

Curso Botánica Tropical

Jenaro Herrera

19 de julio al 8 de agosto de 2008

Tema 2:

Morfología botánica

Morfología botánica

- Estudia la forma de las plantas.

morfo = forma

- Se divide en:
 - Morfología general (forma de órganos de las plantas)
 - Morfología experimental (origen de las formas)
 - Anatomía vegetal (estructura microscópica de órganos)



Estructuras de las plantas

- Estructuras vegetativas:
copa, raíz , fuste, corteza, hojas



- Estructuras reproductivas:
flores, frutos



Hevea nitida
EUPHORBIACEAE

Estructuras vegetativas

Hábito de las plantas

Hierbas
anuales/perennes



Polygonum sp.
POLYGONACEAE

Arbustos
erguidos/escandentes



Tachia occidentalis
GENTIANACEAE

Árboles



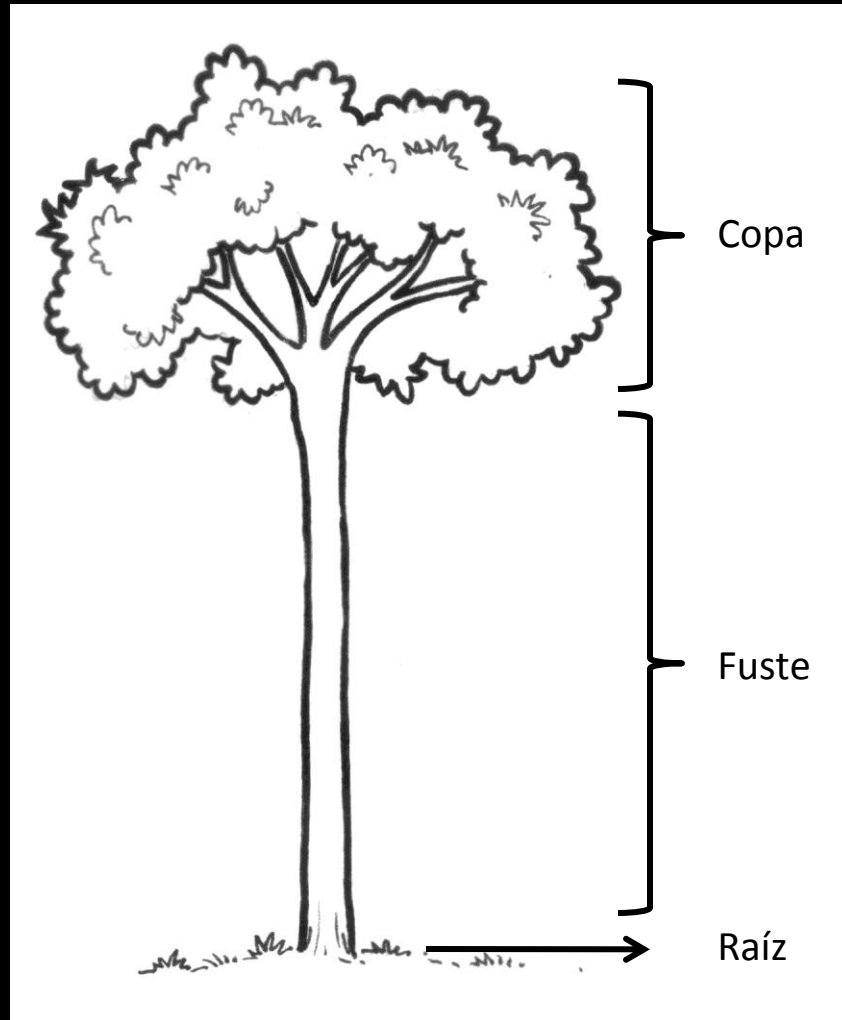
Cedrelinga cateniformis
FABACEAE

Lianas

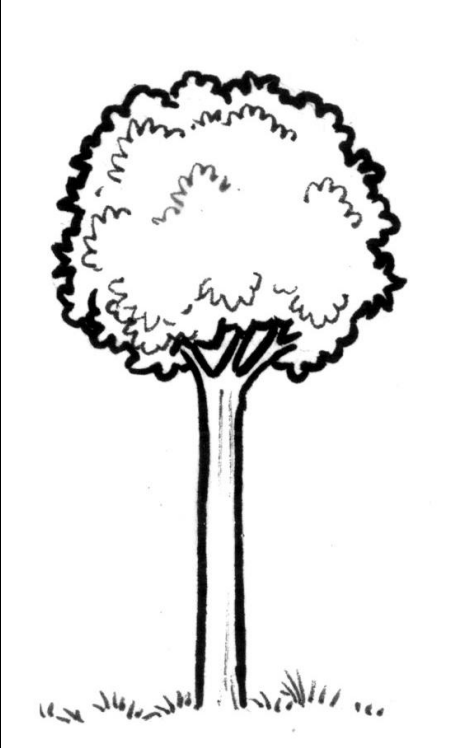


Abuta grandifolia
MENISPERMACEAE

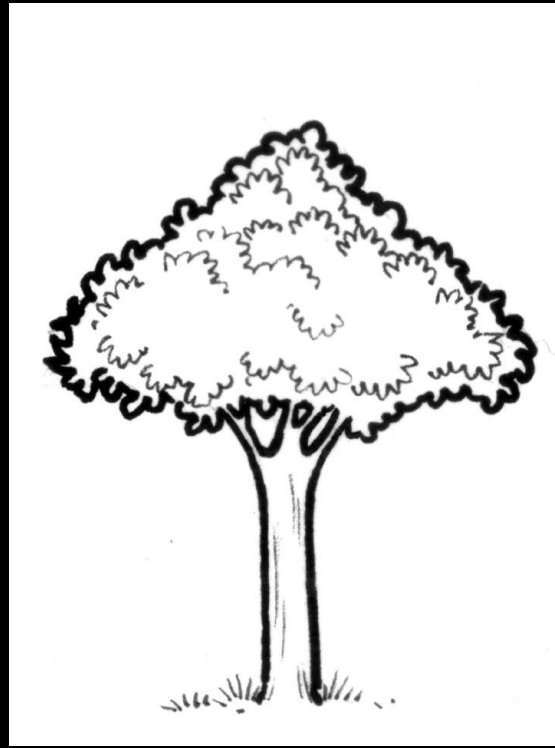
Partes de un árbol



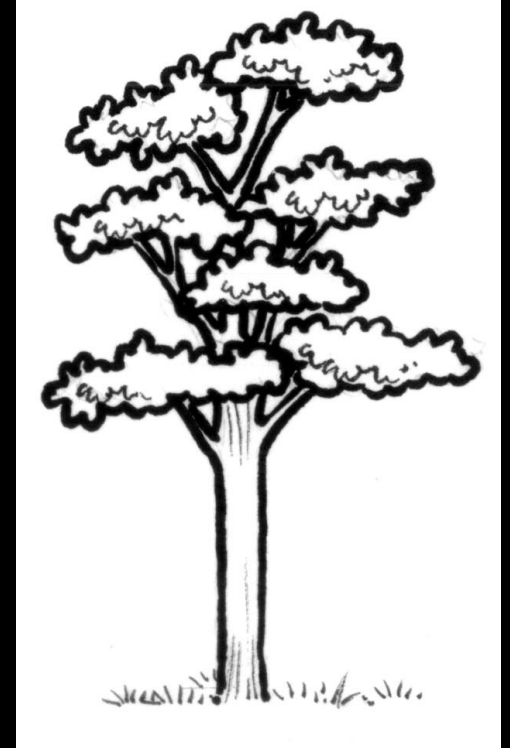
Copa



Globosa



Aparasolada

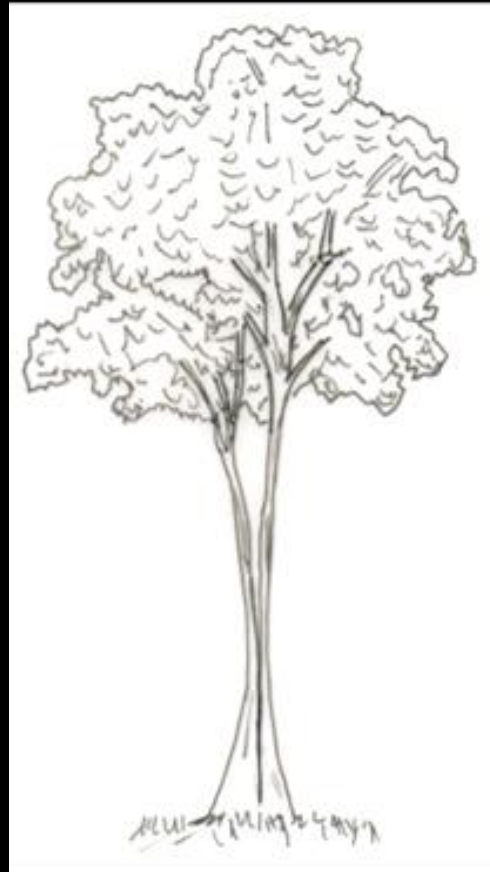


Estratificada

Ramificación



Simpódica

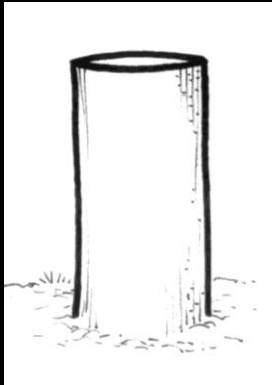


Dicotómica



Monopódica

Fuste



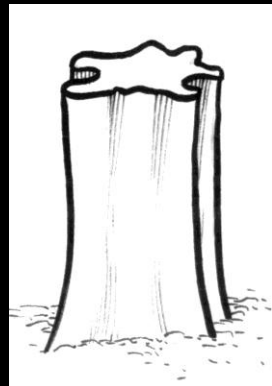
Recto

Macoubea guianensis
APOCYNACEAE



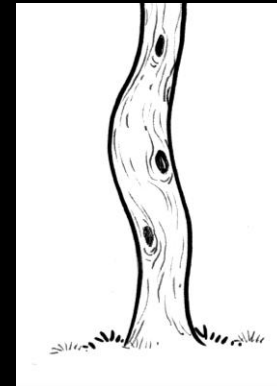
Abultado

Ceiba pentandra
MALVACEAE



Acanalado

Tachigali mellinonii
FABACEAE

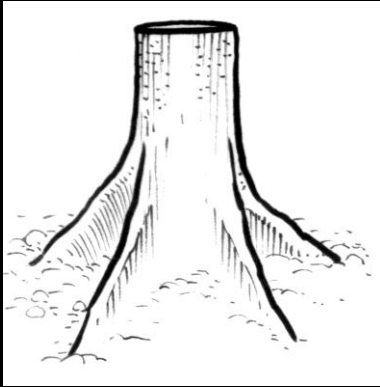


Irregular

Vismia sp. 1
CLUSIACEAE



Raíz



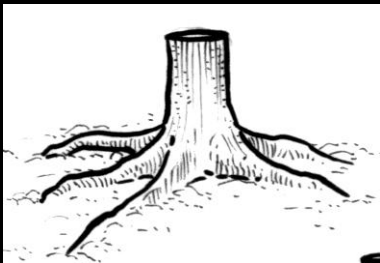
Tablares

Sloanea macrantha
ELAEOCARPACEAE



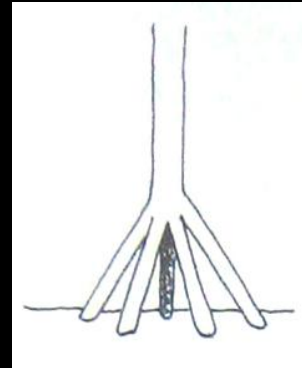
Zancos

Pourouma minor
CECROPIACEAE



Digitada o superficial

Casearia javitensis
SALICACEAE



Fúlcreas

Iriartea deltoidea
ARECACEAE



Corteza externa: tipos

Fisurada



Cedrelinga cateniformis
FABACEAE

Agrietada



Buchenavia sp. 2
COMBRETACEAE

Lenticelada



Aniba hostmanniana
LAURACEAE

Corteza externa: ritidoma

Desprende
en placas



Apuleia leiocarpa
FABACEAE

Desprende en
pedazos
irregulares



Eschweilera coriacea
LECYTHIDACEAE

Desprende en
segmentos
papelosos



Calycophyllum spruceanum
RUBIACEAE

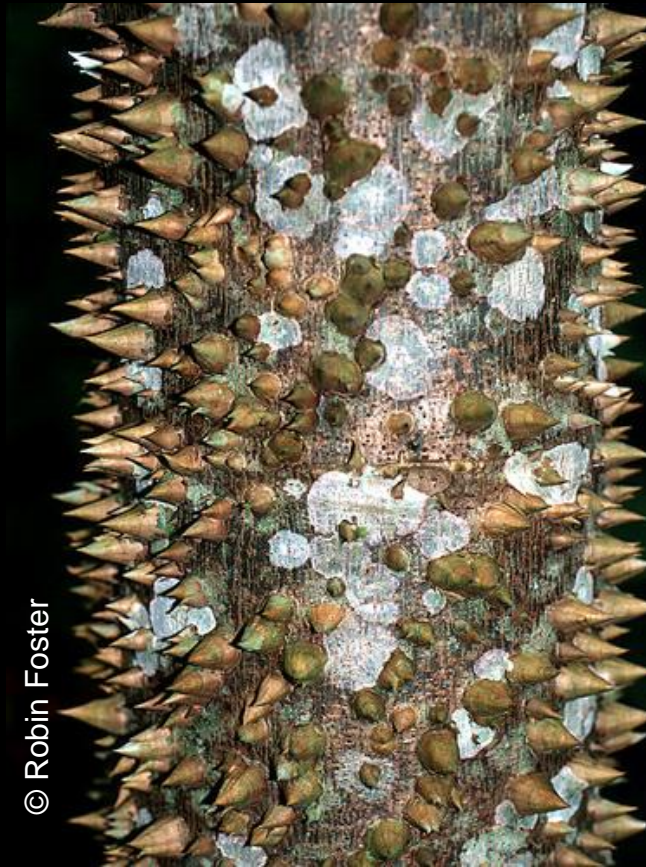
Desprende en
segmentos
coriáceos



Iryanthera tricornis
MYRISTICACEAE

Corteza externa: espinas y aguijones

Espinas



Jacaratia digitata
CARICACEAE

Aguijones



Ceiba samauma
MALVACEAE

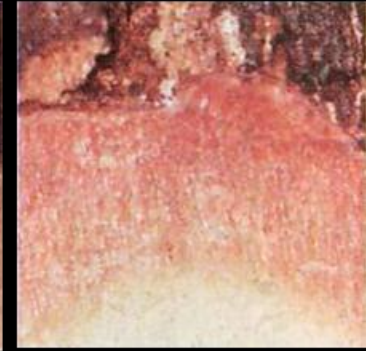
Corteza interna: tipos



Anillada



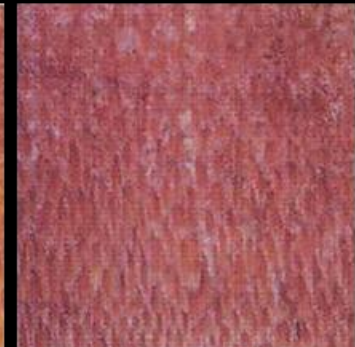
Compacta



Llamas de fuego



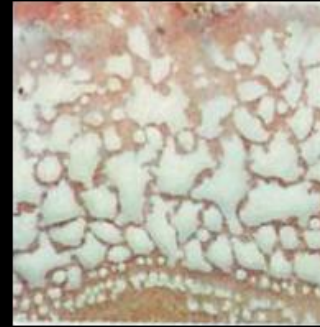
Puntuaciones



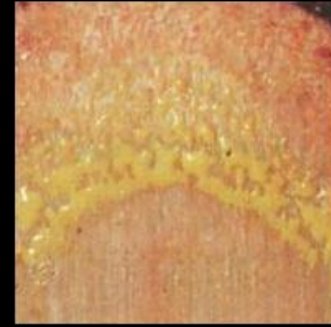
Corteza interna: exudaciones



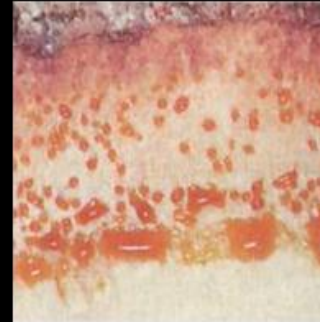
Savia



Látex

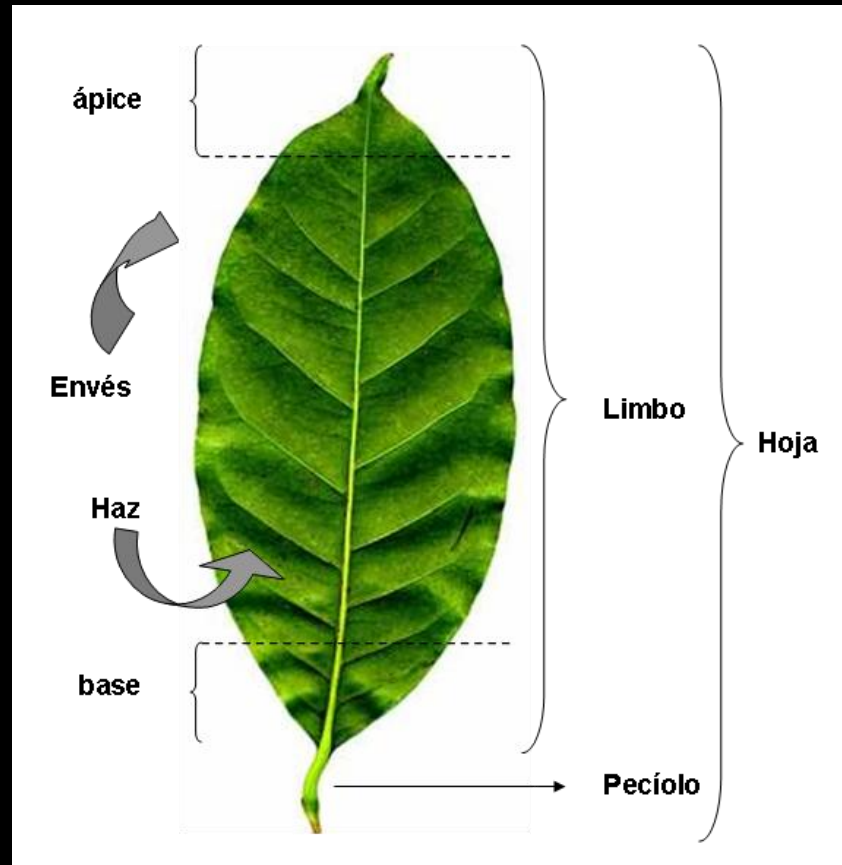


Resina



Goma

Partes de una hoja



Hojas: tipos

Simples



Pourouma minor
CECROPIACEAE

Compuestas



Simaba orinocensis
SIMAROUBACEAE

Hojas: simples



Diclinanona tessmannii
ANNONACEAE

Alternas y dísticas



Qualea paraensis
VOCHYSIACEAE

Opuestas y dísticas



Buchenavia sp. 4
COMBRETACEAE

Agrupadas al final de las ramitas



Hieronyma oblonga
EUPHORBIACEAE

Alternas en espiral



Tocoyena williansii
RUBIACEAE

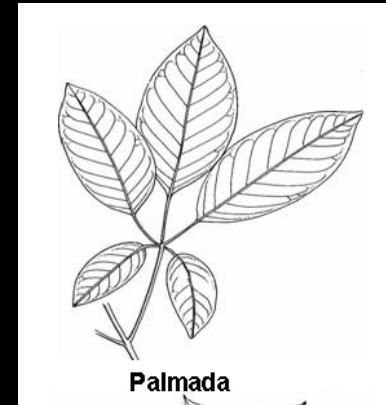
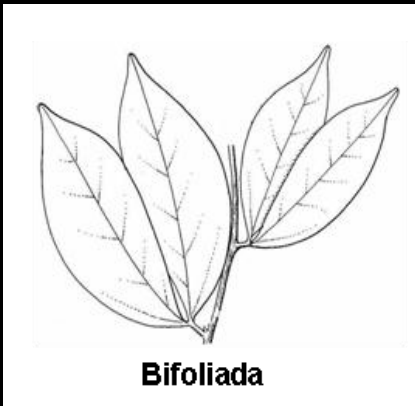
Opuestas y decusadas



Couma macrocarpa
APOCYNACEAE

Opuestas y verticiladas

Hojas: compuestas



Macrolobium limbatum
FABACEAE

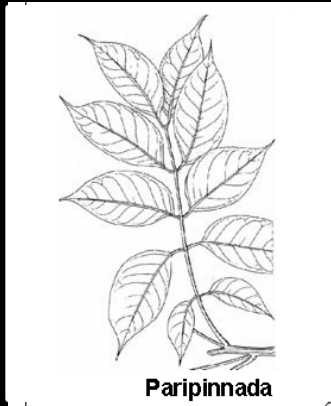


Caryocar glabrum
CARYOCARIACEAE



Schefflera megacarpa
ARALIACEAE

Hojas: compuestas



Tachigali polyphylla
FABACEAE

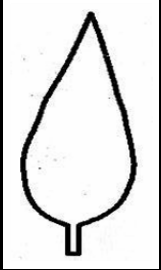


Swartzia sp.
FABACEAE

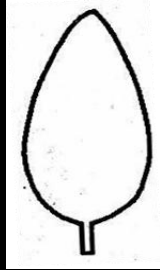


Parkia panurensis
FABACEAE

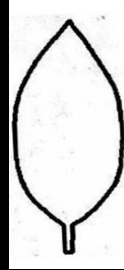
Hojas: limbo



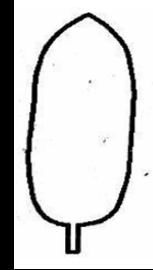
Lanceolada



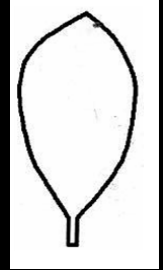
Ovada



Elíptica



Oblonga



Obovada



Virola sebifera
MYRISTICACEAE



Macoubea guianensis
APOCYNACEAE



Aspidosperma vargasii
APOCYNACEAE

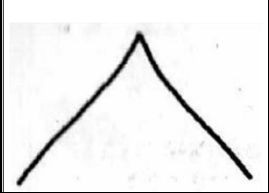


Diospyros sp.
EBENACEAE

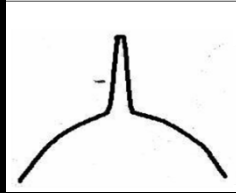


Matisia intricata
MALVACEAE

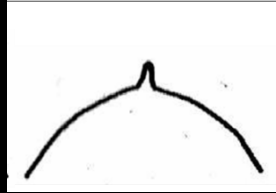
Hojas: ápice



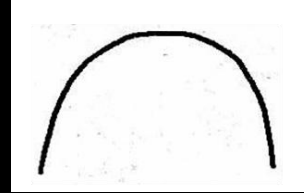
Agudo



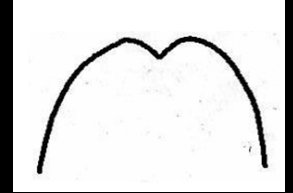
Aristado



Apiculado



Redondo



Retuso



Erythroxylum macrophyllum
ERYTHROXYLLACEAE



Tabernaemontana flavicans
APOCYNACEAE



Dacryodes chimatensis
BURSERACEAE



Osteophloeum platyspermum
MYRISTICACEAE



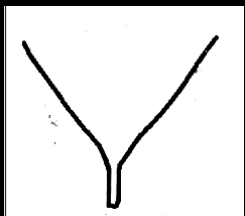
Tapirira retusa
ANACARDIACEAE

Hojas: base

Rhigospira quadrangularis
VIOLACEAE



Aguda



Leonia cymosa
VIOLACEAE



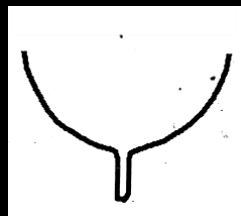
Atenuada



Pourouma herrerensis
CECROPIACEAE



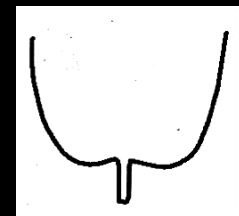
Redonda



Virola sebifera
MYRISTICACEAE



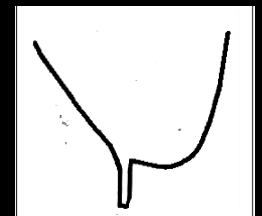
Cordada



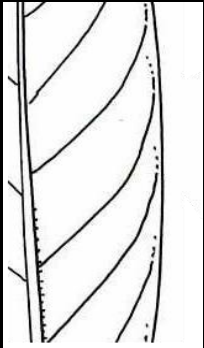
Anisophyllea guianensis
ANISOPHYLLACEAE



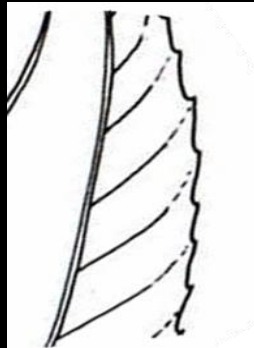
Asimétrica



Hojas: borde



Entero



Aserrado



Dentado



Crenado



Brosimum rubescens
MORACEAE



Conceveiba terminalis
EUPHORBIACEAE

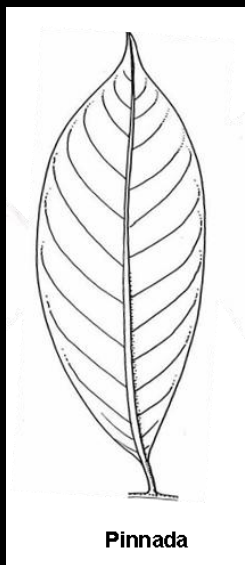


FLACOURTIACEAE

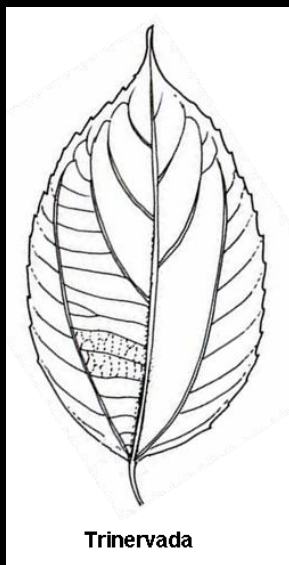


Gordonia fruticosa
THEACEAE

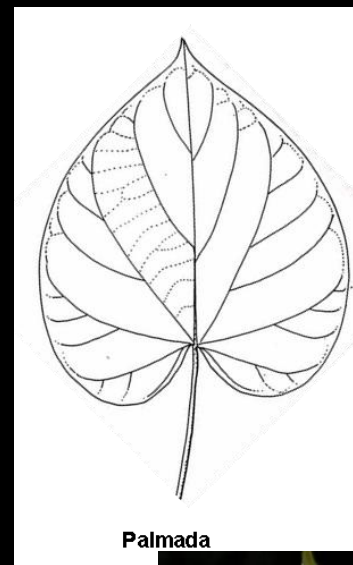
Hojas: nervadura primaria



*Osteophloeum
platyspermum*
MYRISTICACEAE

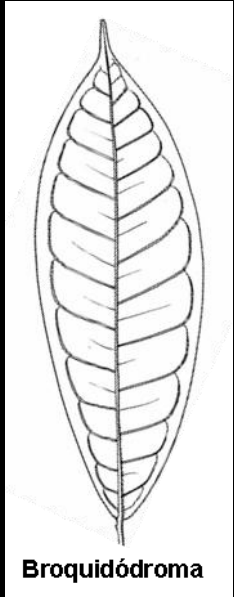


Alchornea triplinervia
EUPHORBIACEAE

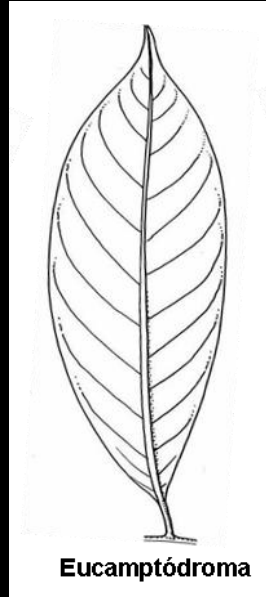


MENISPERMACEAE

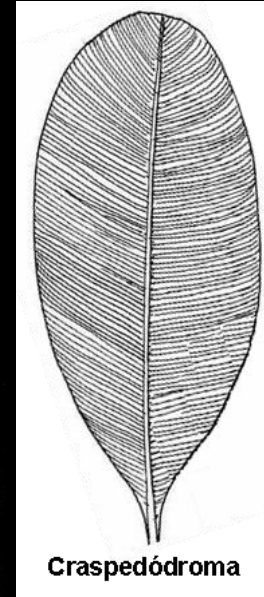
Hojas: nervadura secundaria



Batocarpus orinocensis
MORACEAE

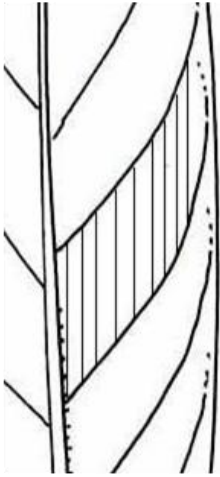


Virola elongata
MYRISTICACEAE



Micropholis sp.
SAPOTACEAE

Hojas: nervadura terciaria



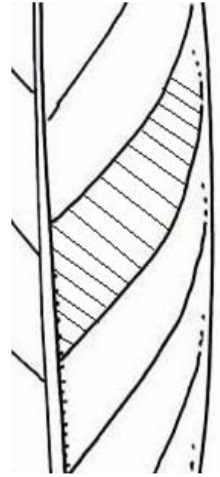
Paralela



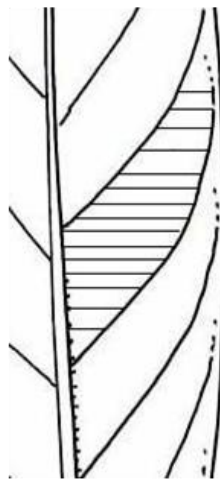
Ecclinusa lanceolata
SAPOTACEAE



Pourouma herrerensis
CECROPIACEAE



Oblicua



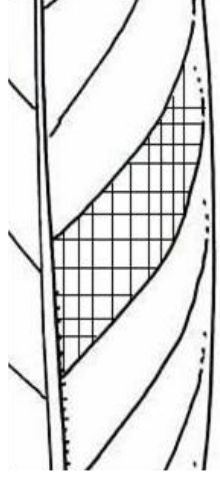
Perpendicular



Miconia sp.
MELASTOMATACEAE



Ficus sp.
MORACEAE



Reticulada

Hojas: indumento



Figura: Pubescencia

Fuente: Ribeiro et al. Reserva Ducke

Hojas: modificaciones



Caryocar harlingii
CARYOCARIACEAE



Hymenolobium pulcherrimum
FABACEAE



Polygonum sp.
POLYGONACEAE

Estípulas



Swartzia cardiosperma
FABACEAE

Estipelas

Ocrea

Hojas: otras estructuras



Glándulas

Puntos translúcidos

Hojas: otras estructuras



Tococa sp.
MELASTOMATACEAE



Duroia saccifera
RUBIACEAE



Mirmecófilos

Hojas: modificaciones



Sterculia sp.
MALVACEAE



Pulvínulos



Protium hebetatum
BURSERACEAE



Pulvinululos

Estructuras reproductivas

Flores

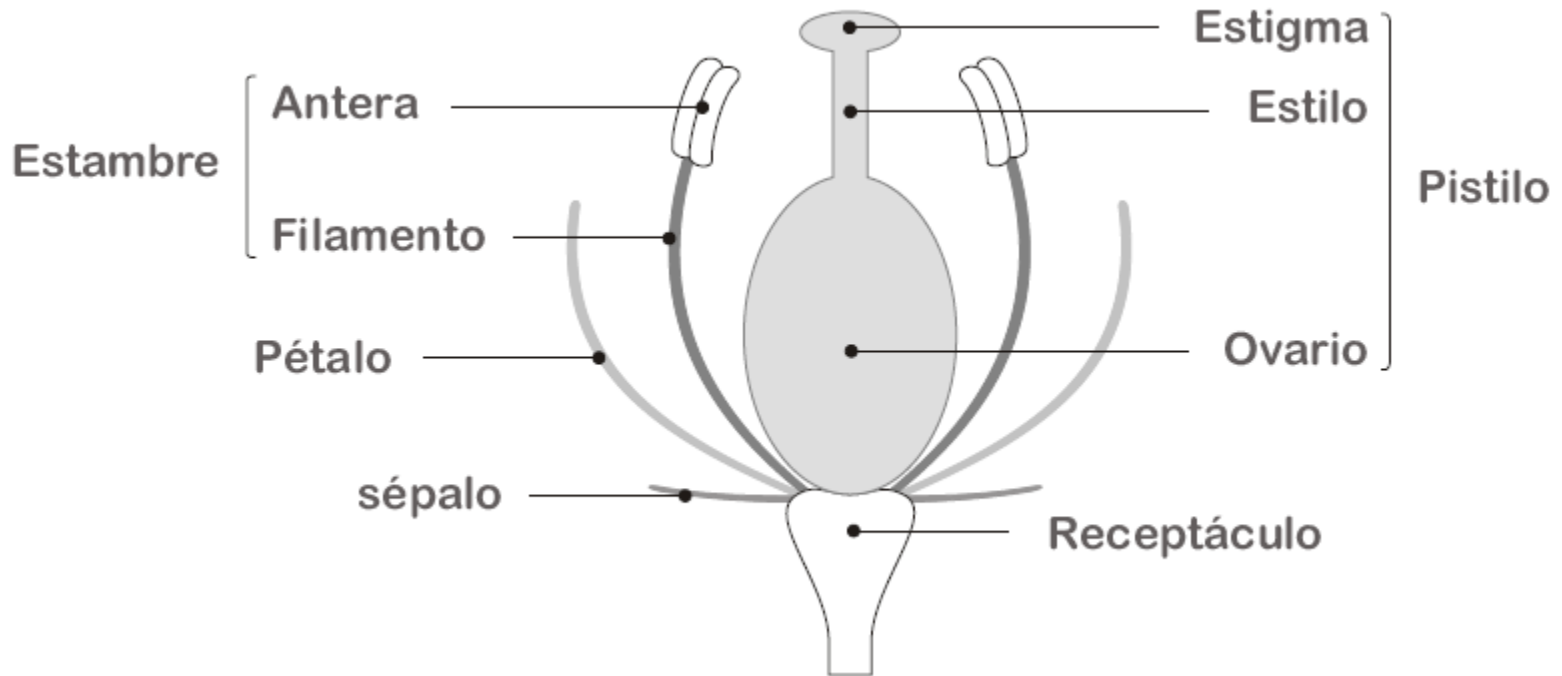


Solitarias



Agrupadas
(inflorescencia)

Flores: estructura



Fuente: OET 2007-18

Flores

Partes

Conjunto

Libres

Fusionados

Sépalos

Cáliz

Dialisépalo

Gamosépalo

Pétalos

Corola

Dialipétala

Gamopétala

Estambres

Androceo

Dialistémono

Gamostémono

Pistilos

Gineceo

Gamocárpico
– Sincárpico –

Dialicárpico
– Apocárpico –

Flores

Partes

Conjunto

Libres

Fusionados

Sépalos

Cáliz

Pétalos

Corola

Estambres

Androceo

Pistilos

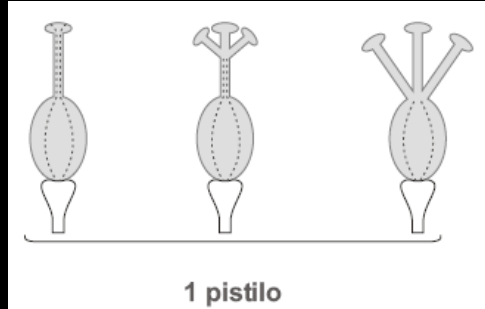
Gineceo



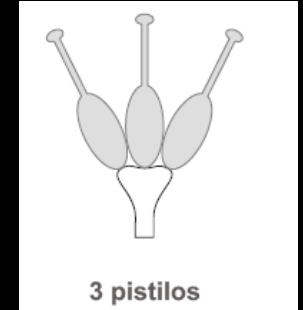
Gamocárpico
– Sincárpico –

Dialicárpico
– Apocárpico –

Pistilos (gineceo)

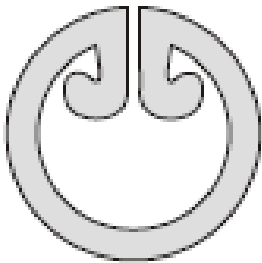


Carpelos fusionados
(Gamocárpico - Sincárpico)

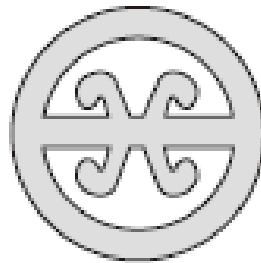


Carpelos libres
(Dialicárpico – Apocárpico)

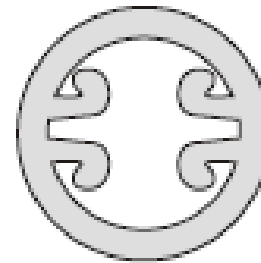
Placentación
marginal



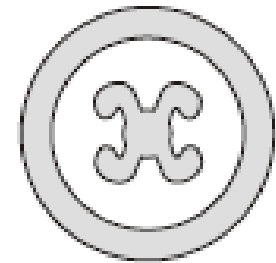
Placentación
Axial



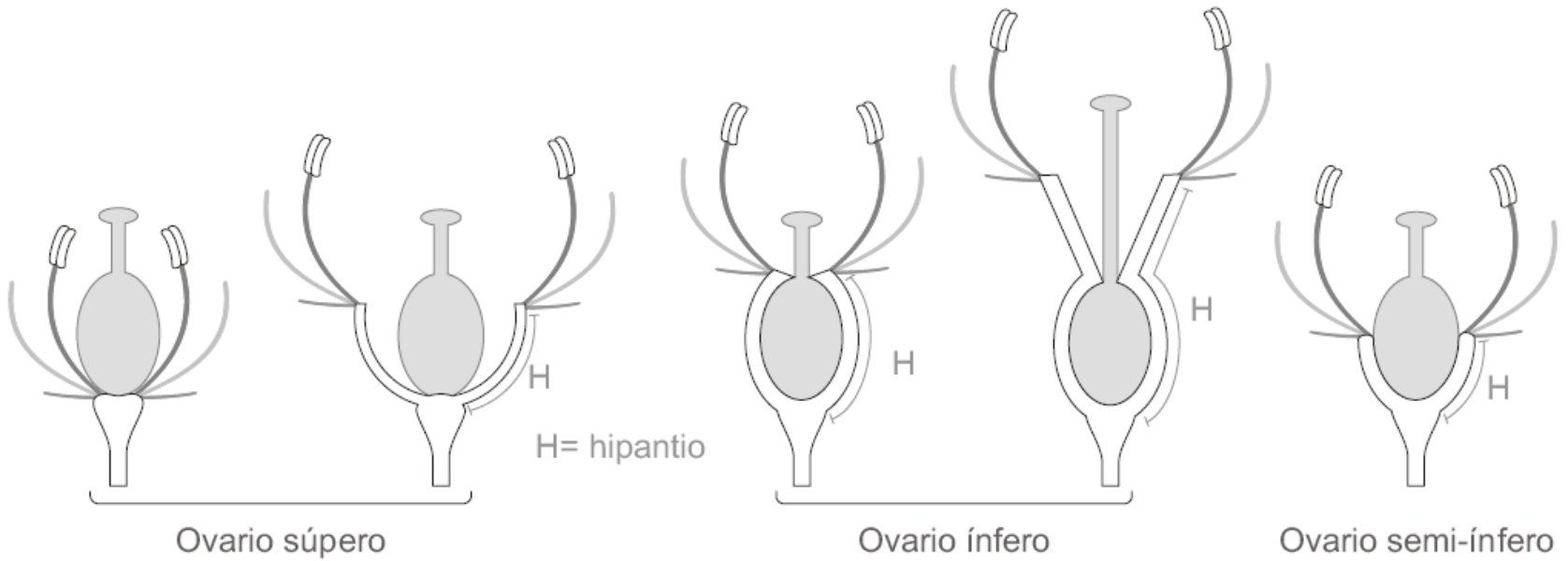
Placentación
Parietal



Placentación
Central



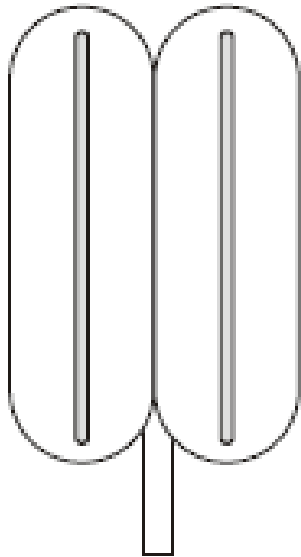
Pistilos (gineceo)



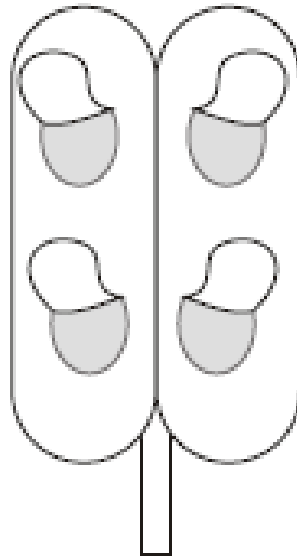
Fuente: OET 2007-18

Anteras: Dehiscencia

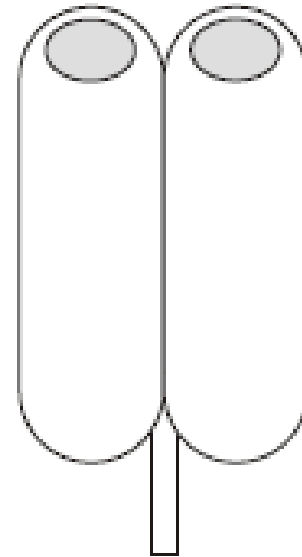
Dehiscencia longitudinal



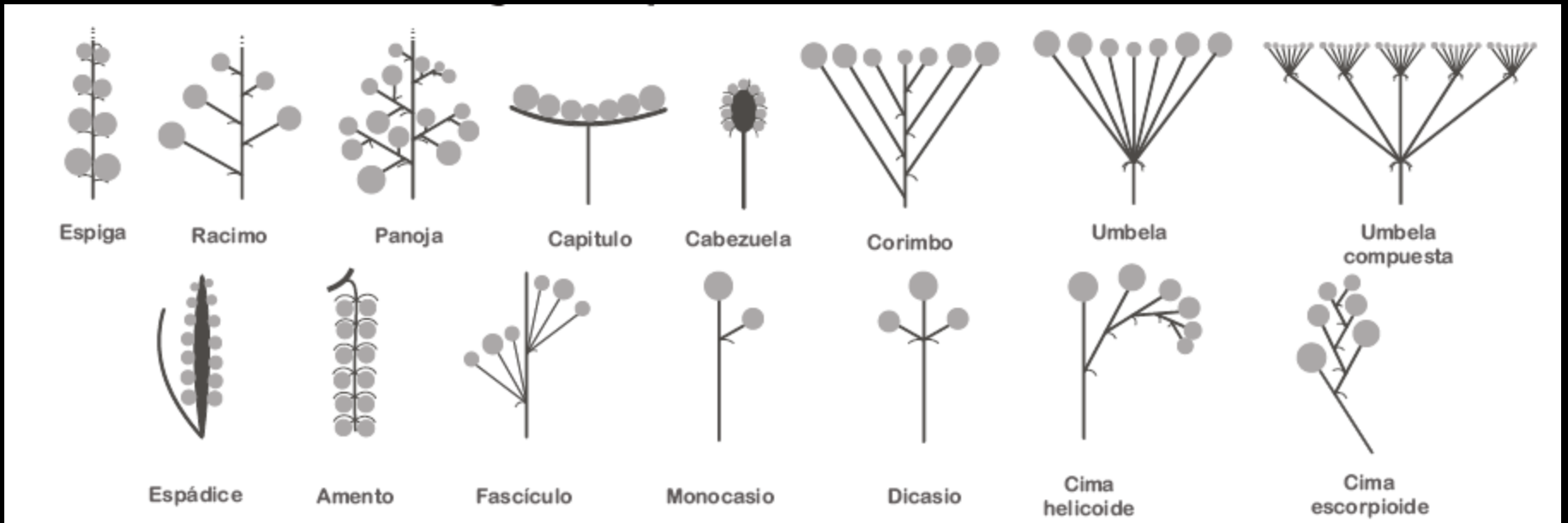
Dehiscencia valvar



Dehiscencia poricida



Inflorescencias



Fuente: OET 2007-18

Flores: prefloración



Abierta



Valvar

Imbricada



Contorta



Quincuncial

Coclear



distal
descendente

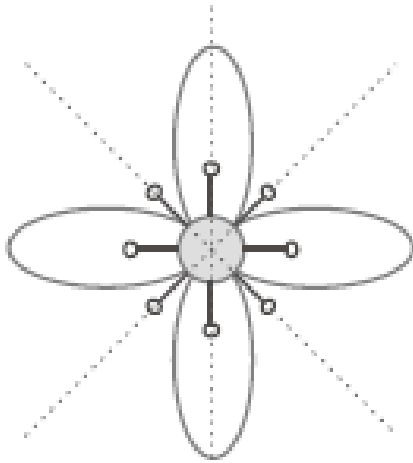


distal
ascendente

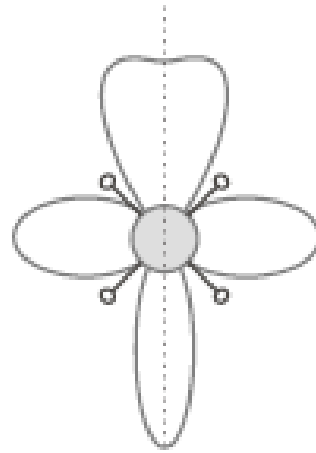


Proximal

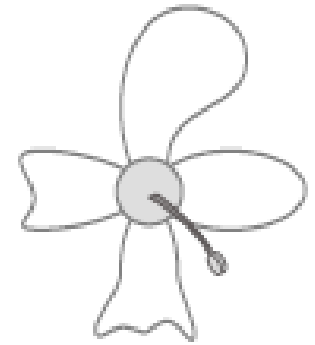
Flores: simetría



Actinomorfa

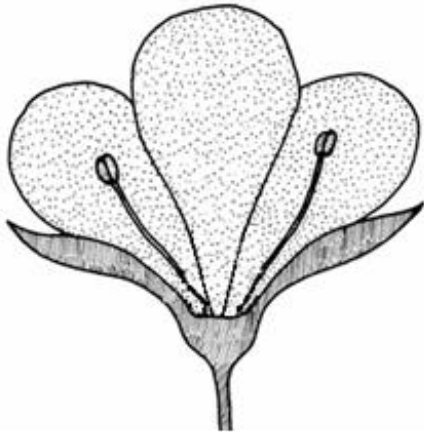


Zigomorfa

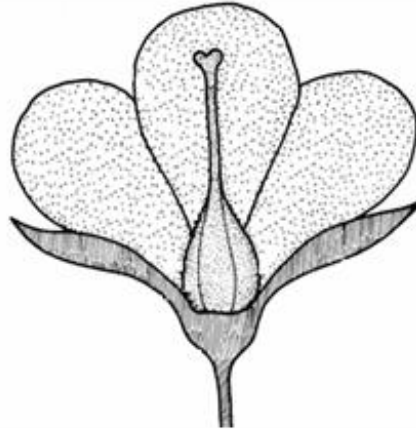


Asimétrica

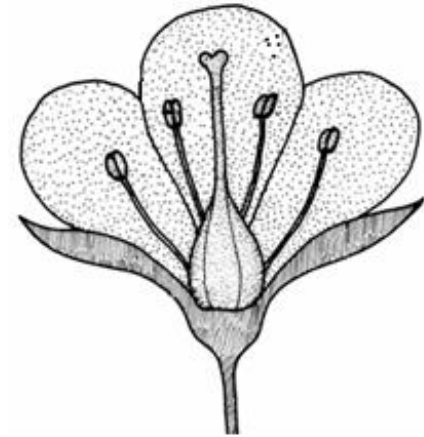
Flores: tipos



Masculina



Femenina



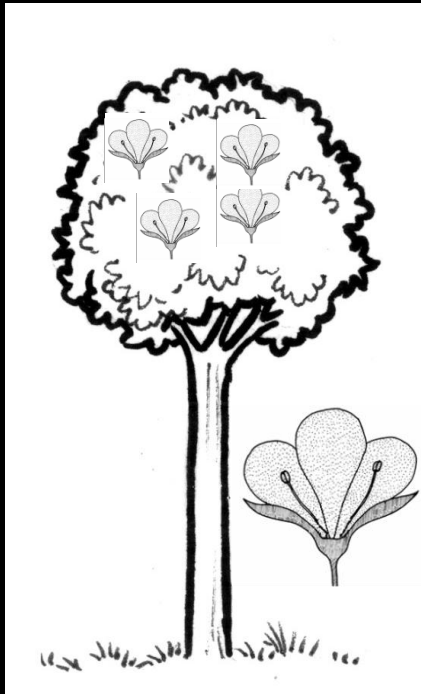
Hermafrodita

Unisexuales

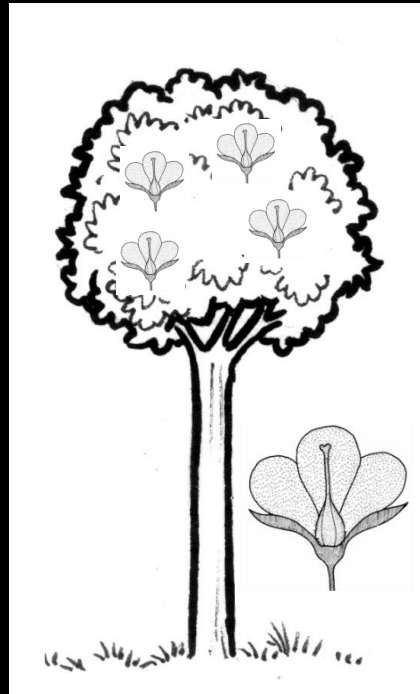
Bisexuales

Tipos de árboles

Árboles dioicos

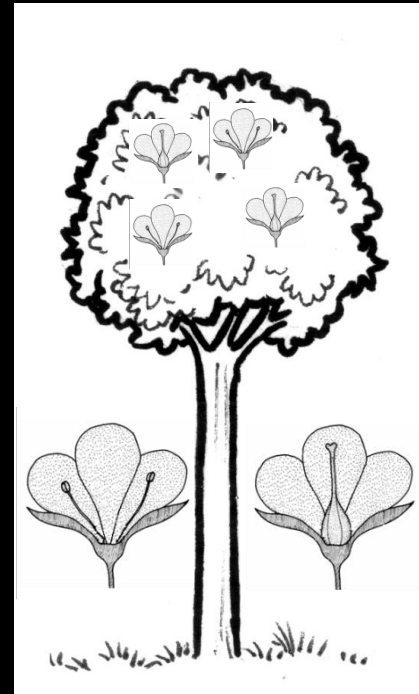


Flores unisexuales
masculinas
(♂)

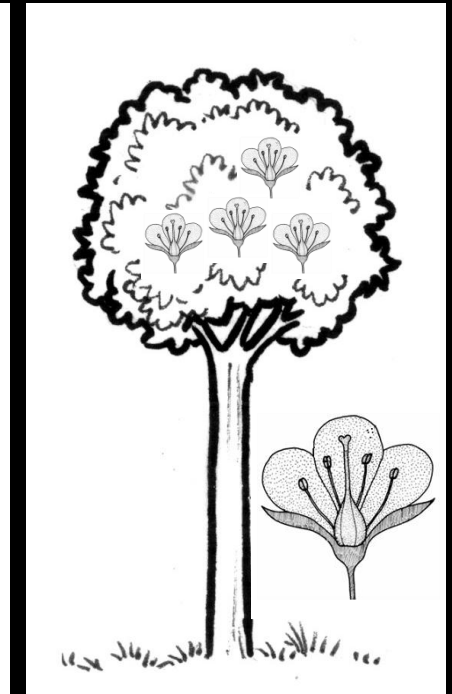


Flores unisexuales
femeninas
(♀)

Árboles monoicos



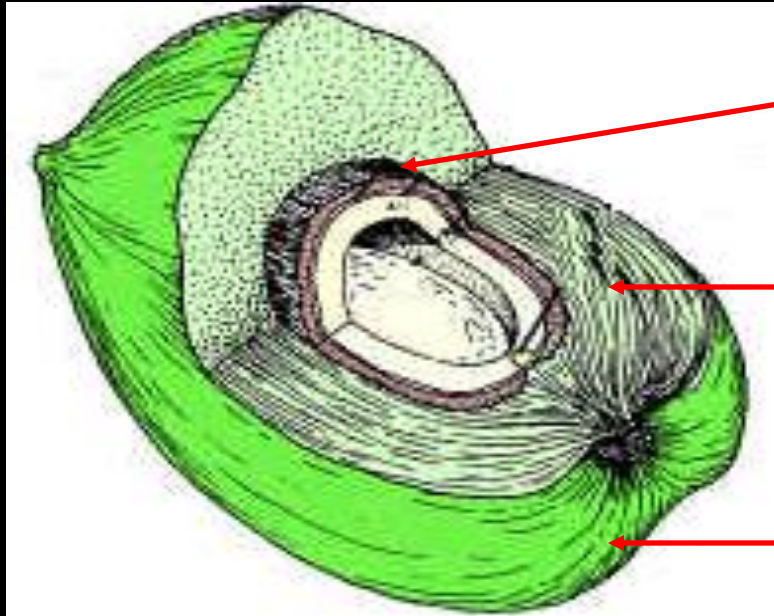
Flores unisexuales
masc. y fem.
(♂♀)



Flores bisexuales
(♂♀)



Frutos



Endocarpio

Mesocarpio

Epicarpio

Frutos

Frutos simples 1 pistilo

Fruto carnoso e indehisciente

Baya

Drupa

Fruto seco

Indehiscente

Aquenio Sámara
Cipsela Nuez
Cariopse Esquizocarpo

Dehiscente

+ 1 carpelo

Cápsula
Silícula

1 carpelo

Legumbre
Folículo

Frutos compuestos + 1 pistilo

+ 1 flor Fruto múltiple

Sicono
Bayas múltiples

1 flor Heterio o Fruto Agregado

Frutos propiamente dichos

Frutos carnosos e indehiscentes:

Drupa

Myrcia crassimarginata
MYRTACEAE

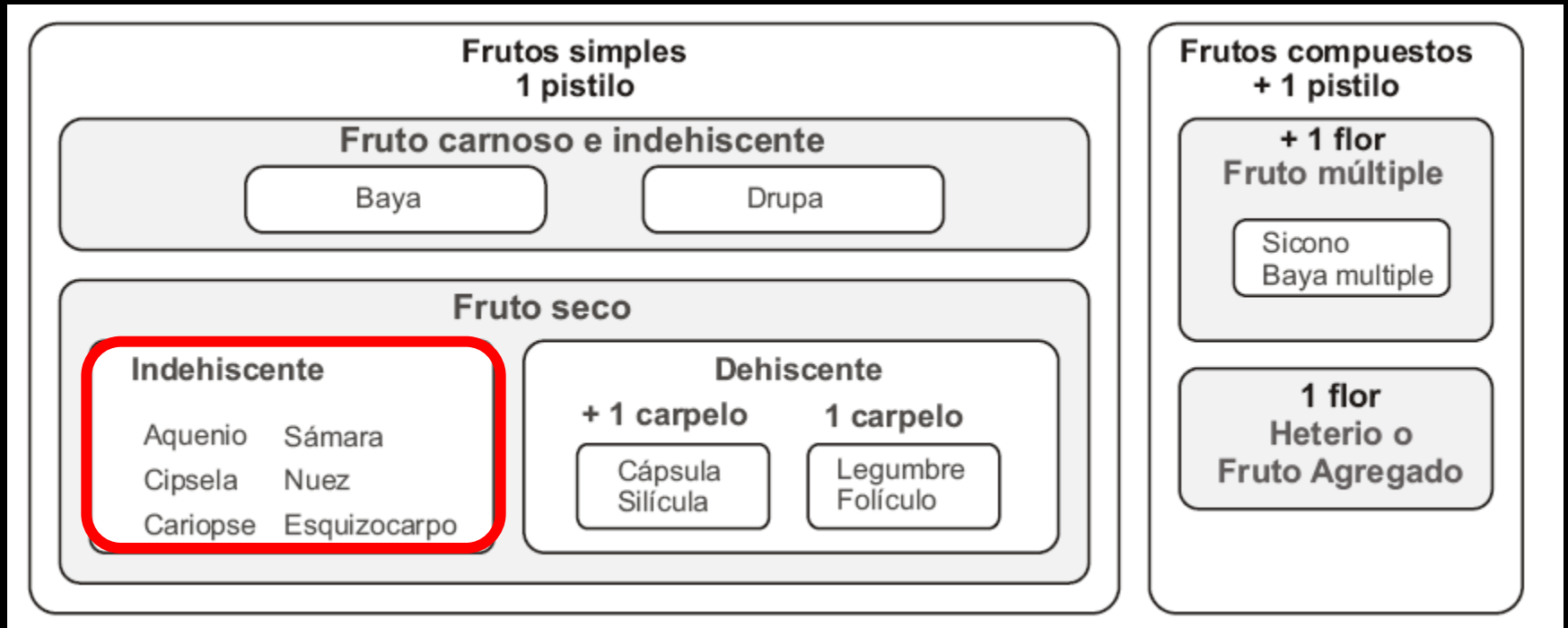


Baya

Parhancornia peruviana
APOCYNACEAE



Frutos



Fuente: OET 2007-18

Frutos propiamente dichos

Frutos secos e indehiscentes:



Neesa sp.
NYCTAGINACEAE



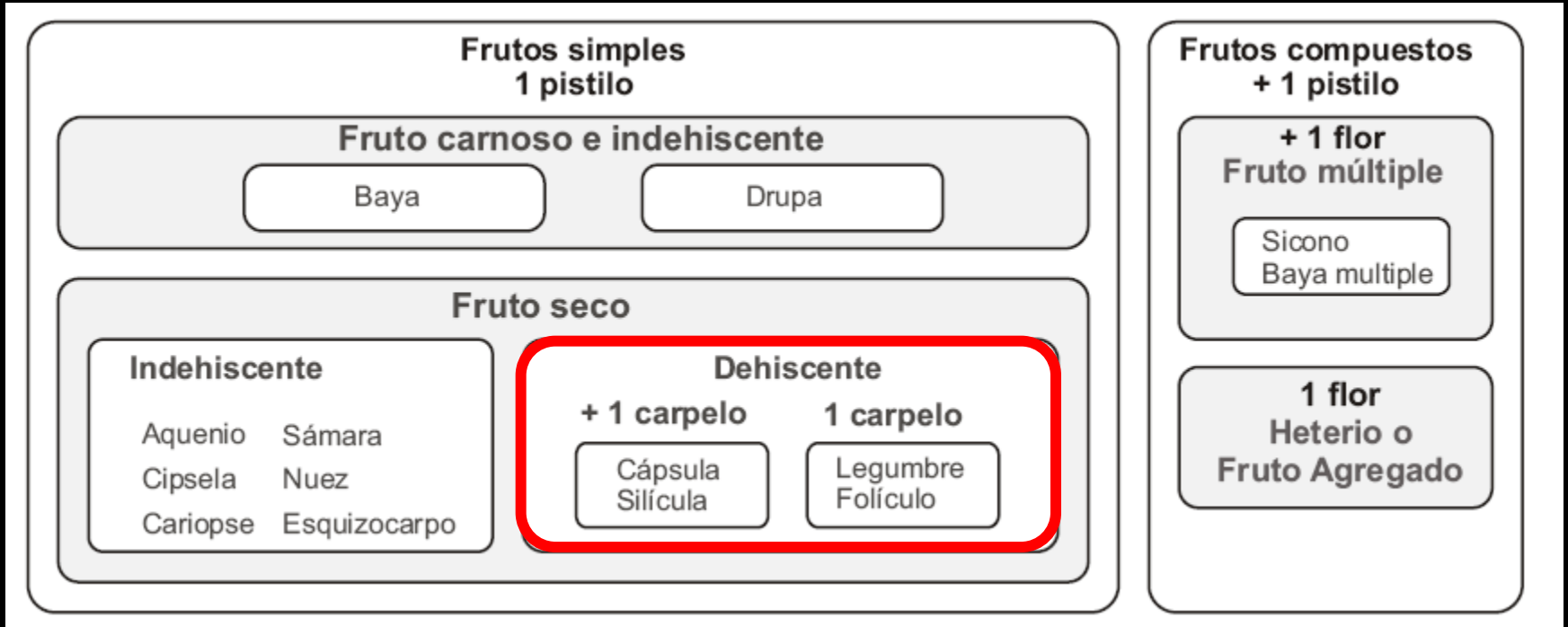
Aquenio



Terminalia oblonga
COMBRETACEAE

Samara

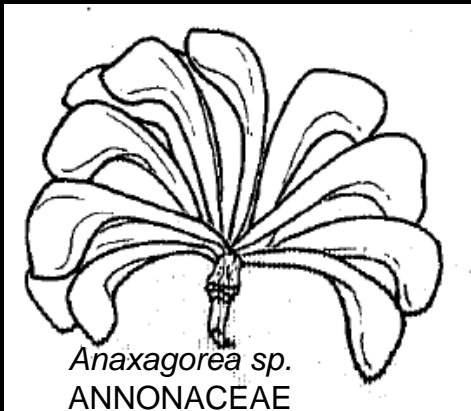
Frutos



Fuente: OET 2007-18

Frutos propiamente dichos

Frutos secos y dehiscentes:



Folículo

Legumbre

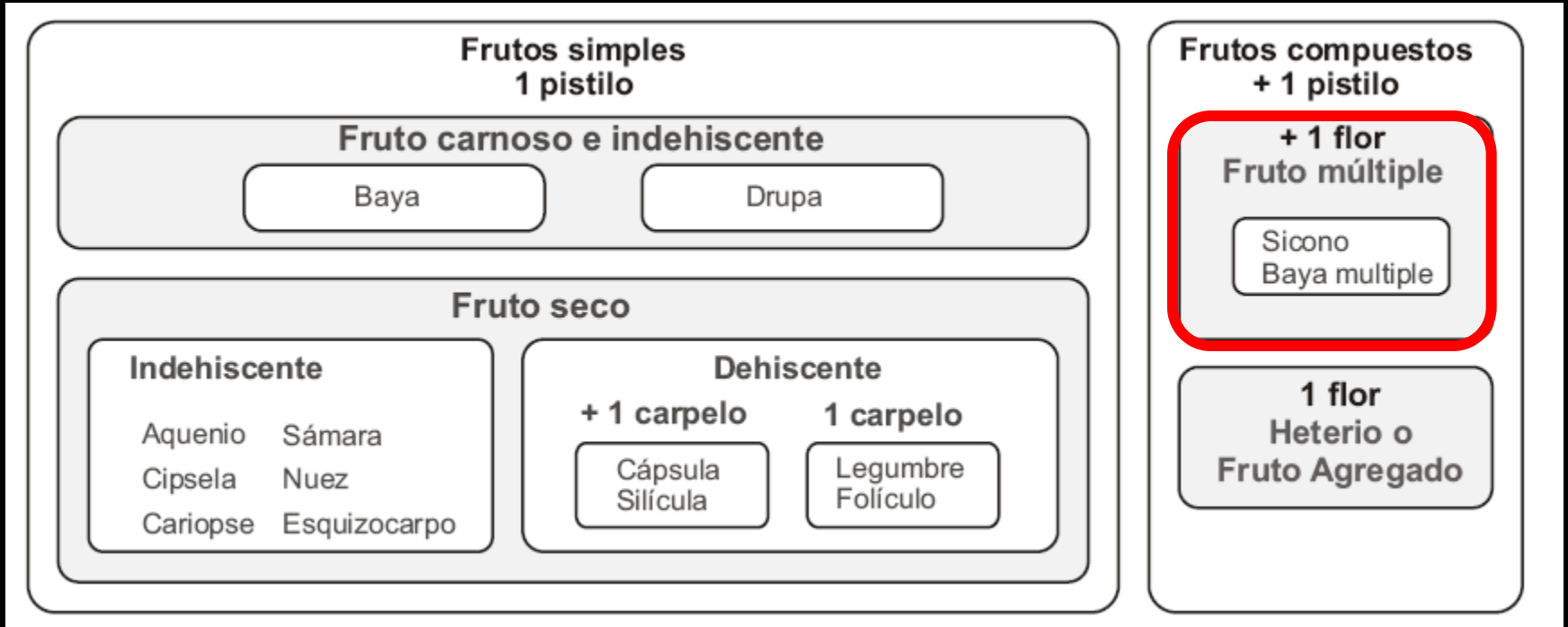


Silicua



Cápsula

Frutos



Fuente: OET 2007-18

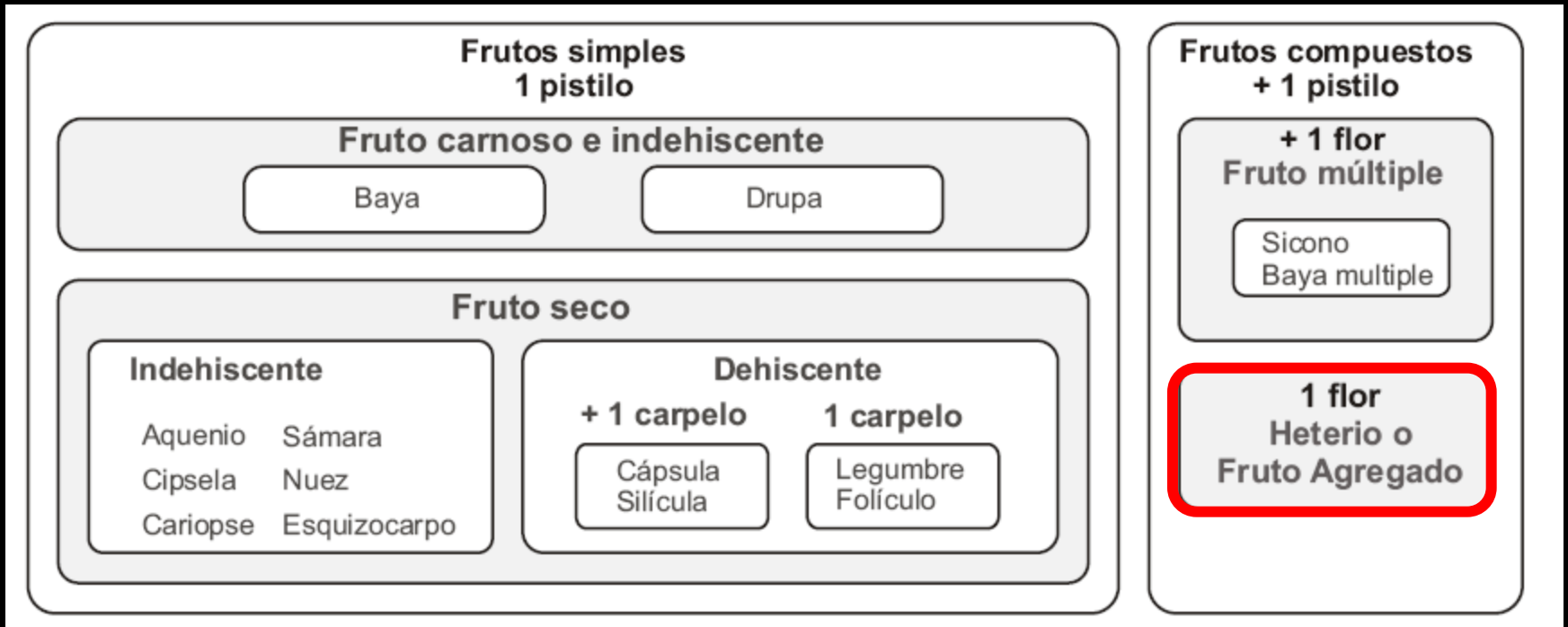
Frutos compuestos

+1 pistilo en +1 flor:

XXX.
MORACEAE

Baya múltiple

Frutos



Fuente: OET 2007-18

Frutos

+1 pistilo en 1 flor:



Duguetia sp.
ANNONACEAE



Xylopia sp.
ANNONACEAE



Guatteria hyosericea
ANNONACEAE

Frutos agregados