

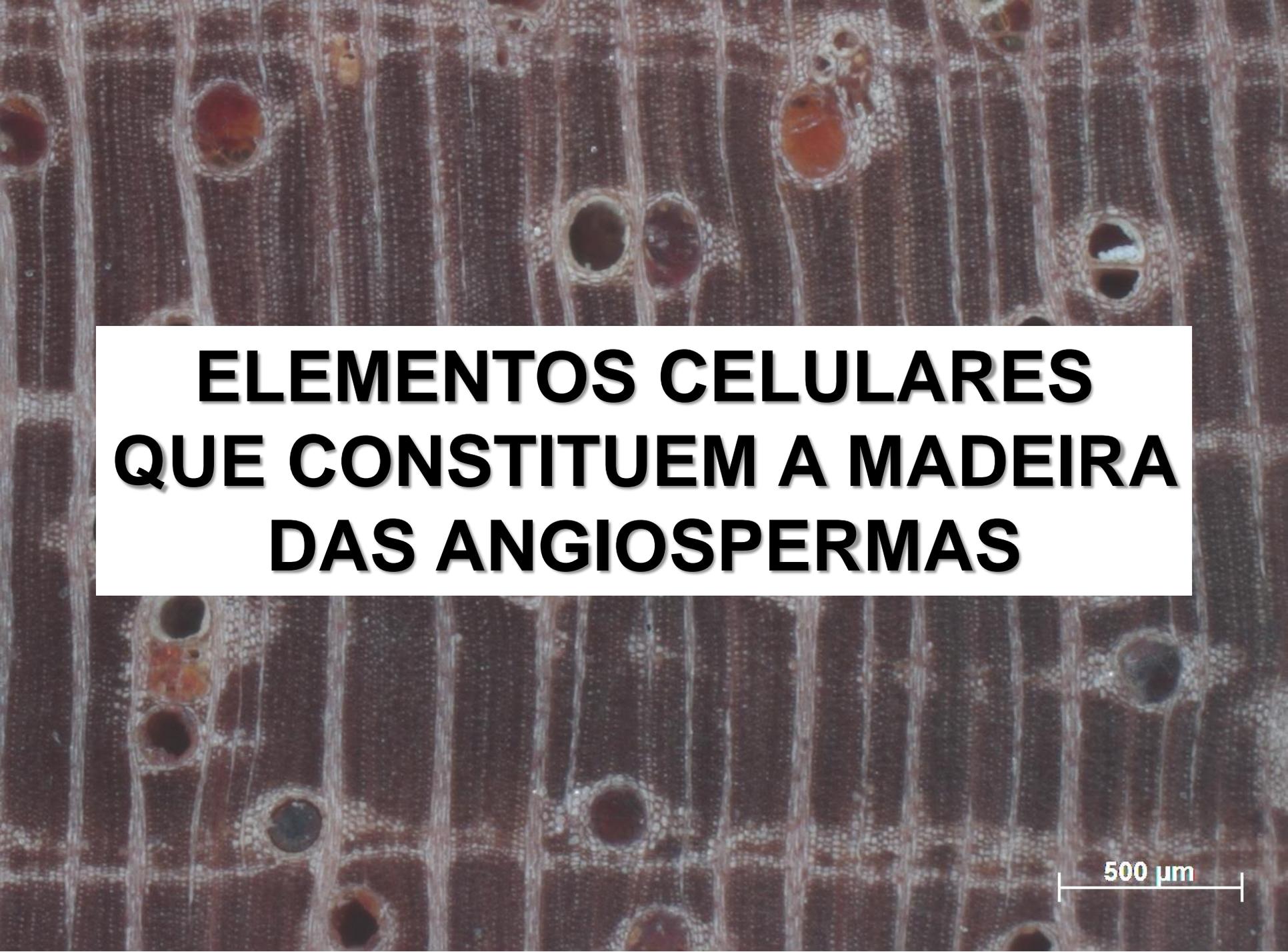
□ ELEMENTOS CELULARES QUE CONSTITUEM AS ANGIOSPERMAS

✓ **Tipos – Vasos**

➤ **Características**

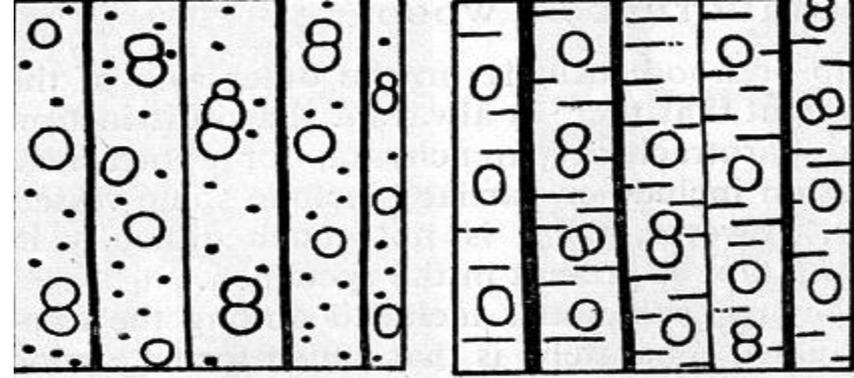
➤ **Classificações**

➤ **Subclassificações**

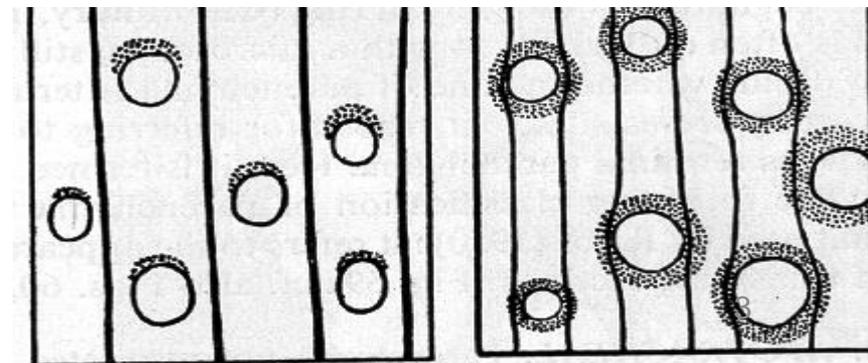
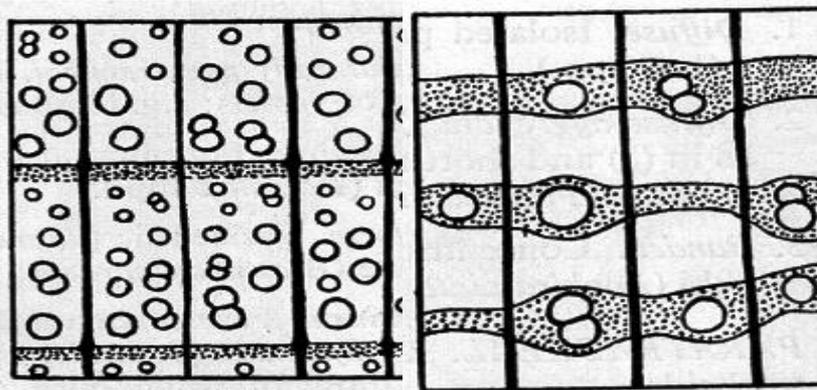
A microscopic image of wood tissue showing cellular elements. The image displays a dense network of vertical, elongated cells with thick, dark brown walls. Several large, circular or oval-shaped vessels are visible, some containing dark, reddish-brown material. The overall appearance is that of a highly organized, fibrous structure. A white rectangular box is overlaid on the center of the image, containing the title text. A scale bar is located in the bottom right corner.

**ELEMENTOS CELULARES
QUE CONSTITUEM A MADEIRA
DAS ANGIOSPERMAS**

500 μm

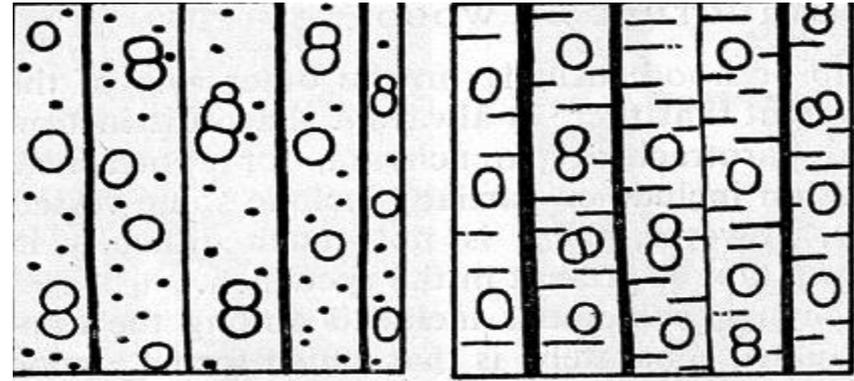


PARÊNQUIMA AXIAL

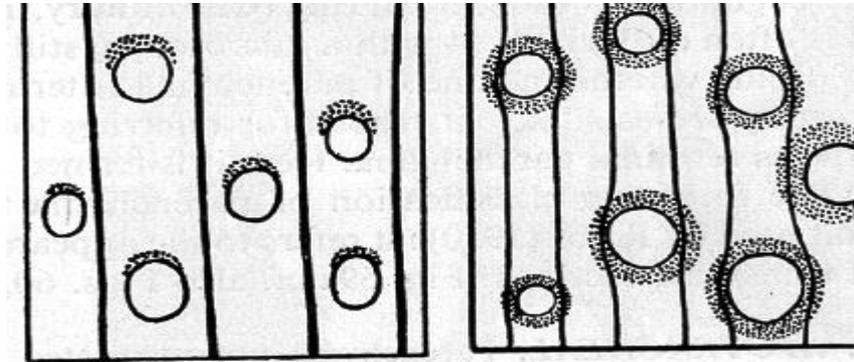


Parênquima longitudinal (axial)

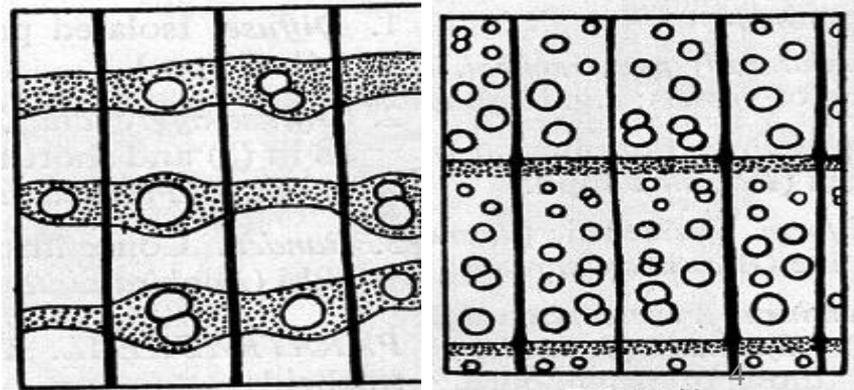
Apotraqueal



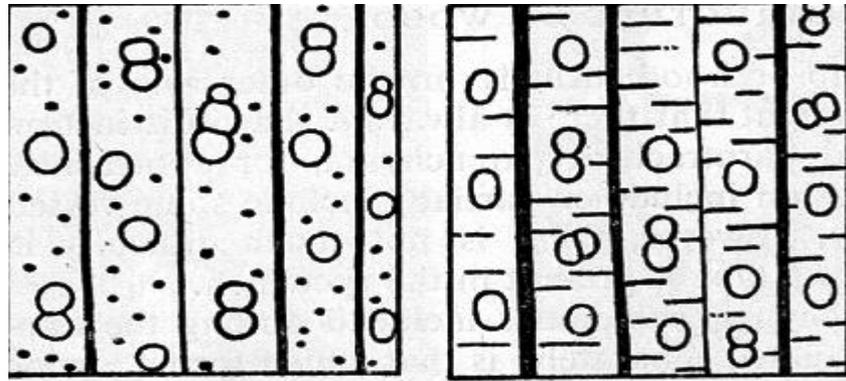
Paratraqueal



Em faixas



APOTRAQUEAL



Parênquima longitudinal (axial)

Parênquima apotraqueal: Quando não está associado aos vasos.

Difuso

Difuso em agregados

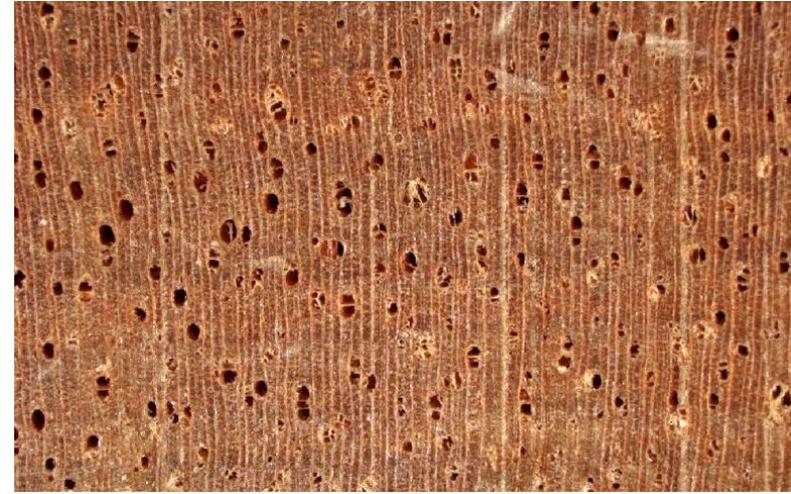
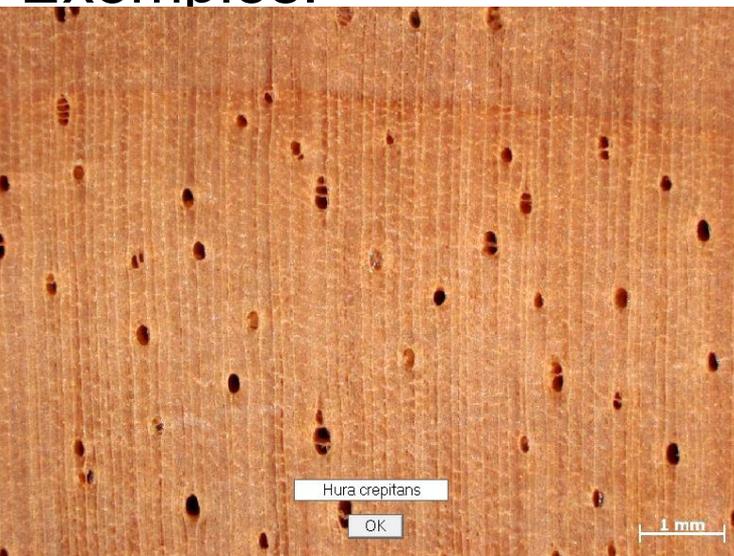
Parênquima longitudinal (axial)

Parênquima apotraqueal

Difuso

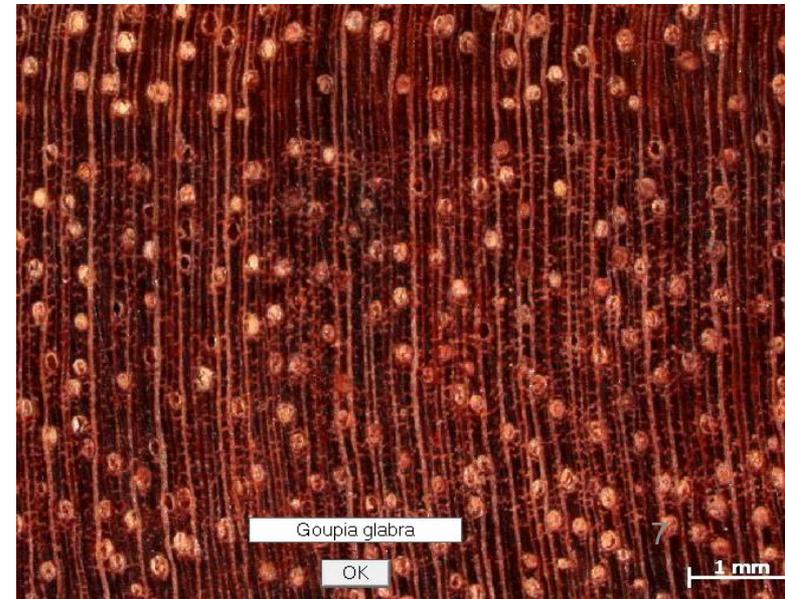
Ocorre quando as células do parênquima axial se distribuem escassa e isoladamente entre as fibras.

Exemplos: *Hura crepitans*
(assacu)



Bixa arborea
(urucu-da-mata)

Goupia glabra
(cupiúba)



Parênquima longitudinal (axial)

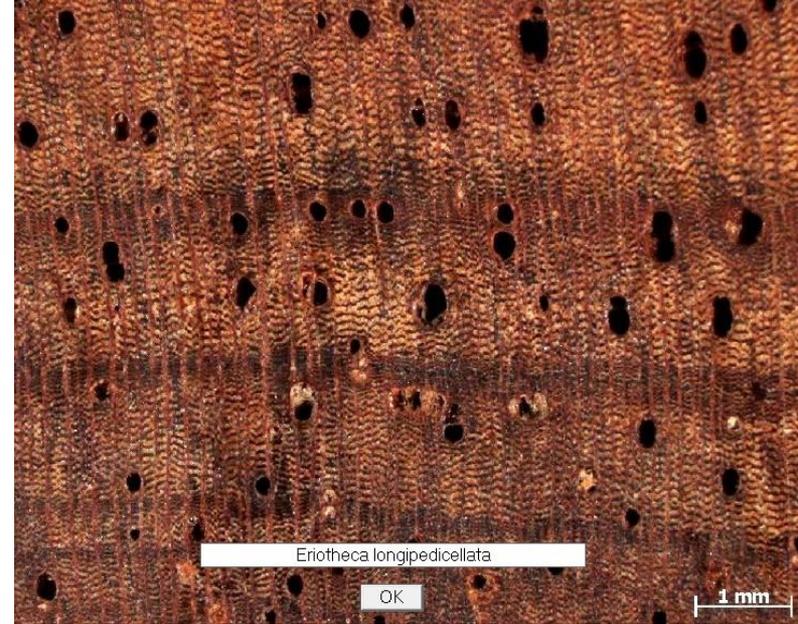
Parênquima apotraqueal

Difuso em agregados

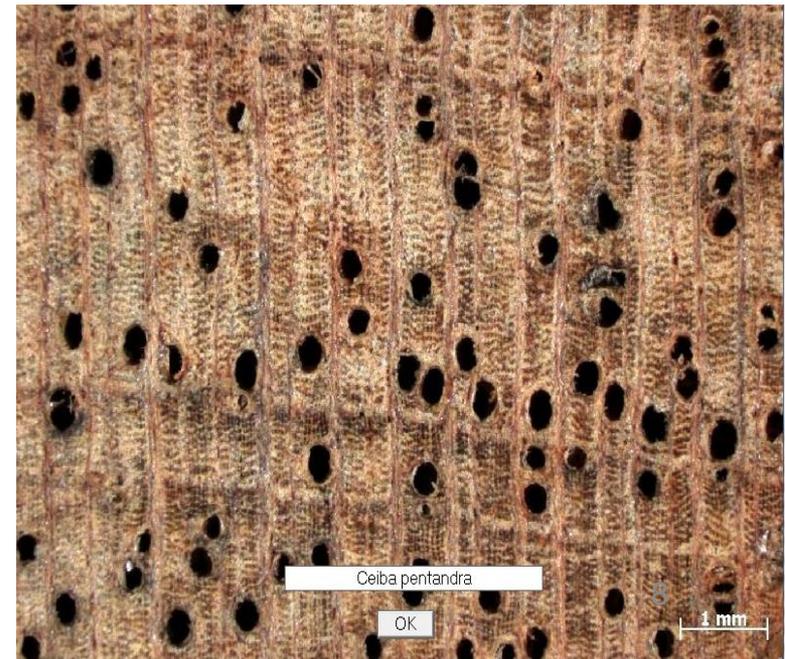
É um parênquima difuso no qual as células tendem a se unir, em segmentos lineares, muito finos, aproximados, formando com os raios uma trama fina e irregular.

Exemplos:

Ceiba pentandra (sumaúna)



Eriotheca longipedicellata
(sumaúna-de-terrafirme)

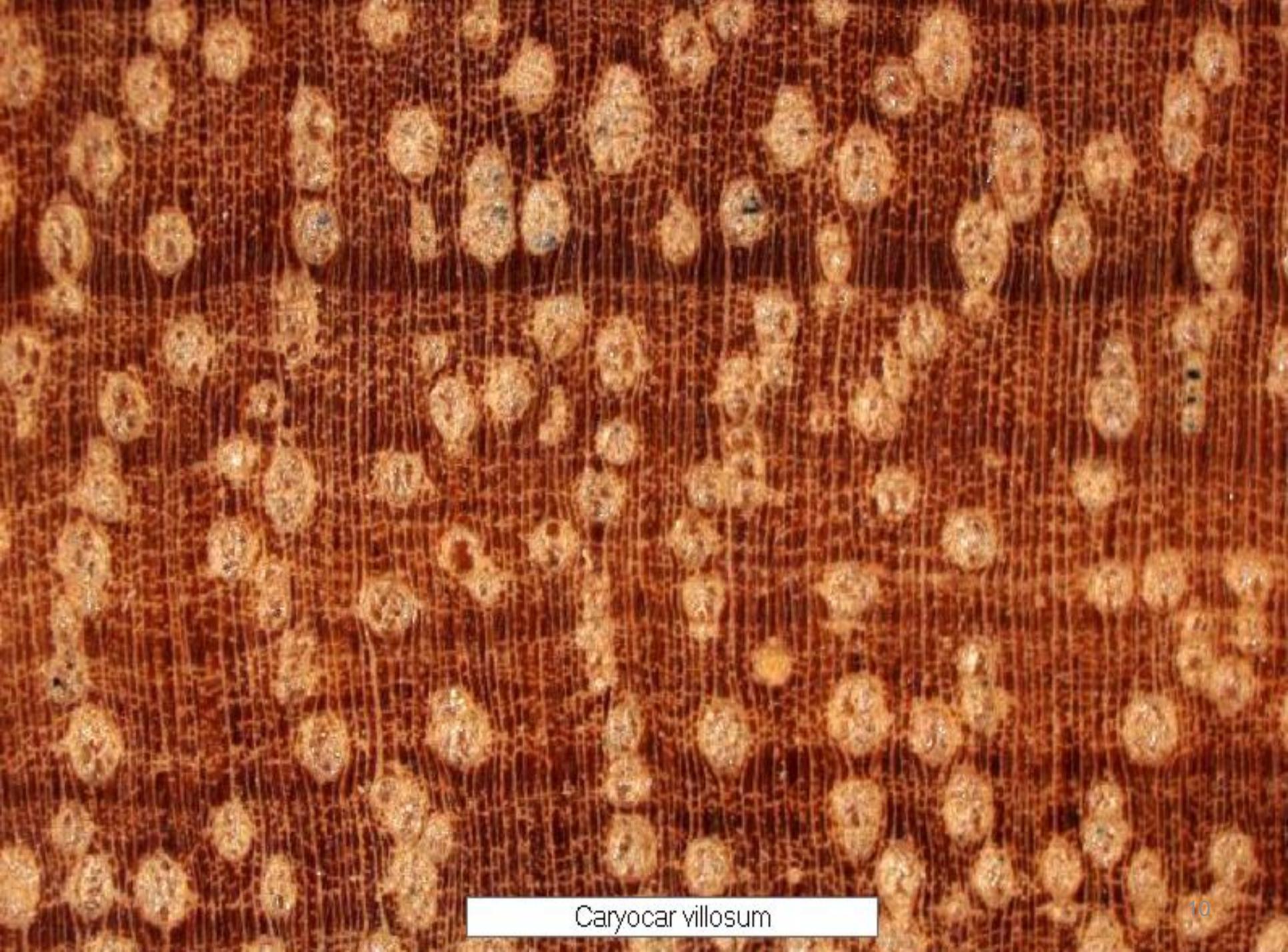




Goupia glabra

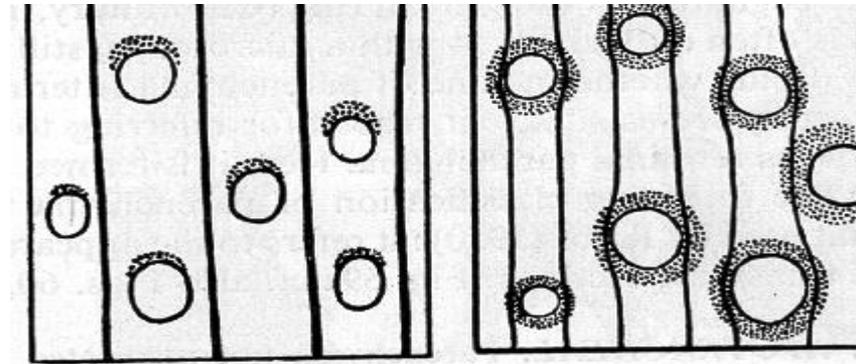
OK

1 mm



Caryocar villosum

PARATRAQUEAL



Parênquima longitudinal (axial)

Parênquima paratraqueal: Quando está associado aos vasos (poros).

Escasso

Vasocêntrico

Aliforme (losangular, linear)

Confluente

Unilateral

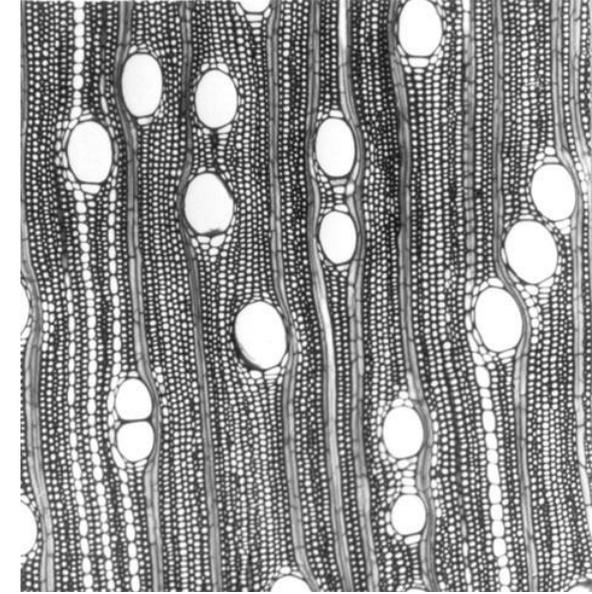
Parênquima longitudinal (axial)

Parênquima paratraqueal

Escasso

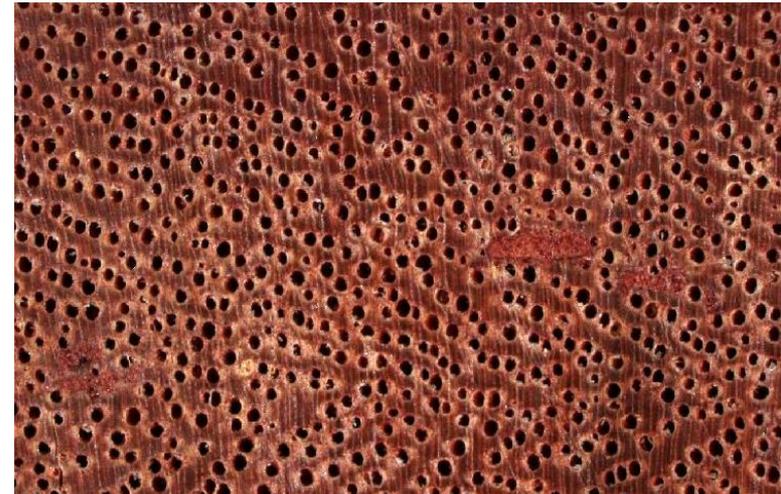
Quando ocorrem células ocasionais, associadas aos vasos ou formando círculo incompleto, ou seja, células ocasionalmente dispostas na vizinhança imediata dos mesmos.

Exemplos:



Trattinnickia burseraefolia
(Mart.) Willd. (amesclão)

Caraipa densifolia
(camaçari)



Parênquima longitudinal (axial)

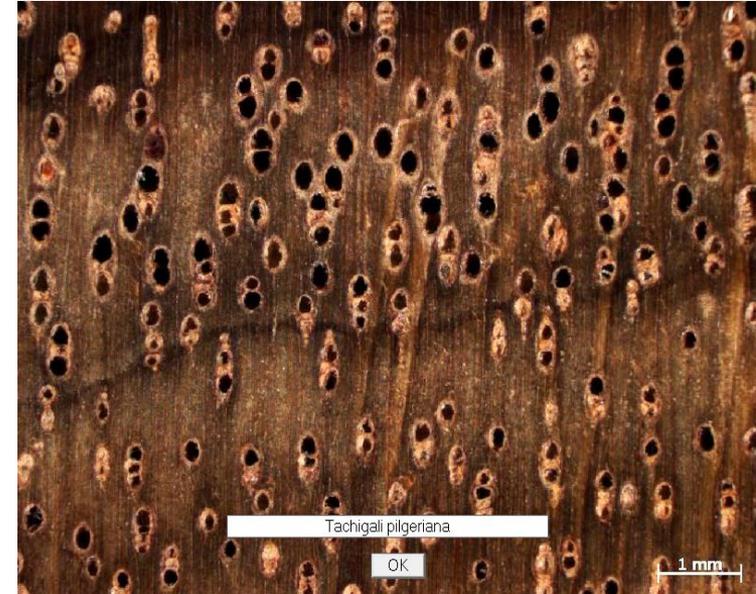
Parênquima paratraqueal

Vasicêntrico

Quando as células do parênquima axial formam uma bainha circular ou oval completa ao redor dos vasos, a qual pode ser larga ou estreita.

Exemplos:

Enterolobium maximum (faveira)



Tachigali pilgeriana
(ingá-louro)



Parênquima longitudinal (axial)

Parênquima paratraqueal

Aliforme: Circunda o vaso e tem extensões laterais.

Aliforme Losangular

Aliforme Linear

Parênquima longitudinal (axial)

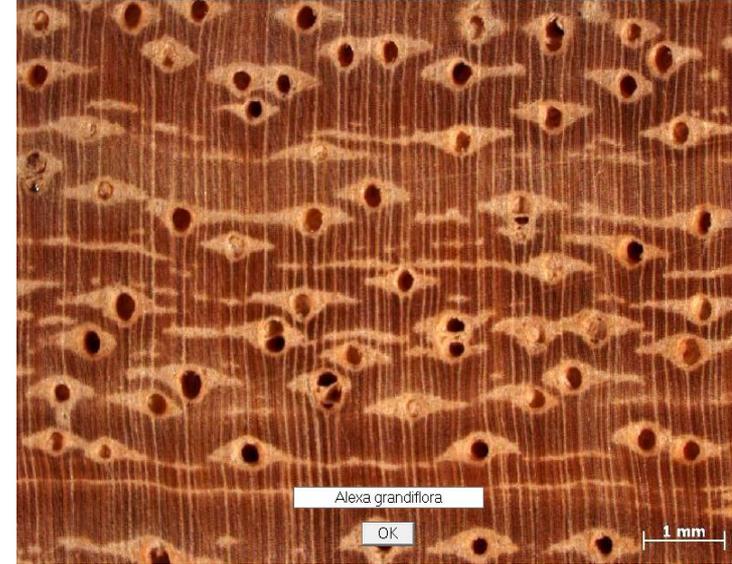
Parênquima paratraqueal

Aliforme Losangular

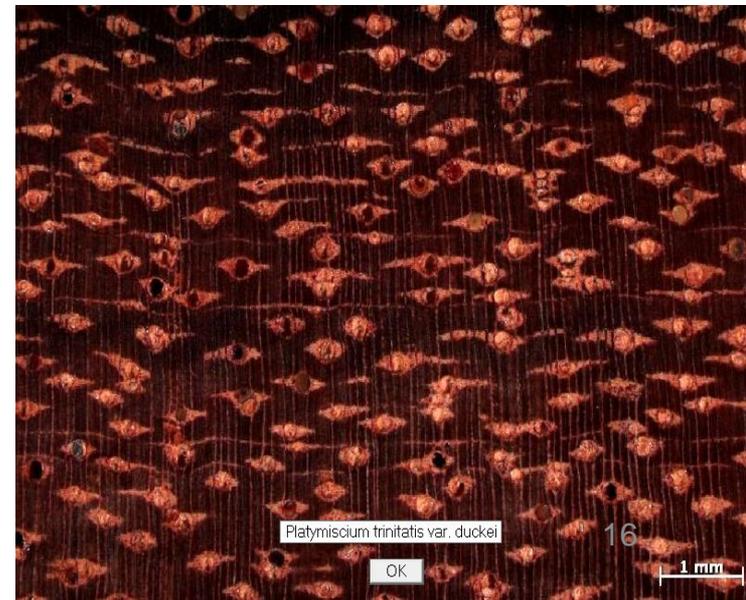
Se dispõe em torno dos poros, estendendo-se opostamente, em expansões largas e curtas, formando um desenho tipo losango e, em prolongamentos laterais, unindo-se a outros parênquimas vizinhos.

Exemplos:

Platymiscium trinitatis
(**macacaúba**)



Alexa grandiflora
Ducke (melancieira)



Parênquima longitudinal (axial)

Parênquima paratraqueal

Aliforme Linear

Com prolongamentos laterais alongados e estreitos.

Exemplos:



Jacaranda copaia
(parapará)

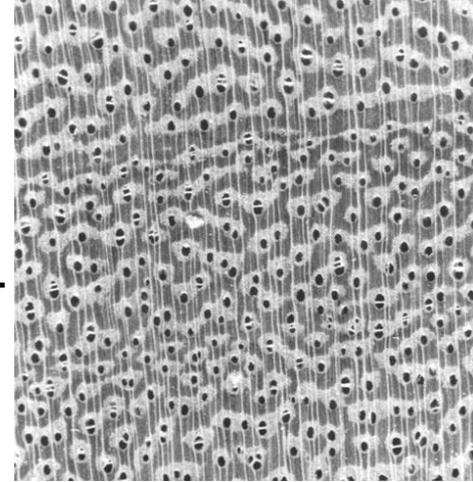
Brosimum acutifolium
(mururé)



Parênquima longitudinal (axial)

Parênquima paratraqueal

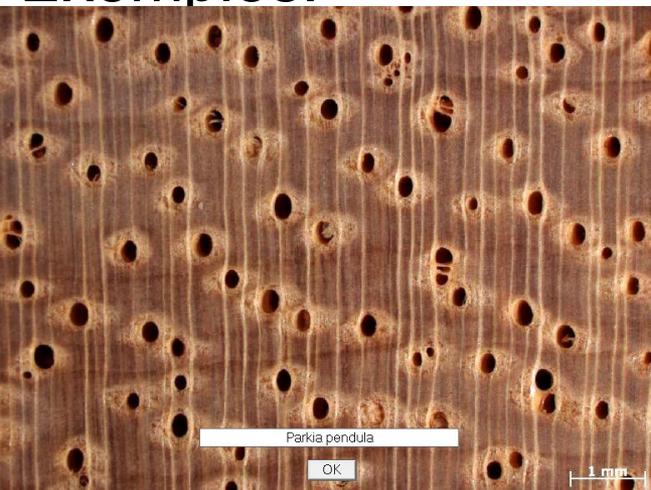
Dimorphandra sp.
(faveira)



Confluente

Quando as células de parênquima se juntam e ocasionalmente formam faixas irregulares tangenciais ou diagonais.

Exemplos:

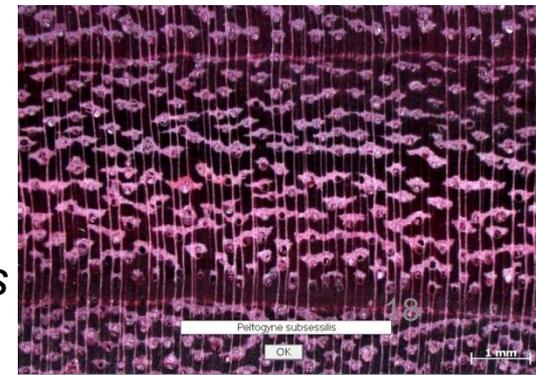


Parkia pendula
(angelim-saia)



Bowdichia nitida
(sucupira-preta)

Peltogyne subsessilis
(pau-roxo)



Parênquima longitudinal (axial)

Parênquima paratraqueal

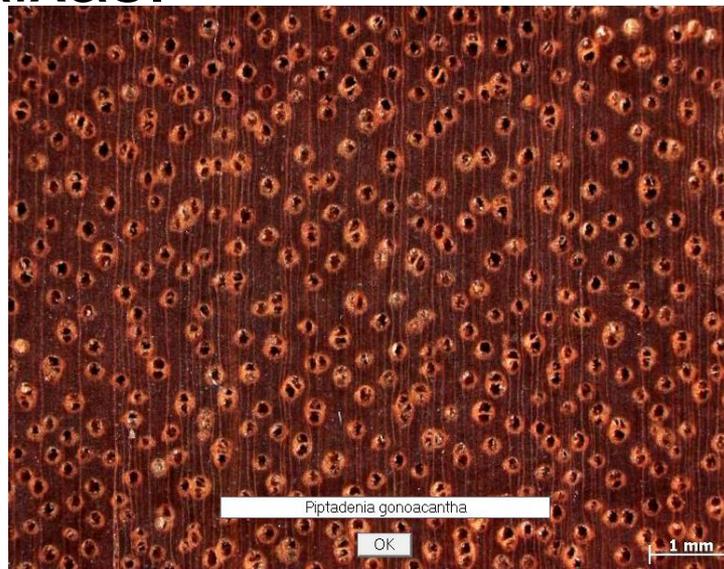
Unilateral

Se apresenta de formas semicirculares, só em um lado do vaso, podendo se estender lateralmente em um padrão confluyente ou em faixas.

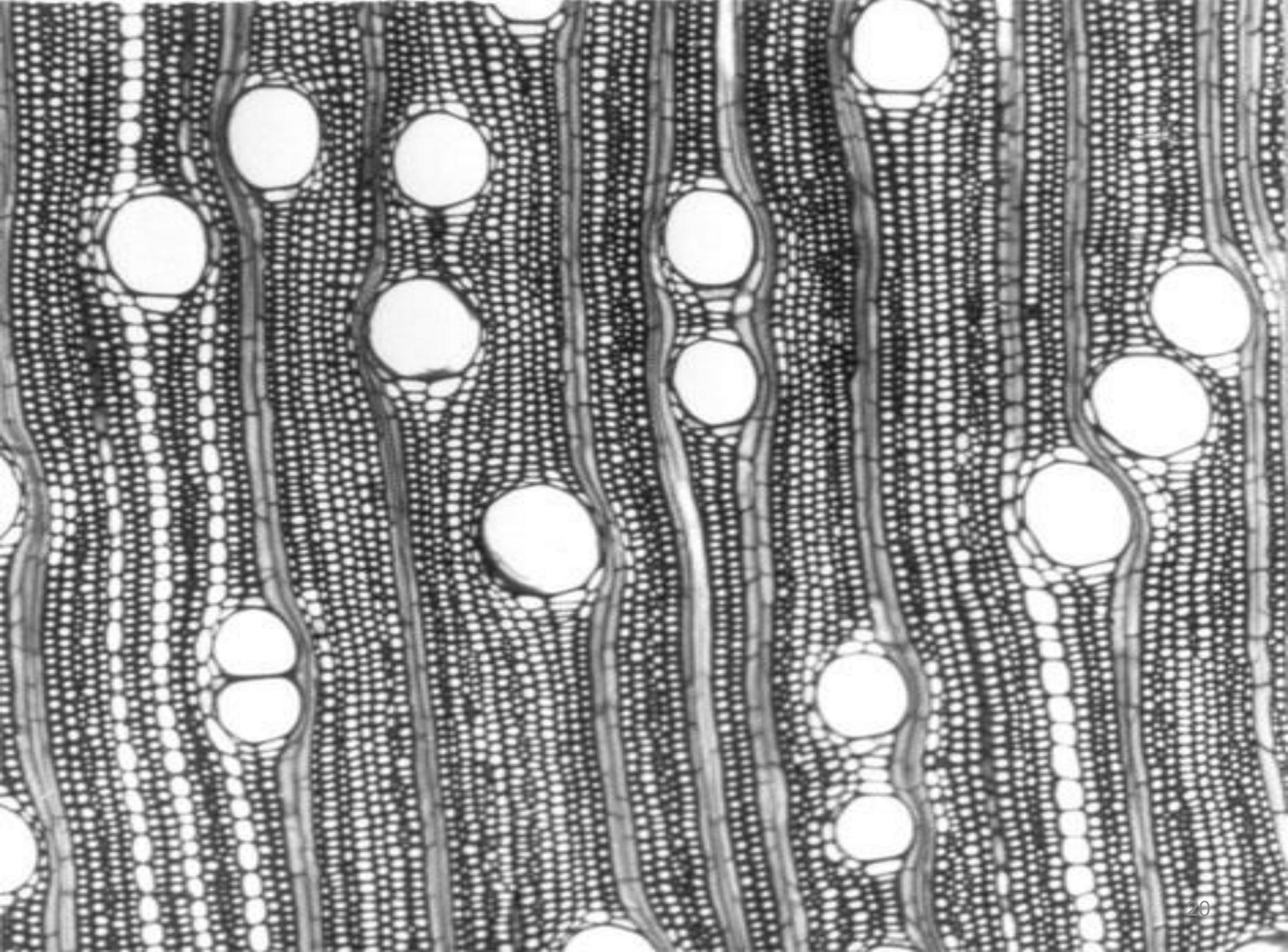
Exemplos:



Pseudopiptadenia suaveolens (angico)



Piptadenia gonoacantha (angico-branco)





Tachigali pilgeriana

OK

1 mm



Alexa grandiflora

OK

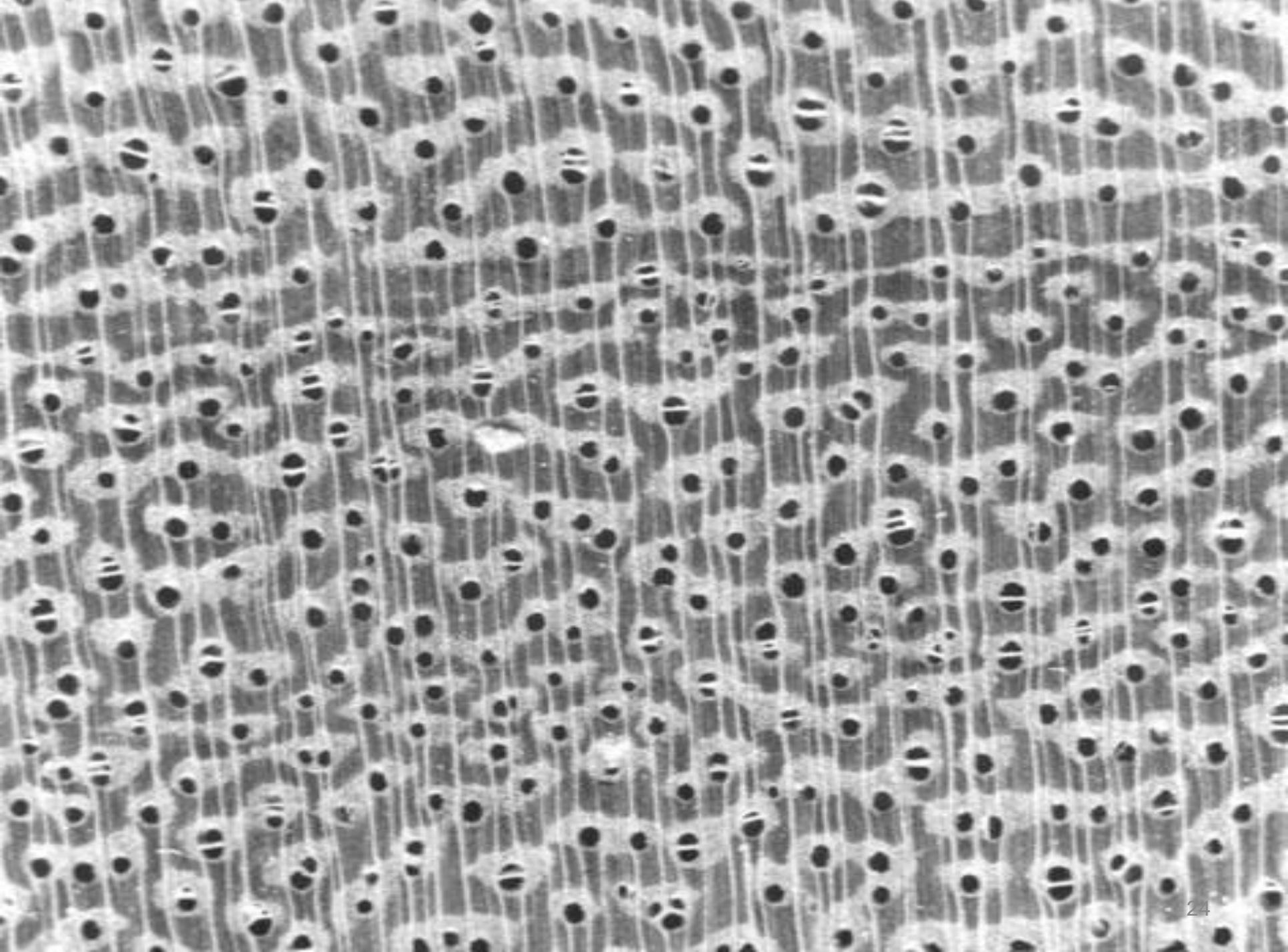
1 mm

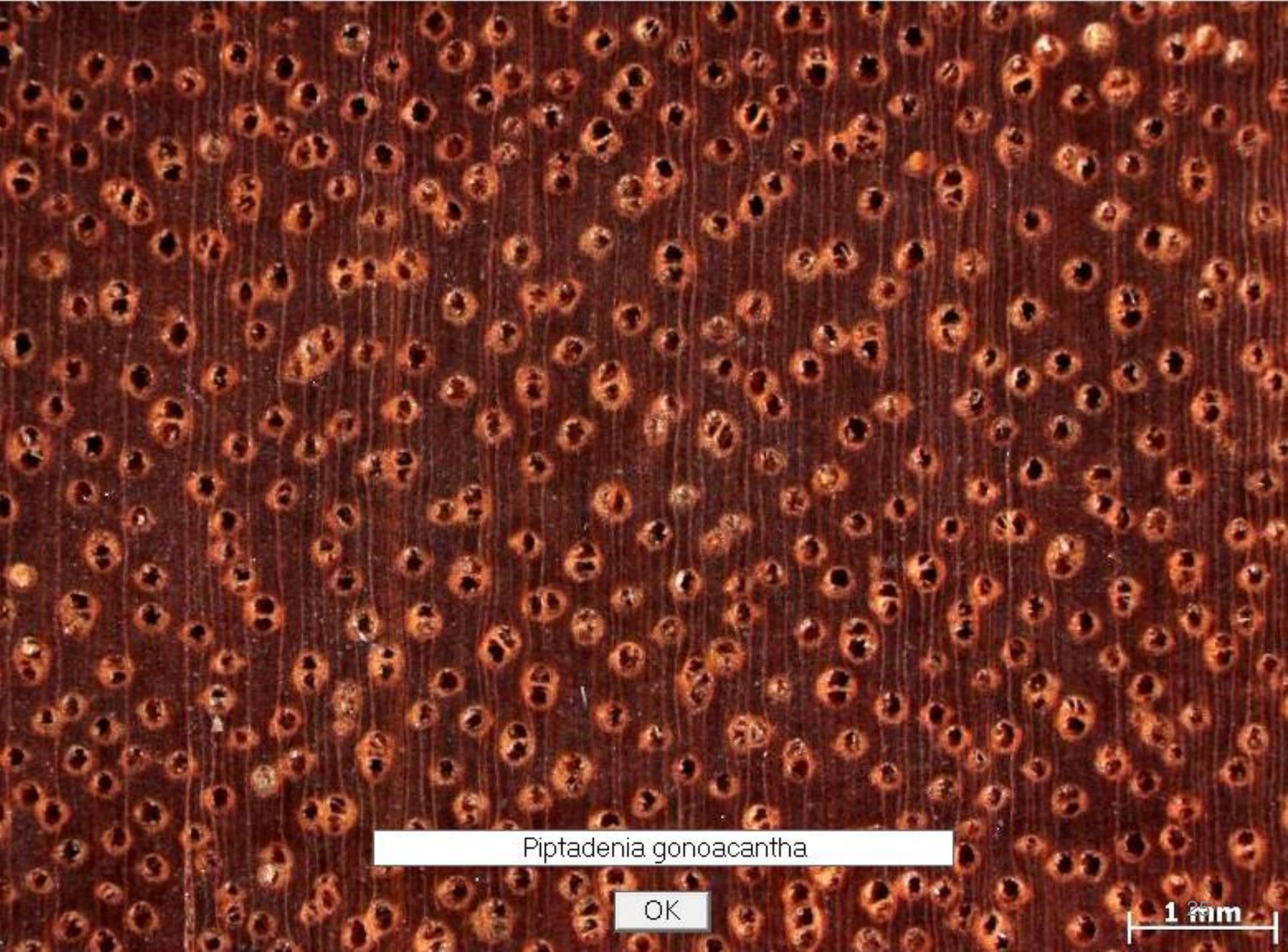


Jacaranda copaia

OK

23
1 mm

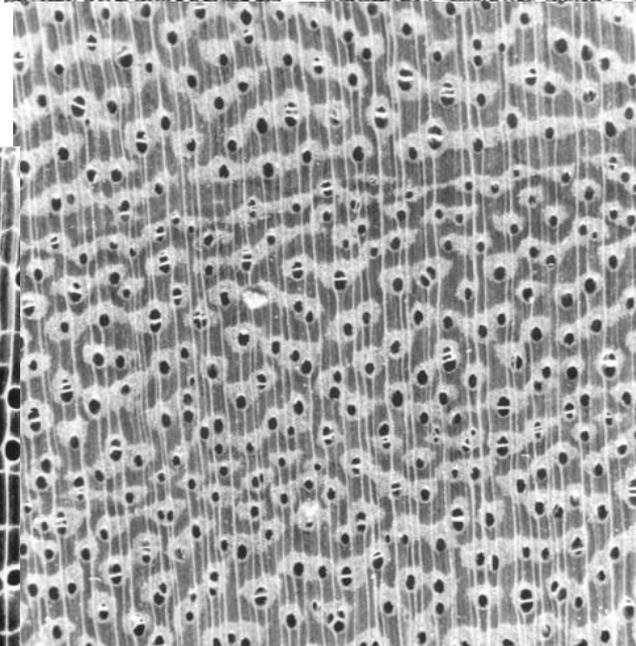
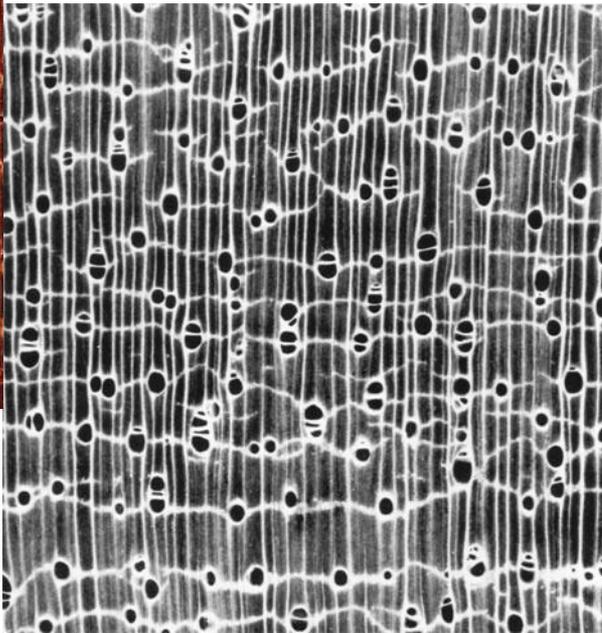
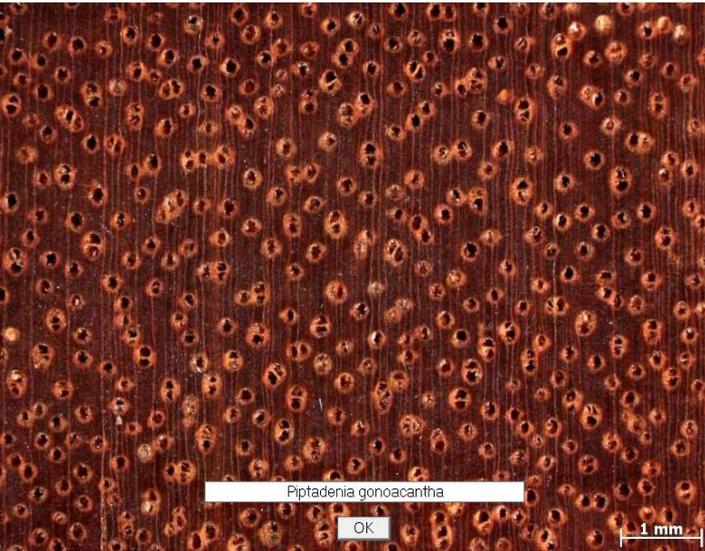
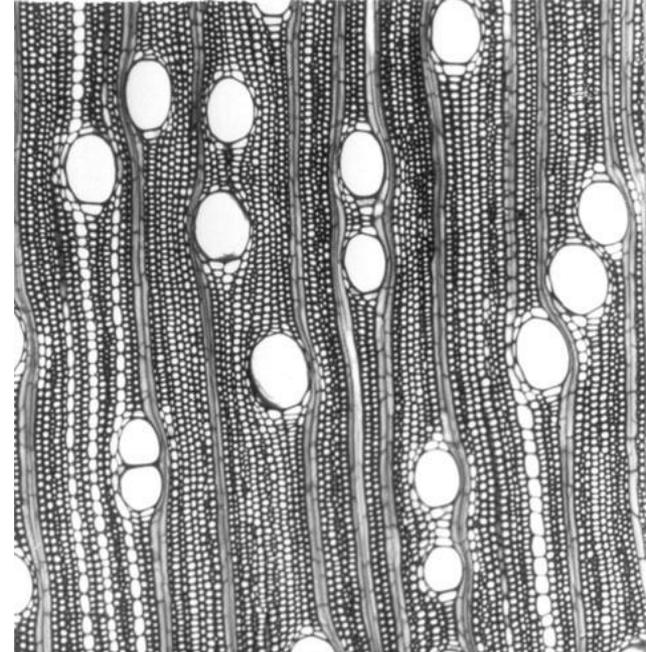
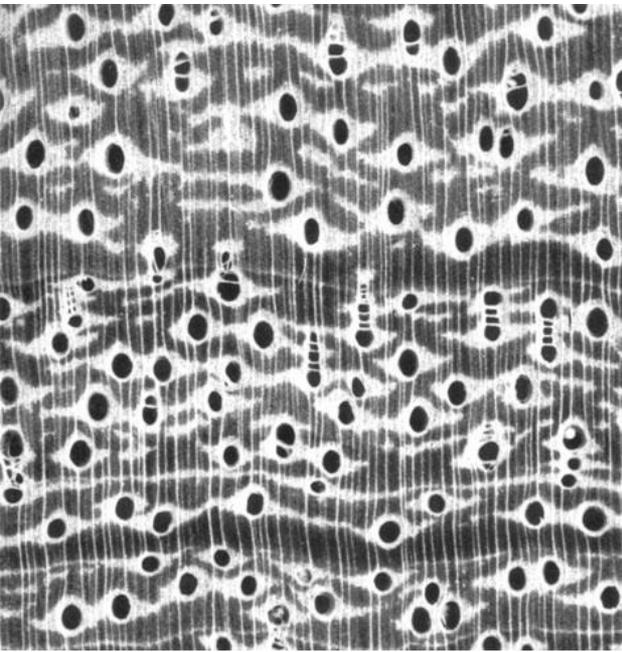




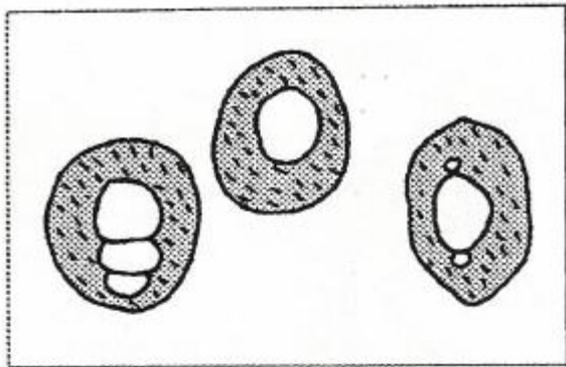
Piptadenia gonoacantha

OK

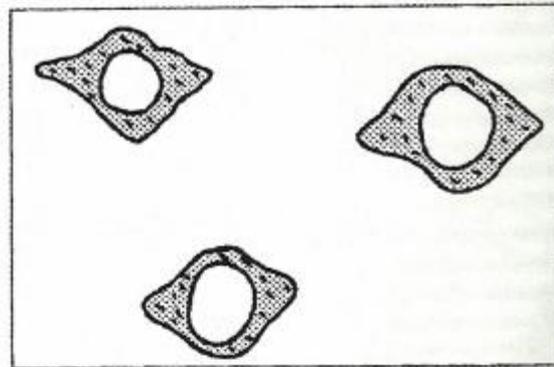
1 mm



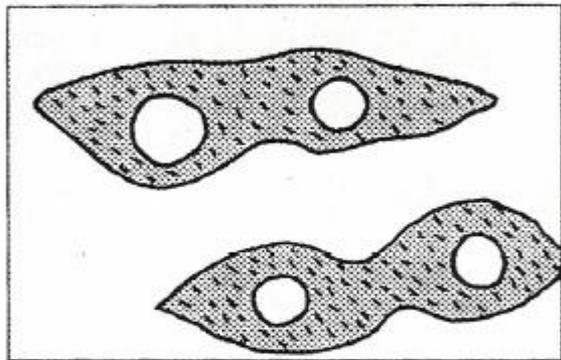
A



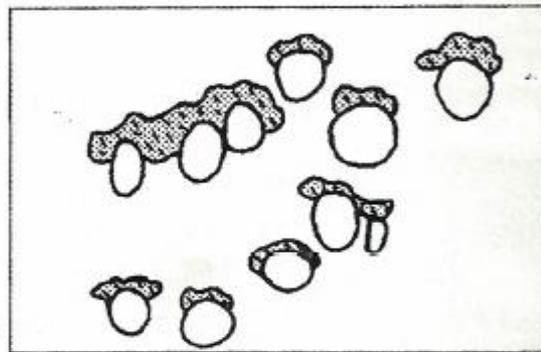
B



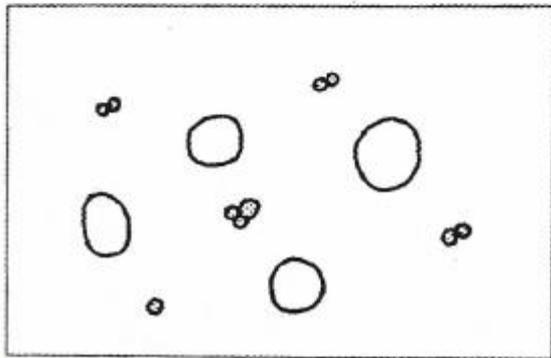
C



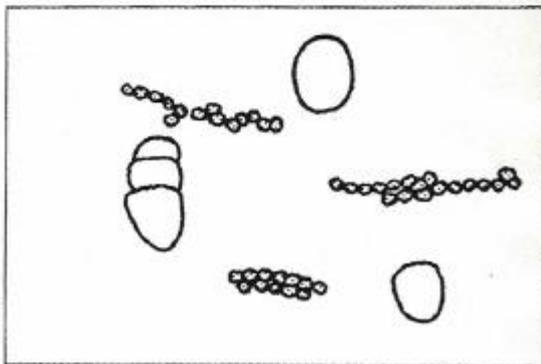
D



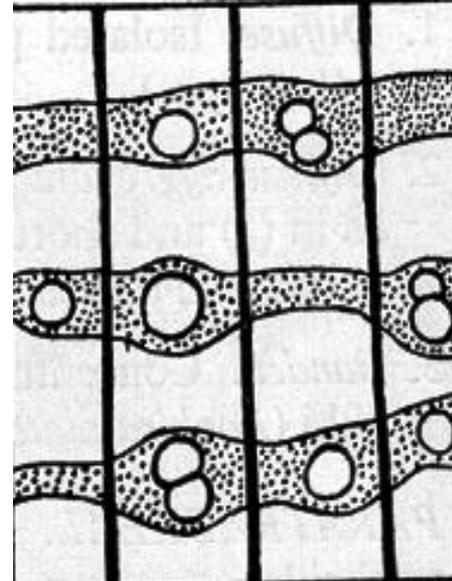
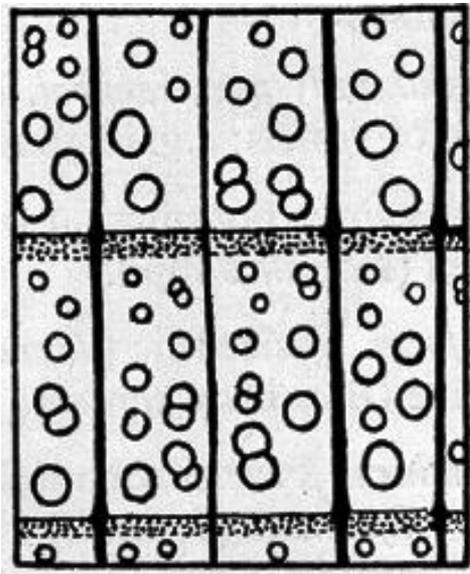
E



F



EM FAIXAS



Parênquima longitudinal (axial)

Parênquima em faixas: Que forma faixas transversais aos raios.

Faixas largas

Faixas estreitas (linhas, finas)

Reticulado

Escalariforme

Marginal

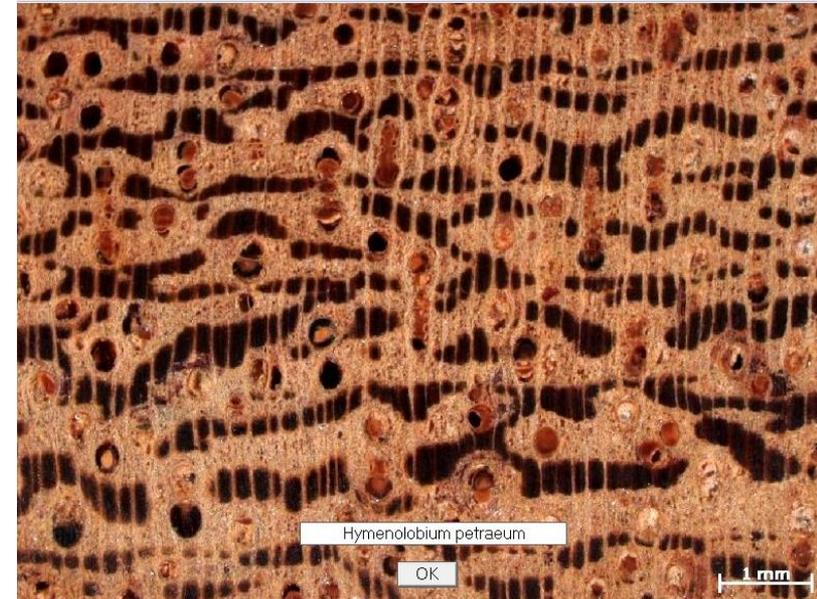
Parênquima longitudinal (axial)

Parênquima em faixas

Faixas largas

Distribuído em faixas ou linhas nitidamente concêntricas aproximadas ou não com mais de três células na largura.

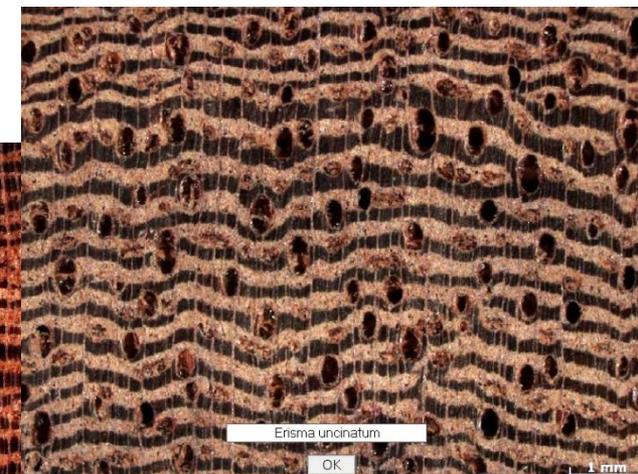
Exemplos:



Hymenolobium petraeum (angelim pedra)



Lecythis lurida (jarana)



Erisma uncinatum (cedrinho)

Parênquima longitudinal (axial)

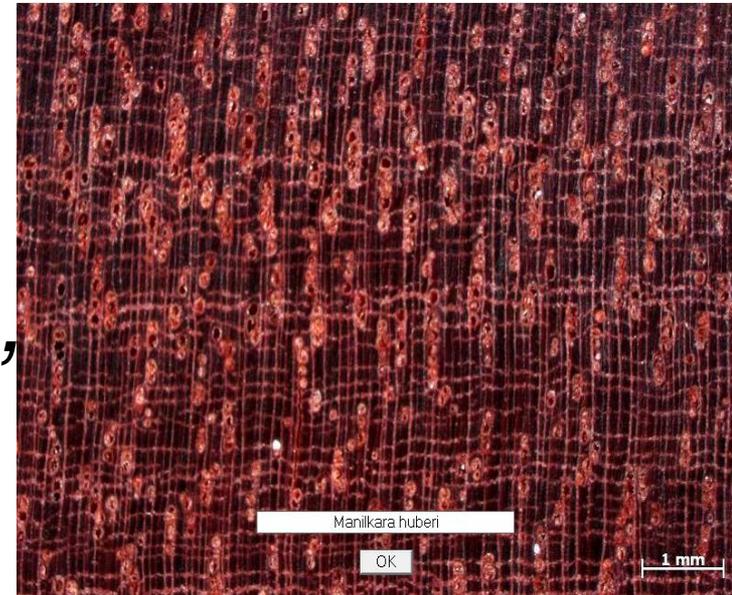
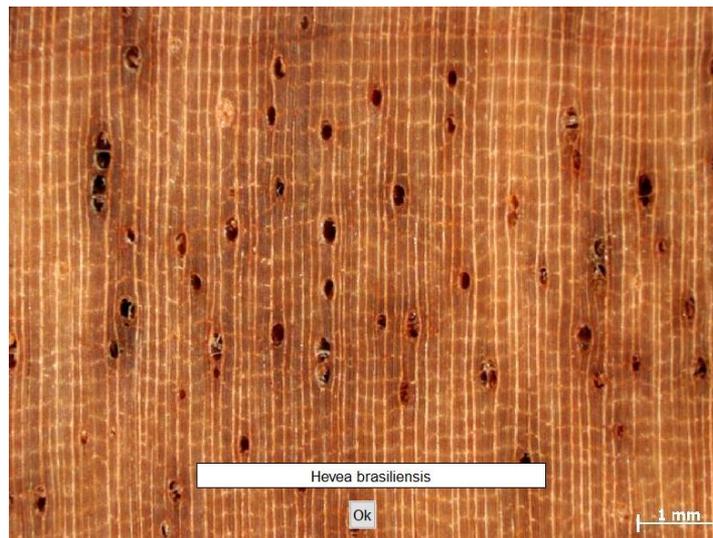
Parênquima em faixas

Faixas estreitas (linhas, finas)

Constituído por linhas nitidamente concêntricas, aproximadas ou não. Apresenta até três células na largura.

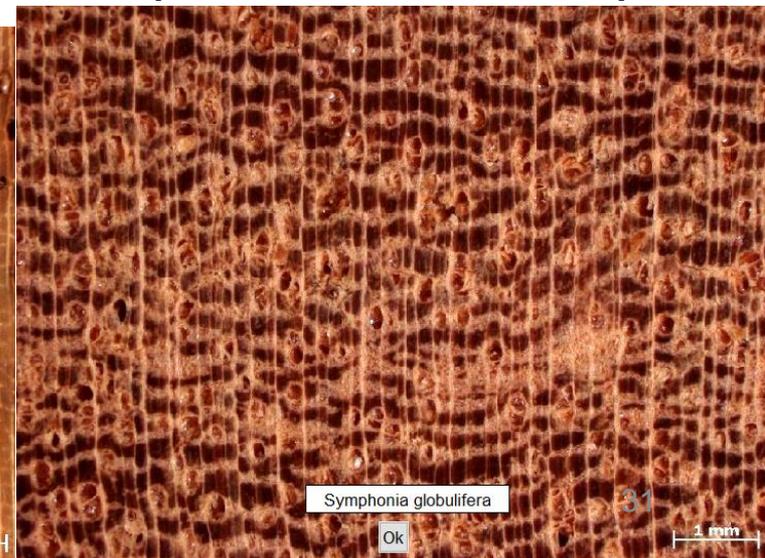
Exemplos:

Hevea brasiliensis
(seringueira)



Manilkara elata
(maçaranduba)

Symphonia globulifera
(anani-da-terra-firme)



Parênquima longitudinal (axial)

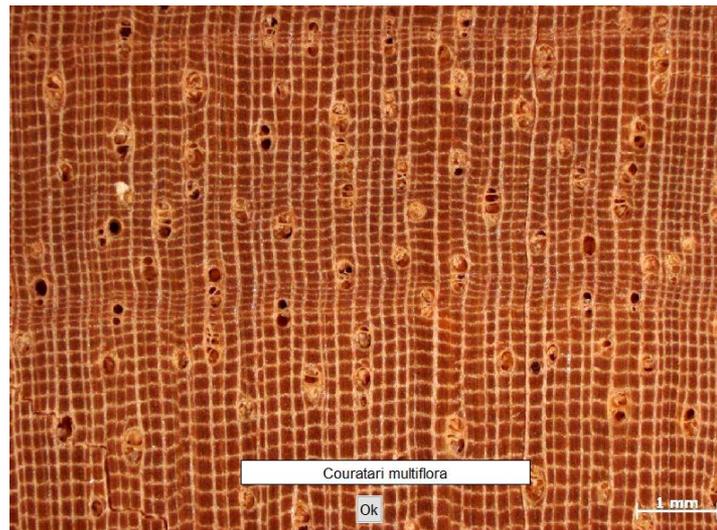
Parênquima em faixas

Reticulado

Distribuído em linhas regularmente espaçadas, com a mesma largura e proximidade dos raios formando um retículo semelhante às malhas de uma rede.

Exemplos:

Couratari multiflora
(tauari)



Couratari guianensis
(tauari-branco)

Eschweilera coriacea
(matamatá)



Parênquima longitudinal (axial)

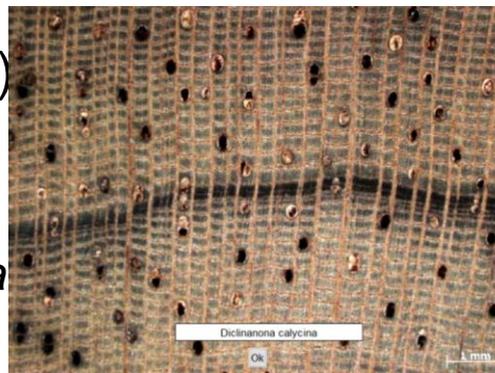
Parênquima em faixas

Escalariforme

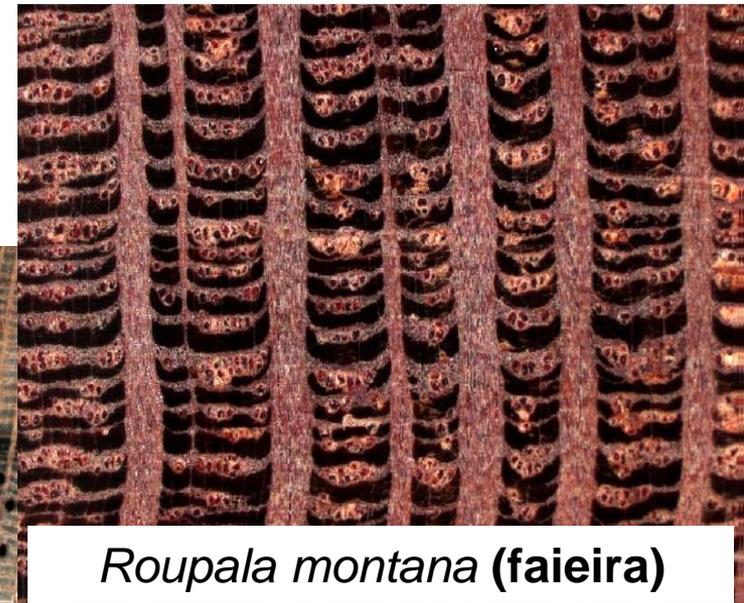
Apresenta-se em linhas ou faixas regularmente espaçadas, arranjadas horizontalmente ou em arcos, claramente mais estreitas que os raios e com eles formam um aspecto de escada.

Exemplos: *Xylopia* sp. e *Guatteria paraensis* (enviras)

Diclinanona calycina
(**envira-preta**)



Onychopetalum amazonicum
(**envira-preta-lisa**)



Roupala montana (**faieira**)

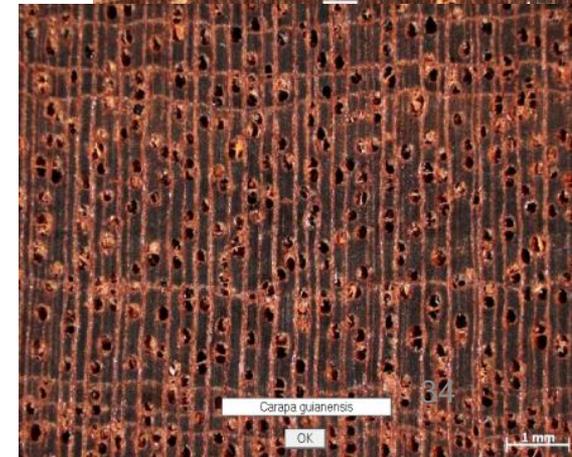
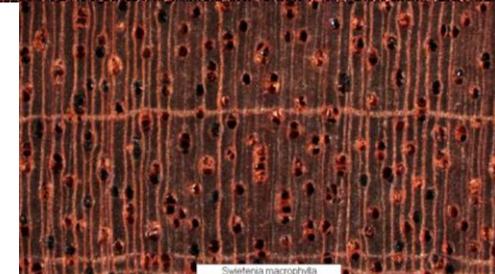
Parênquima longitudinal (axial)

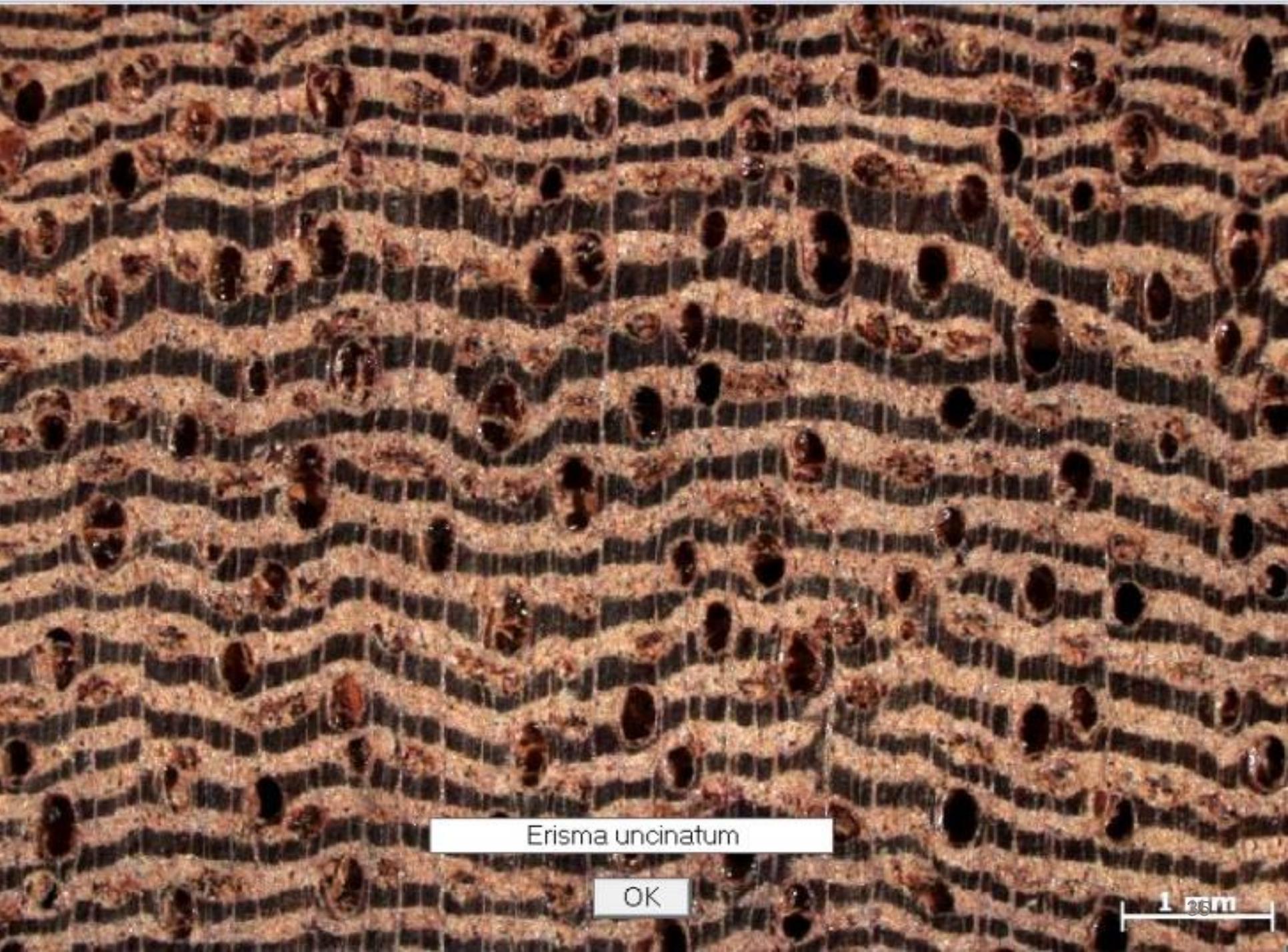
Parênquima em faixas

Marginal

Formam uma camada mais ou menos contínua de largura variável nas margens de um anel de crescimento. Denomina-se inicial quando ocorre no início de uma camada de crescimento e final quando ocorre no final de uma camada de crescimento.

Exemplos: *Iryanthera grandis* (ucuuba), *Swietenia macrophylla* (mogno), *Cedrela odorata* (cedro), *Carapa guianensis* (andiroba)





Erisma uncinatum

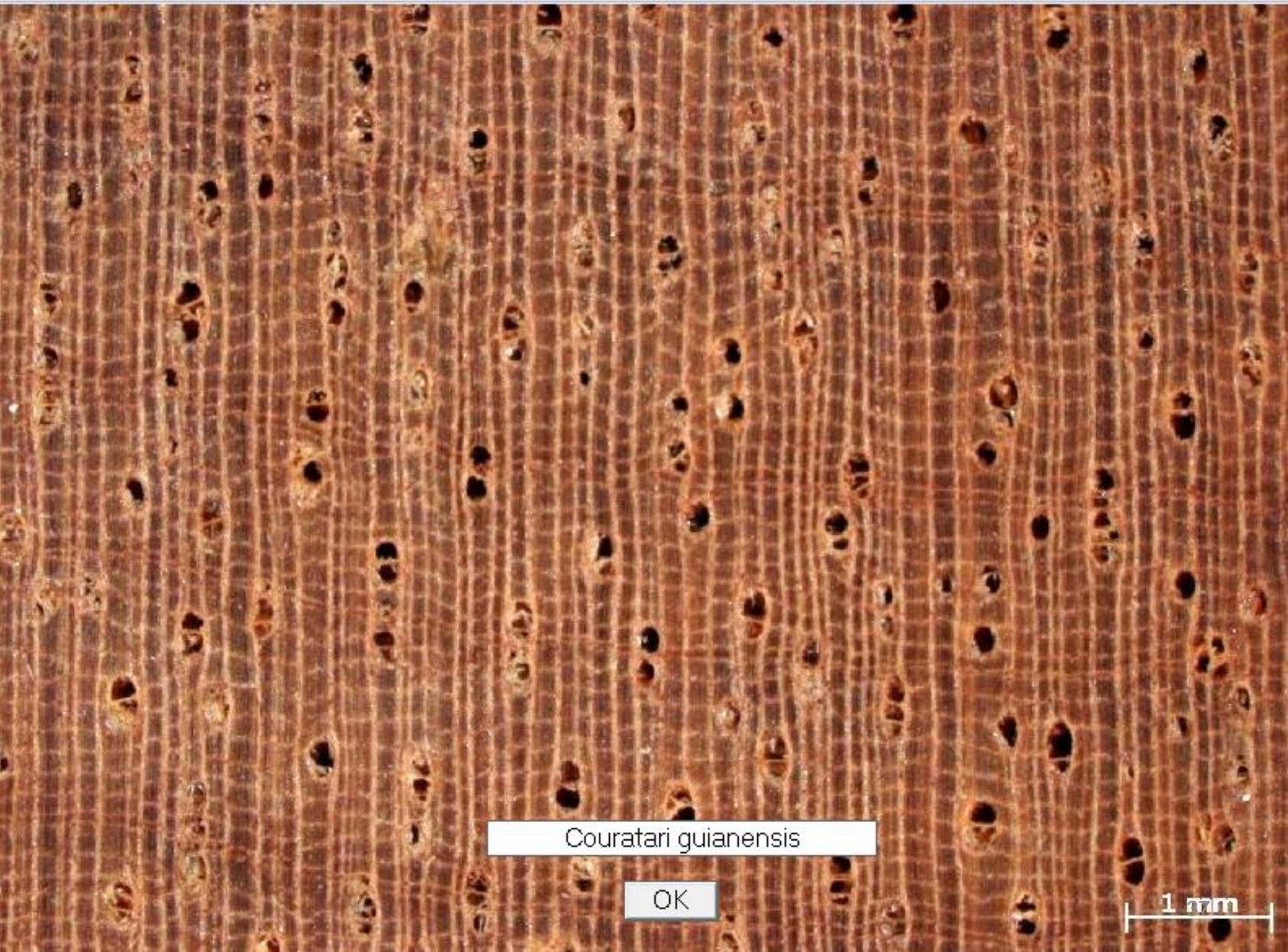
OK

1 35 μm



Transversal

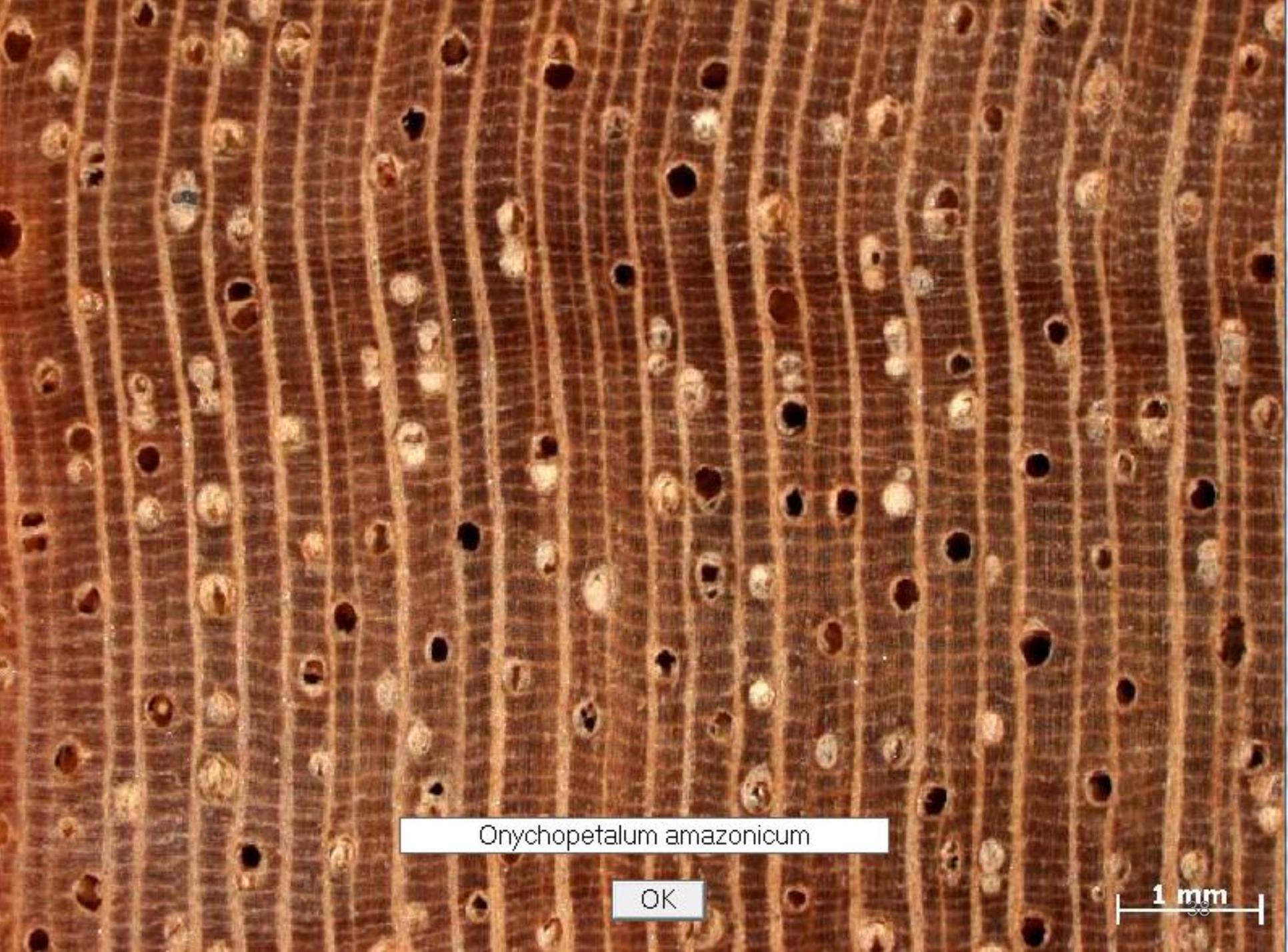
1 mm



Couratari guianensis

OK

1 mm



Onychopetalum amazonicum

OK

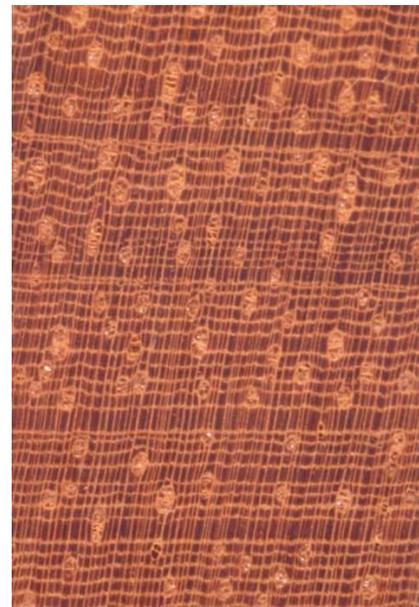
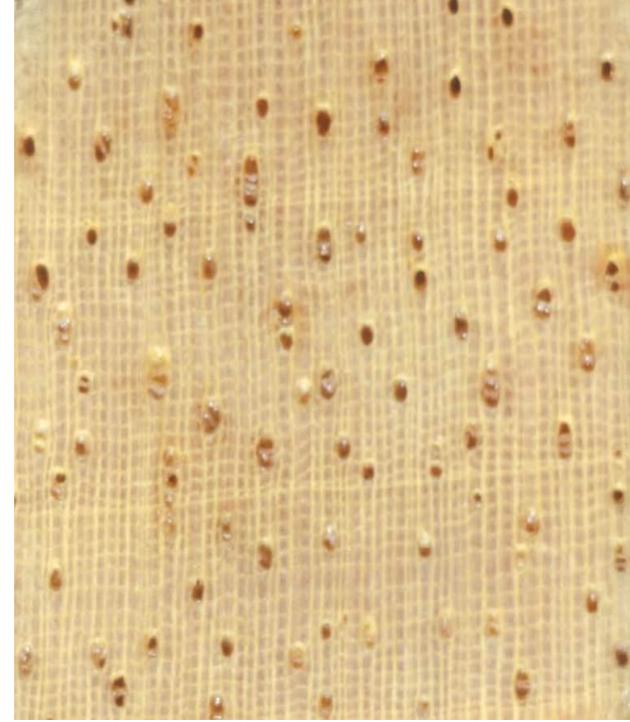
1 mm



Cedreia odorata

OK

1 mm



Agradeço a atenção!

luciana.sousa@ufopa.edu.br

