



NOT YOUR AVERAGE PALM

**A look at some
unusual palms,
special anatomical
features and strange
adaptations**

Christine Kelly-Begazo
University of Florida-Indian River Co.



**We Floridians
love our palms!**



*But some people
are loving them
to death!*

A FEW FACTS ABOUT PALMS

- ✓ Fossil record extends back to the Cretaceous Period, 80 million years ago
- ✓ Monocots-have more in common with grasses
- ✓ 225 genera and 2,600 species
- ✓ Grow best in zones 8-10 and can be found from deserts to rainforests
- ✓ Range in temperatures, -10°F

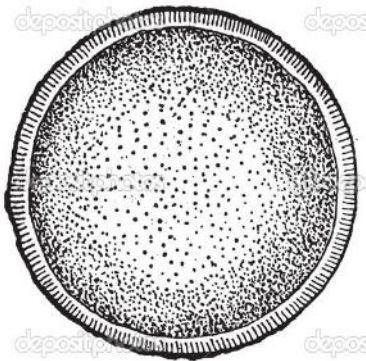
Variability

- *The tallest 197'-Quindio wax palm
(*Ceroxylon quindiuense*) Columbia
- *The smallest 4'-Sand palm
(*Guihaia argyrata*) China
- *Largest seeds in the world-Coco de
mer (*Lodoicea maldivica*) 20",66lbs
- *Largest leaf-Raffia palm-over 80'
(*Raphia regalis*) Africa



Durability

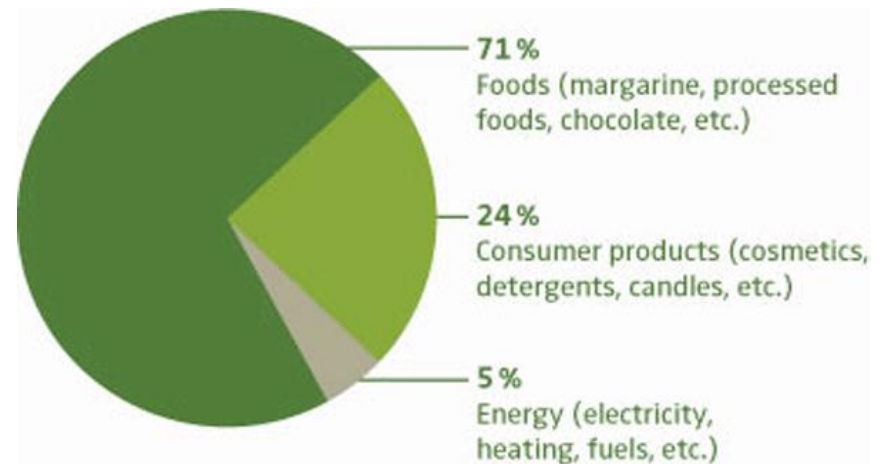
- Evergreen-don't lose leaves in a particular season
- Do not normally branch
- Trunks do not get larger in width but in height
- Tensile strength of fronds & fibers



Chilean wine palm
Jubaea chilensis

Utility

- Used for many purposes
 - ❖ Rope, skirts, hats
 - ❖ Alcoholic beverages
 - ❖ Oil, wax, shoe polish
 - ❖ Food (animal & human)
 - ❖ Building material, furniture



Coconut Palm

Cocos nucifera



LEAF ARRANGEMENT ON THE FROND

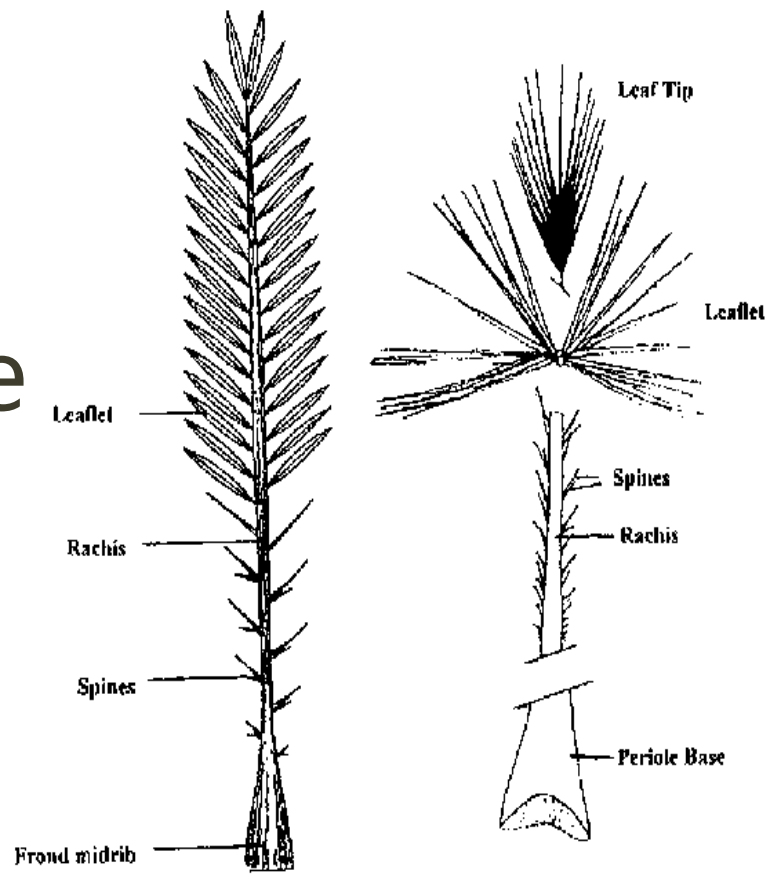
Entire

Palmate

Costa-palmate

Pinnate

Bi-pinnate



ENTIRE FROND

unsegmented blade

Diamond Joey Palm

Johannesteijsmannia

altifrons

Malaysia



Necklace Palm

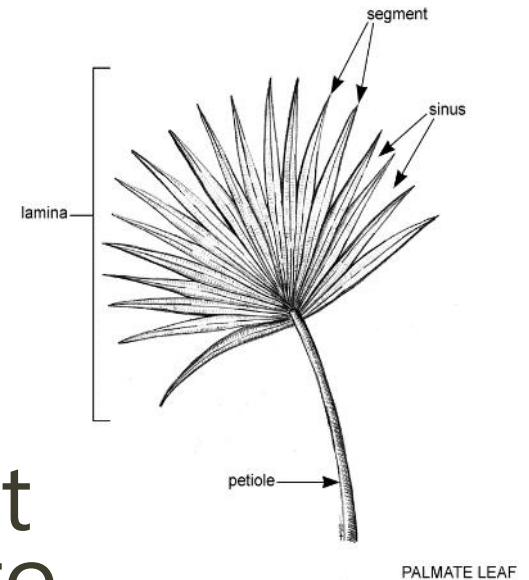
Chamaedorea
geonomiformis

Central America



PALMATE

- Leaflets radiate from the base, circular or semi-circular.
- Divided into segments; radiate out from the point where they are attached to the petiole.
- Laminae may be slightly divided to being divided nearly to the leaf base.



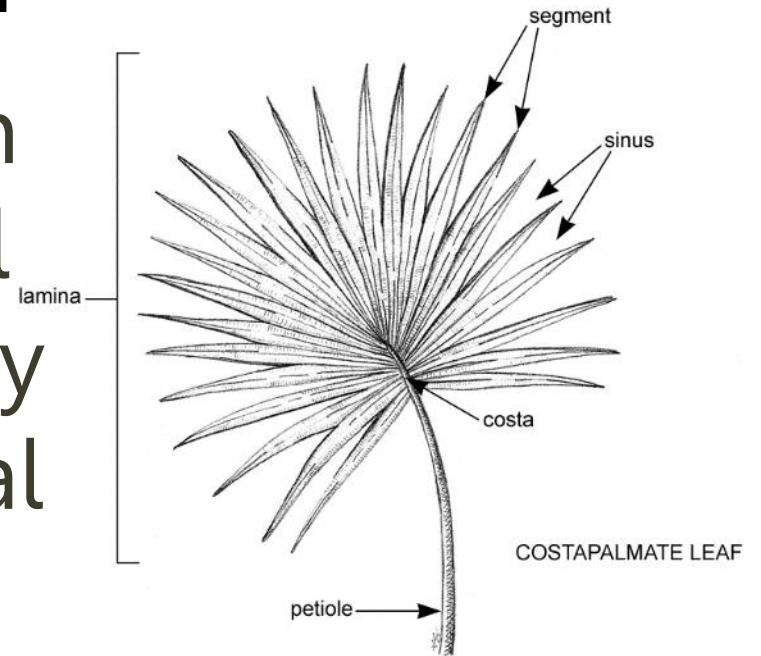
PALMATE

- Leaf size is variable between species
 - ❖ Size of the human hand-lady palms (*Rhapis* spp.)
 - ❖ Maximum of 5 m across such as in the talipot palm (*Corypha umbraculifera*)
- The most important economic palm with palmate leaves is the palmyra (sugar) palm (*Borassus flabellifer*).



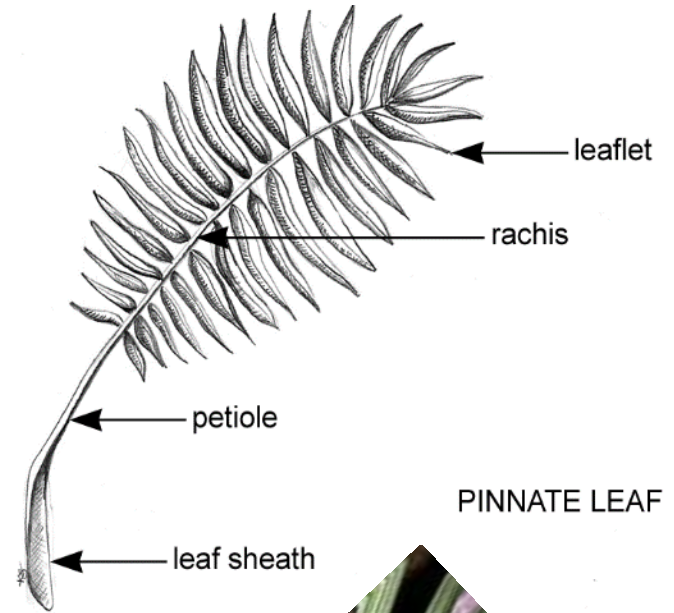
COSTA-PALMATE

palmate leaf in which the stem extends well into the frond partially dividing it at the distal end of the petiole.



PINNATE

- Most common type
- Feather-like palm leaves
- 2 rows of leaflets generally on each side of stem
- Leaves range in size <1m to >25m

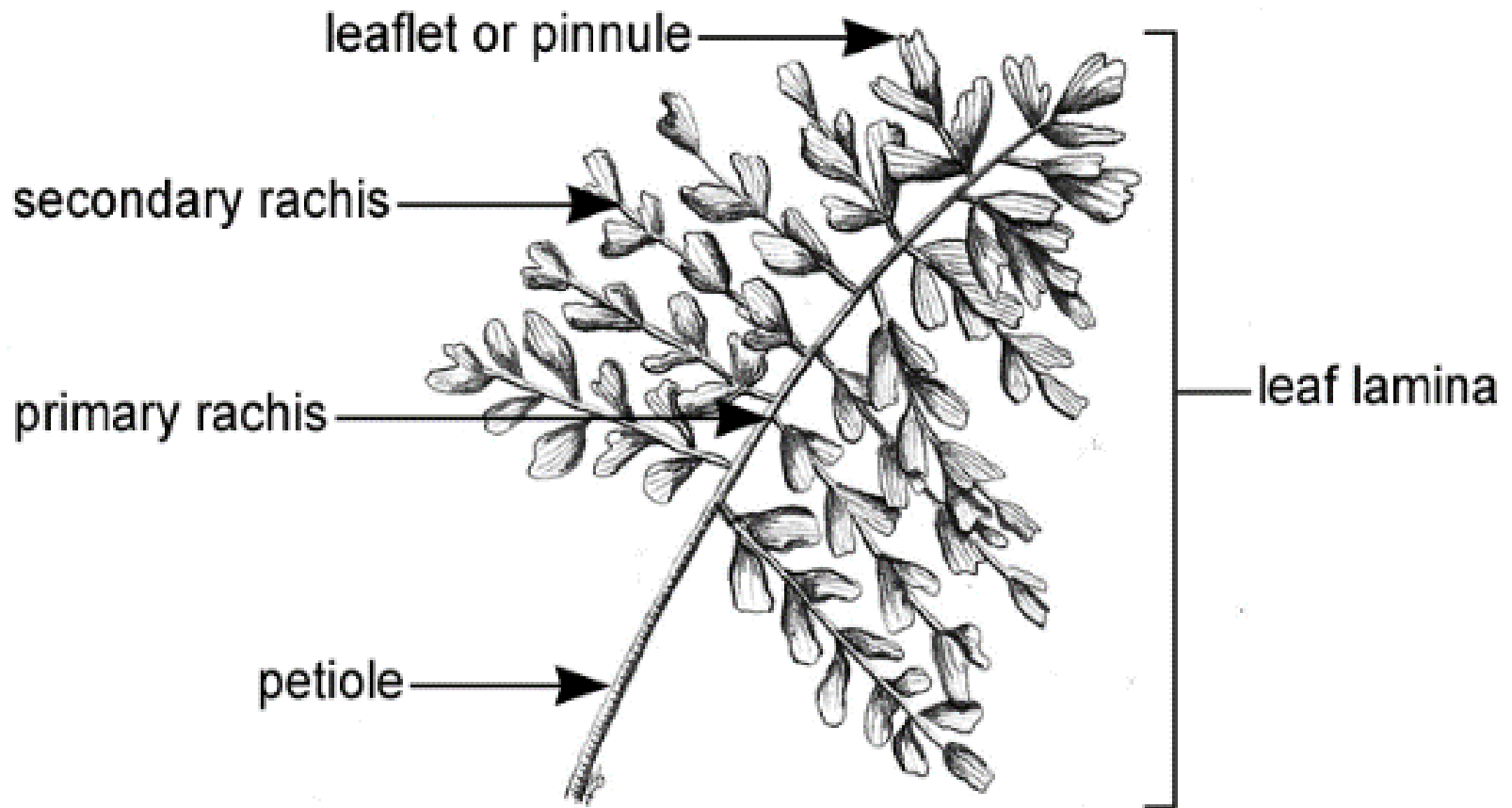


Major ECONOMIC palms are pinnate



Coconut, African
oil palm, Date
palm, Betel nut
palm and Peach
palm (Costa Rica)

BIPINNATE



BI-PINNATE LEAF

BIPINNATE

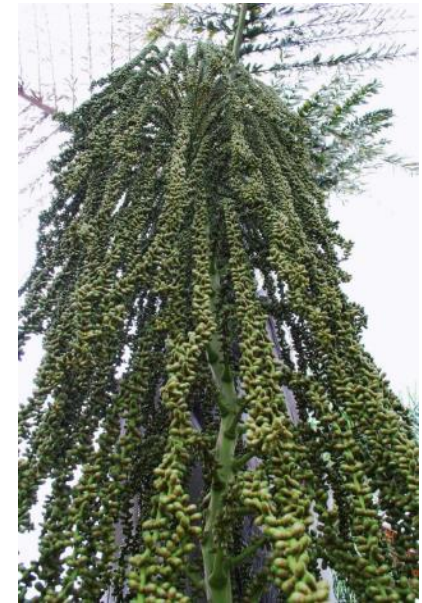
Caryota Palms (fish-tail palm)

- 13 different species
- Monocarpic-once they flower the stem dies
- Susceptible to lethal yellowing disease
- Needs lots of H₂O and nutrients
- Toxic fruits (even to touch)
- Very hard wood
- Shallow roots



dwarfing a Royal palm

Caryota obtusa Giant fish-tail palm



Caryota mitis

Clumping fishtail Palm



PALMS WITH STRANGE ADAPTATIONS

Hair

Trunk

Poison

Leaf scars

Waxy surface

Spines/needles

H₂O-holding

Pneumatic ability



Hair-like fibers

Old Man Palm
Coccothrinax crinita



Stiff, thick beige-colored fibers densely borne along the entire length of thick trunk.

Trunk

Silver Thatch Palm
Coccothrinax barbadensis



burlap-like woven
fibers from old leaf
bases and sheaths

Poisonous Toxins

Caryotas and
Arenga spp.

Formosa Palm
Arenga engleri

-oxylates in the fleshy
coating

-also can cause physical
pain if touched



Leaf Scars



Nikau Palm
Rhopalostylis sapida



Only palm endemic
to New Zealand

Canary Island Date

Phoenix canariensis



Spines/Needles



Stimulants



Betel Nut Palm

Areca catechu

- mild stimulant
- moderately toxic
- addictive

When is a palm not a true palm?

When its a:

Cycad

Sago

Zamia

Dioon

Yucca





Dragon Tree
Dracaena spp.



Traveler's palm

Ravenala

madagascariensis



Madagascar palm

Pachypodium lamerei



Giant Dioon

Dioon spinulosum



Pandanus Palm
Pandanus spp.



Spiral Palm Screw Palm *Pandanus spiralis*



long, prickly leaves
emerge in a screw-
like arrangement

PALMS THAT DO FUNNY THINGS



PALMS THAT DO FUNNY THINGS



COLD TOLERANT PALMS - Pinnates



Dwarf Bamboo Palm
Chamaedorea radicalis
12°F



Pindo Palm
Butia capitata
14°F



Chilean Wine Palm
Jubaea chilensis
10°F

COLD TOLERANT PALMS - Palmates



Windmill Palms
Trachycarpus fortunei
0°F



Mediterranean Fan
Chamaerops humilis
10°F



Mazari Palm
Nannorrhops richtiana
-4°F



Needle Palm
Rhapidothymum hystrix
-10°F

