

PAKU

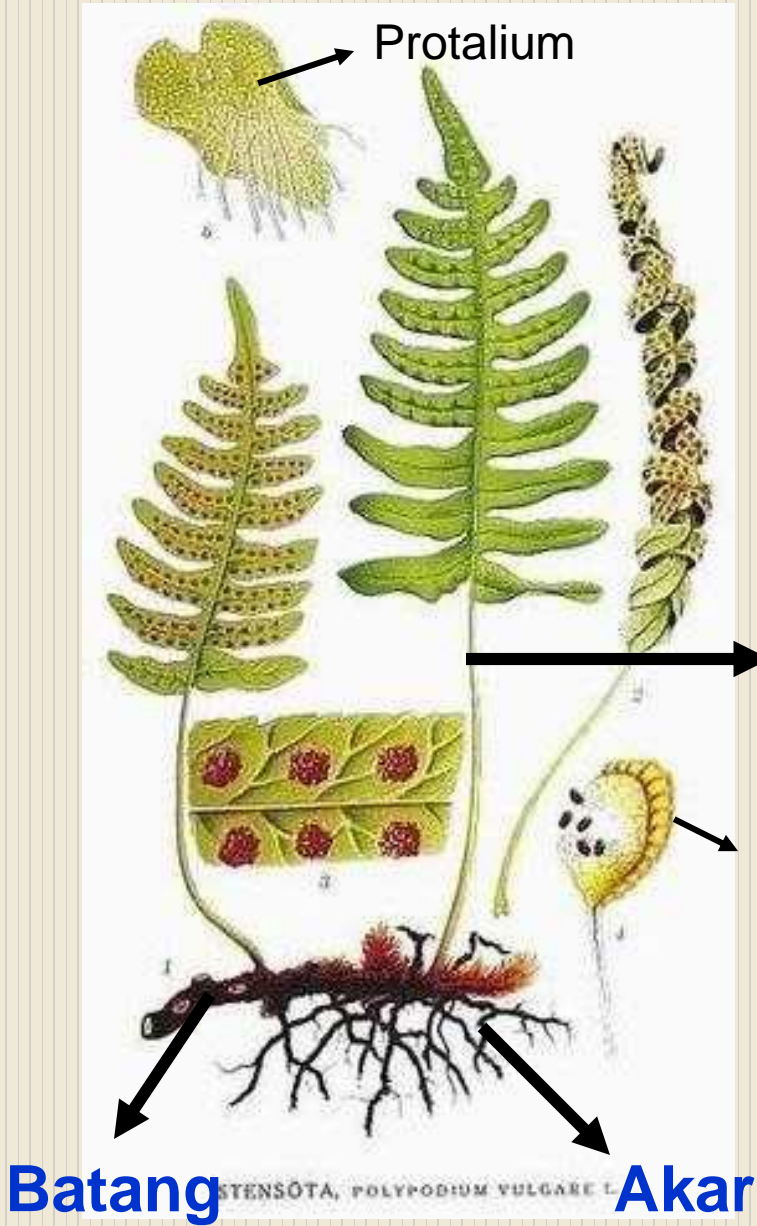


- CIRI
- KLASIFIKASI
- METAGENESIS
- PERANAN

Tumbuhan Paku

- Hijau (berklorofil)
- KORMUS : Batang, akar, daun sempurna, berpembuluh
- Batang berupa Rhizoma (dalam tanah)
- Daun 2 fungsi : sporofil, tropofil
- Akar serabut
- Metagenesis : SPOROFIT > Gametofit

STRUKTUR



SORUS

Tipe Tumbuhan Paku



EPIFIT (Paku Sarang Burung)



Paku Air (kiambang)



Paku Tiang



Di atas tanah



Paku Tiang, Pteridophyta



Pakis haji , Gymnospermae

ZAMAN KARBON

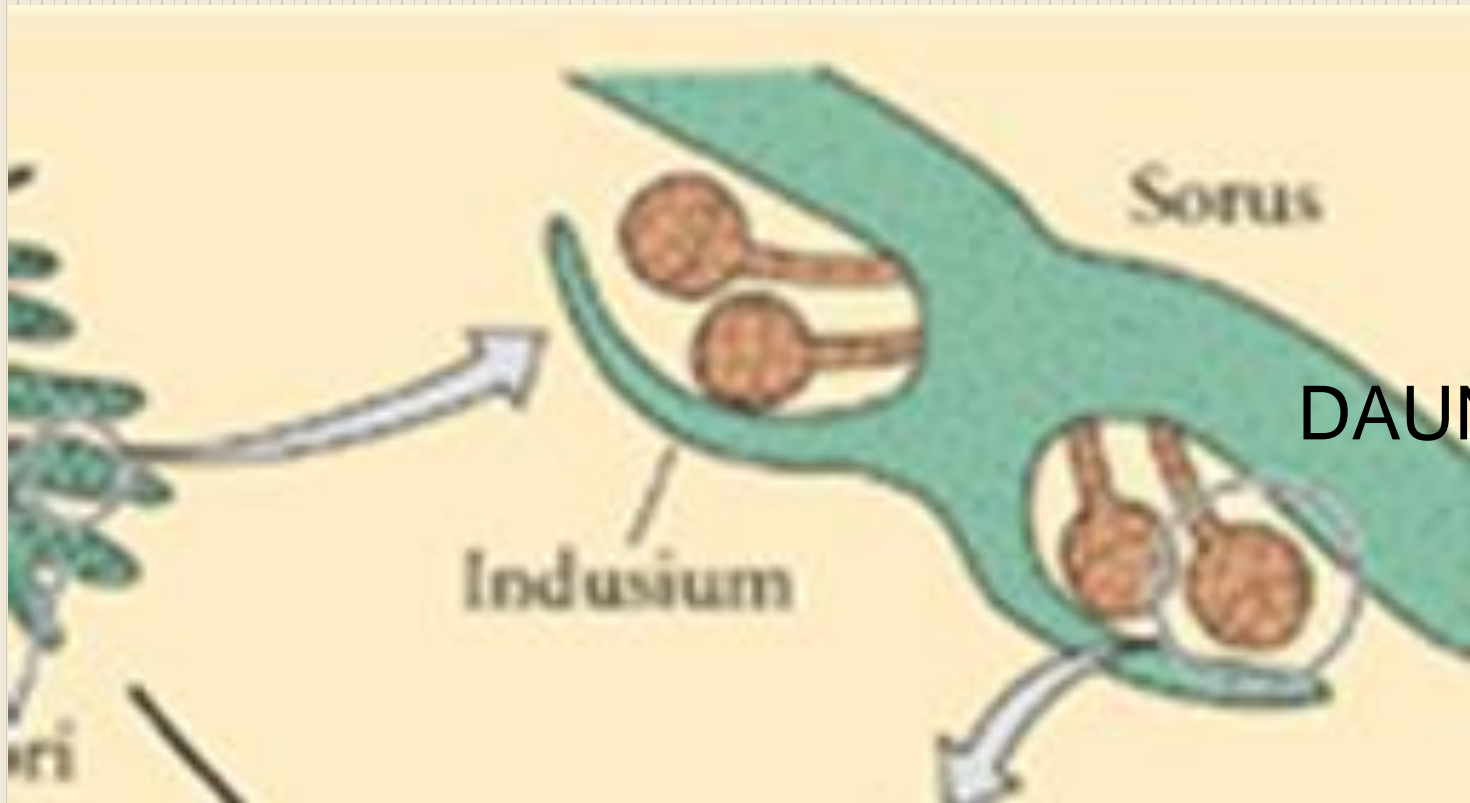
- Tumbuhan paku pernah menjadi vegetasi utama di bumi, disebut zaman paku
- Kayu tumbuhan paku merupakan bahan dasar terbentuknya batu bara

Spora Tumbuhan Paku

- Paku Homospora (cth: Paku Suplir)
- Paku Heterospora (cth: paku Selaginela)
- Paku Peralihan (cth: Paku Ekorkuda)

Spora

- **Homospora**, 1 macam spora, memiliki 2 gamet (jantan, betina)
- **Heterospora**, 2 macam spora (jantan & betina). Yang jantan mikrospora, yang betina makrospora
- **Peralihan**, spora dengan ukuran sama, tetapi keduanya menjadi protalium betina, atau jantan

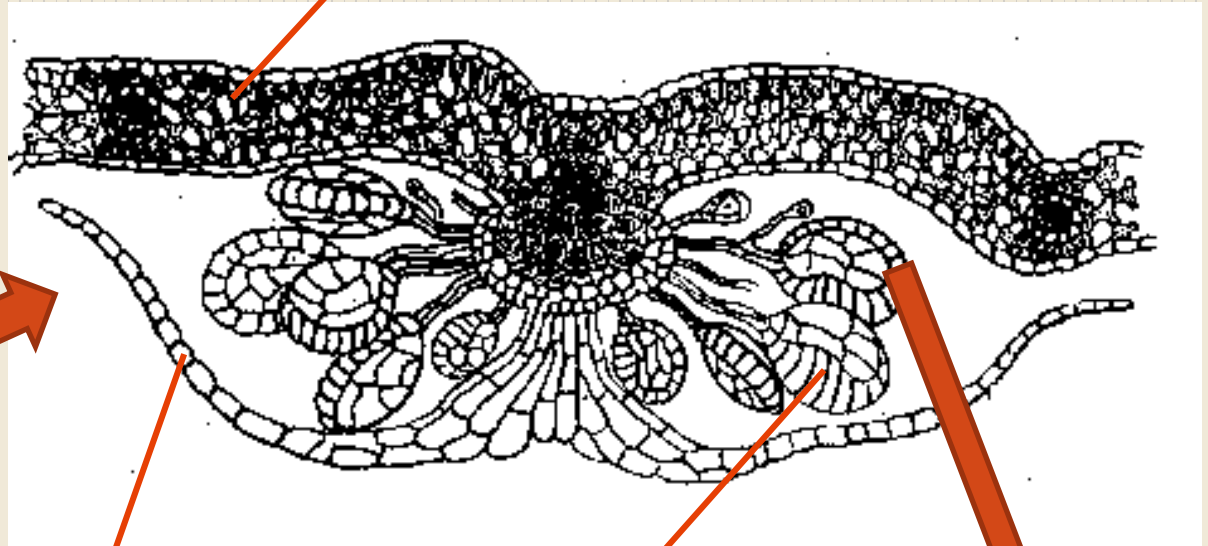


DAUN

SPORANGIUM

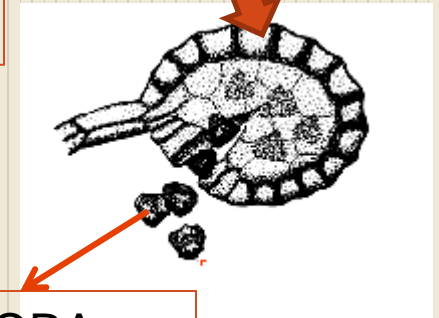


Permukaan Daun



INDUSIUM

Sporangium



SPORA



http://www.ubcbotanicalgarden.org/potd/polypodium_glycyrrhiza2.jpg

METAGENESIS PAKU

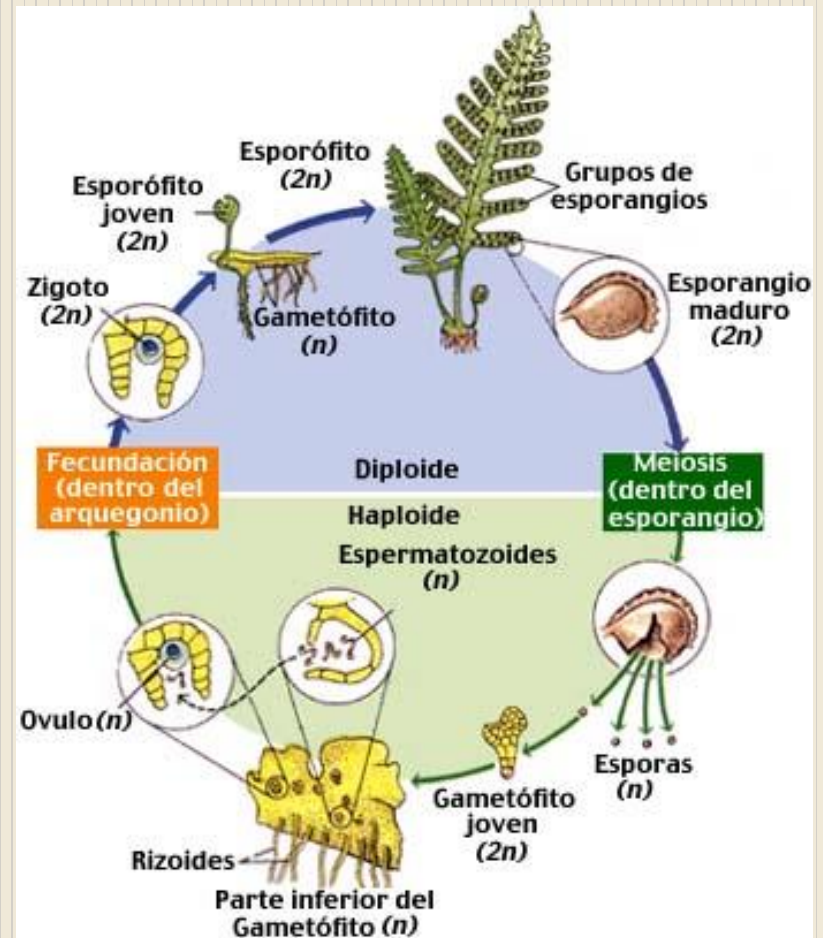
SPOROFIT



GAMETOFIT



SPOROFIT



Ferns: Sporophyte is large and long lived but, when young, depends on gametophyte for nutrition.

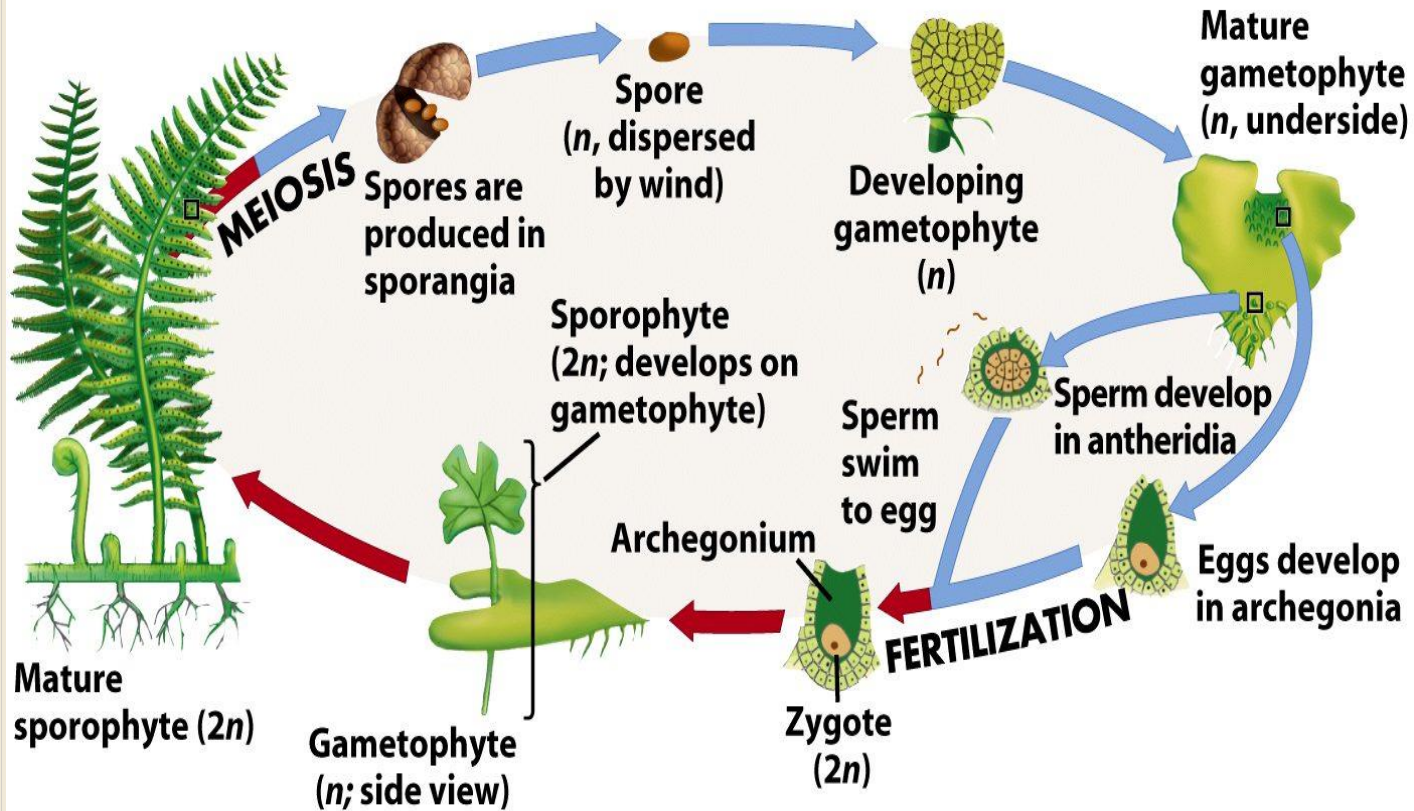
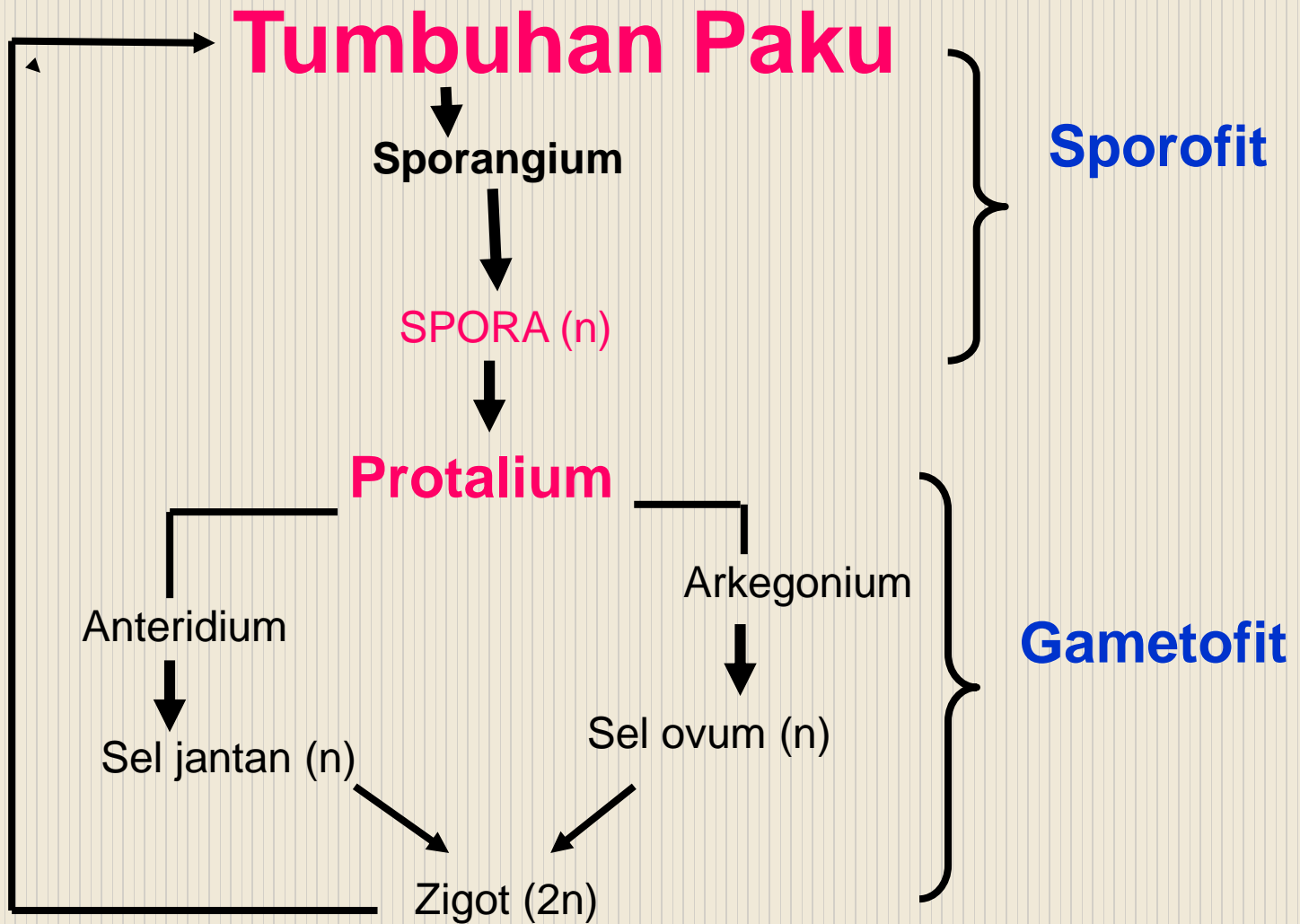


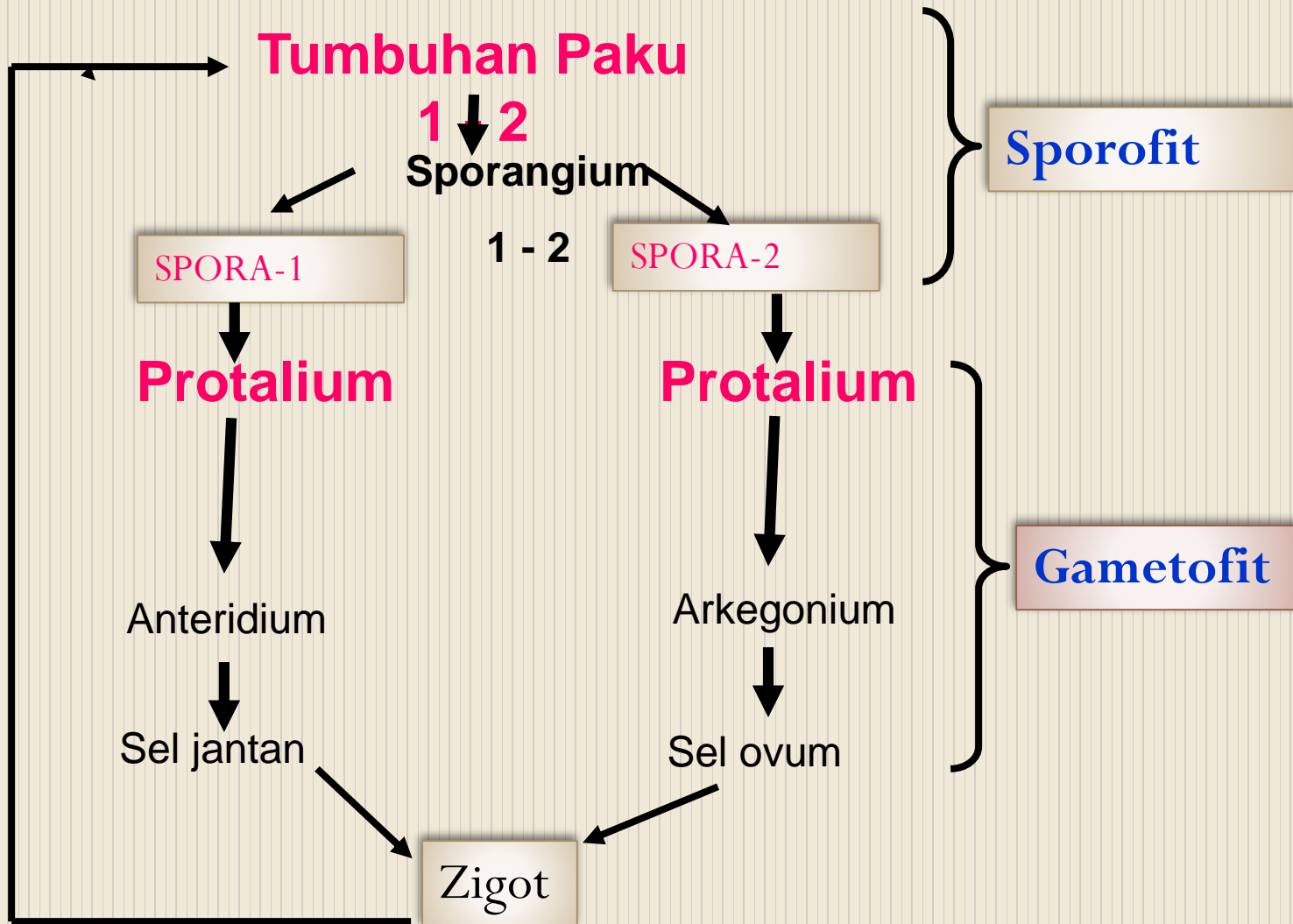
Figure 29-14c Biological Science, 2/e
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Daur Hidup PAKU HOMOSPORA

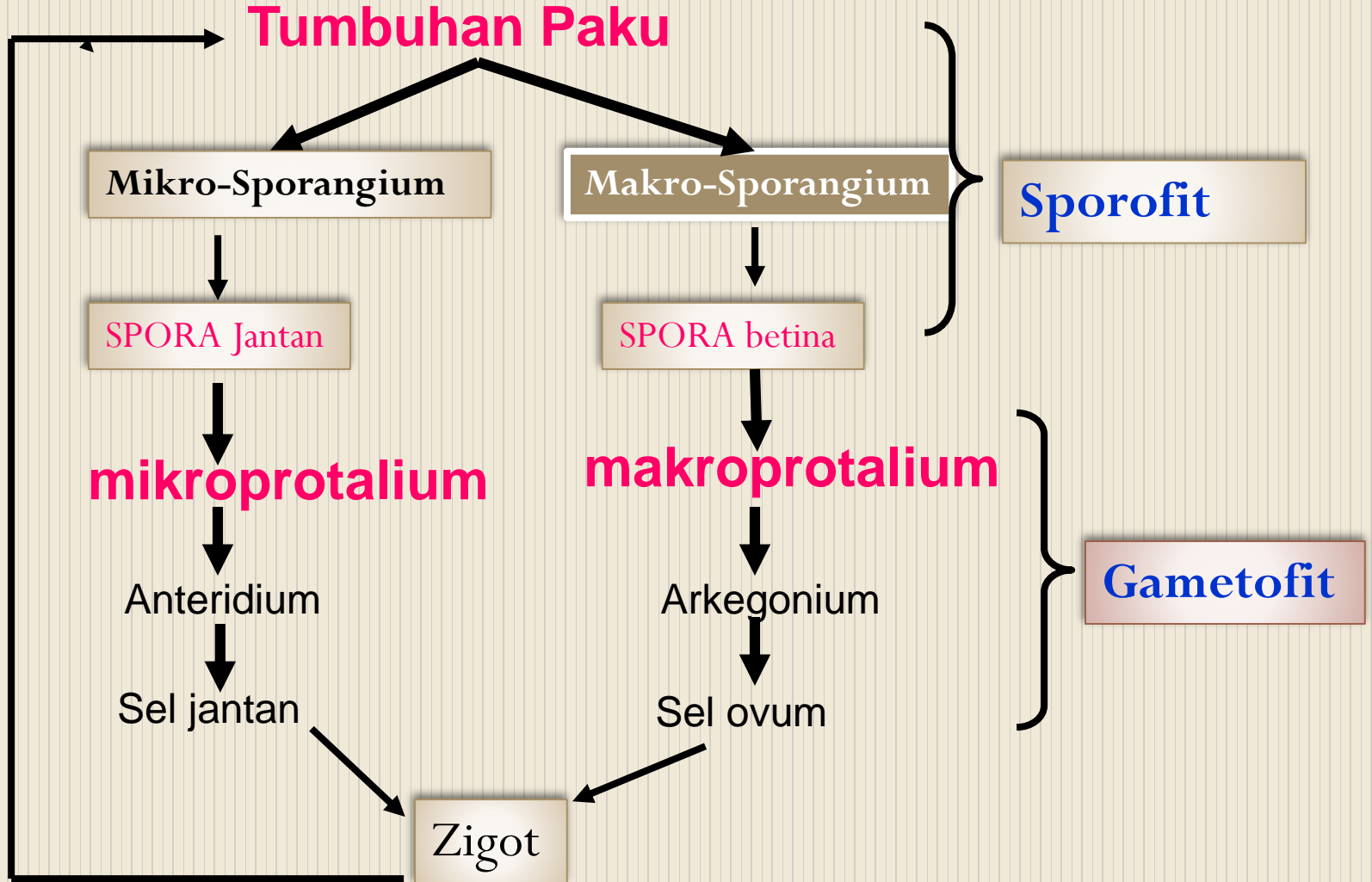


Buatlah bagan daur hidup paku heterospora & peralihan!

Daur Hidup PAKU PERALIHAN



Daur Hidup PAKU HETEROSPOORA



Klasifikasi...

- Paku Purba (Psilophytinae) → hampir punah
- Paku Ekor Kuda (Equisetinae)
- Paku Kawat (Lycopodinae)
- Paku Sejati (Filicinae) → paku “Pakis”



Peranan Tumbuhan Paku?

- Produsen --- penghasil oksigen
- Tanaman hias (paku Suplir, paku Sarang-burung, paku Tanduk-rusa)
- Bahan sayur → semanggi, kiambang (*Salvinia sp*)
- Bahan obat → *Aspidium filix-mas*, *Selaginella sp*, *Lycopodium clavatum*
- Penyubur tanah → *Azolla pinata*

LAMPIRAN

Paku



http://images.google.co.id/imgres?imgurl=http://phobos.ramapo.edu/~spetro/Slides/march_arch400x.jpg&imgrefurl=http://phobos.ramapo.edu/~spetro/labsyllabus/slide_review_index.html&usq=__fAGAgMFNuGivLT8iKw2joISla4E=&h=450&w=450&sz=51&hl=id&start=13&tbnid=9Yzuiop1AROY4M:&tbnh=127&tbnw=127&prev=/images%3Fq%3Dbryophyta%2Bgametangia%26bv%3D2%26hl%3Did

Fern Fronds with Sori **(Sori are composed of aggregates of sporangia)**



Mature sori

Developing sori

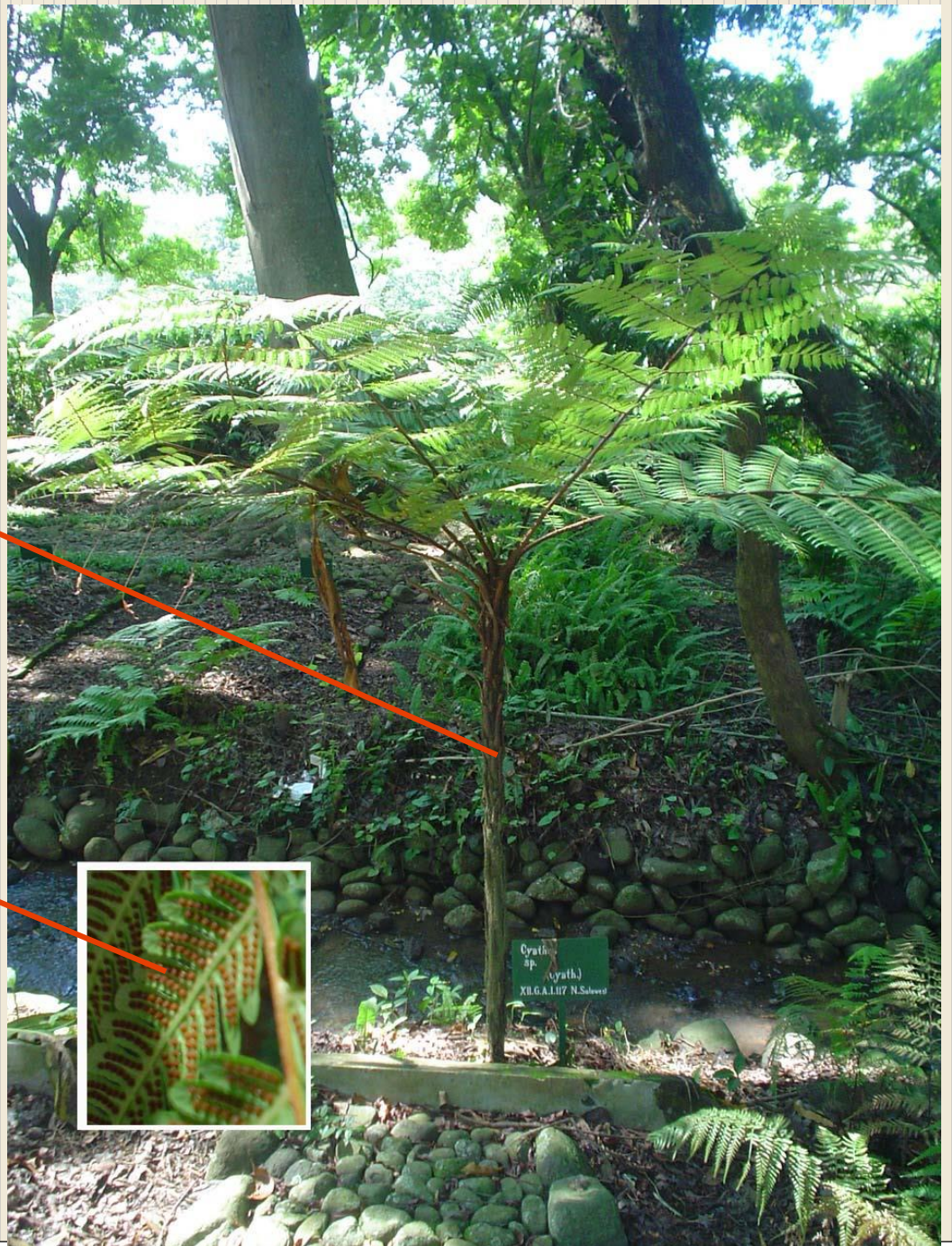


Paku tiang

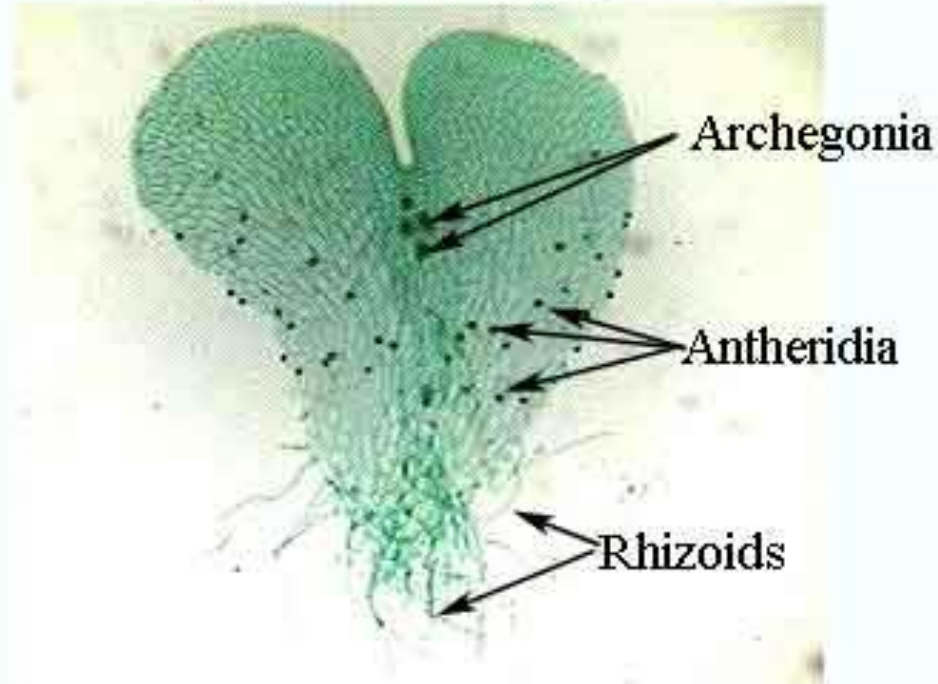
BATANG

SORUS

[http://www.krpurwodad
i.lipi.go.id/pic/Paku/DS
C05515%20copy.jpg](http://www.krpurwodad.i.lipi.go.id/pic/Paku/DS C05515%20copy.jpg)

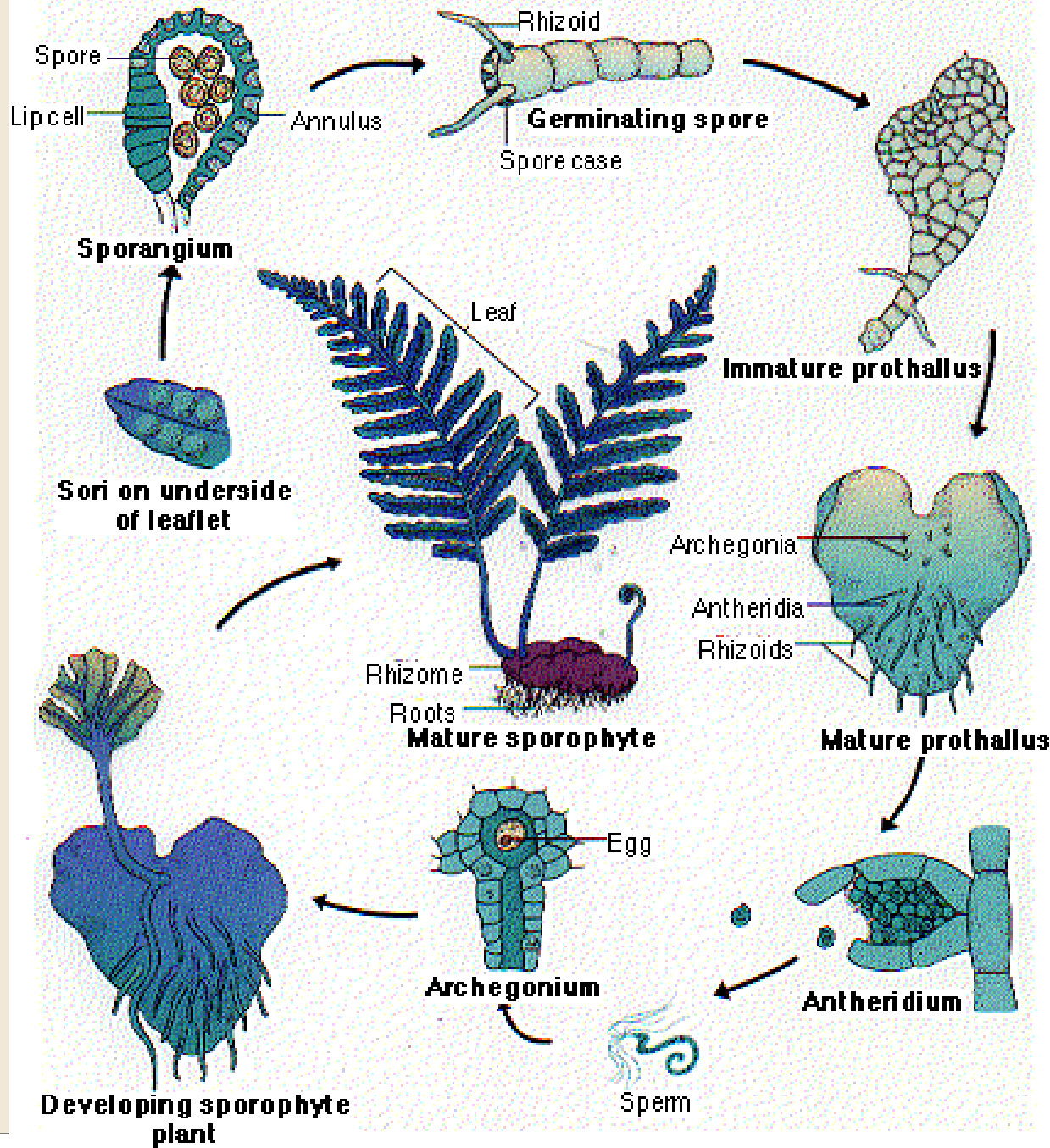


Fern Gametophyte (Prothallus)

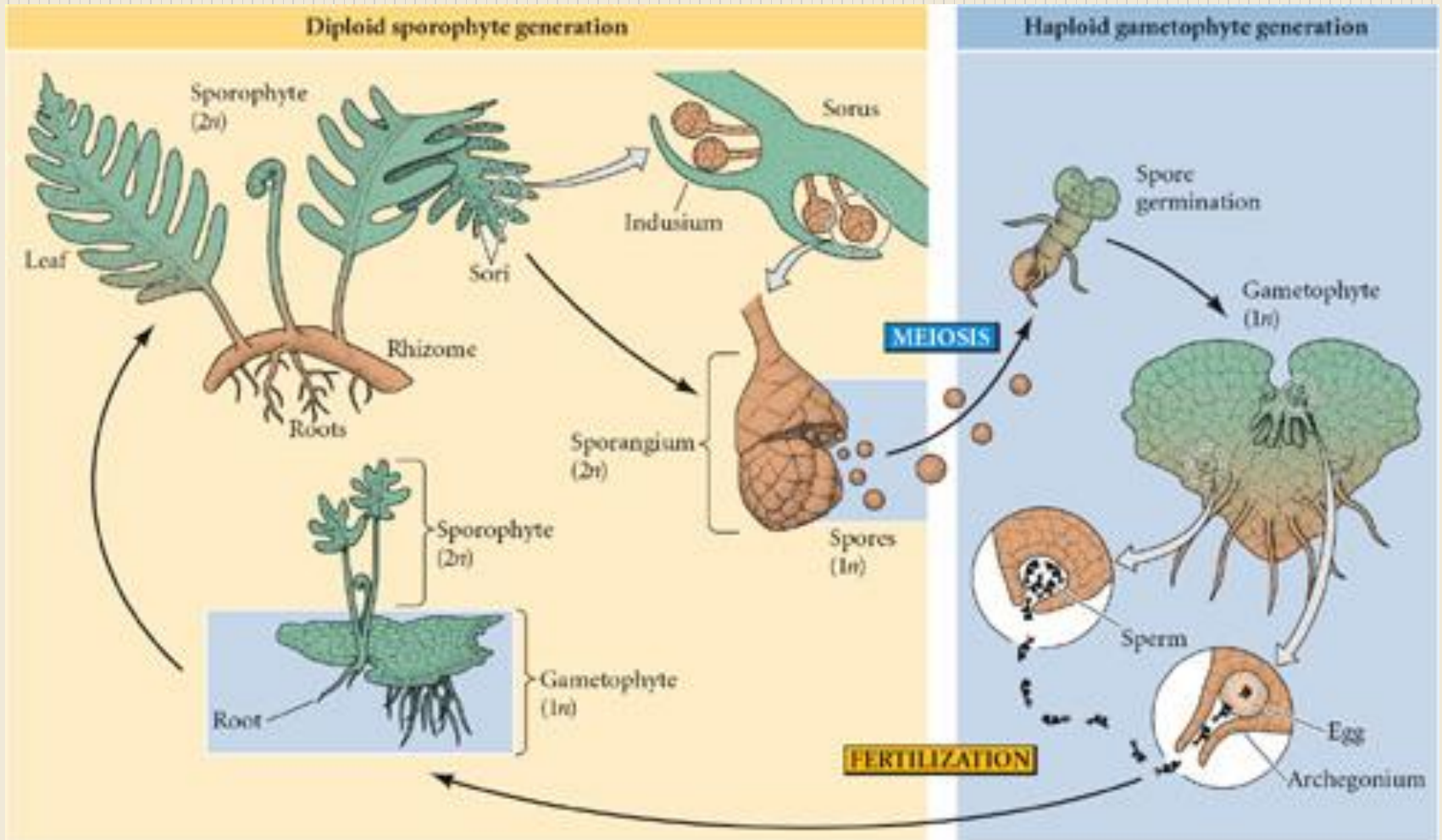


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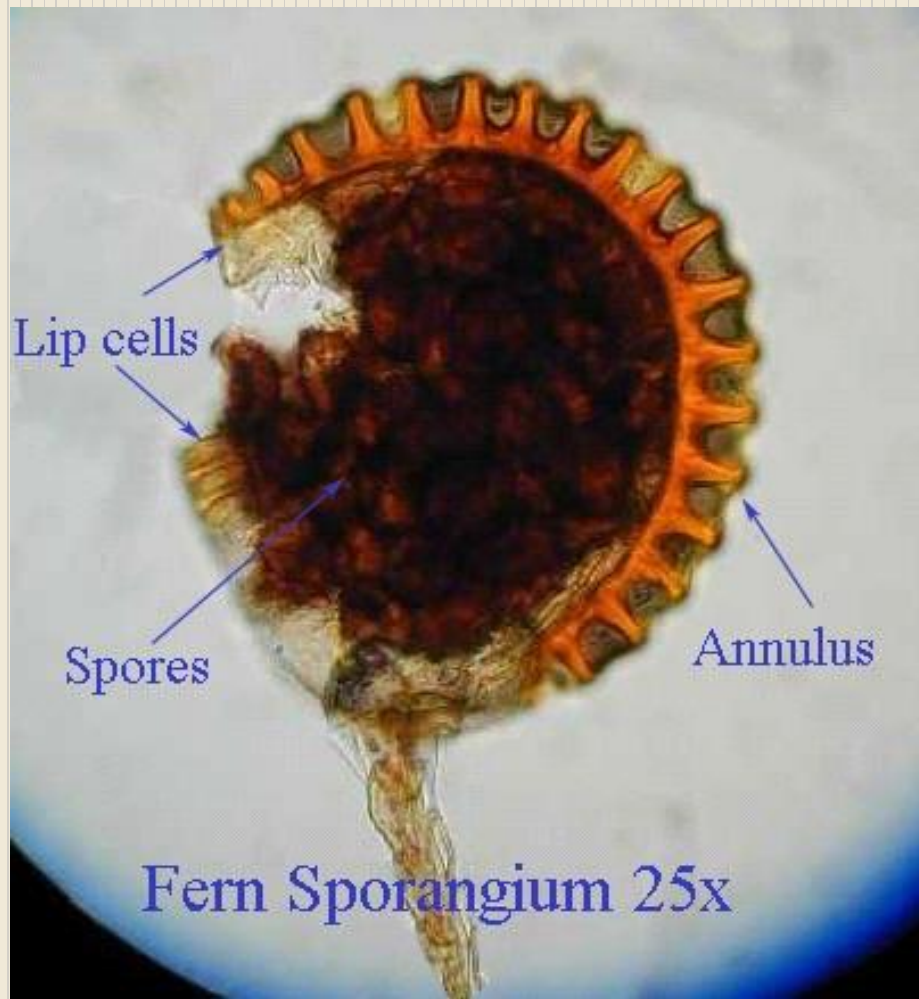
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Siklus



<http://8e.devbio.com/images/ch20/01.PLC.03.thumb.jpg>



http://images.google.co.id/imgres?imgurl=http://phobos.ramapo.edu/~spetro/Slides/march_arch400x.jpg&imgrefurl=http://phobos.ramapo.edu/~spetro/labsyllabus/slide_revie_w_index.html&usg=__fAGAgMFNuGivLT8iKw2jolSla4E=&h=450&w=450&sz=51&hl=id&start=13&tbnid=9Yzuiop1AROY4M:&tbnh=127&tbnw=127&prev=/images%3Fq%3Dbryophyta%2Bgametangia%26gbv%3D2%26hl%3Did

Perbiakan Tumbuhan Paku

- **FASE SPOROFIT**
 - Daun sporofil membentuk badan sporangium (penghasil spora)
 - Spora yang matang berkembang menjadi protalium
 - Protalium berkembang membentuk gamet
- Tumbuhan paku dewasa adalah sporofit

Perbiakan Tumbuhan Paku

- **FASE GAMETOFIT**

- Spora berkembang menjadi protalium
- Protalium sbg penghasil gamet (sel kelamin)
 - Anteridium menghasilkan sel jantan
 - Arkegonium menghasilkan sel ovum
- Zigot yang terbentuk berkembang menjadi tumbuhan paku.



EQUISETUM SP



<http://www.hktree.com/images/trees/PICT6291.jpg>



Lycopodium sp

http://www.bigeastern.com/eotp/images/lycopodium_digitatum.jpg



FILICINAE → paku sejati

http://zaifbio.files.wordpress.com/2009/01/davallia_denticulata_23.jpg

Pakis Hias



Tanduk Rusa



Sarang Burung



Adiantum (suplir)

http://4.bp.blogspot.com/_dLSVgS5AxBI/R3i2vdCMgEI/AAAAAAAAABwM/oG7JqucTlcQ/s320/Adiantum+raddianum+%27Double+Leaflet%27.jpg

SUPLIR



<http://asgap.org.au/jpg/a-hisp.jpg>

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