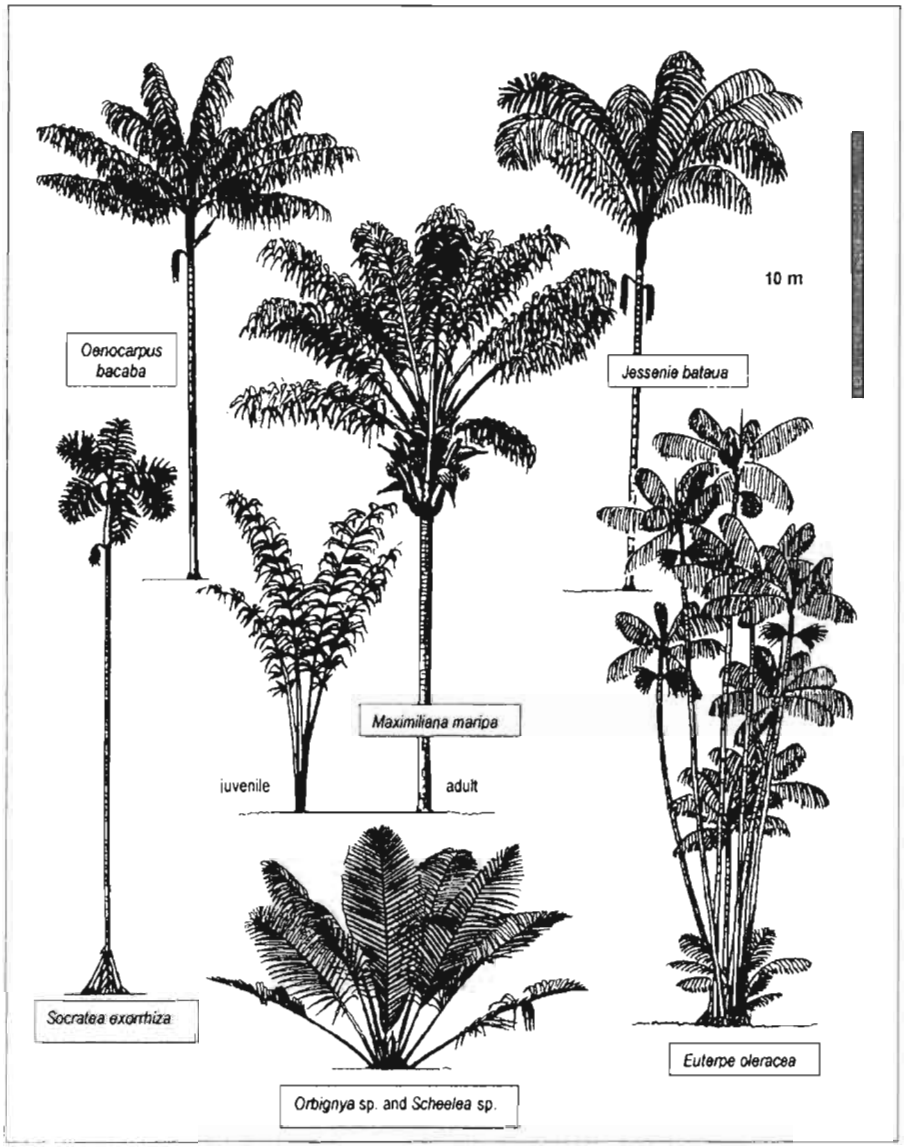
19a. Blade always simple and deeply bifid, the segments more or less elliptic and conve above. Peduncular bract setose..... *Bactris aubletiana*
19b. Blade either simple and bifid or with 2-6 pinnae per side. When simple, the segments slightly sigmoid and flat. Peduncular bract glabrous..... 20

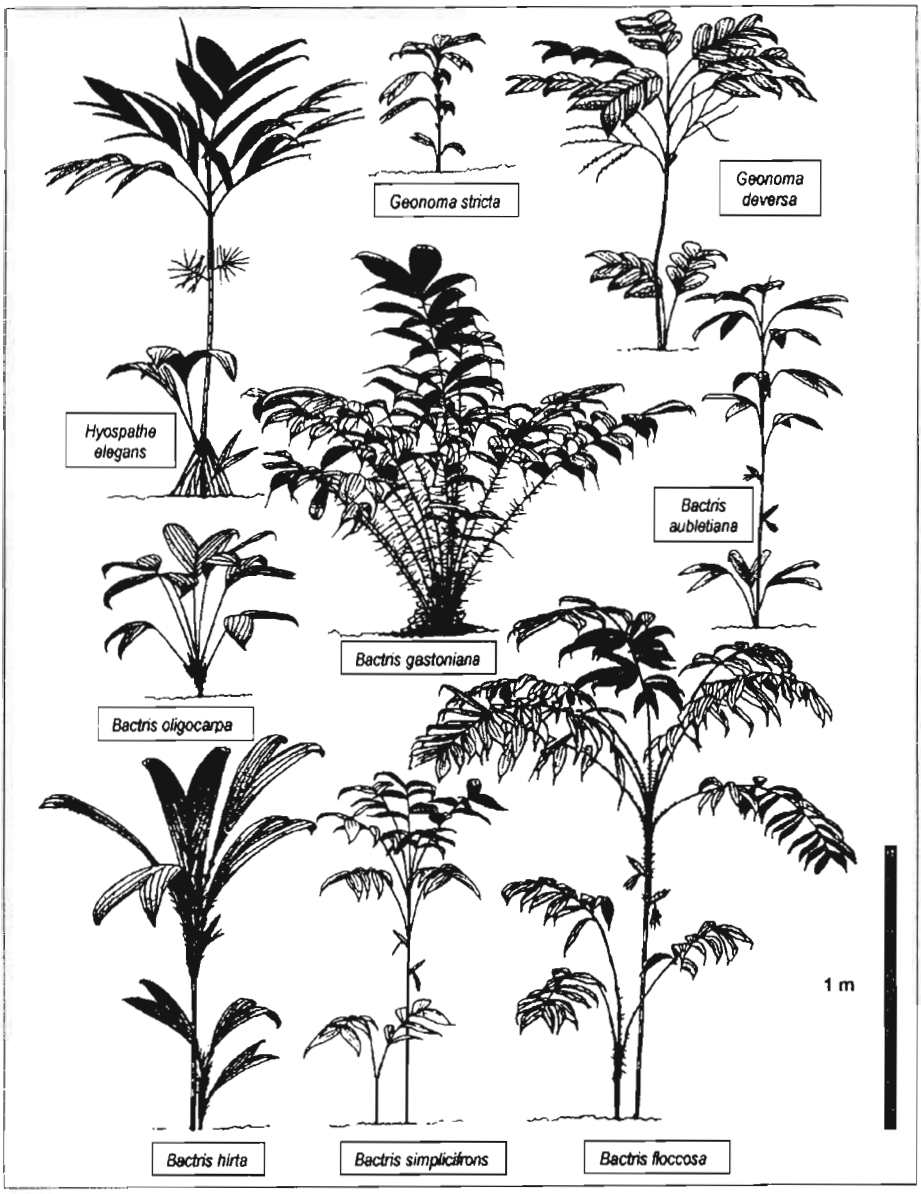
20a. Stem slender, > 50 cm tall, at least in fertile individuals. Leaves more or less spirally distributed along upper part of stem. Inflorescence recurved, infrafoliar. Fruit globose, orange to red at maturity..... *Bactris simplicifrons*
20b. Stem inconspicuous or very short, usually < 30 cm tall. Leaves forming a crown. Inflorescence erect, interfoliar. Fruit ovoid, purplish black at maturity..... *Bactris oligocarpa*

21a. Stem < 3 cm in diameter or inconspicuous. Pinnae sigmoid, long acuminate at apex, less than 20 per side 22
21b. Stem > 3 cm in diameter. Pinnae straight, more than 20 per side..... 23

22a. Stem inconspicuous or very short. Leaf rachis generally < 60 cm long, with 5-12 pinnae per side. Fruits ovoid, glabrous..... *Bactris gastoniana*
22b. Stem up to 2 m tall. Leaf rachis > 60 cm long, with 13-18 pinnae per side. Fruits globose, covered with fleshy bristles..... *Bactris constanciae*

23a. Stem short, with leaf scars very closely spaced. Pinnae disposed in a single plane, at regular intervals along rachis..... *Bactris rhaphidacantha*
23b. Stem well developed, with leaf scars widely spaced. Pinna clustered and oriented in several planes..... *Bactris acanthocarpoides*


10 m
Oenocarpus bacaba
Jessenia bataua
Maximiliana maripa
juvenile
adult
Socratea exorrhiza
Euterpe oleracea
Orbignya sp. and Scheelea sp.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Geonoma deversa
Hyospathe elegans
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Bactris gastoniana
Bactris oligocarpa
1 m
Bactris hirta
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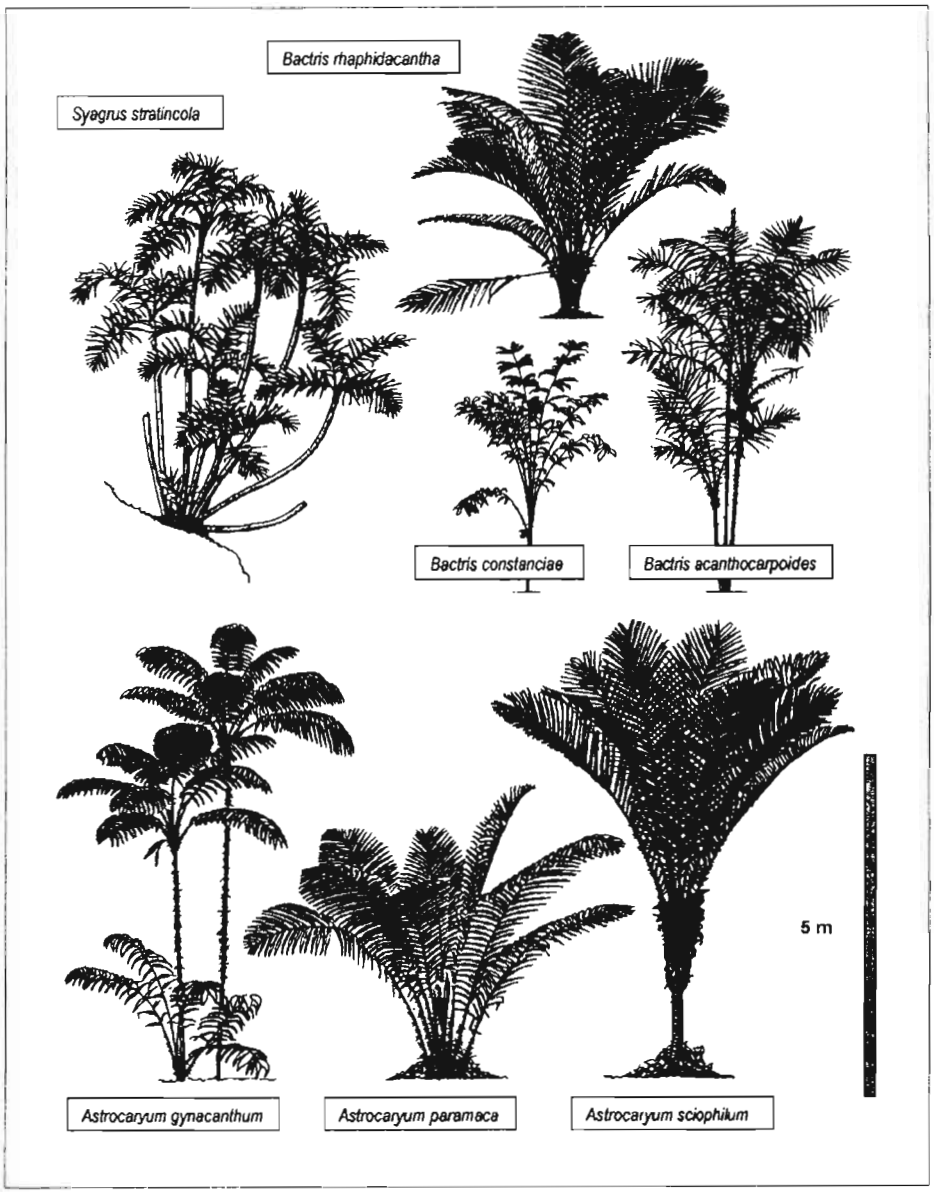
Bactris floccosa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Syagrus stratincola
Bactris constanciae
Bactris acanthocarpoides
5 m
Astrocaryum gynacanthum
Astrocaryum paramaca
Astrocaryum sciophilum

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