



# NOT YOUR AVERAGE PALM

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

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**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

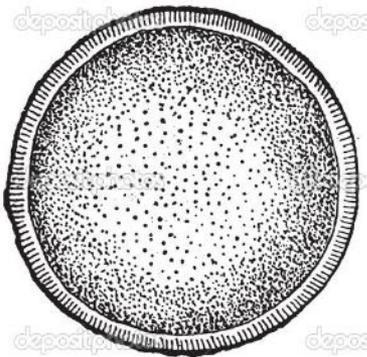
# Variability

- \*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

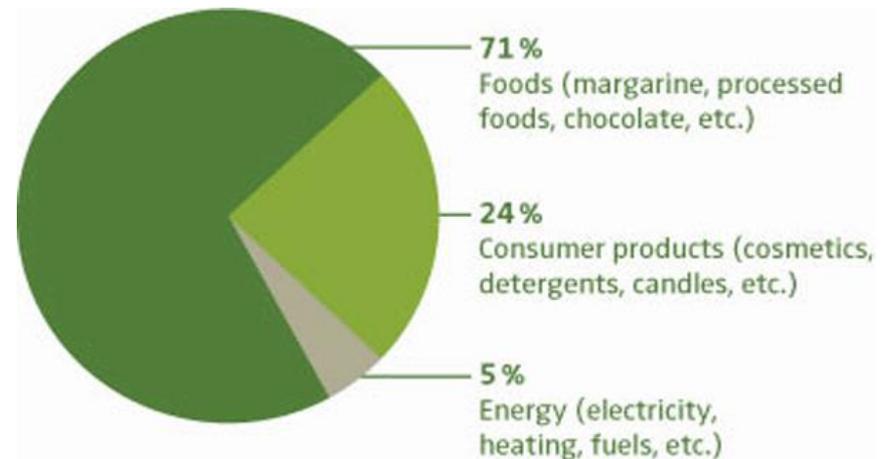
- Evergreen-don't lose leaves in a particular season
- Do not normally branch
- Trunks do not get larger in width but in height
- Tensile strength of fronds & fibers



**Chilean wine palm**  
*Jubaea chilensis*

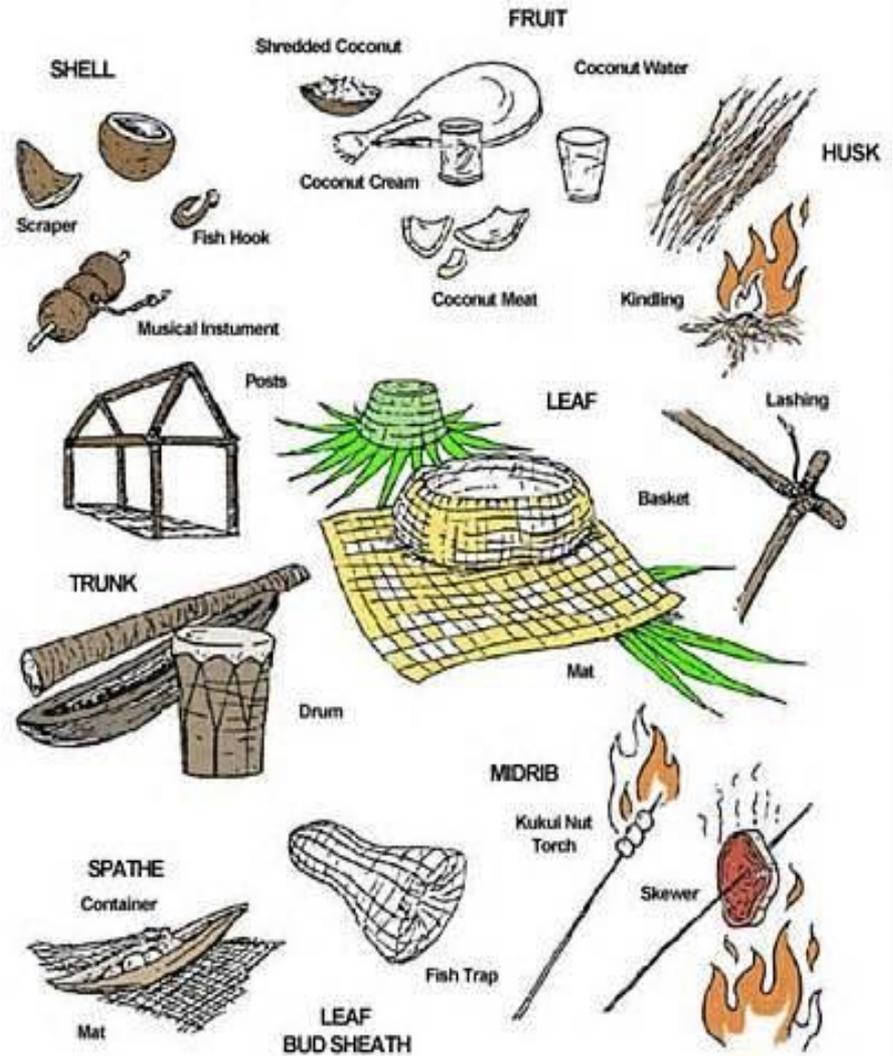
# Utility

- 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

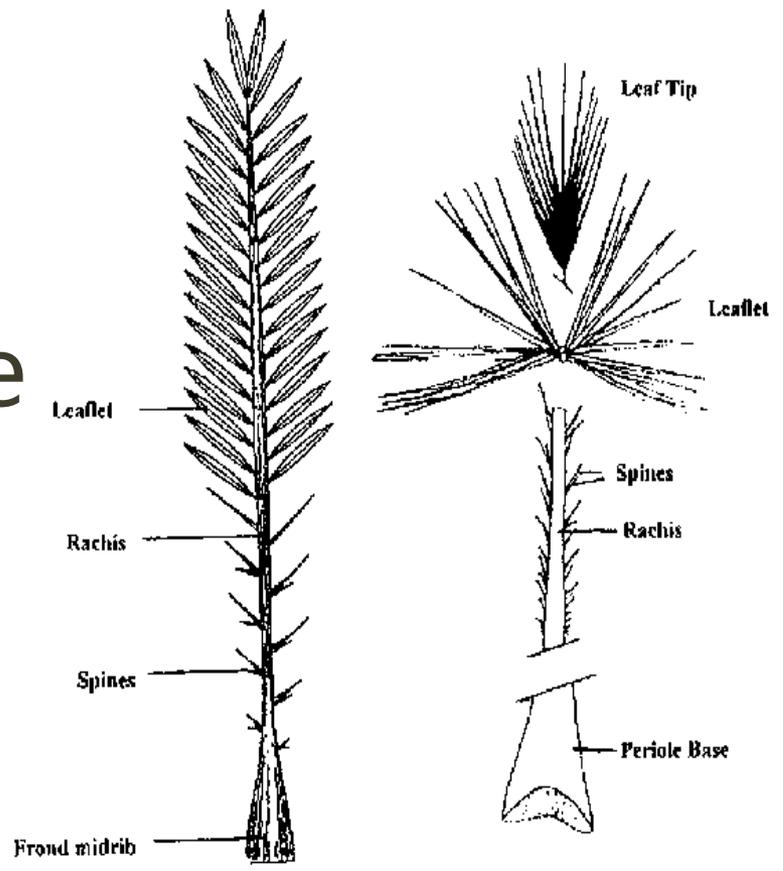
Entire

Palmate

Costa-palmate

Pinnate

Bi-pinnate



# ENTIRE FROND

unsegmented blade

## Diamond Joey Palm

*Johannesteijsmannia*

*altifrons*

Malaysia



## Necklace Palm

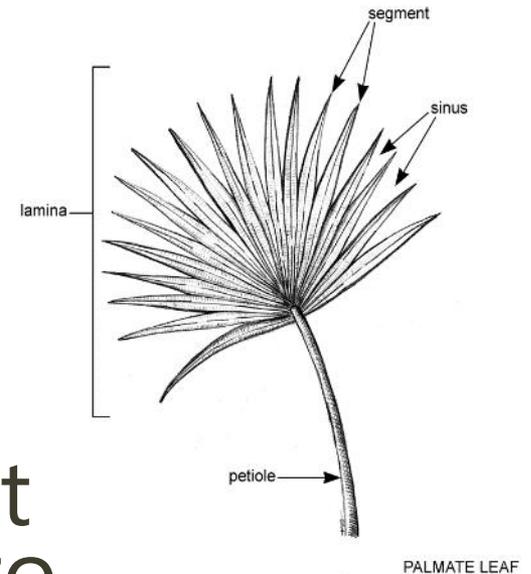
*Chamaedorea*  
*geonomiformis*

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.



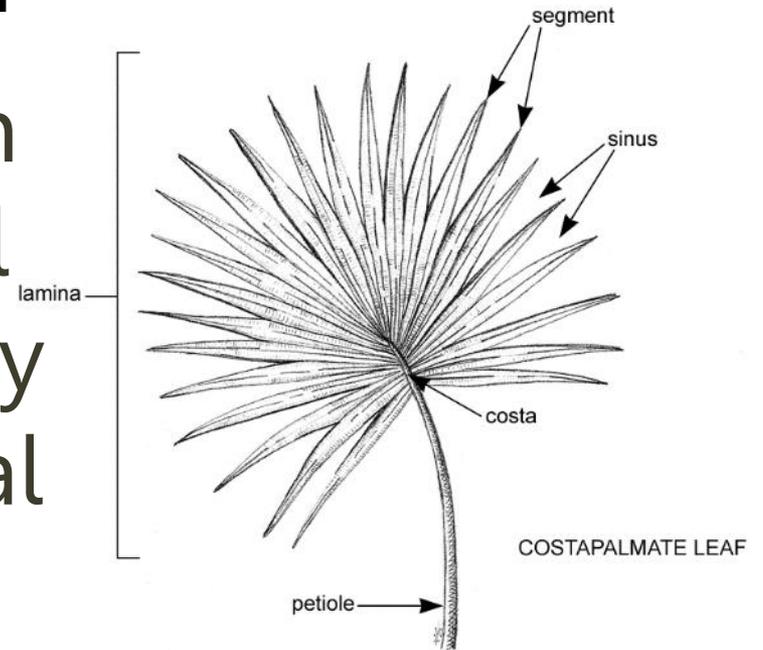
# PALMATE

- 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*).



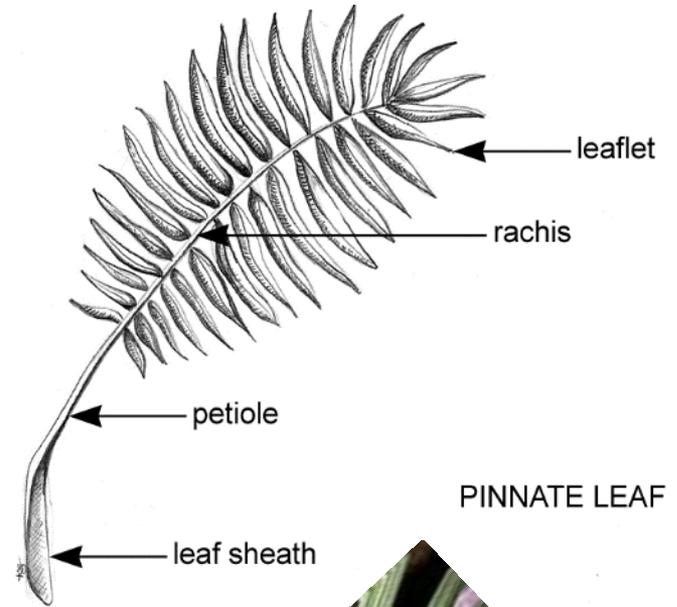
# COSTA-PALMATE

**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

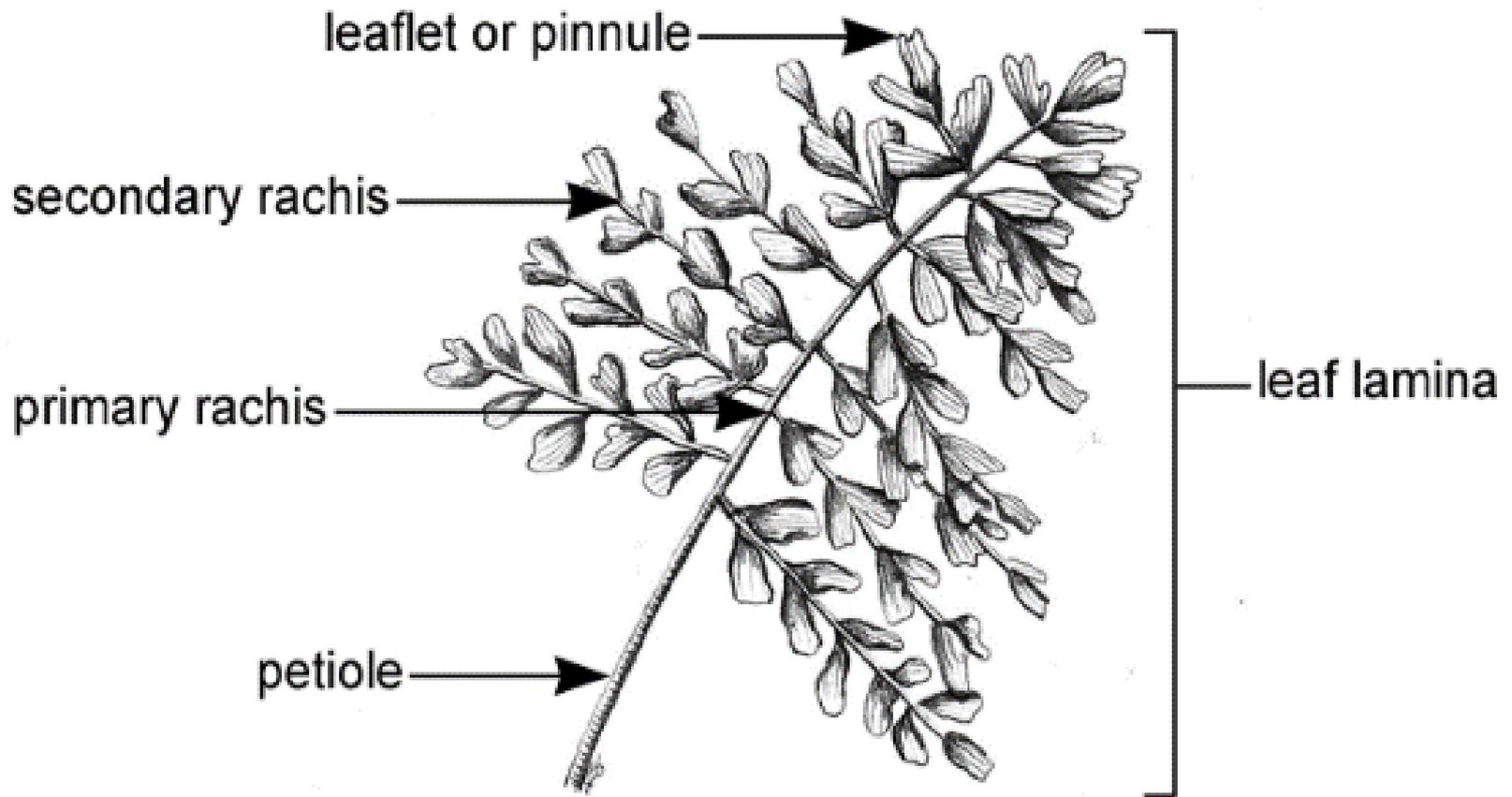


# Major ECONOMIC palms are pinnate



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 H<sub>2</sub>O 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

H<sub>2</sub>O-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

