

CNIDARIA

CURSO BOM 2021

Biología de los Organismos Marinos

Foraminíferos e Invertebrados

GABRIELA FAILLA SIQUIER

Sección Zoología de Invertebrados

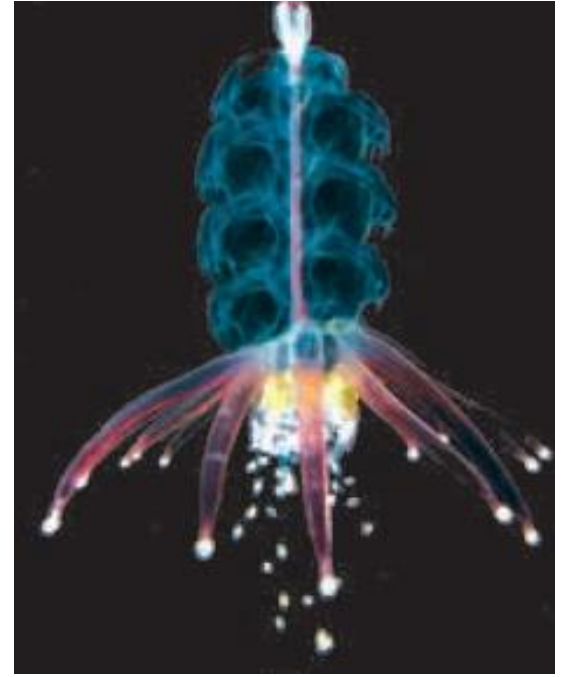
Dpto. de Biología Animal

PHYLUM CNIDARIA

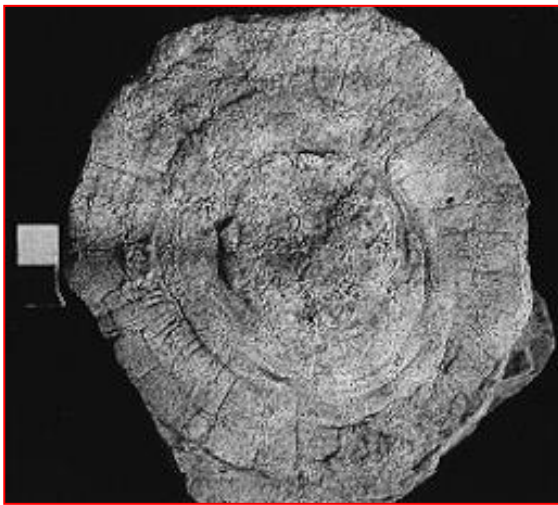
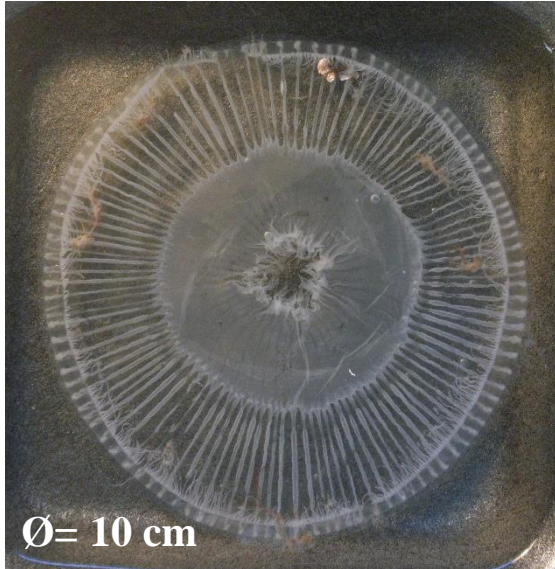
11000 spp
reconocidas



PHYLUM CNIDARIA



Cámbrico inferior 550 m.a



Yacimiento de Constantina, Sevilla
“Piedra Escrita de Constantina”

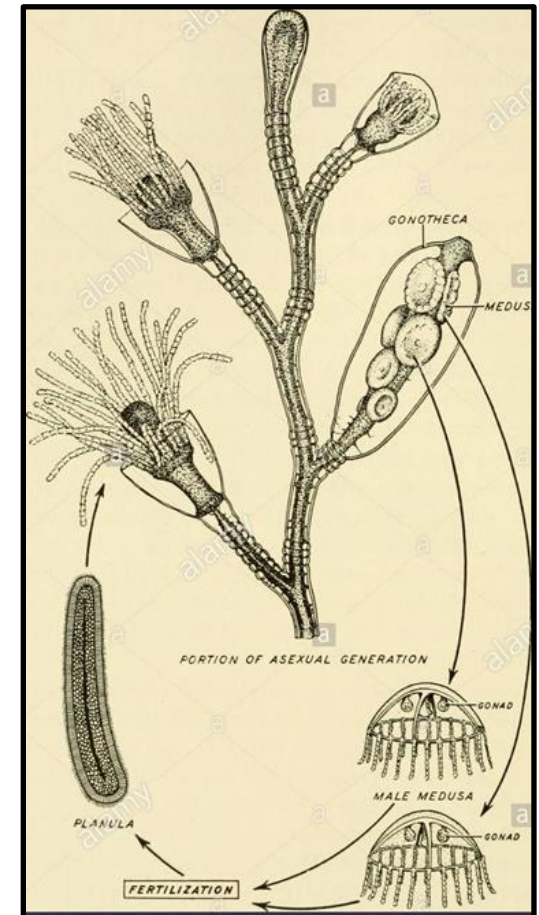
Cyclomedusa

Fauna Ediacara (Australia) 580 m.a

CNIDOCITOS O CNIDAE (*gr. Knide: ortiga*)

METAGÉNESIS pólipo - medusa

- Metazoa diblásticos
- Nivel de organización tisular
- simetría radial (tetrarradial)
- larva plánula
- **Marinos** (pocas sp. dulceacuícolas)
- > **predadores**



Organismos **diblasticos** ectodermo y endodermo. Simetría radial

Organismos **triblasticos** ectodermo, mesodermo, endodermo
Simetría bilateral

Gastrulación: formación de la cavidad gástrica.

Endodermo: 1era hoja en formarse

Blastoporo: Protostomados y Deuterostomados

PHYLUM CNIDARIA

(Kramp 1961, Bouillion, 1999)

SUBPHYLUM MEDUSOZOA



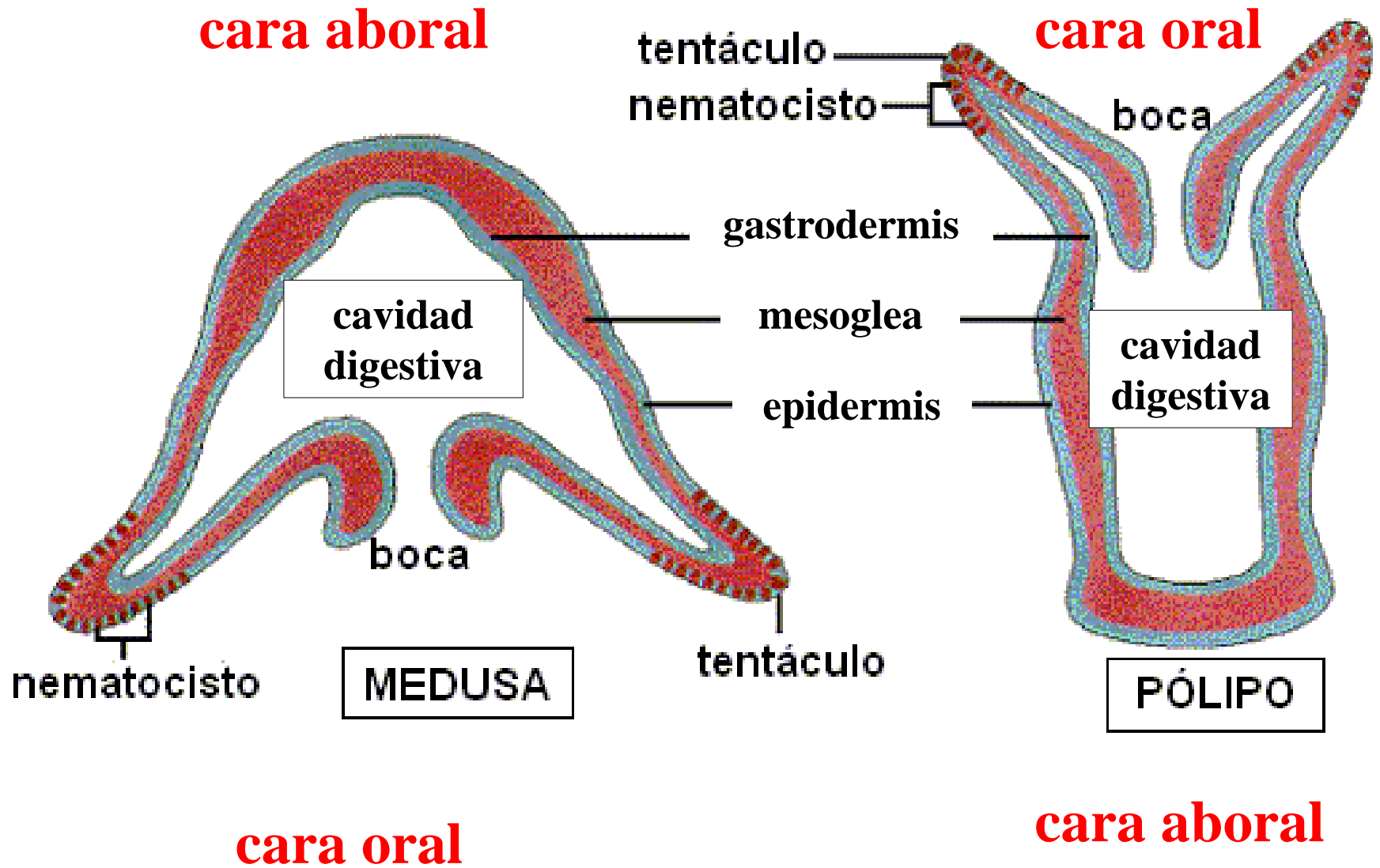
1. CLASE HYDROZOA (pM)
(¿CLASE MIXOZOA?!)
2. CLASE SCYPHOZOA (pM)
3. CLASE CUBOZOA (pM)
4. CLASE STAUROZOA (pM)

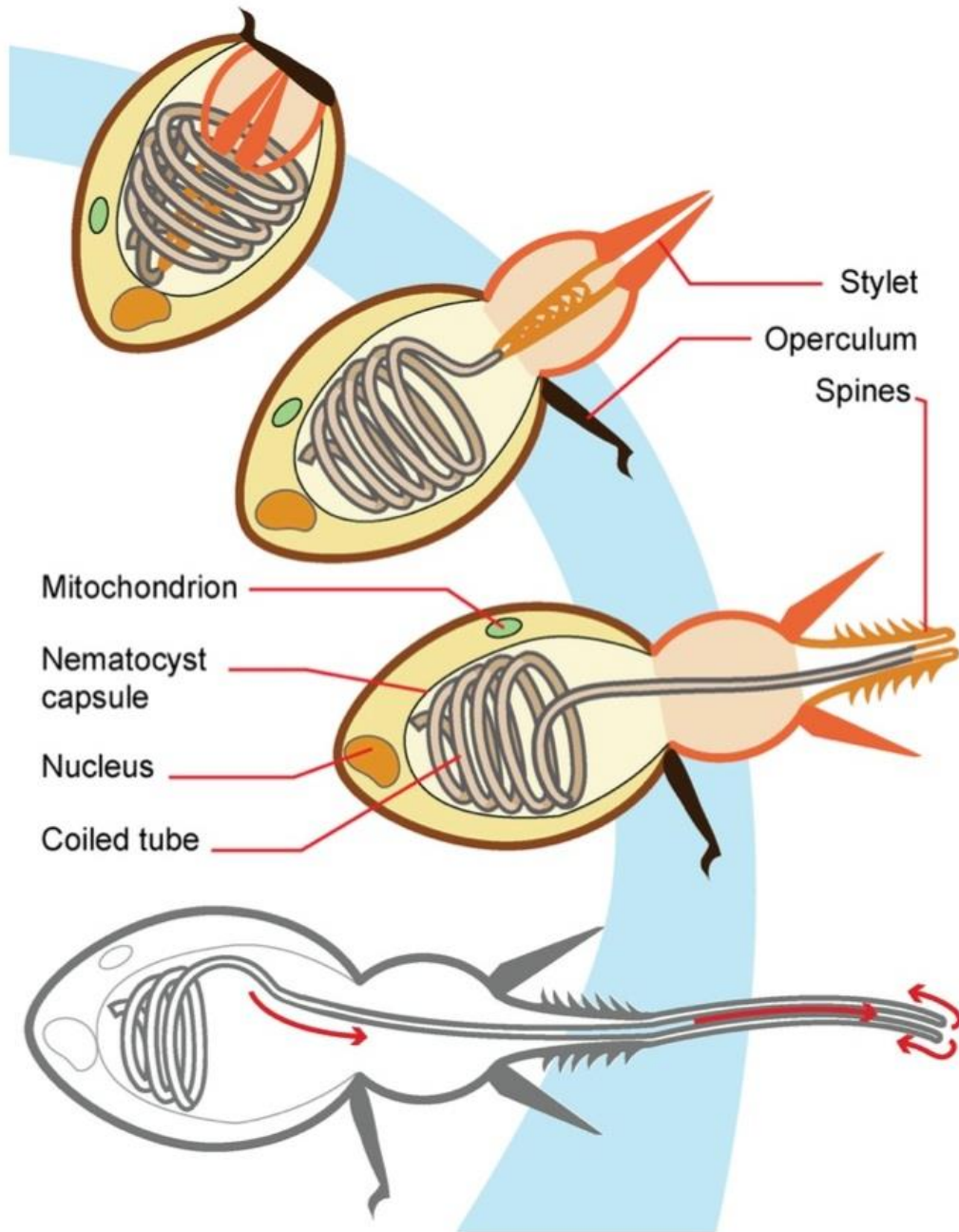
SUBPHYLUM ANTHOZOA



1. CLASE ANTHOZOA (P)

¿cnidario hipotético?





CNIDAE = CNIDOCITO = CÉLULA

CISTO = CÁPSULA

3 CATEGORÍAS:

1. NEMATOCISTOS (el más común, **25** tipos)

2. SPIROCISTOS (2)

3. PTYCOCISTOS (1)

(solo en Ceriantharia)

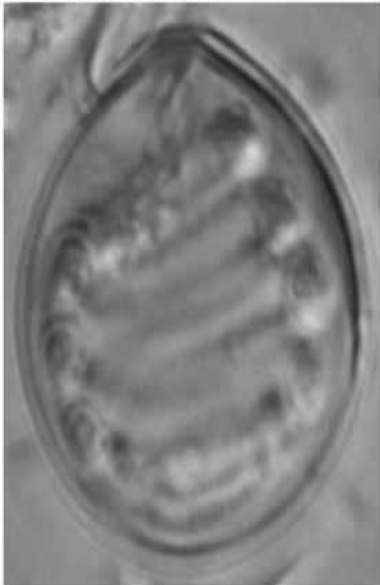
} sólo Anthozoa



CNIDOMA de *Chrysaora lactea*

Medusa tentacles

Holotrichous
O-isorhiza



A

Holotrichous
a-isorhiza



B



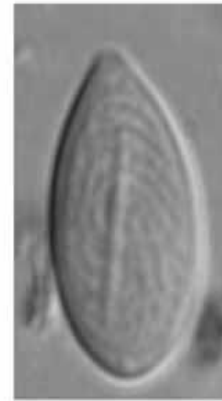
15µm

Holotrichous
A-isorhiza



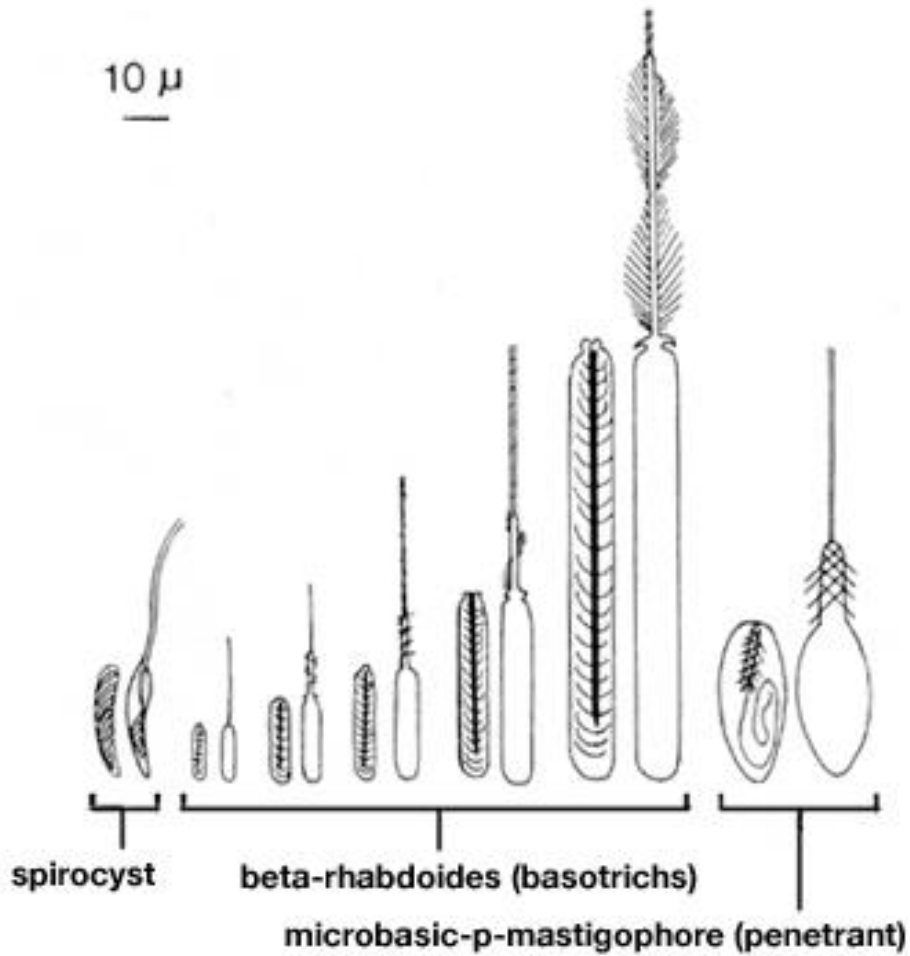
C

Heterotrichous
microbasic



D





T Tent. faringe, mesent. **T**

CNIDOMA



MATRIZ EXTRA CELULAR (MEC)

MESOGLEA (MEC)

FUNCIÓN:

- SOPORTE
- FLOTACIÓN
- ALMACENAMIENTO y TRANSPORTE DE NUTRIENTES
- TOLERANCIA A LA HIPOXIA
- ANTAGONISTA DE LA CONTRACCIÓN

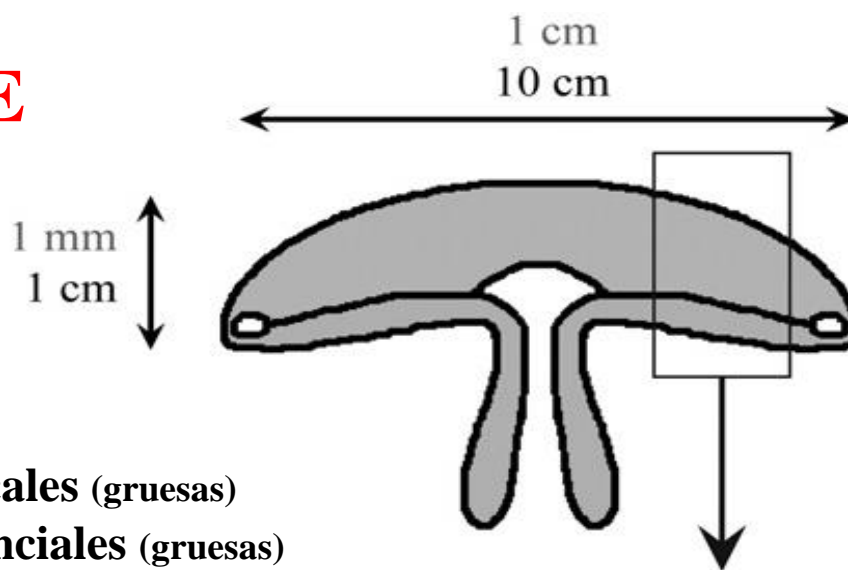


MESOGLEA (MEC)

- **FIBRAS DE COLÁGENO** (principal elem. de soporte)
- **MICROFIBRILLAS** (= fibrilinas-glicoproteínas ppal. elem. flexible)
- **MUCOPOLISACÁRIDOS** (= **GLUCOSAMINOGLUCANOS**):
aminoazúcares, azúcares sulfatados, azúcares ácidos y N- acetil derivados
- **OTRAS PROTEÍNAS ESTRUCTURALES**
- **CÉLULAS LIBRES ***

AGUA !

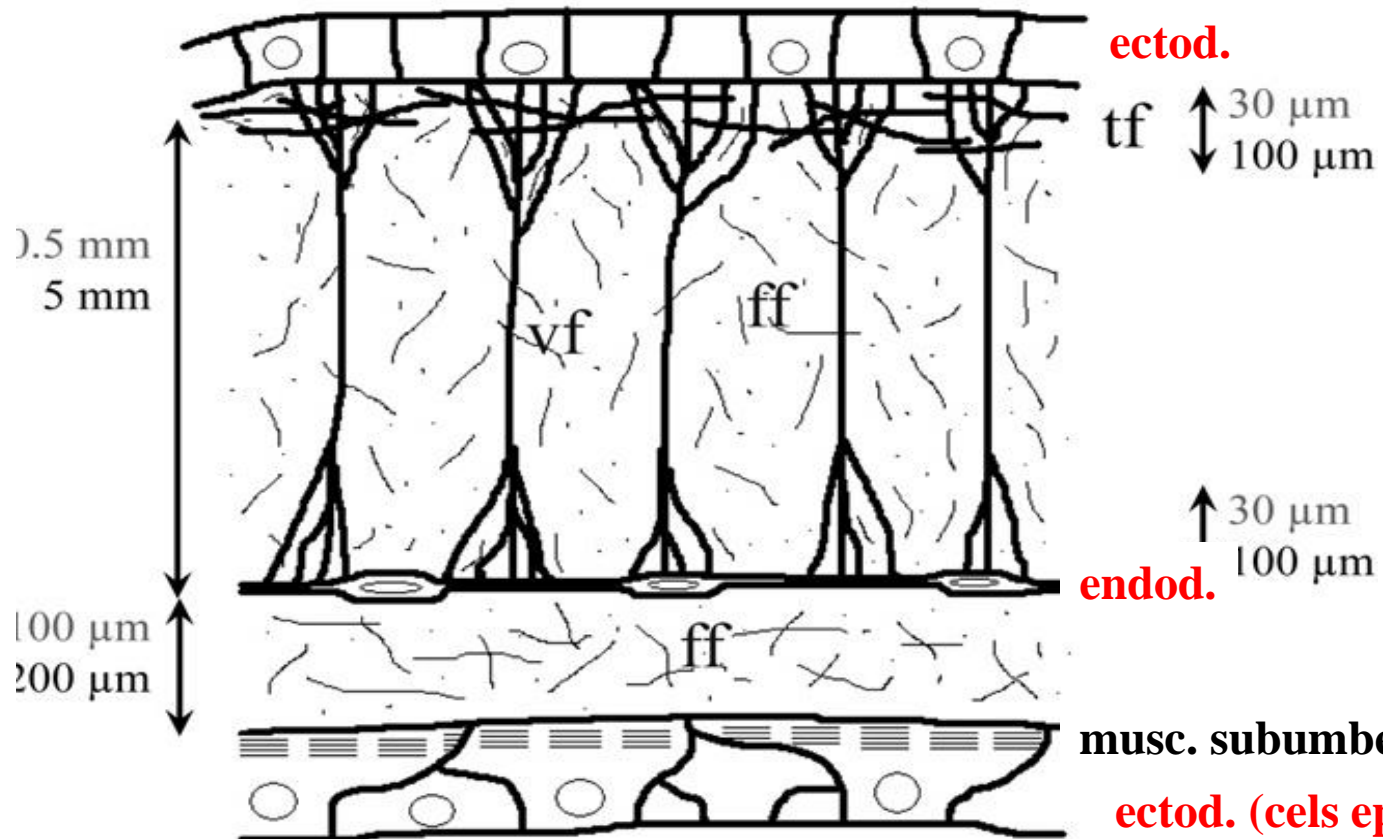
SOPORTE

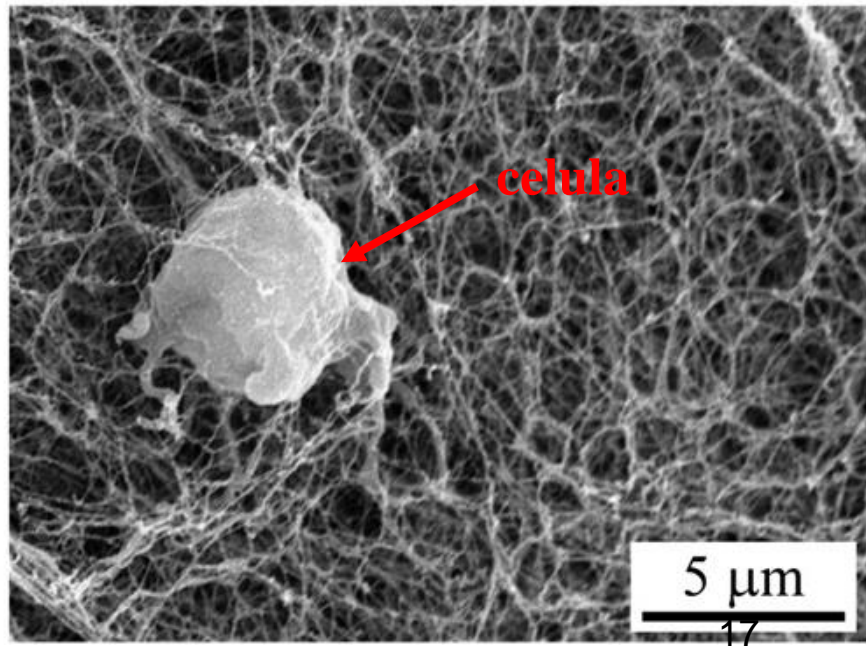
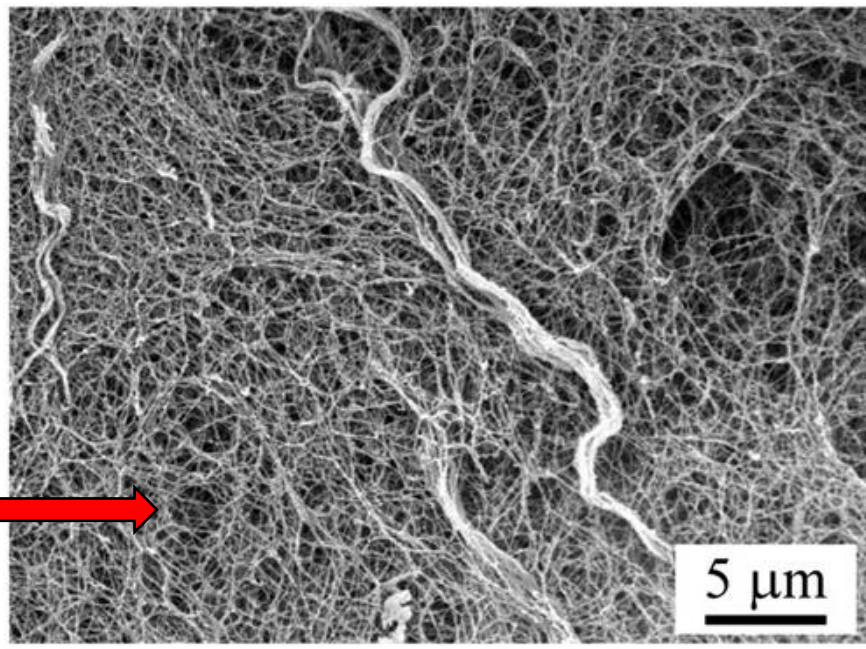
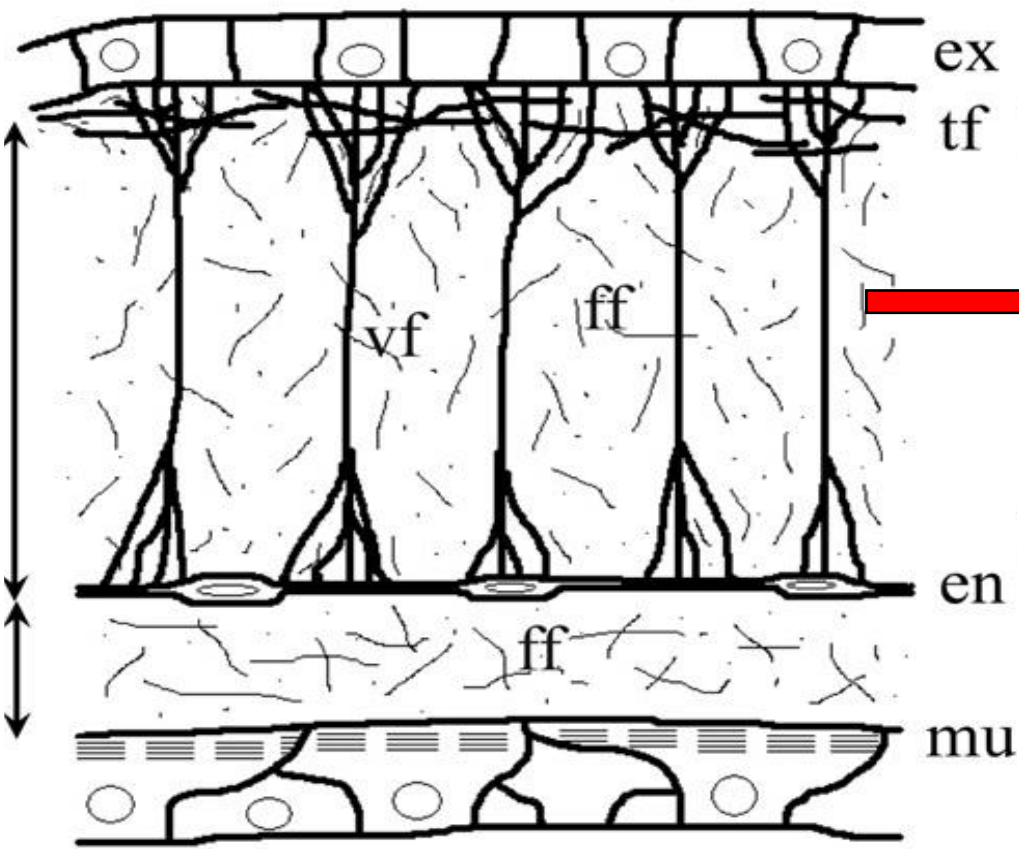


ff: fibras finas

vf: fibras verticales (gruesas)

tf: fibras tangenciales (gruesas)





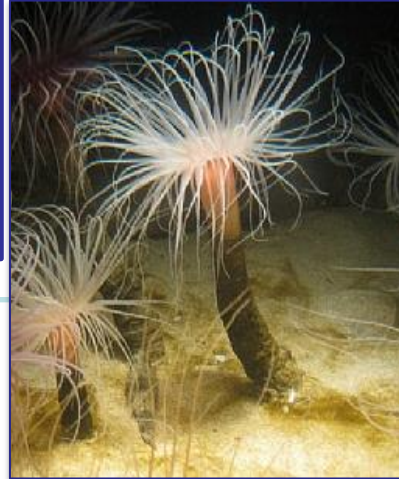
Las fibras delgadas dan flexib.
(ambiente viscoso)

-Antag. de la contracc.

CLASE ANTHOZOA

1) SUBCLASE HEXACORALLIA :

- SOLITARIOS Y COLONIALES
- ANÉMONAS
- CORALES HERMATÍPICOS
- **EXOESQUELETO** de CaCO_3
- cav. gastrov. con septos
- Tentáculos 6 ó multipl.



3) SUBCLASE CERIANTHARIA:

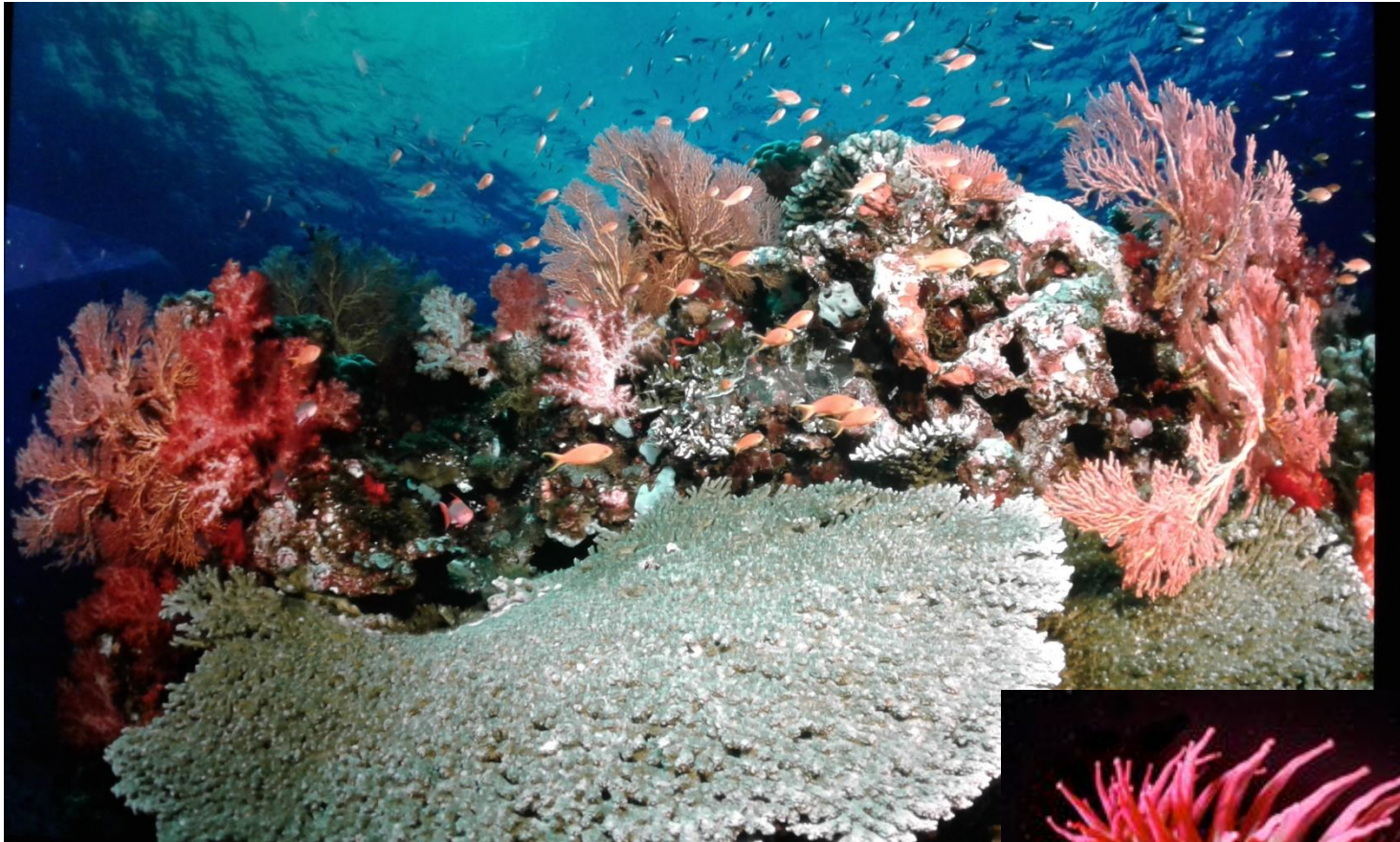
- doble corona de tentáculos 6 ó multipl.
- cav. gastrov. con septos
- coloniales o solitarios en tubos, se entierran
- larva planctónica!

2) SUBCLASE OCTOCORALLIA :

- COLONIALES – CORALES BLANDOS –
- **ENDOESQUELETO** proteico. Espículas
- Tentáculos 8 PINNADOS

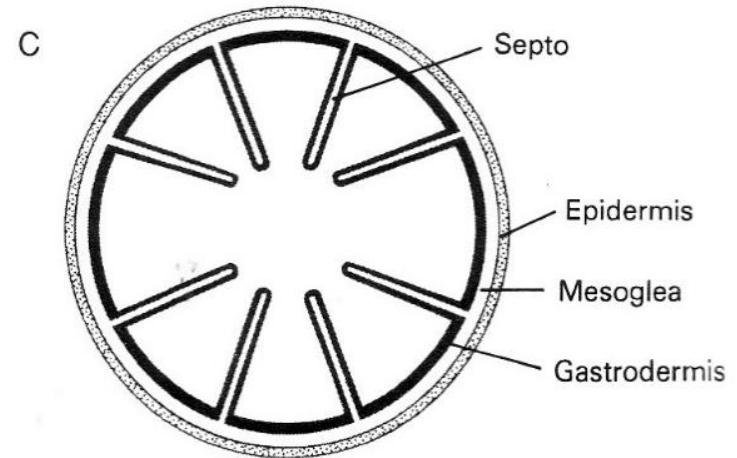
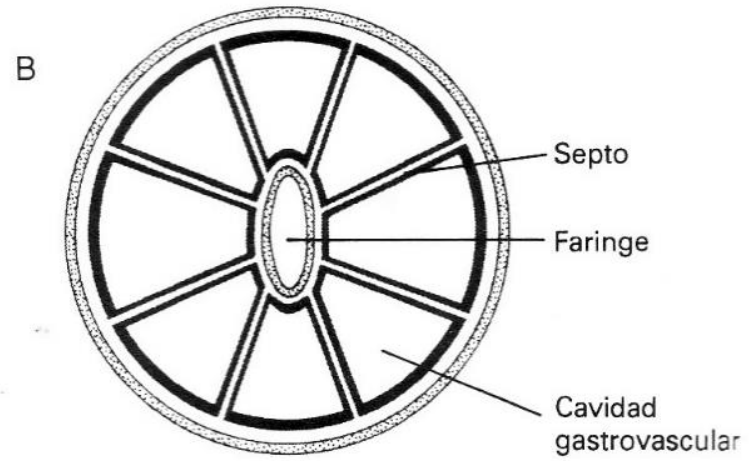
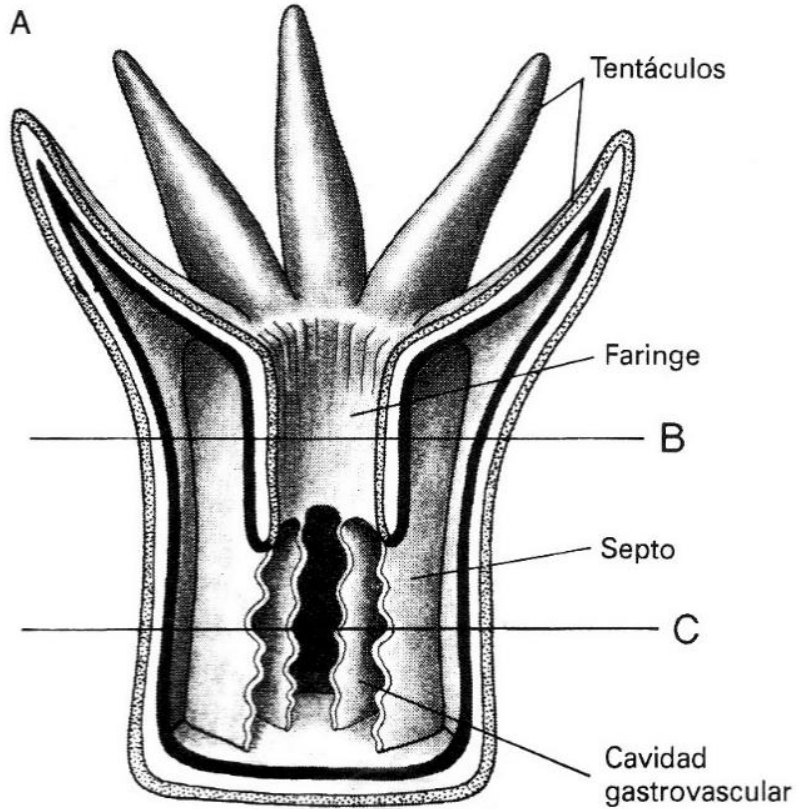


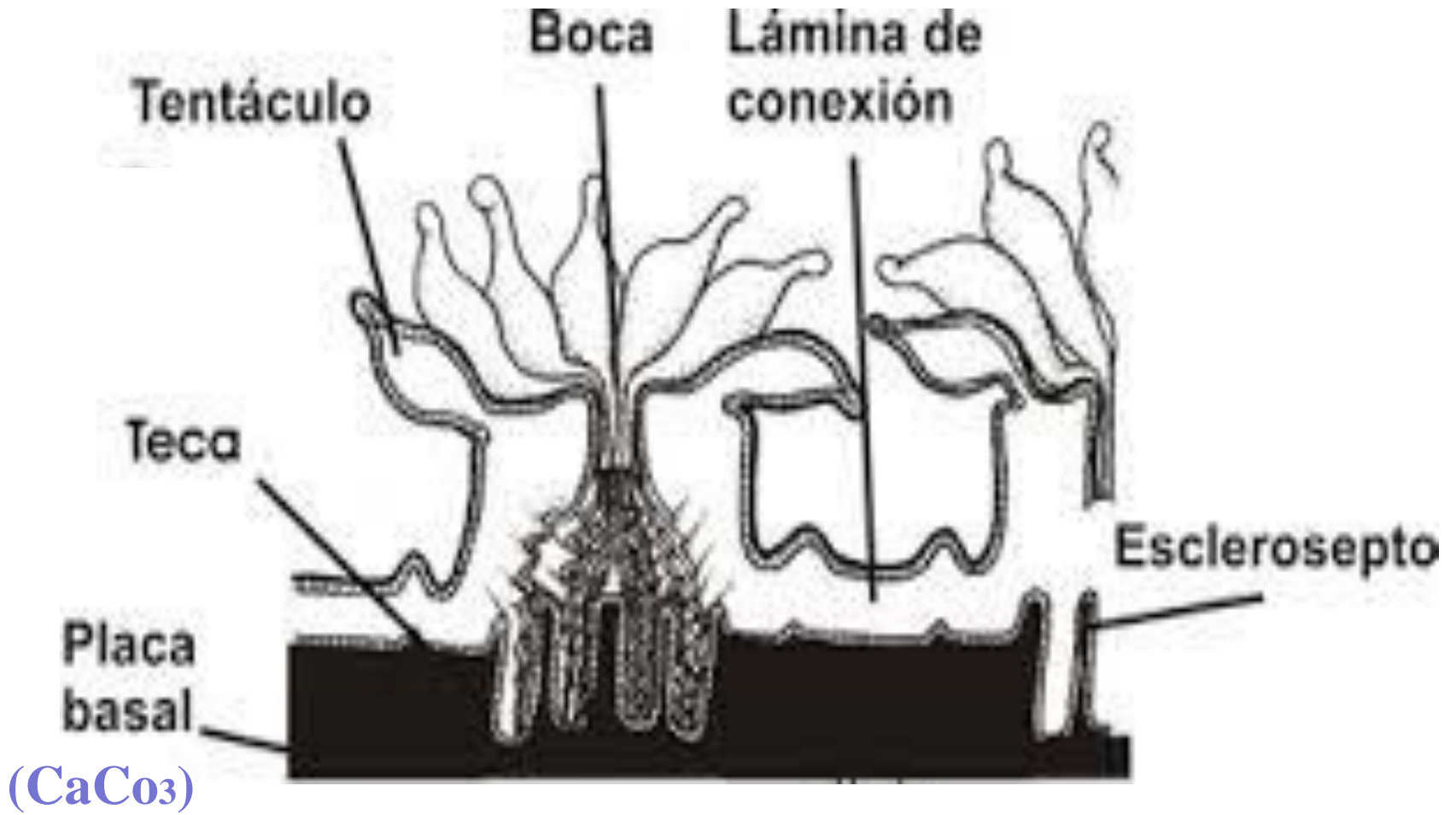
SUBCLASE HEXACORALLIA

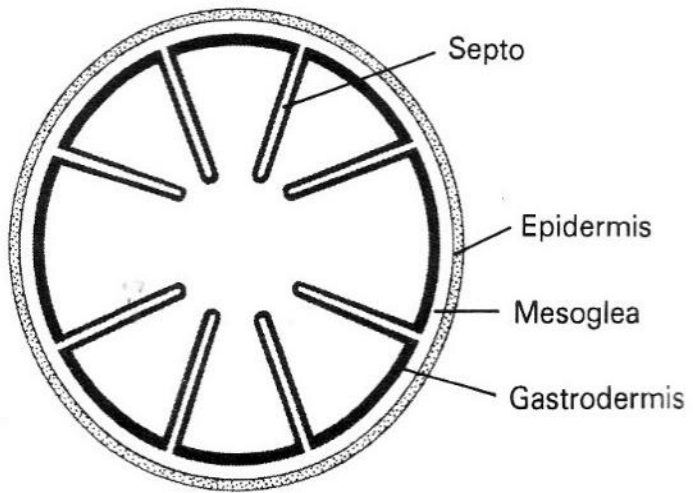


ANTHOZOA

SUBCLASE HEXACORALLIA

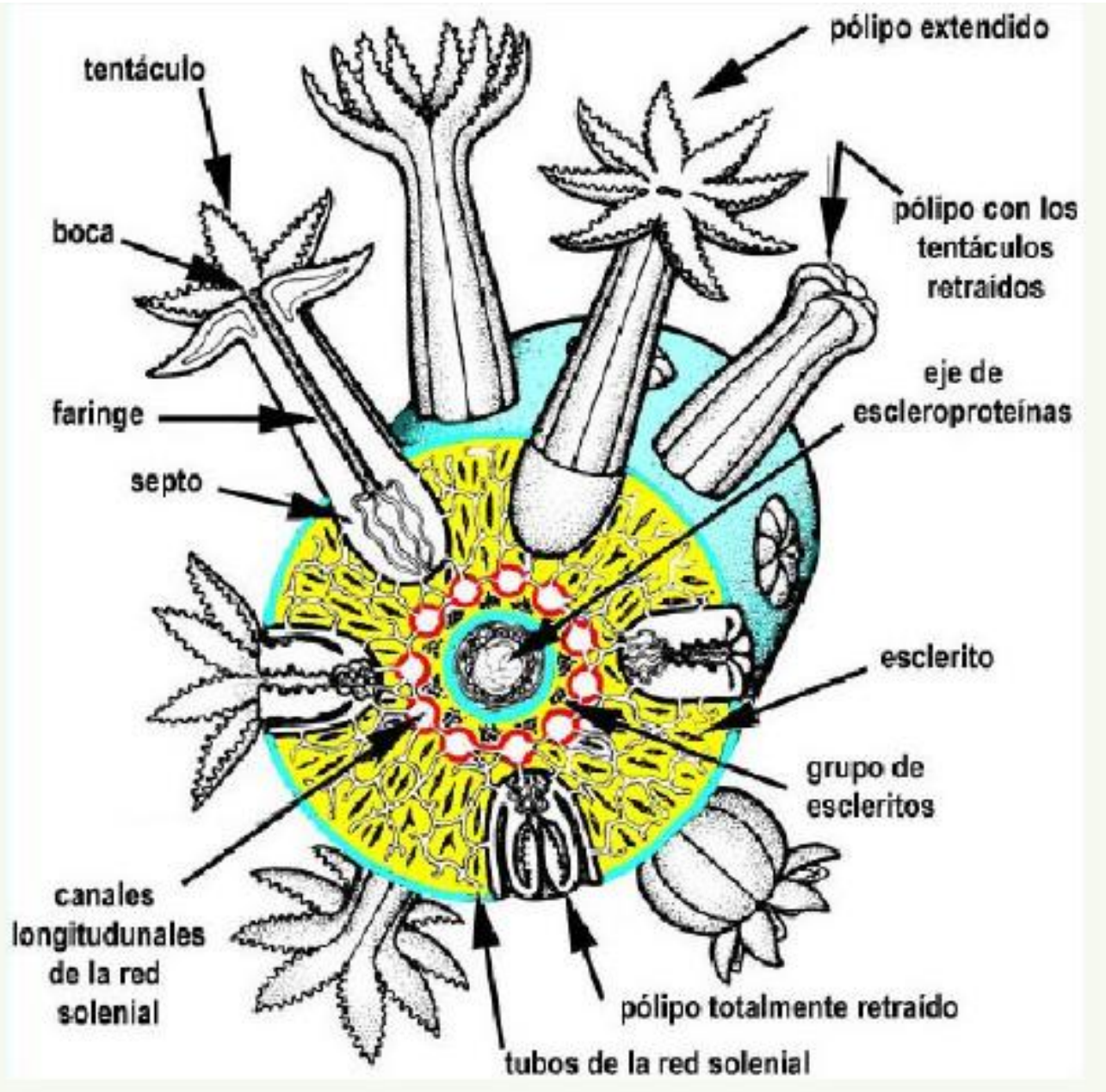






Colonia de *Tubastraea micranthus*

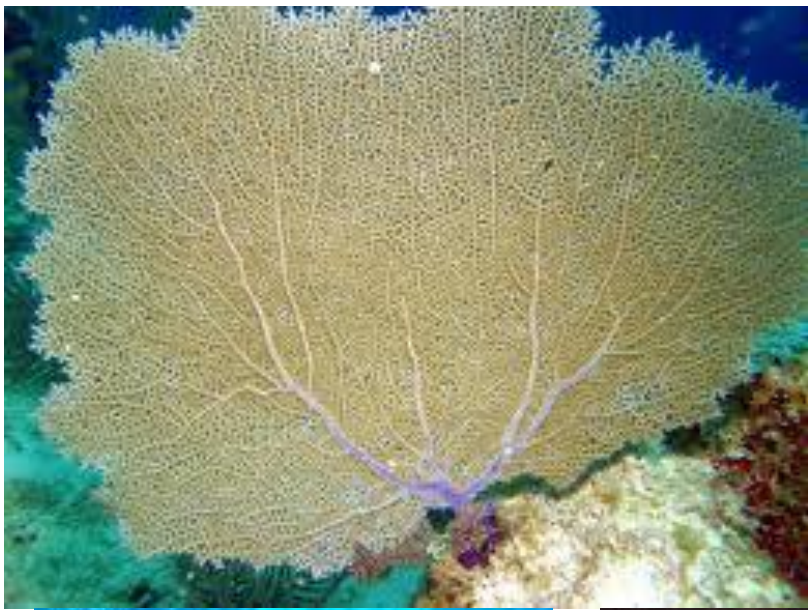
SUBCLASE OCTOCORALLIA





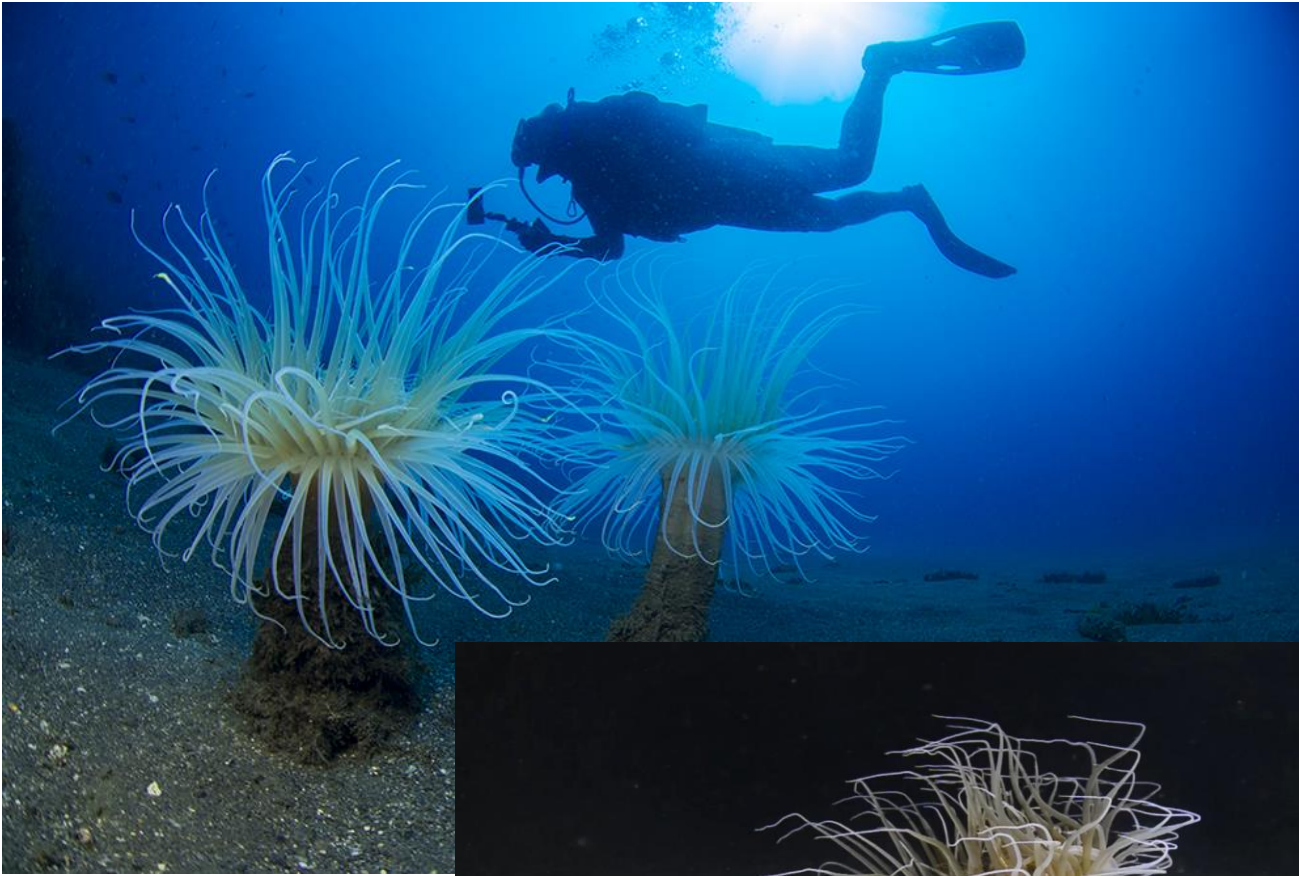
069RRI02042 [RM] © www.visualphotos.com

**SUBCLASE: OCTOCORALLIA
CORALES BLANDOS**



**Diferentes formas:
abanicos, arborescentes, plumosas**

SUBCLASE CERIANTHARIA



UNIVERSIDAD
DE GRANADA

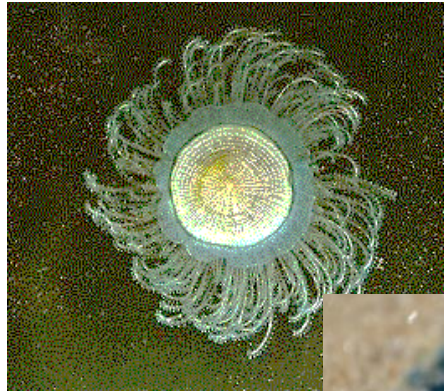
L.S.TOCINO

CLASE: HYDROZOA

≈ 3700 spp.

Hidra

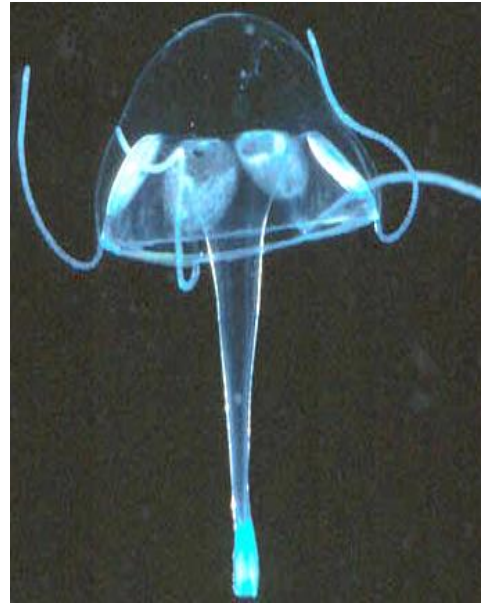
agua dulce!



Condróforos



Hidromedusas

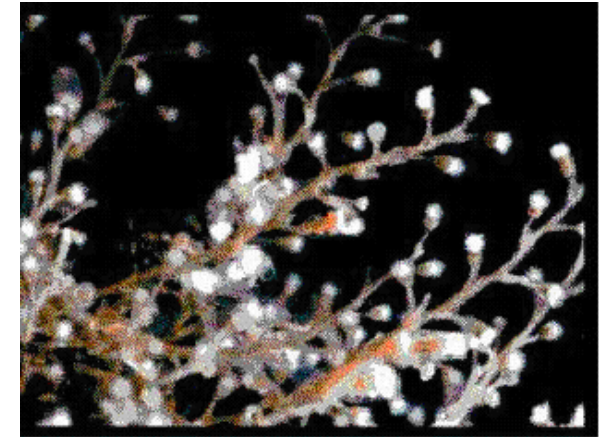


Sifonóforos

Es casi imposible generalizar un Hydrozoa típico.



Hidrocorales

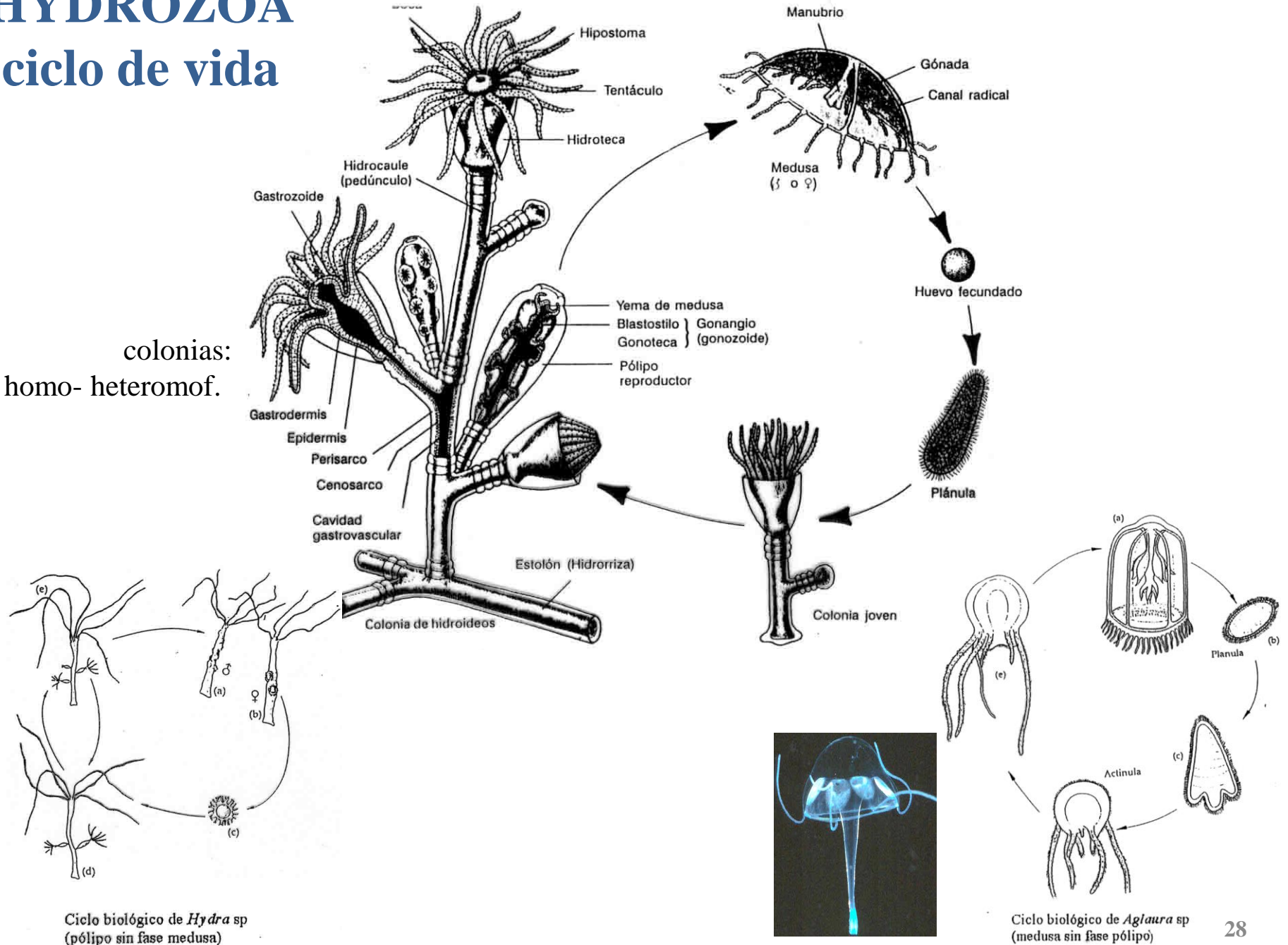


Hidroides

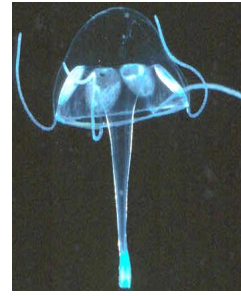
HYDROZOA

ciclo de vida

colonias:
homo- heteromof.

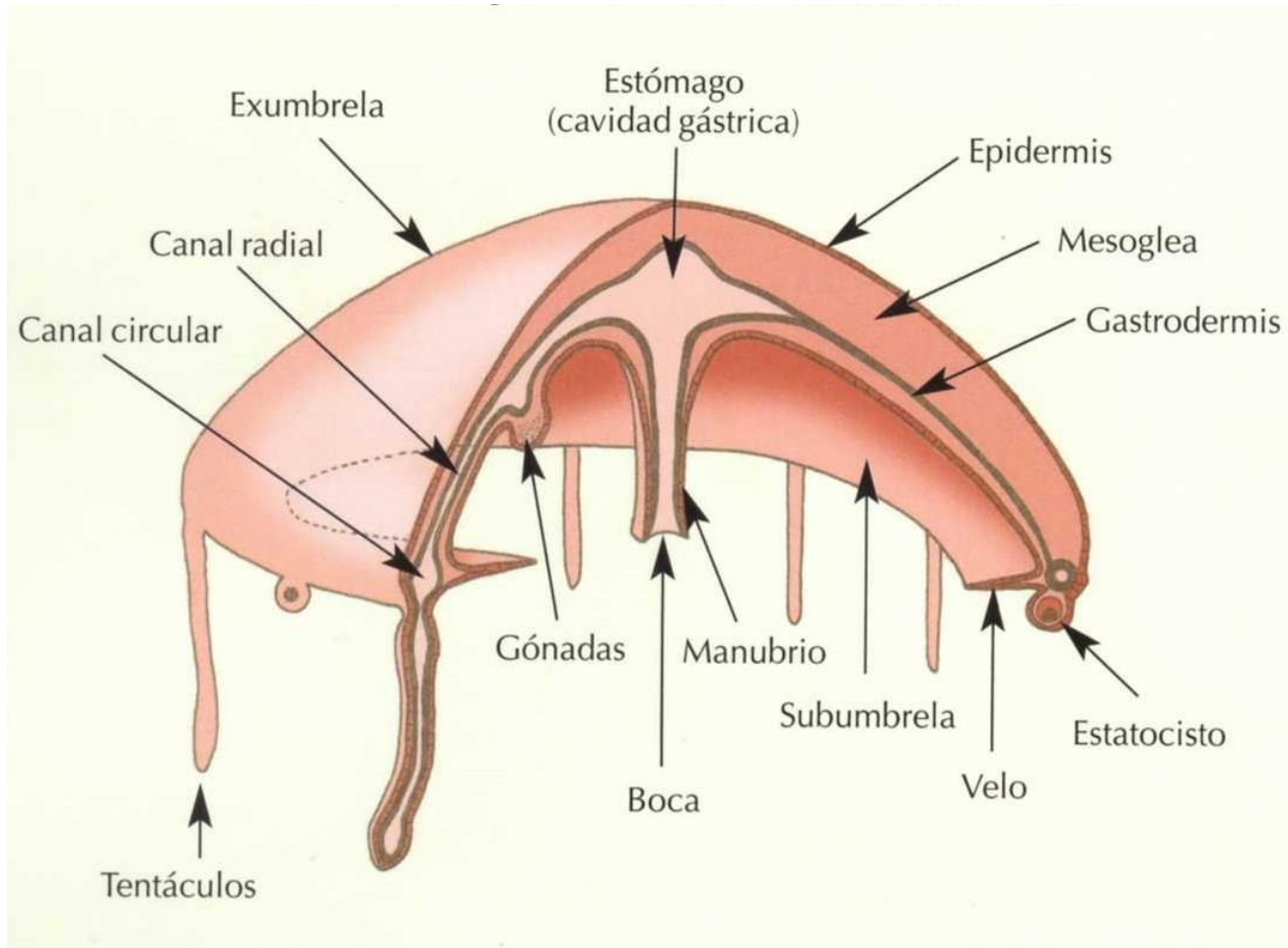


Ciclo biológico de *Hydra* sp.
(pólipos sin fase medusa)



Ciclo biológico de *Aglaura* sp.
(medusa sin fase pólipos)

Medusa de Hydrozoa



Clase Hydrozoa

Subclase Trachylina

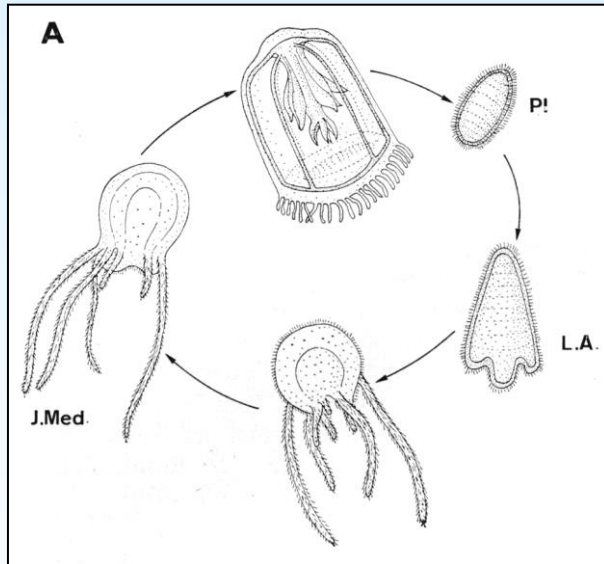
Trachym. Narcom. Limnom.

~~Pólipo - medusa~~

Subclase Hydroidolina

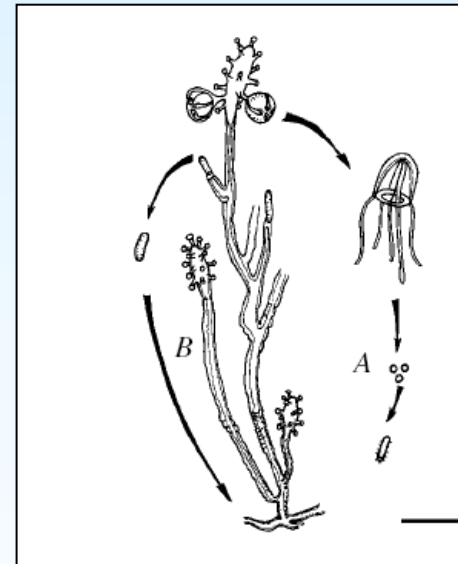
Leptom. Anthom. Siphonoph.

Pólipo - medusa



Holoplanctónicas

Sin alternancia



Meroplanctónicas

Con alternancia



Subclase: Trachylina



Liriope tetraphylla (Trachymedusa)



Aequorea aequorea (Limnomedusa)



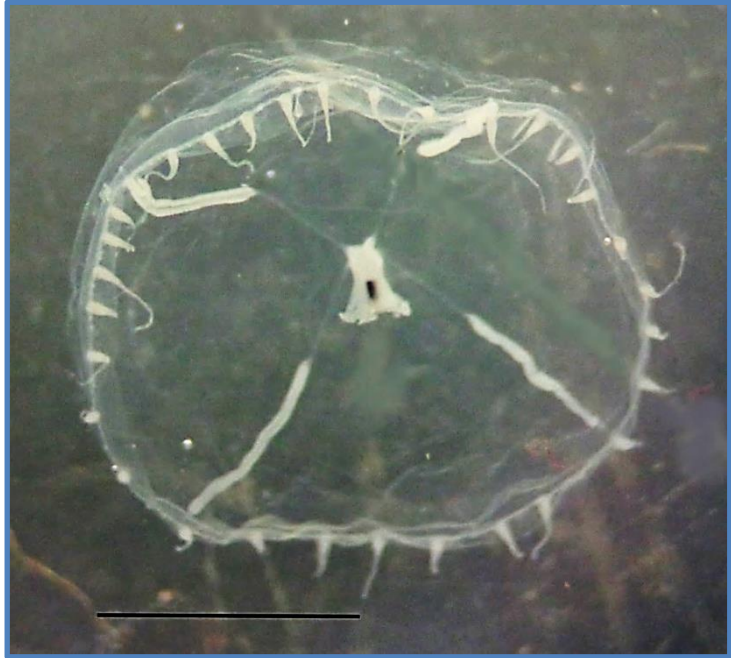
Cunina octonaria (Narcomedusa)



O. sambaquiensis (Limnomedusa)

Subclass: Hidroidolina

Eucheilota maculata
(Leptomedusae – Leptothecata)



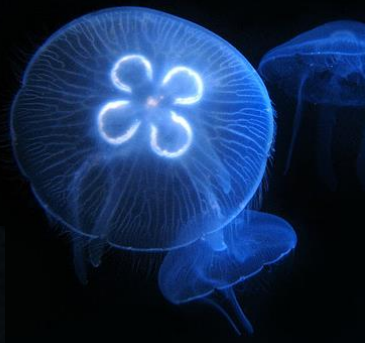
Velella velella
(Antomedusae – Antoathecata)



Porpita porpita
(Antomedusae – Antoathecata)



CLASE SCHYPHOZOA



Rhizostomatidae *Nemopilema nomurai* (medusa nomurai)



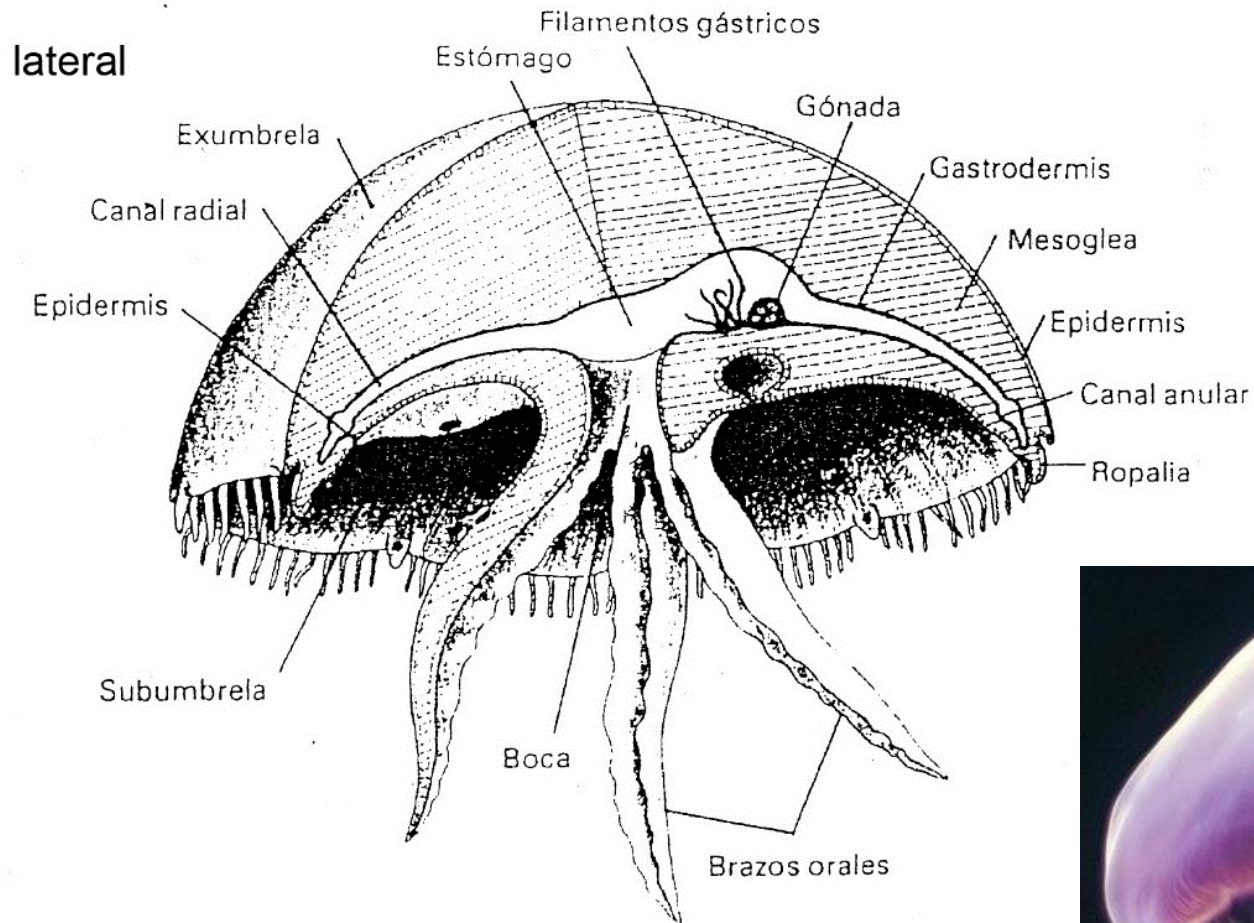
Cyanea capillata (Medusa melena de león)

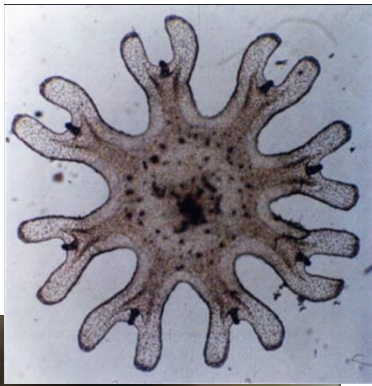
- Oc. Atlántico N.



- Order [Semaestomeae](#)
- Family [Cyaneidae](#)
- tentáculos en 8 grupos de 150 c/u
- elevada toxicidad
- hasta 2 m de diam. de campana

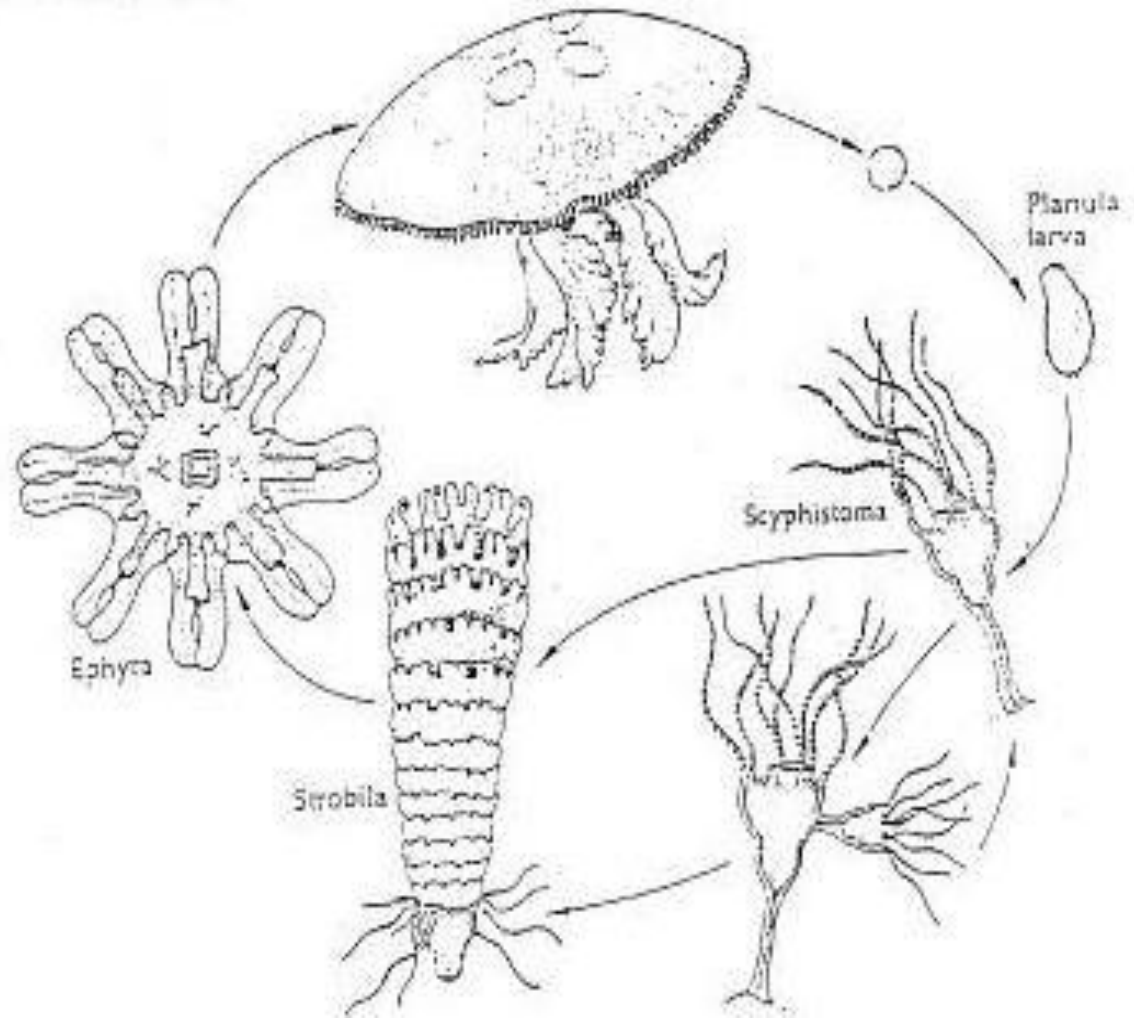
Medusa de Scyphozoa





SCYPHOZOA

Ciclo de vida

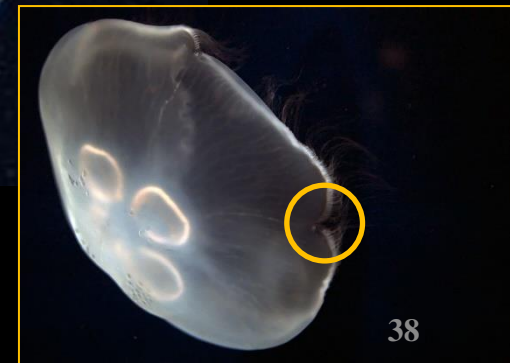


Estrobilación - Monodisco
- Polidisco

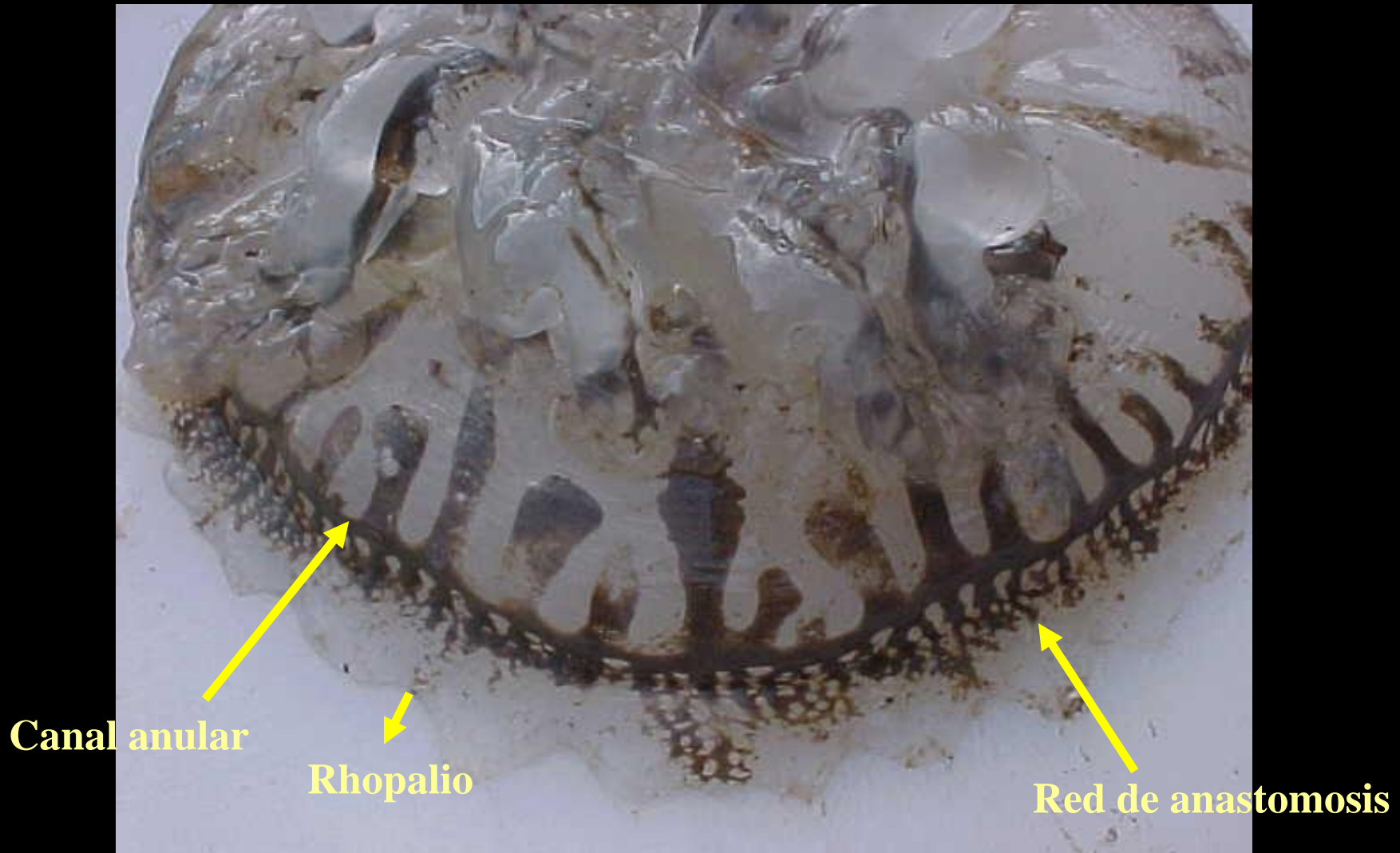
- **brotación**
- **fisión transversal**

Ropalios y sistema de canales

SCHYPHOZOA



✓ canales ramificados en zona periferica



Rhizostomeae



Semaeostomeae



Coronatae



Rhizostomeae



Semaeostomeae



Coronatae



Linuche unguiculata

“medusa dedal”



Coronatae



Nausithoe sp.

Rhizostomatidae: *Lychnorhiza lucerna*



Rhizostomatidae: *Lychnorhiza* sp.



Hembras?

Machos?

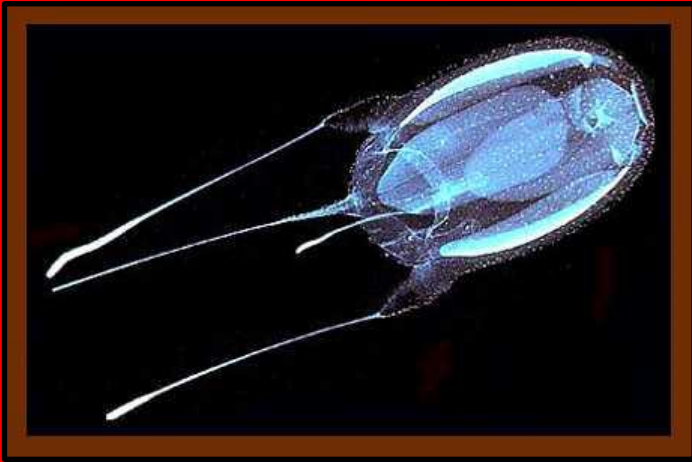
Coloración del tejido gonadal

Cotyloriza tuberculata



CLASE CUBOZOA

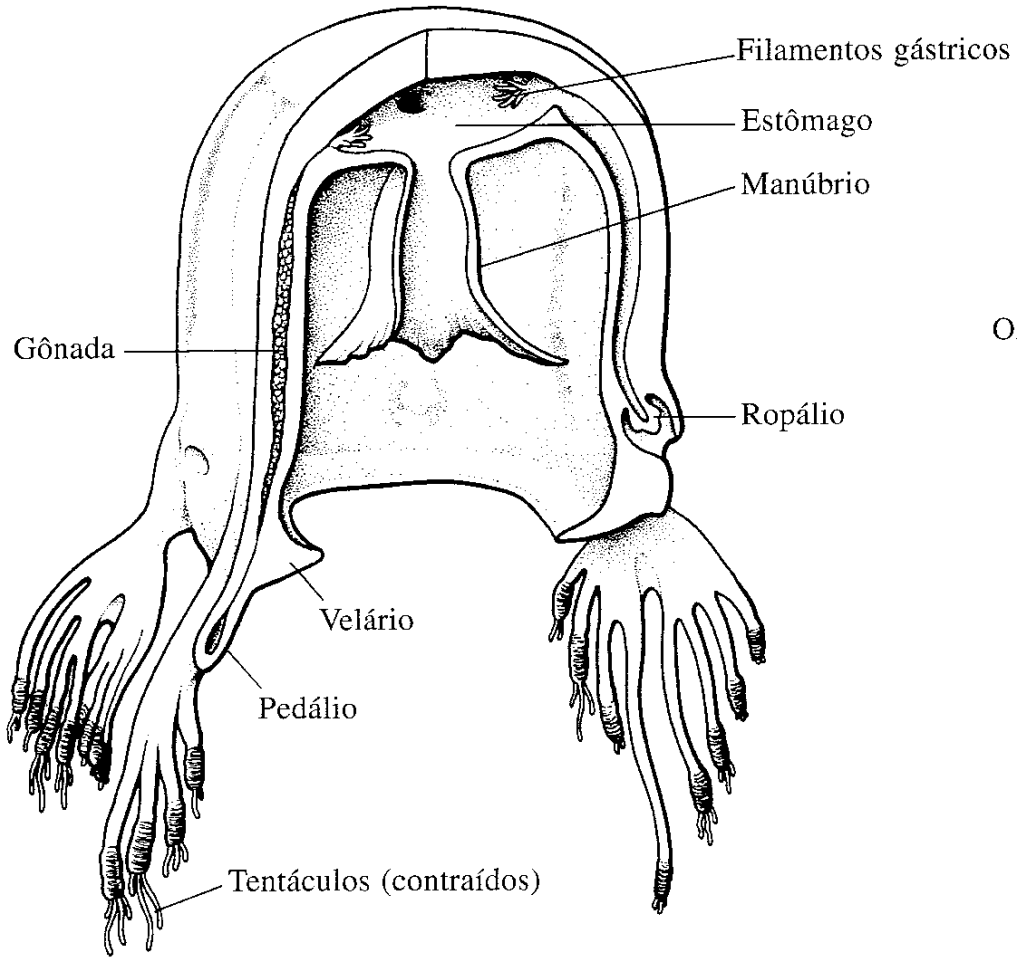
- ✓ ~43 sp; ~1 Uruguay y Argentina
- ✓ Marinos, mayormente tropicales
- ✓ ciclos metagenéticos
- ✓ dimorfismo sexual es común
- ✓ pólipos solitarios y desnudos



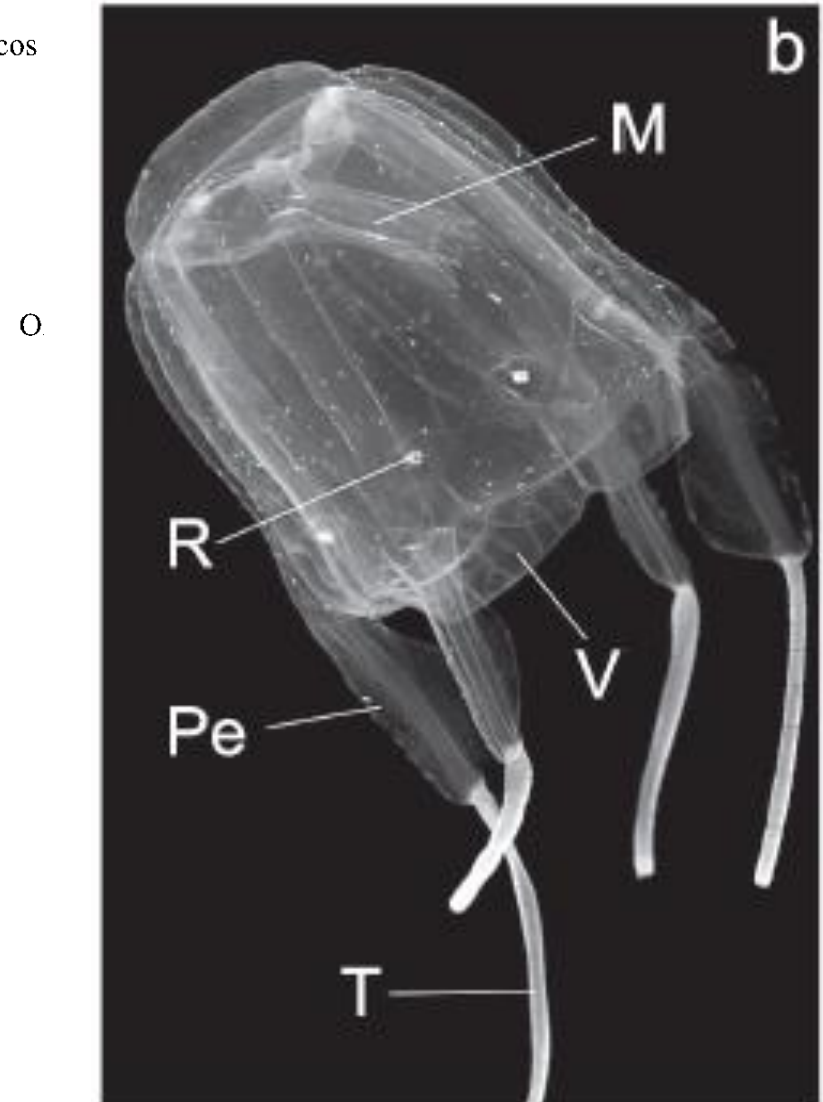
Tamoya haplonema



ORDEN CARYBDEIDAE



ORDEN CHIROPIDAE



a. T: tentáculos; R: ropalios; Pe: pedálios; M: manubrio; V: velarium.

ORDEN CHIROPIDAE

Chironex fleckeri



Chiropsalmus

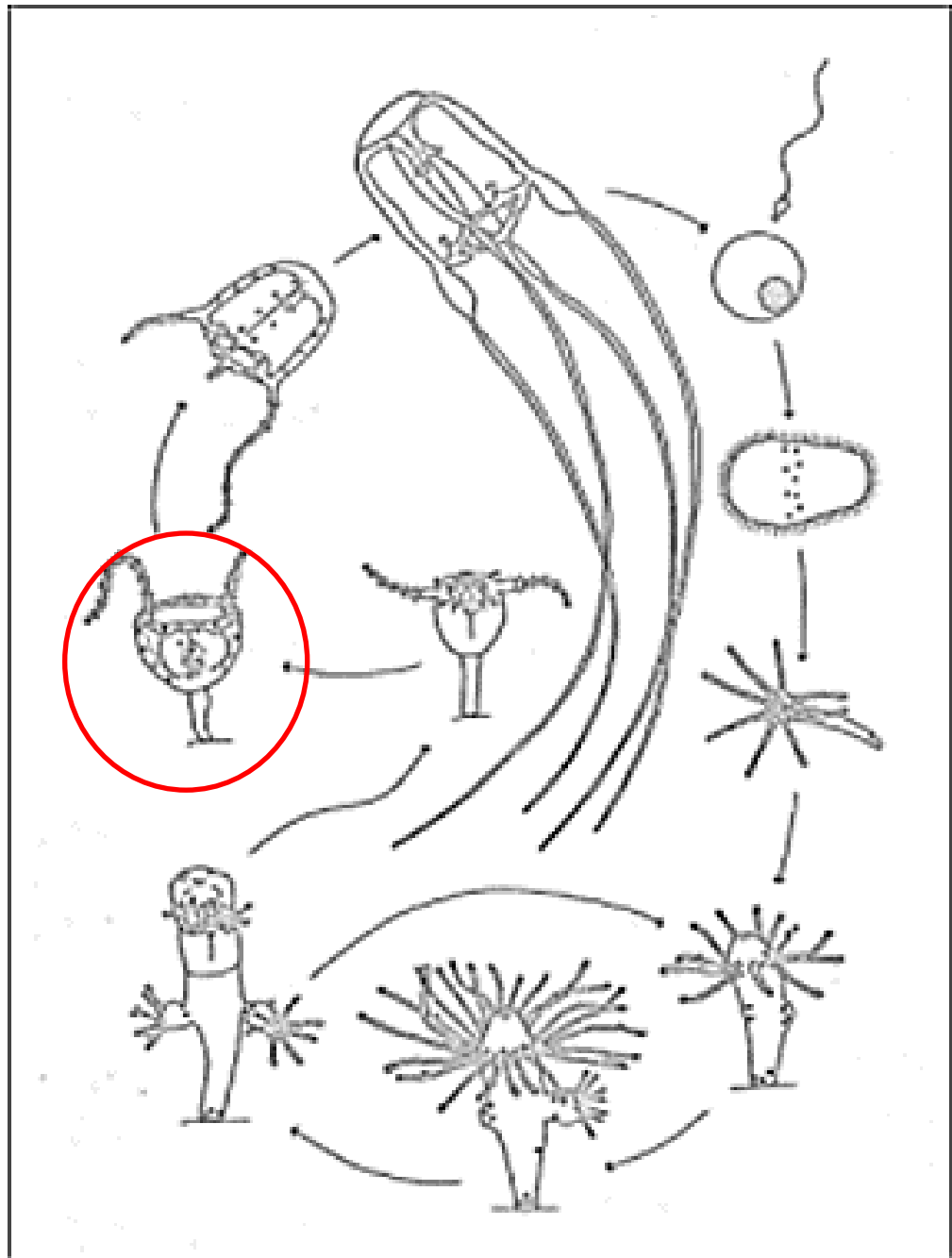


15 tent.flat 30cm

9 tent. Round 10 cm

CUBOZOA

Carybdea marsupialis



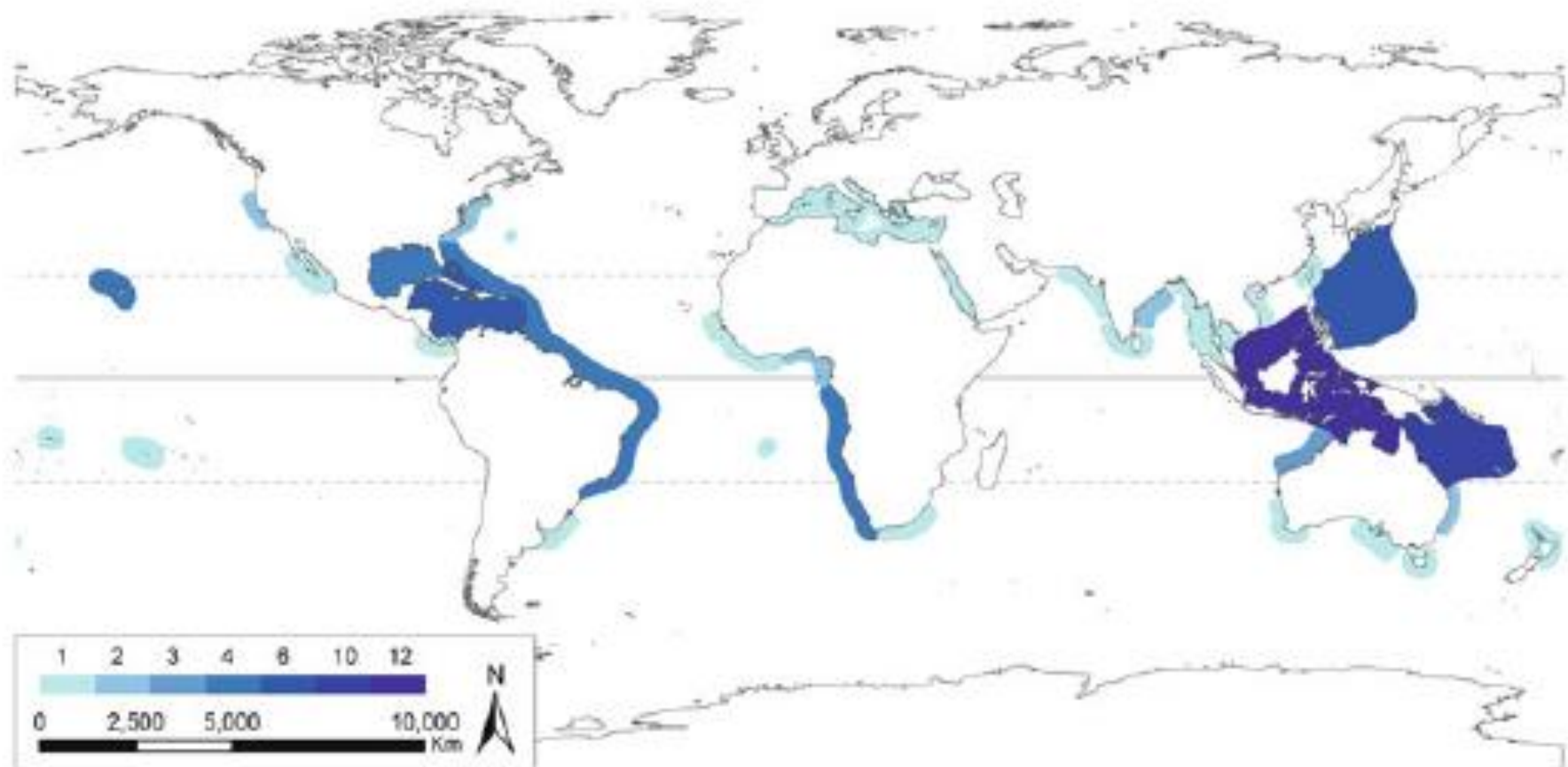


Fig. 12.3 Published occurrences of accepted cubozoan species around the world. *Colour* indicates number of accepted species for region. The width of regional patches is for presentation only; the majority of taxa were caught close to shore. For detail of species occurrence see Table 12.1

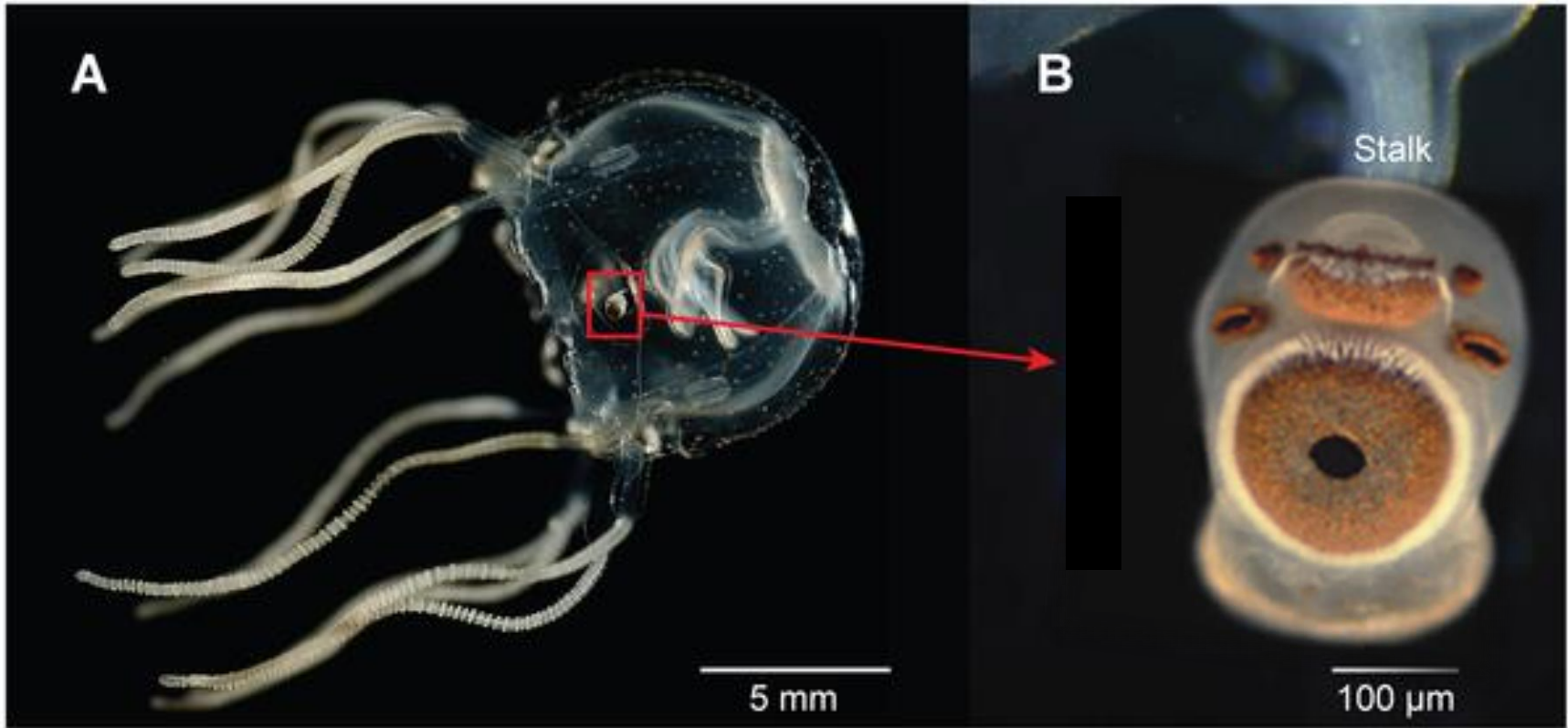
CUBOZOA

OJO!



Trypedalia cystophora

Ojo complejo tipo cámara Ópticamente competente



- Prot. tipo rodopsina y opsina, pigmentos visuales involucrados en la fototransducción
- Neurotransmisores: glutamato, serotonina, gaba y Rf-amida
- Anillo nervioso subumbelar con N.gigantes

CORTEJO



Carybdea sivicksi



acercamiento del manubrio en el cortejo

CLASE: STAUROZOA (Marques y Collins, 2004)

- 50 spp descriptas

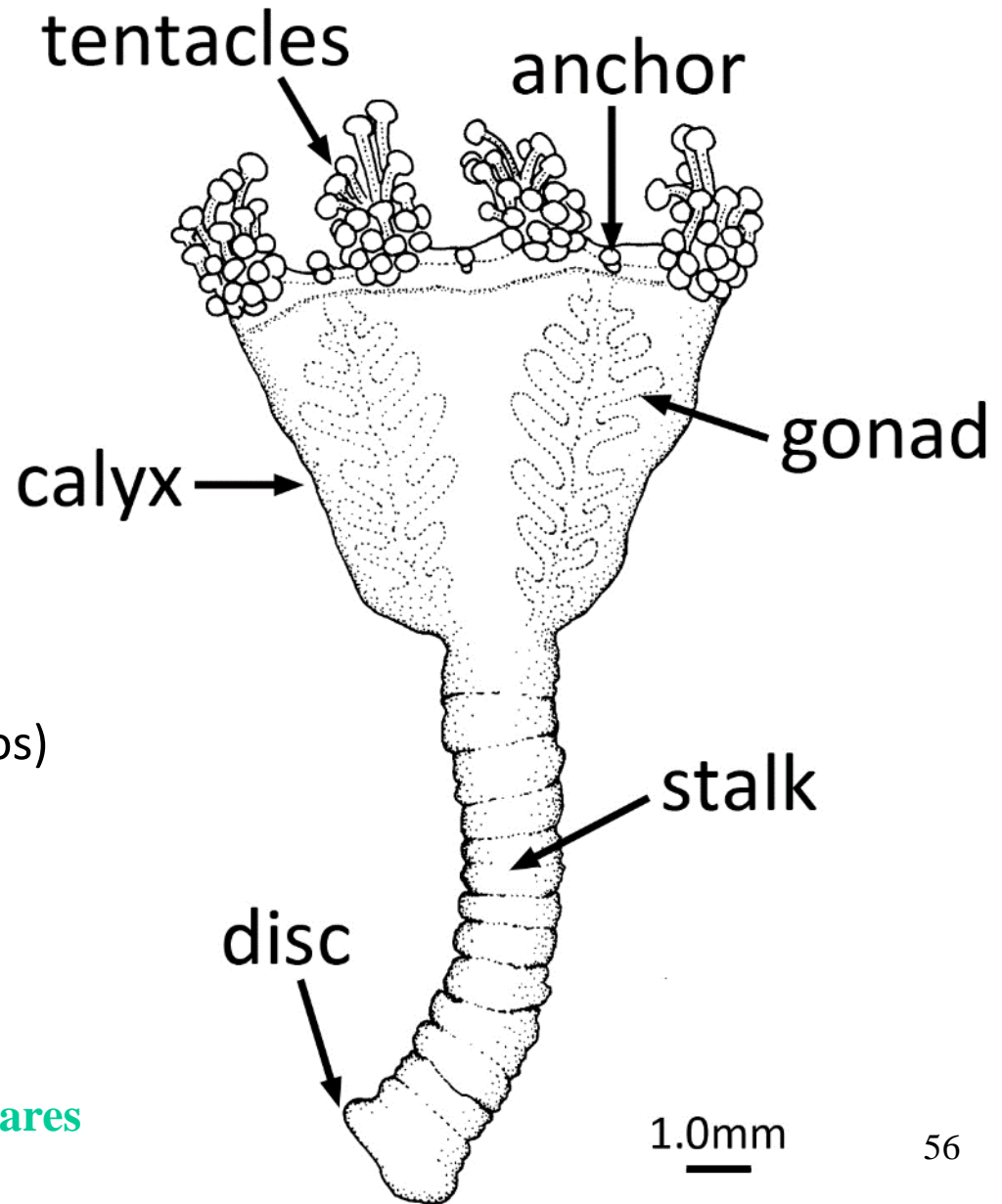
Orden Stauromedusae con:

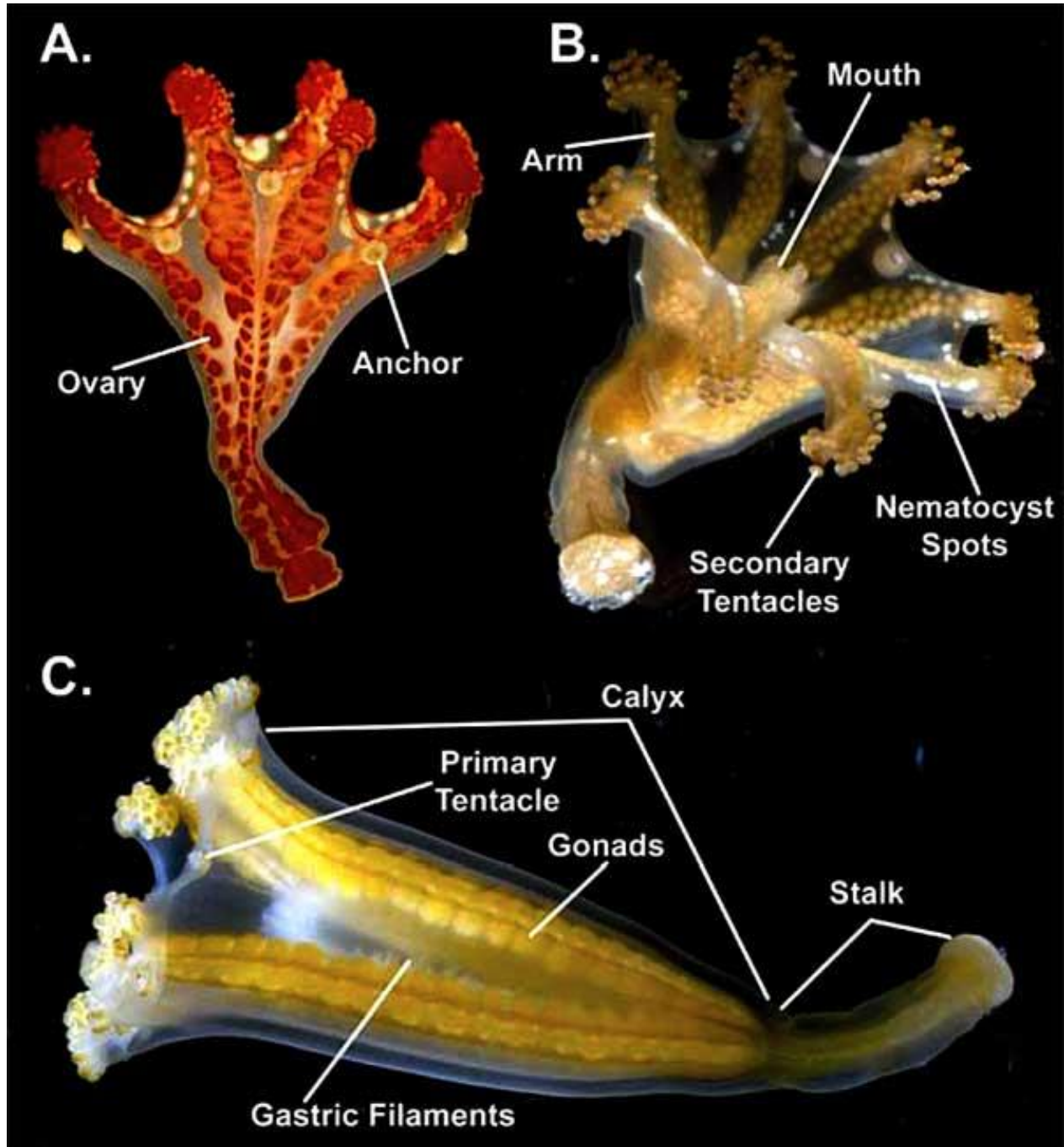
6 familias y 11 gen.

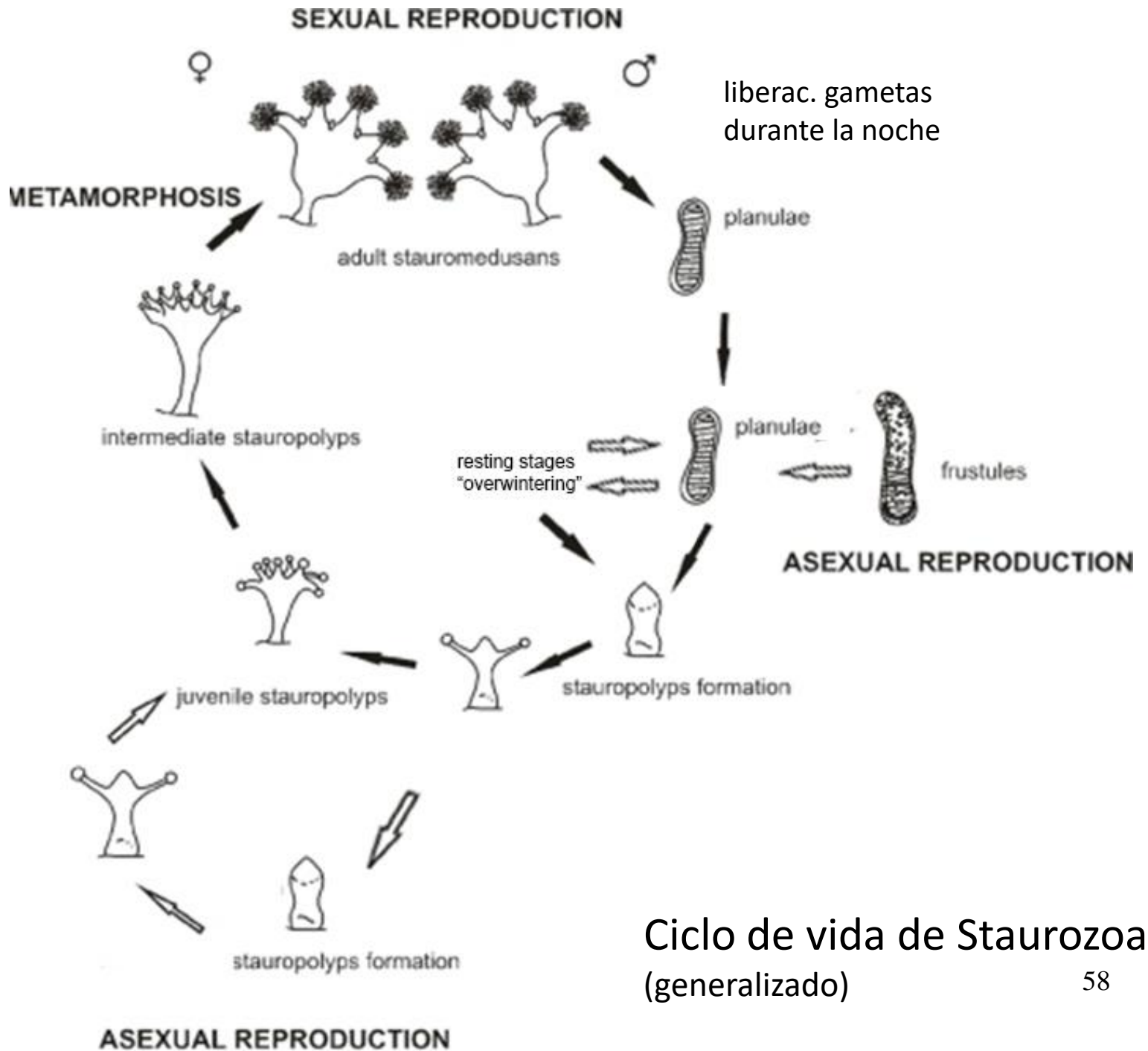
(Miranda et al.,2017)

CLASE: STAUROZOA (Marques y Collins, 2004)

- Simetria tetrámera
(= Cuboz.)
- Tentáculos 1º red.
(anchor) ayudan a trasladarse
sust. adhesivas.
- Tentáculos 2º capitados
8 sets en "clusters" (agrupados)
- Aguas tropicales, templadas y polares







Ciclo de vida de Staurozoa
(generalizado)

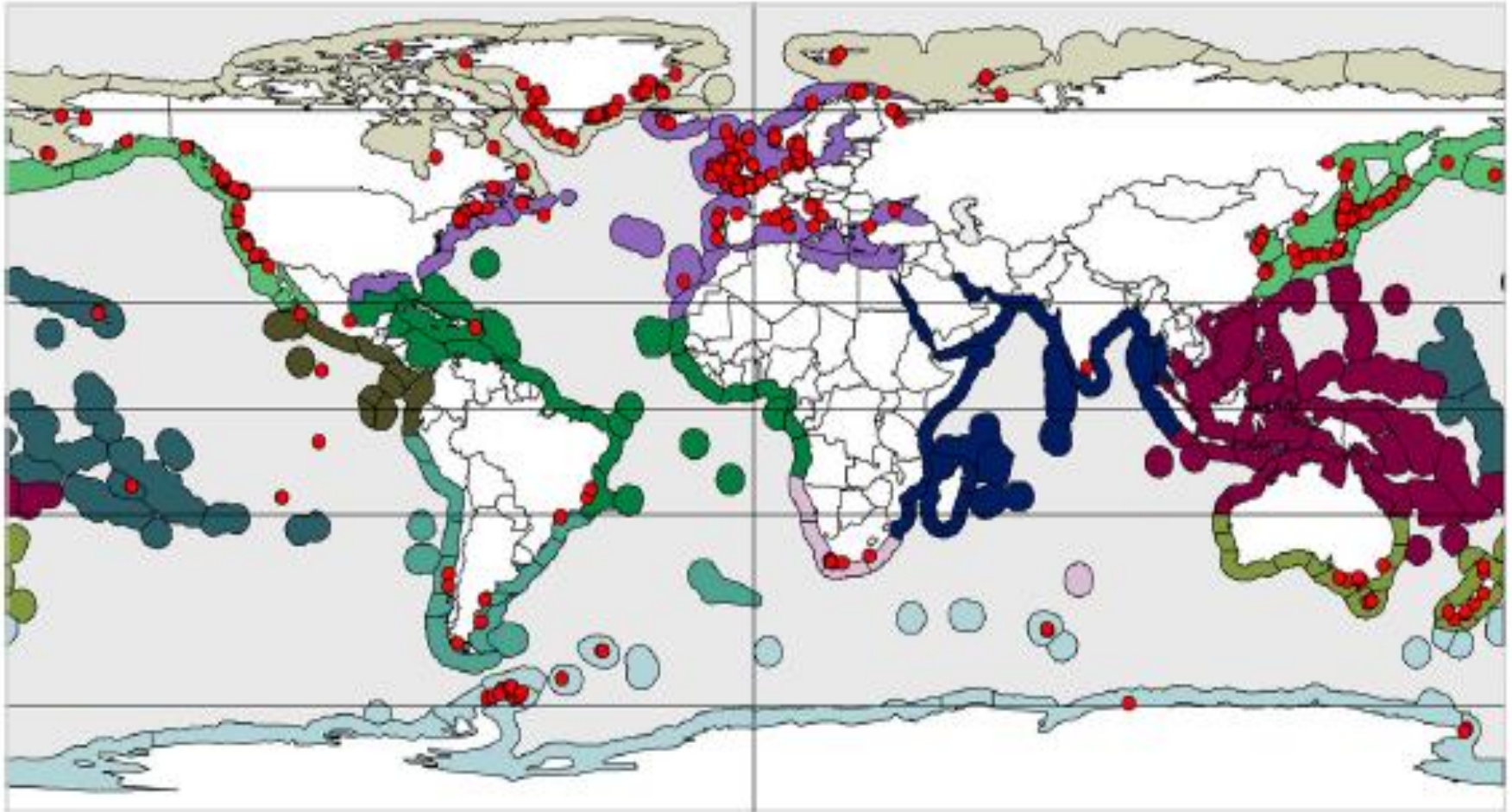


Fig. 4 Geographic distribution of Staurozoa. Distribution (*filled red circles*) plotted over the marine realms proposed by Spalding et al. (2007)

Disribución geográfica de Staurozoa (puntos rojos)

FIN

