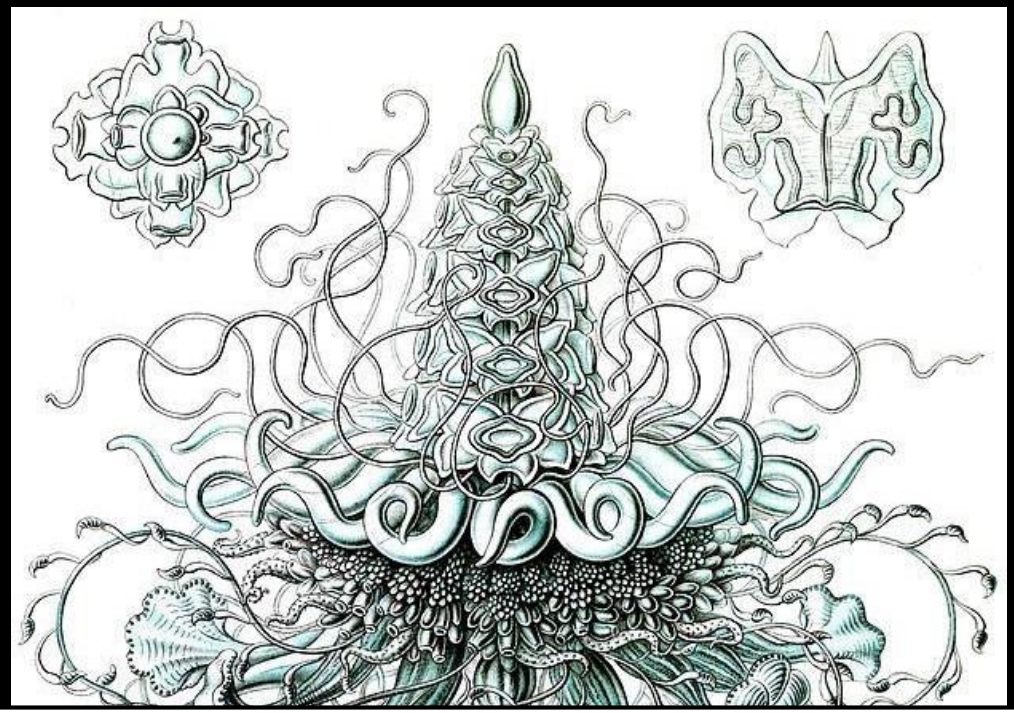
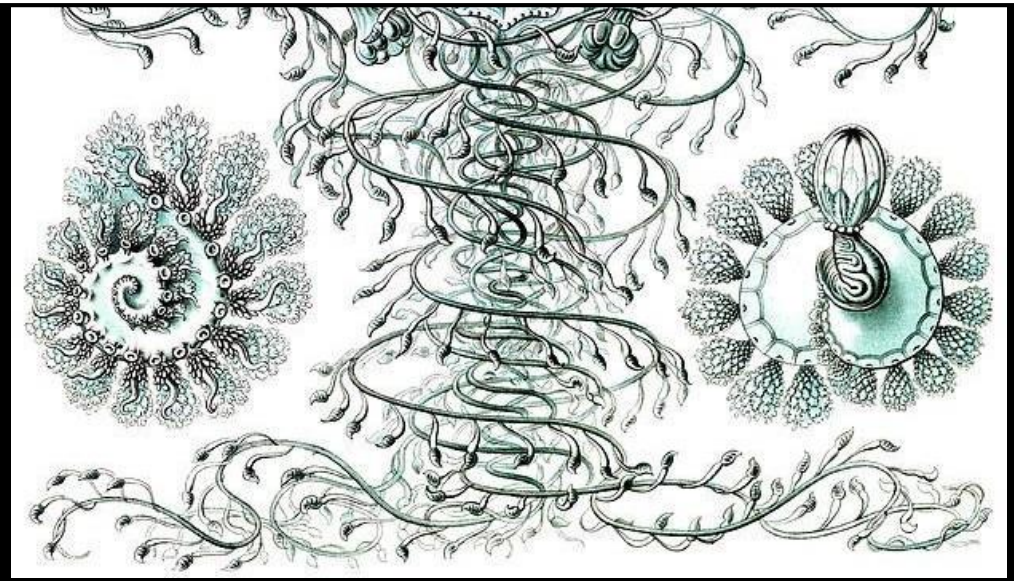
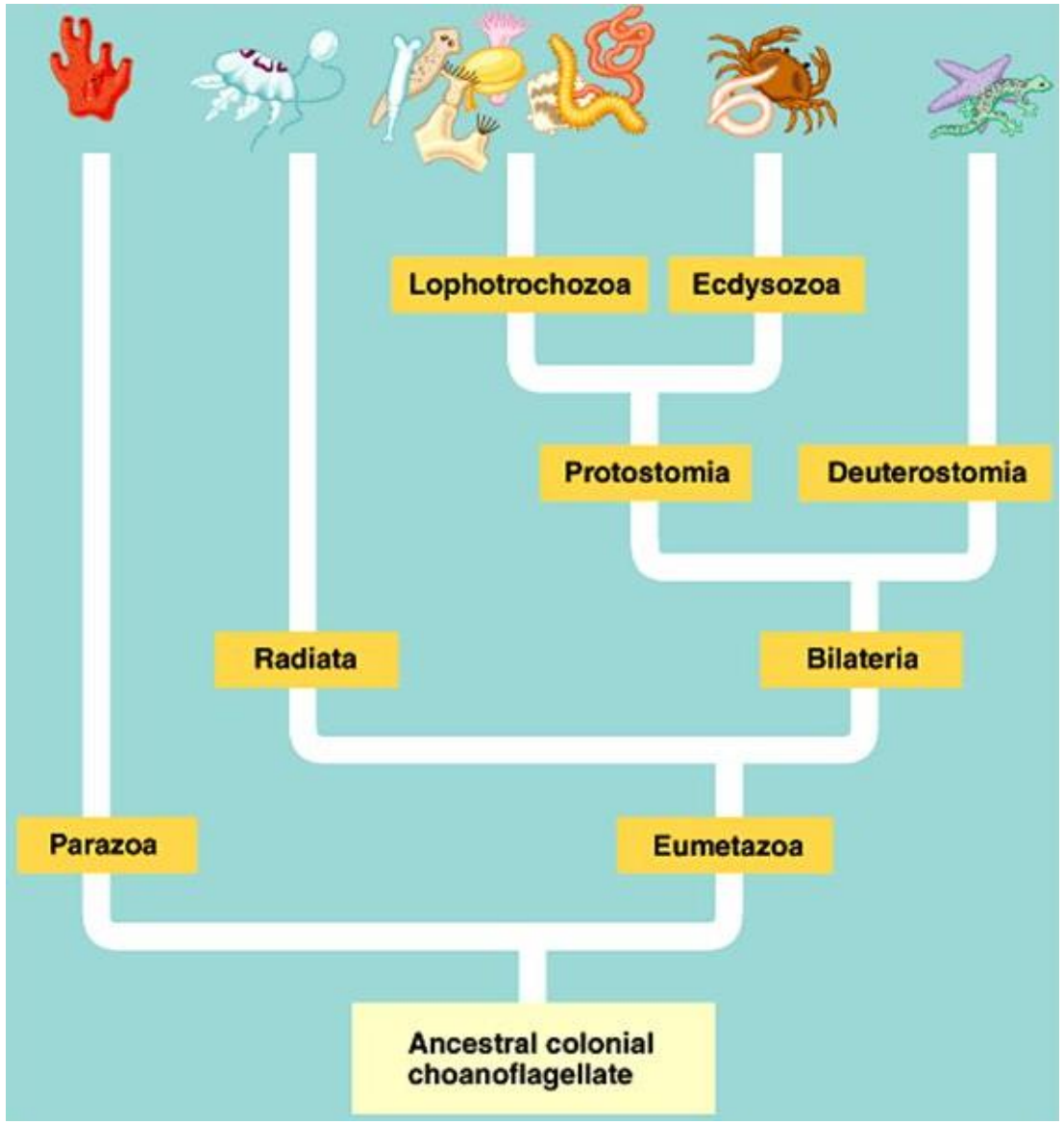


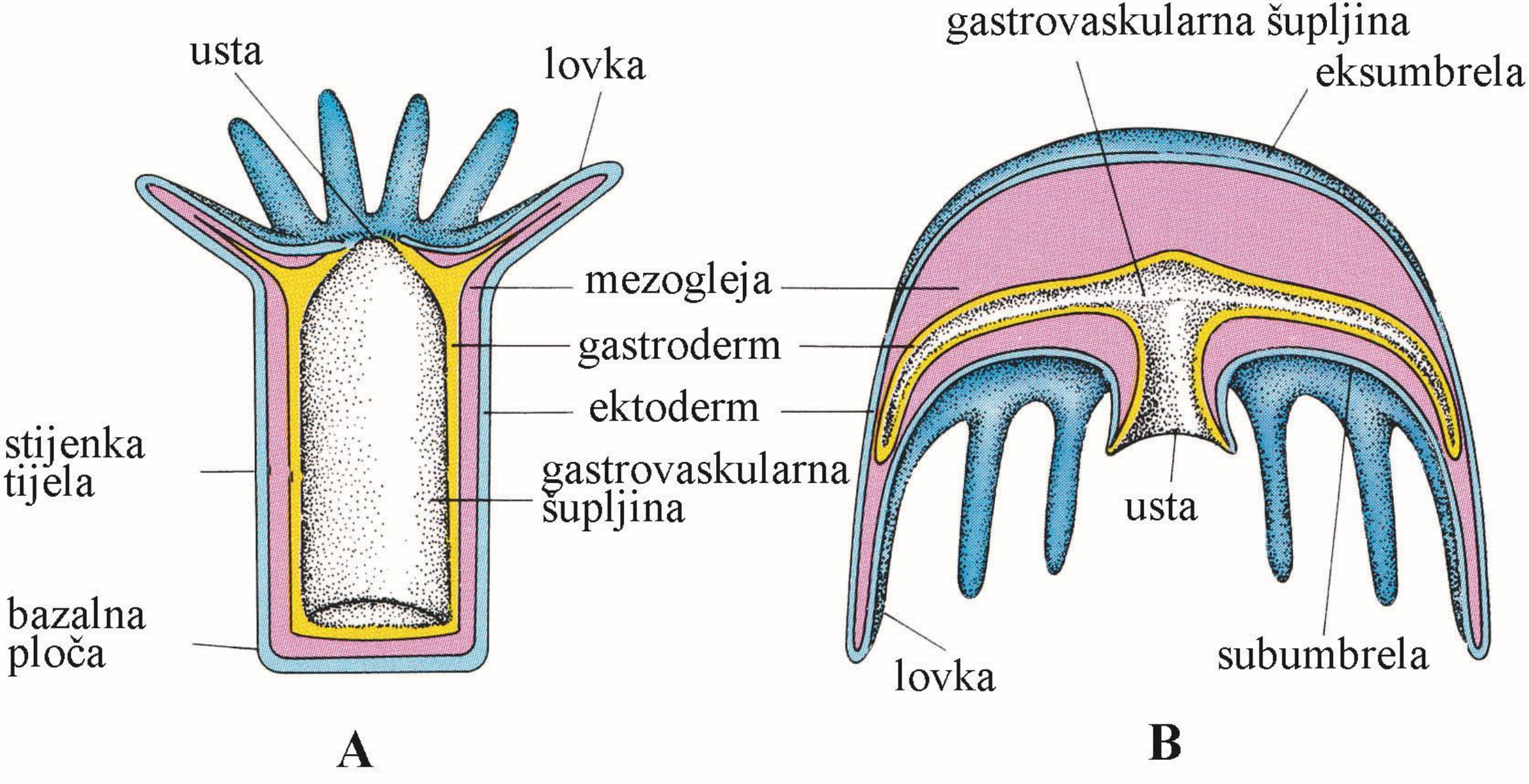
CNIDARIA - ŽARNJACI



Eumetazoa

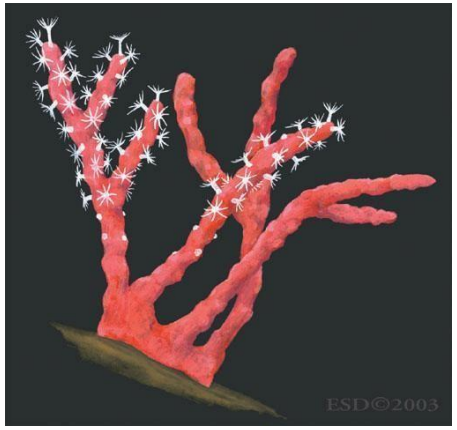


- koljena Cnidaria (žarnjaci) i Ctenophora (rebraši) – životne funkcije ustrojene na **tkivnoj** razini, ali bez izgradnje organskih sustava


usta
lovka
mezogleja
gastroderm
ektoderm
stijenka tijela
gastrovaskularna šupljina
bazalna ploča
A
gastrovaskularna šupljina
eksumbrela
usta
lovka
subumbrela
B

koljeno Cnidaria

Anthozoa
- koralji



Scyphozoa
- režnjaci



Hydrozoa
- obrubnjaci

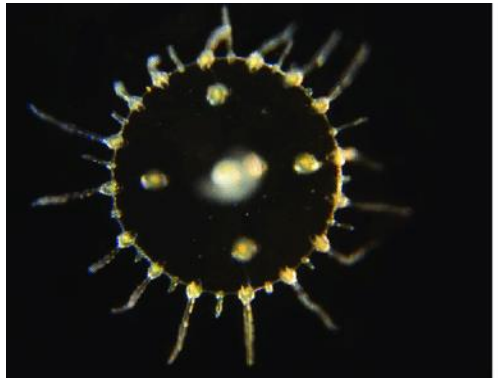


Cubozoa
- kubomeduze





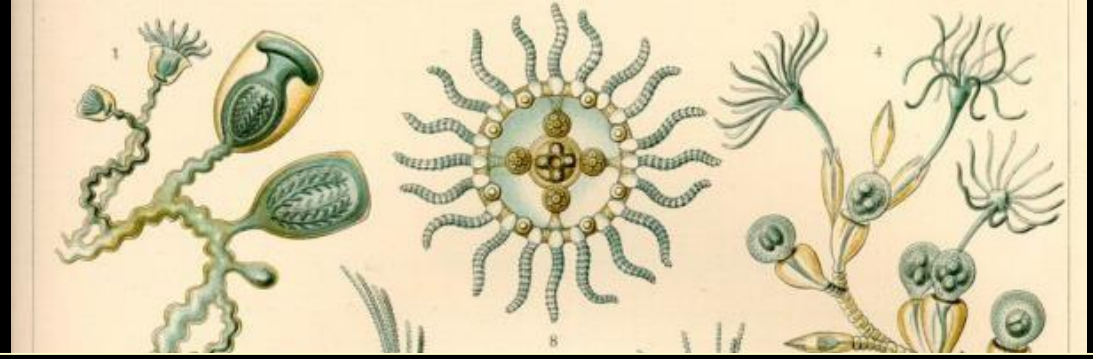




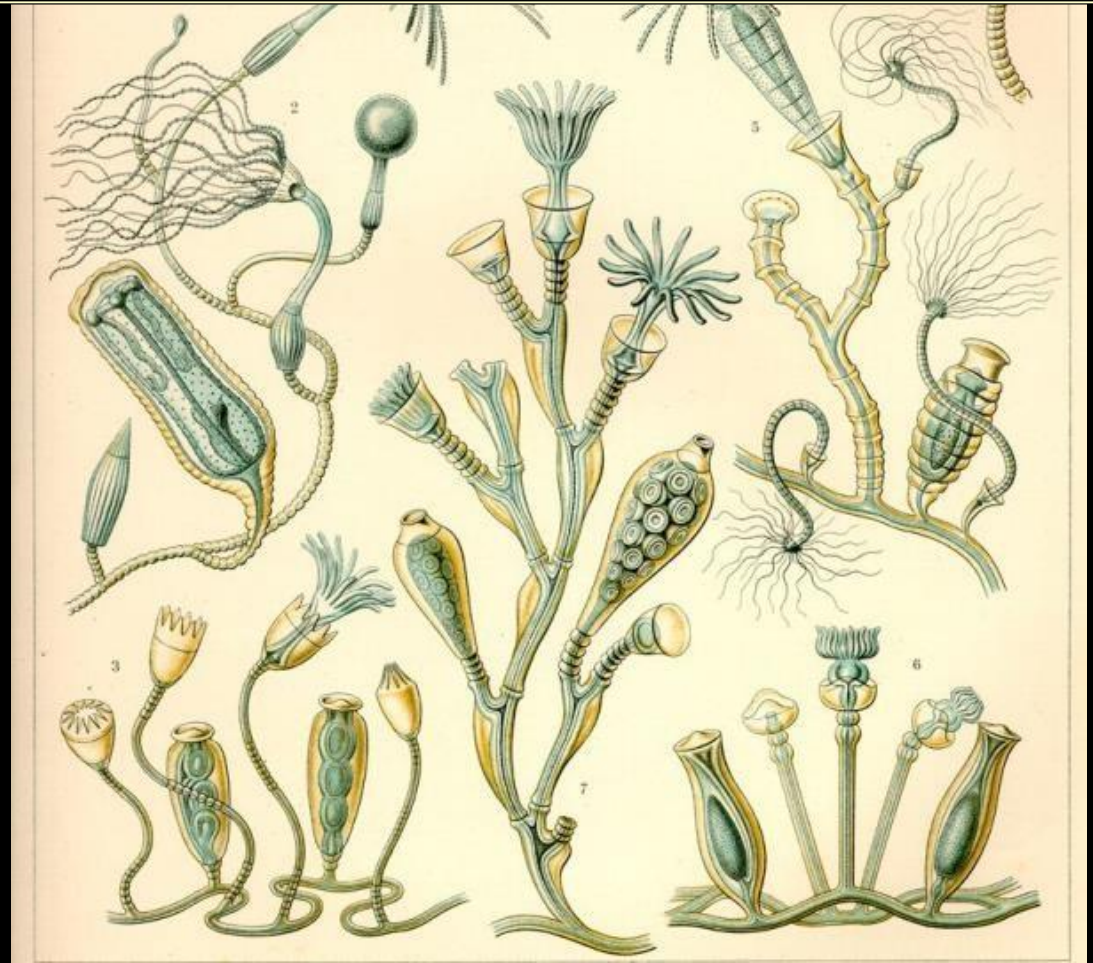


koljeno: Cnidaria (žarnjaci)

- razred: Hydrozoa (obrubnjaci)
  - *Aglaura* sp.
- razred: Scyphozoa (režnjaci)
  - *Pelagia noctiluca* (morska mjesečina)
- razred: Anthozoa (koralji)
  - podrazred: Alcyonaria (Octocorallia)
    - *Alcyonium palmatum* (blijeda ručica)
    - *Veretillum cynomorium*
  - podrazred: Zoantharia (Hexacorallia)
    - *Actinia equina* (crvena moruzgva)
    - *Sagartia dohrnii*

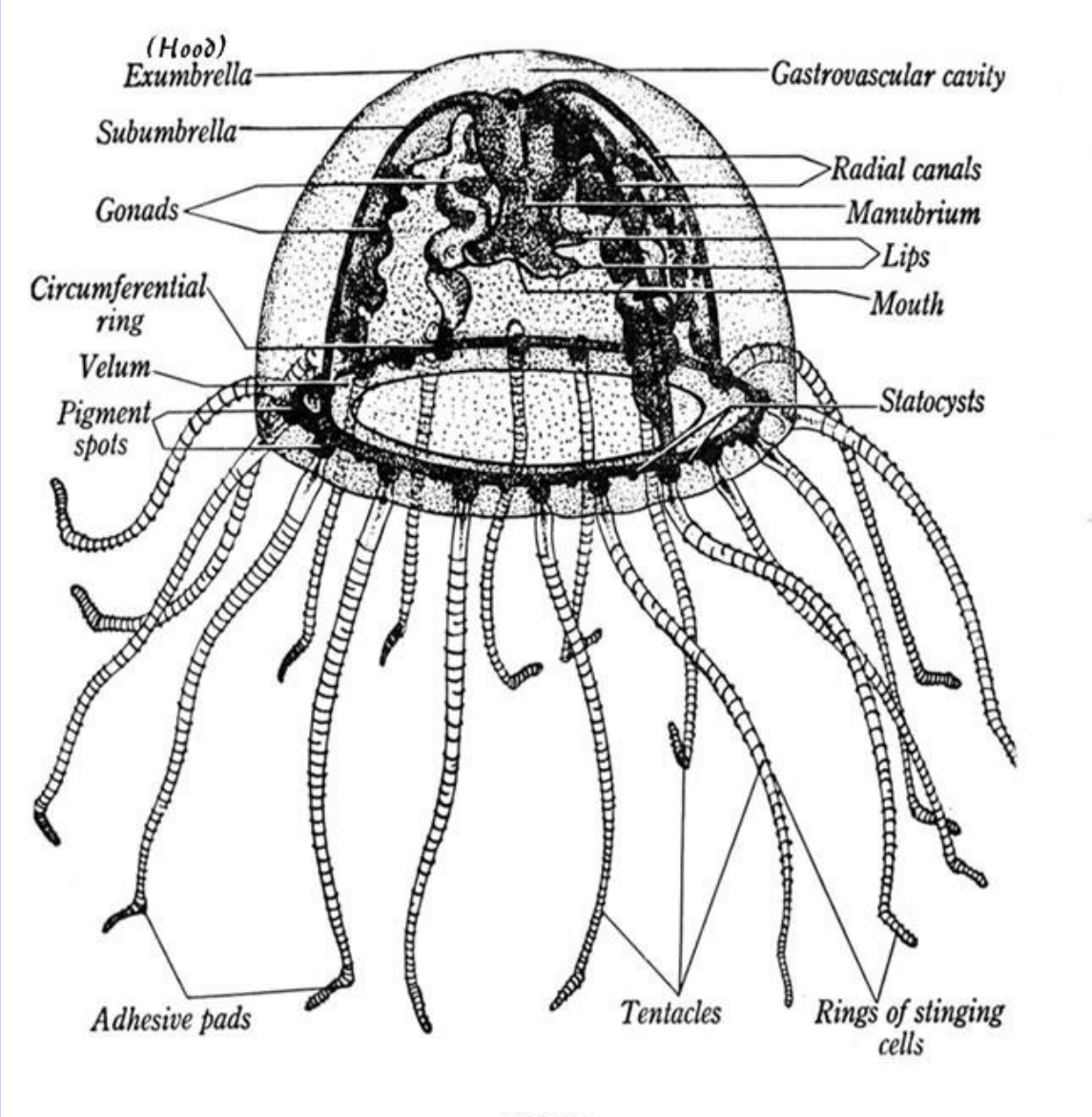


HYDROZOA - OBRUBNJACI

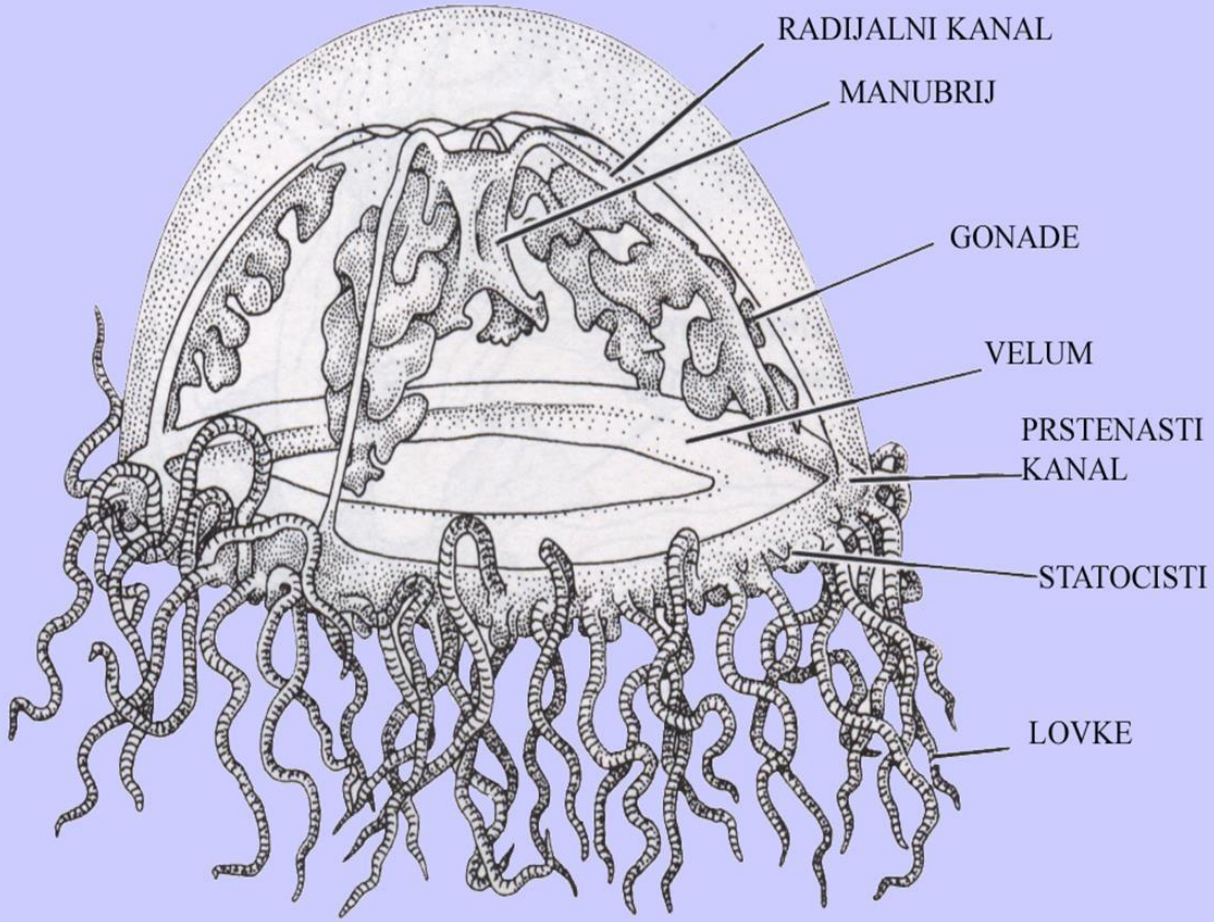


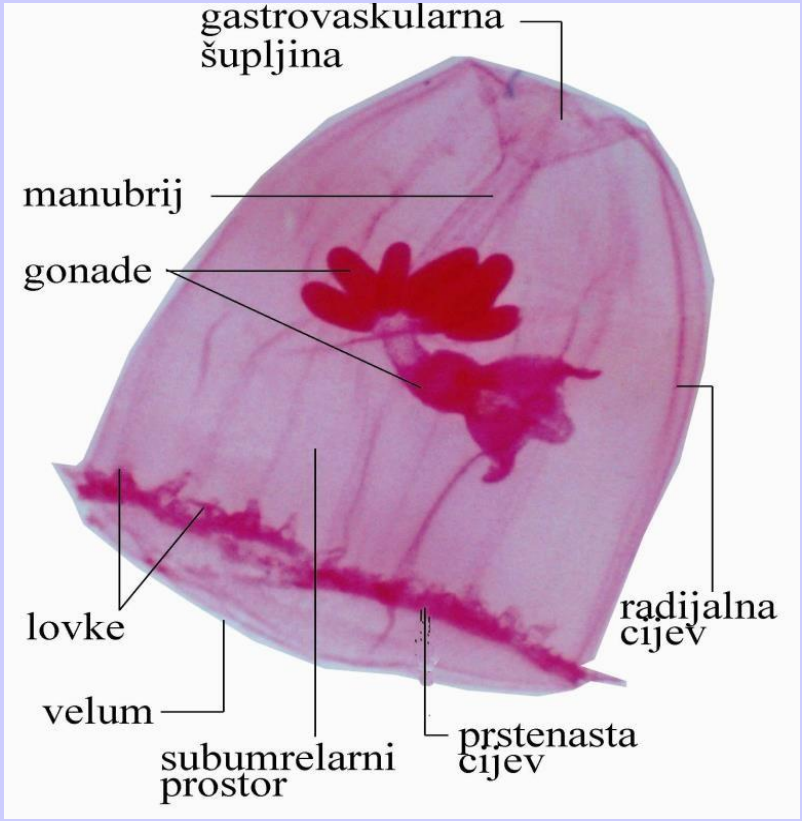
Razred: Hydrozoa (obrubnjaci)

- HIDROMEDUZE:
  - **velum** – epidermalna duplikatura
    - sa subumbrelom zatvara subumbrelarni prostor
  - usta na **manubriju**
  - GVŠ – „želudac” **bez pregrada**
    - iz želuca idu 4 **radijalne** cijevi → periferija zvona → **prstenasta** cijev



Građa hidromeduze



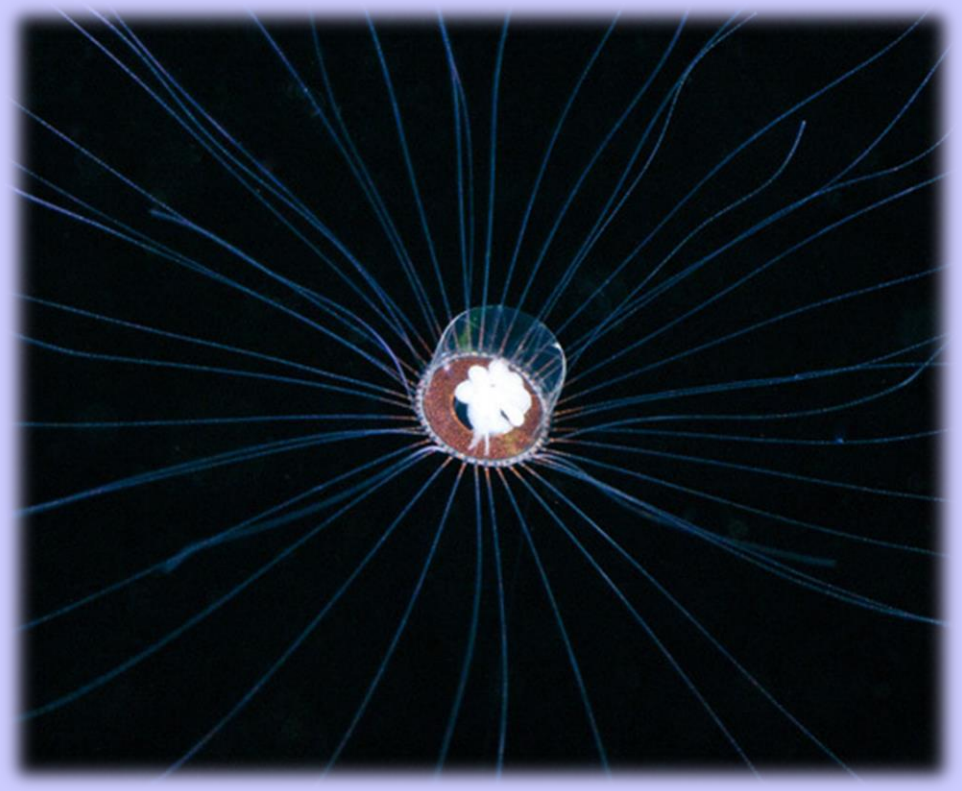


Građa hidromeduze obrubnjaka *Aglaura* sp.

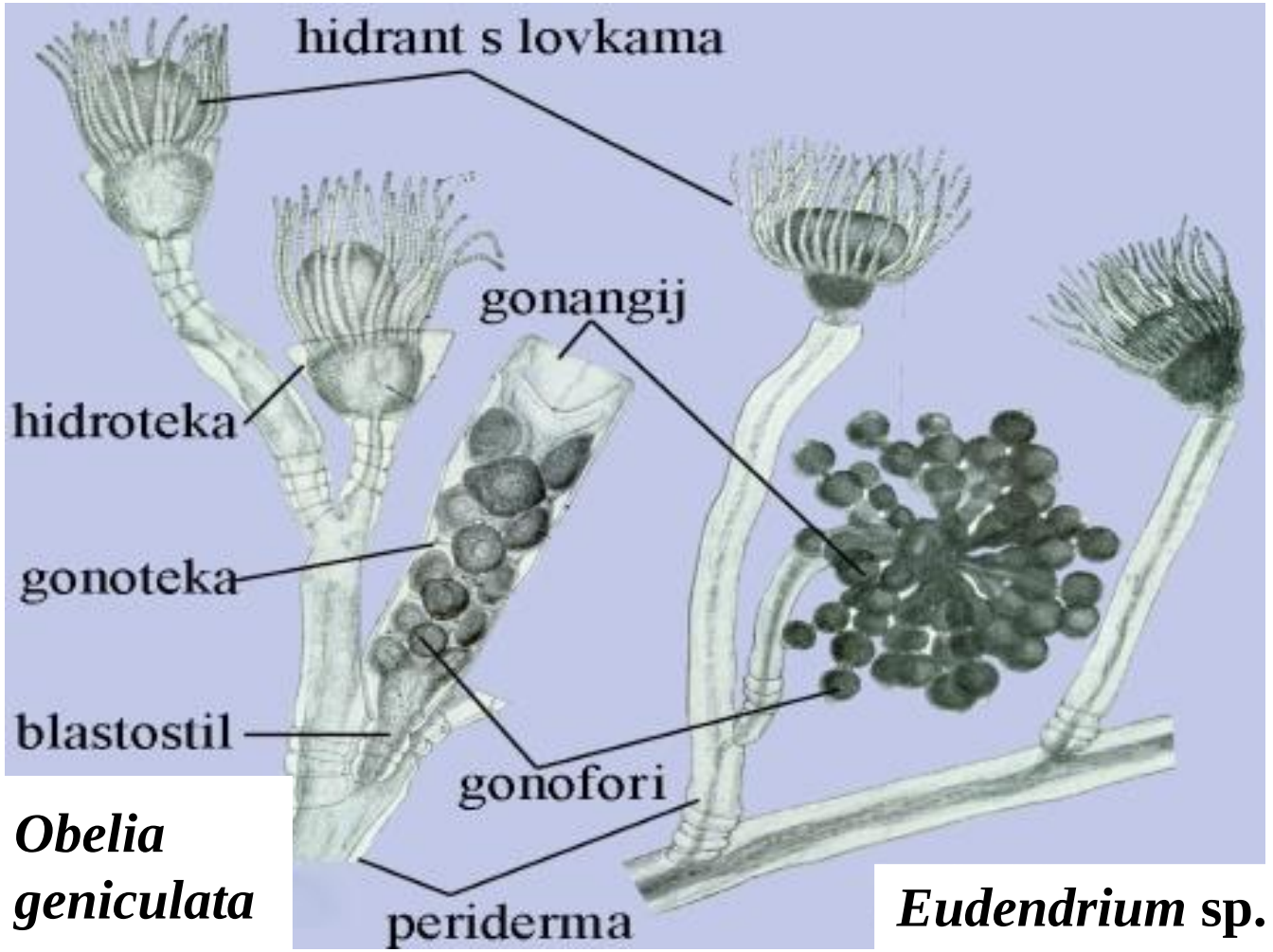
Razred: HYDROZOA – obrubnjaci

***Aglaura* sp. – građa hidromeduze**

- **EKSUMBRELA**
- **SUBUMBRELARNI PROSTOR**
- **VELUM**
- **LOVKE**
- **GASTROVASKULARNA ŠUPLJINA**
- **MANUBRIJ**
- **GONADE**
- **PRSTENASTA CIJEV**
- **RADIJALNA CIJEV**







Obelia geniculata



***Eudendrium* sp.**



Razred: HYDROZOA – obrubnjaci

***Eudendrium* sp. - dio kolonije**

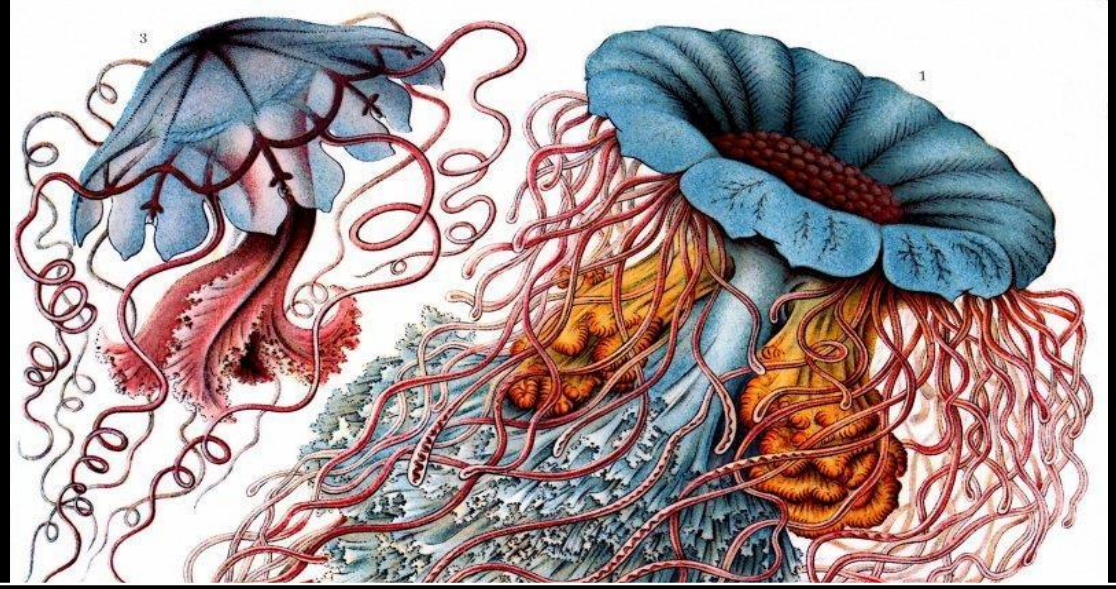
HIDROKAULUS
- CENOSARK
- PERISARK

HIDRANTI (ZOOIDI)

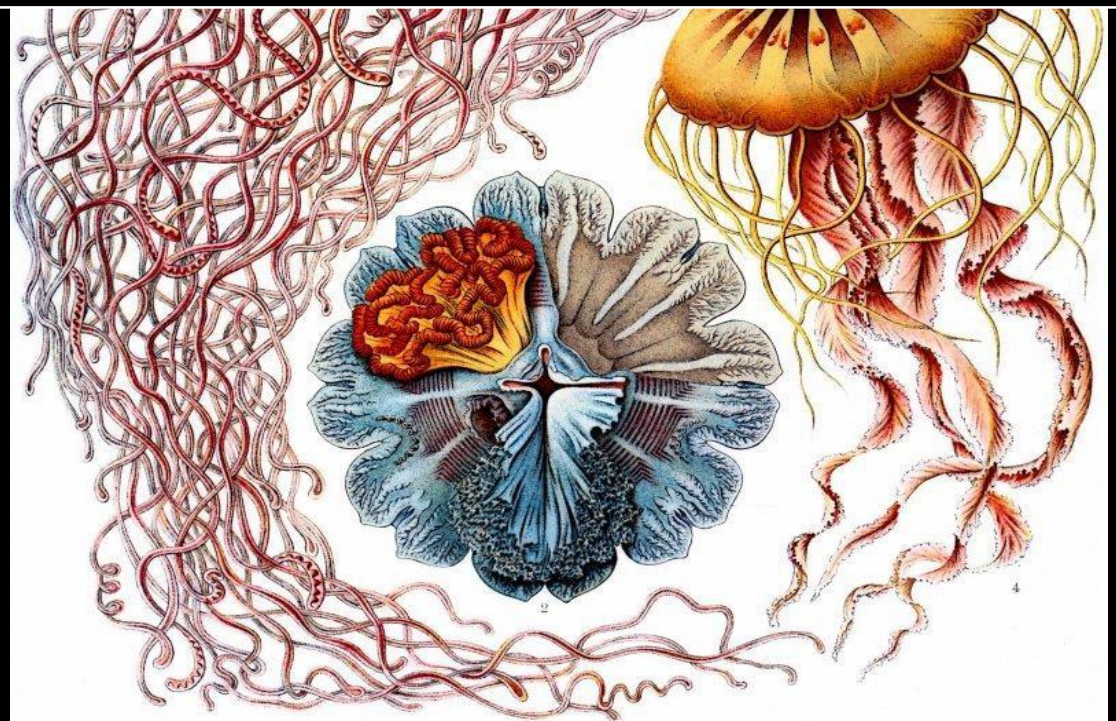
GASTROZOOID (TROFOZOOID)
- USNI ČUNJ
- GASTROVASKULARNA ŠUPLJINA
- LOVKE

GONOZOOID (GONANGIJ)
- GONOFOR
- BLASTOSTIL





SCYPHOZOA - REŽNJACI

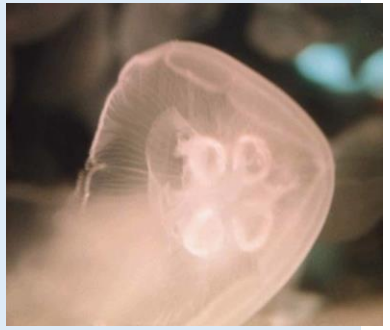


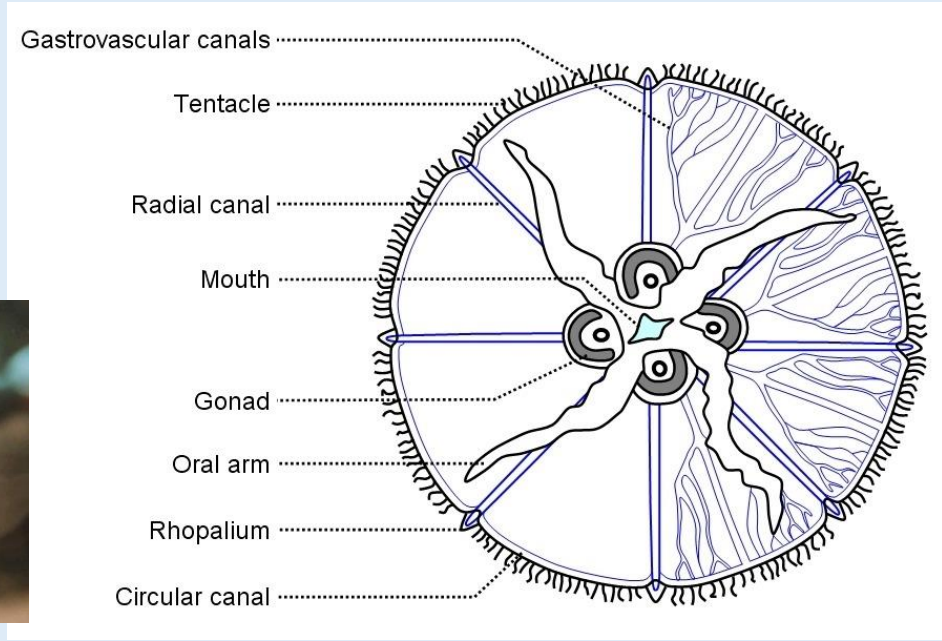


Razred: Scyphozoa (režnjaci)

- SKIFOMEDUZE:
  - usta na manubriju
  - **debela mezogleja**
  - gastrovaskularna šupljina (GVŠ):
    - srednji dio (**želudac**) + **4 gastralna odjeljka/džepa** (odvojeni s 4 pregrade)
    - **radijalne** + **prstenasta** cjevčica

Aurelia

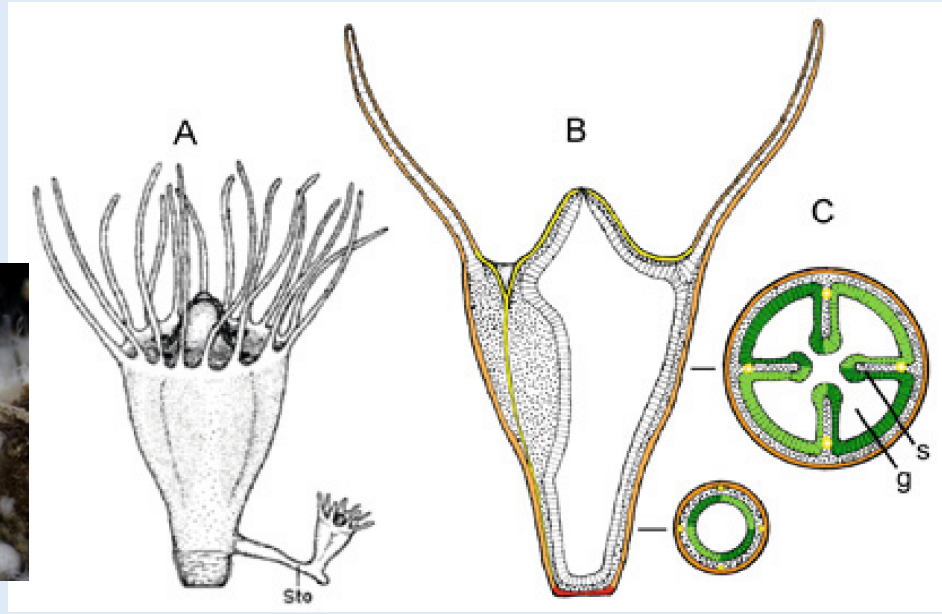


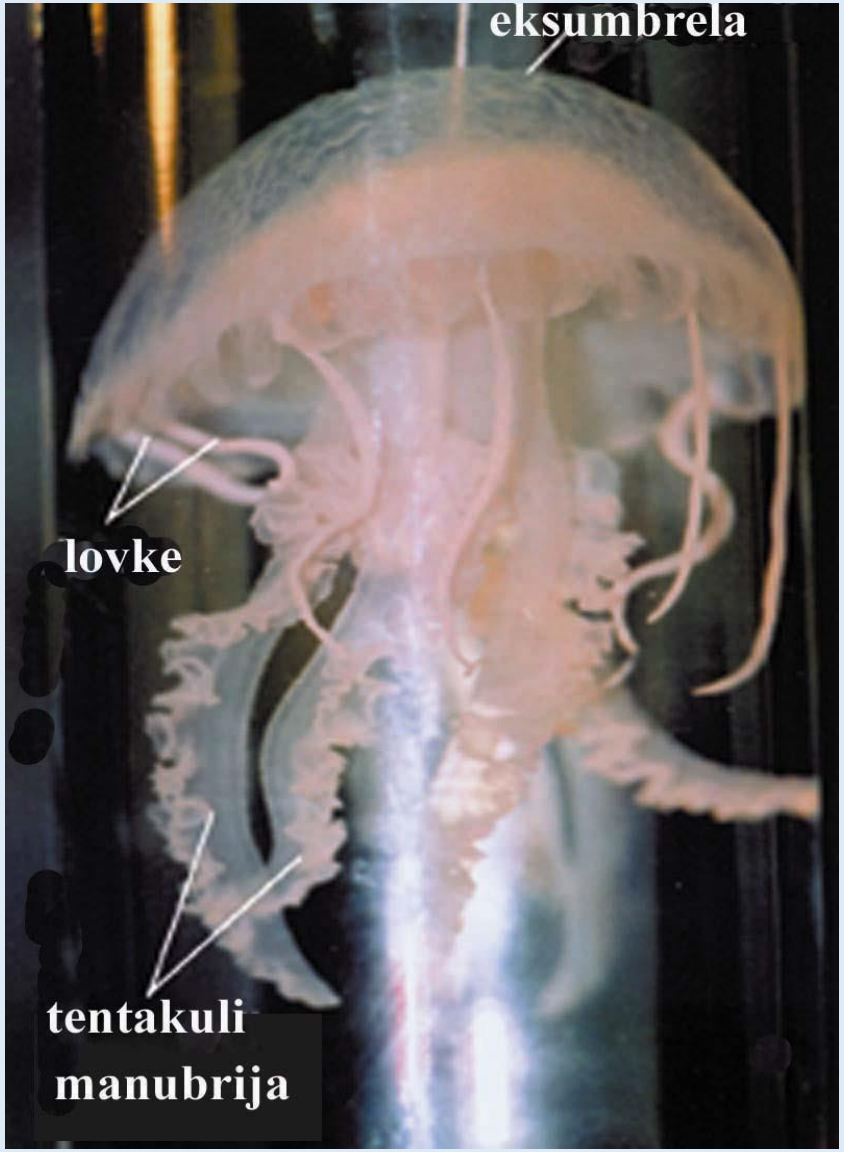


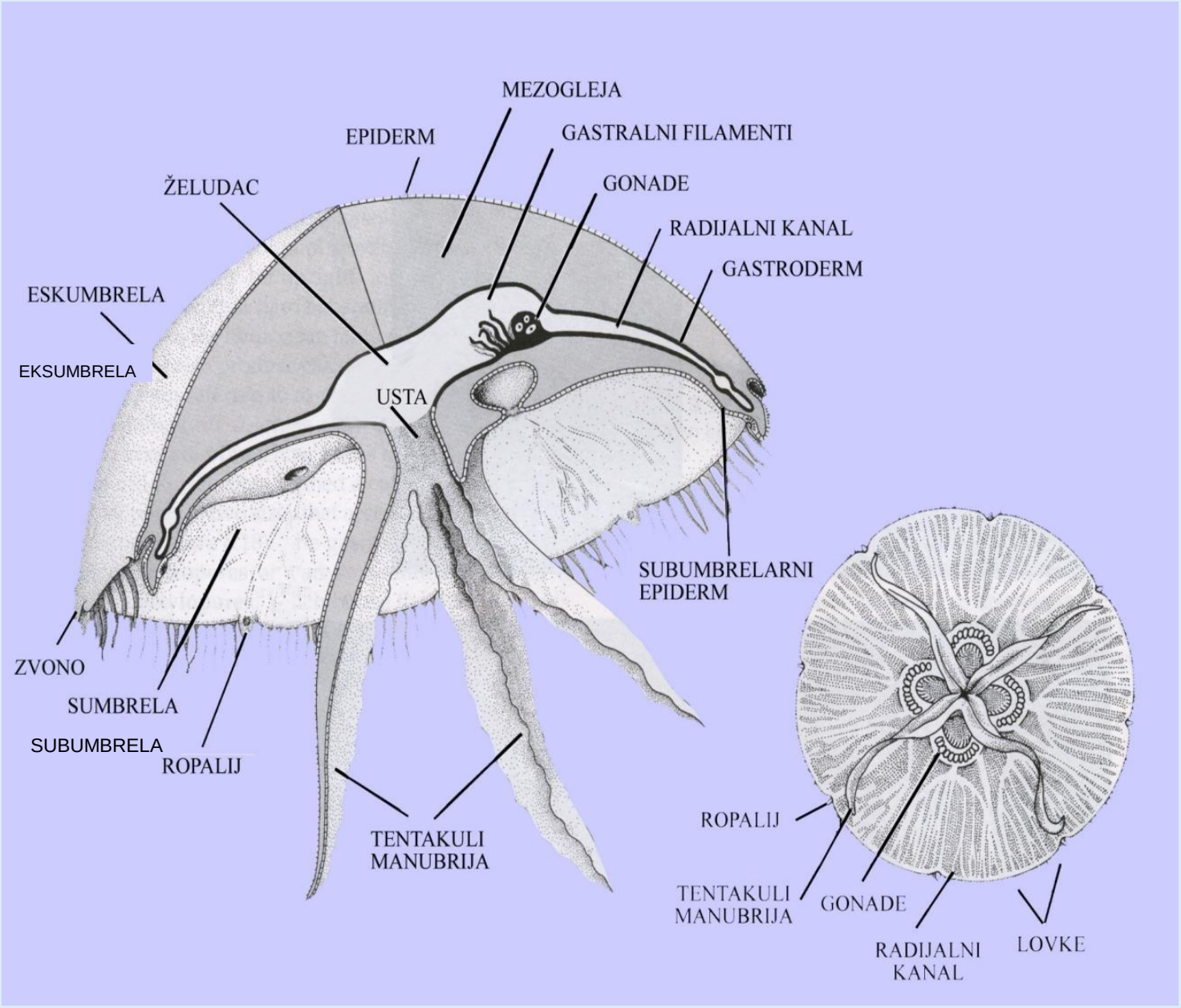
- SKIFOPOLIPI:
  - usta na **usnom čunju** (+16 lovki)
  - **nemaju** ždrijelo
  - GVŠ – **4 septe** → 4 gastralna džepa

Aurelia









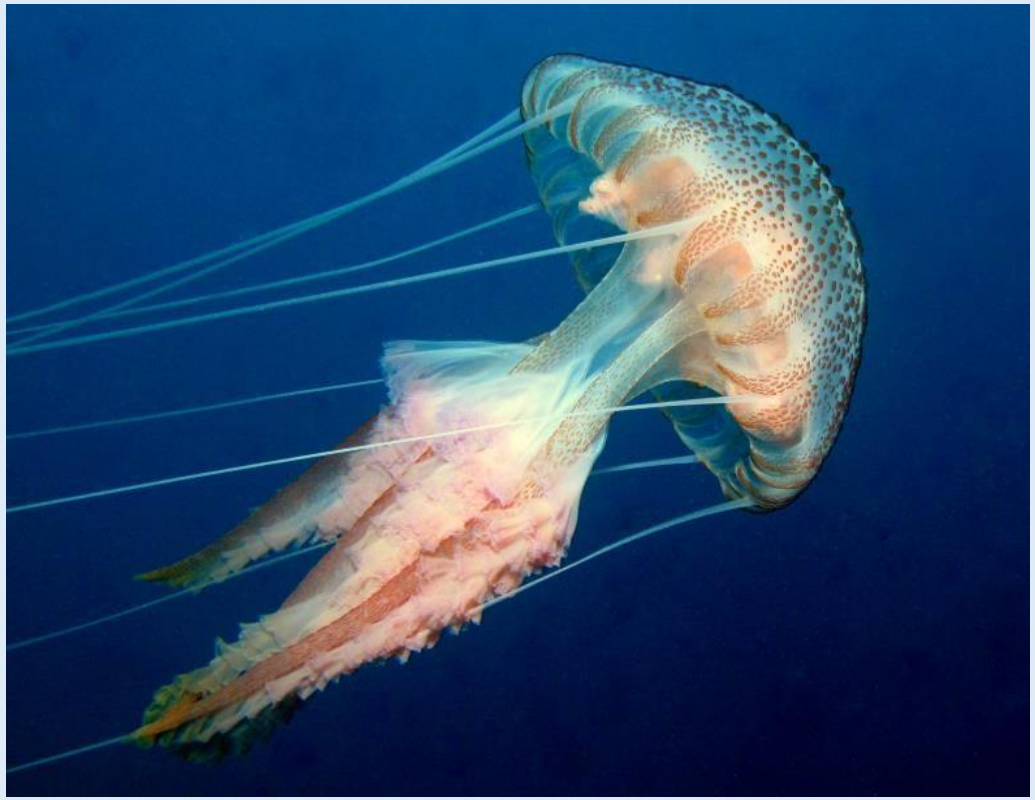
Vanjska i unutrašnja građa skifomeduze - morska mjesečina (*Pelagia noctiluca*)

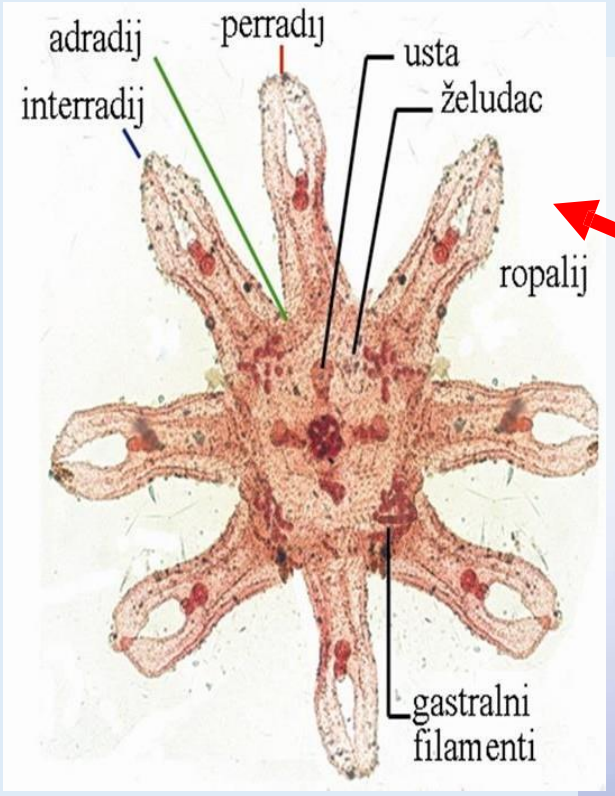
Razred: SCYPHOZOA - režnjaci

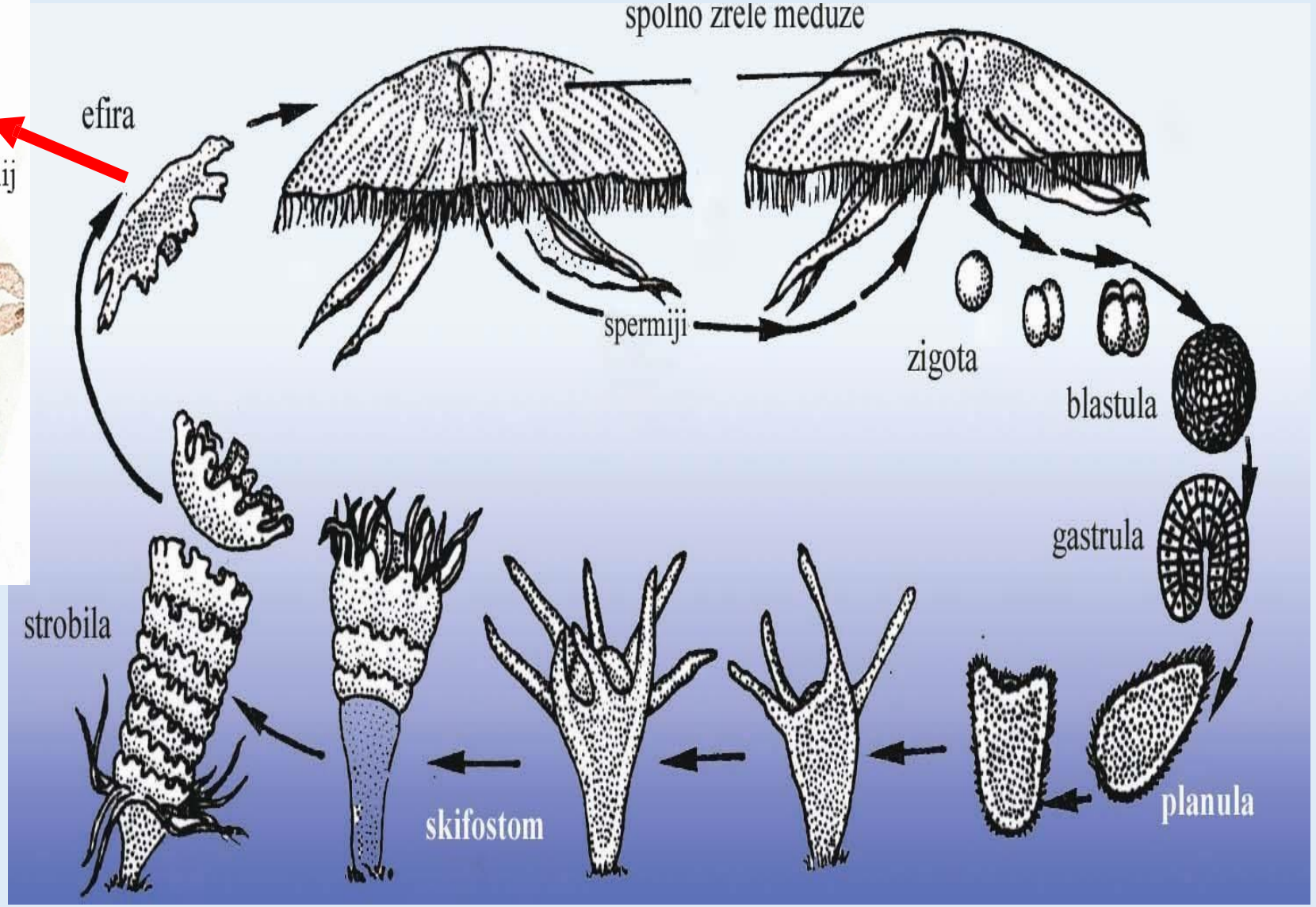
***Pelagia noctiluca* - morska mjesečina**

vanjski izgled i unutrašnja građa skifomeduze

- **EKSUMBRELA**
- **SUBUMBRELA**
- **LOVKE (8)**
- **RUBNI NASTAVCI (16)**
- **MANUBRIJ**
- **TENTAKULI MANUBRIJA (USNI TENTAKULI) (4)**
- **EPIDERM**
- **MEZOGLEJA**
- **GASTRODERM**
- **USTA**
- **˝ŽELUDAC˝**
- **GASTROVASKULARNA ŠUPLJINA**
- **RADIJALNI KANAL (16)**
- **GASTRALNI FILAMENTI**
- **GONADE**
- **ROPALIJ (8)**







- **nespolno**: pupanje/strobilacija polipa
- **spolno**: meduza

Životni ciklus skifomeduze, uhati klobuk *(Aurelia aurita)*



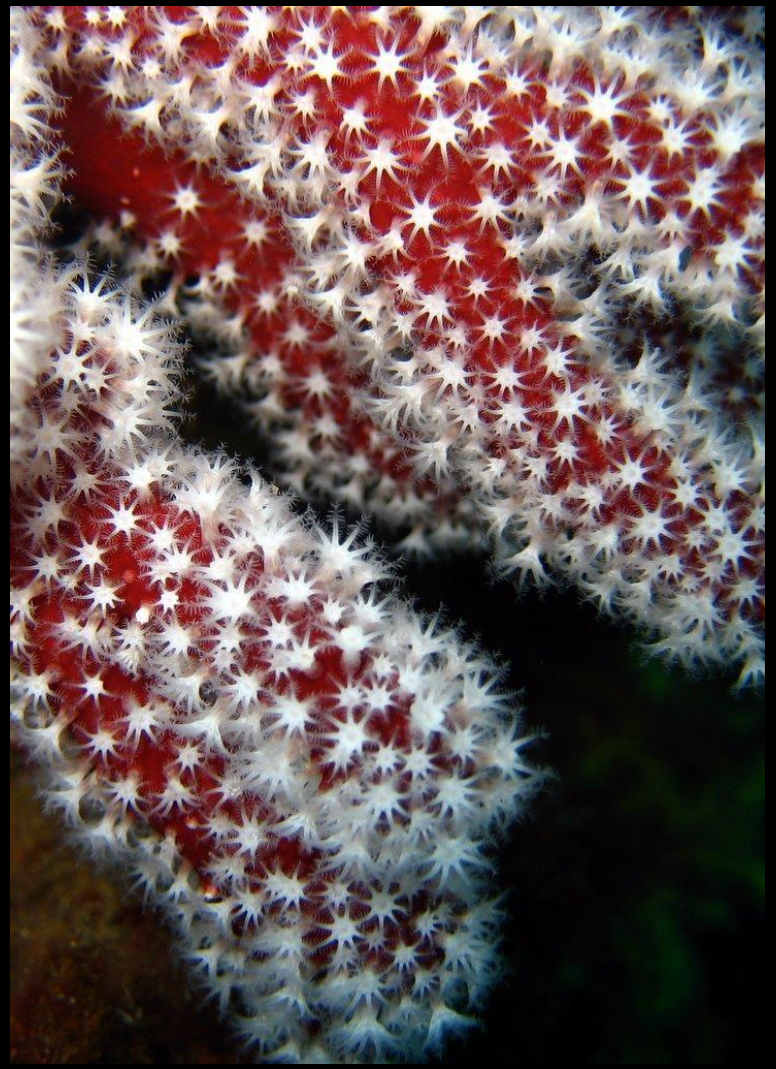
ANTHOZOA - KORALJI



Podrazred:



Hexacorallia



Octocorallia

Podrazred: Hexacorallia



Actinia equina (crvena moruzgva)

Cladocora caespitosa (busenasti koralj)





Adamsia palliata
(plaštana moruzgva)



Anemonia viridis (smeđa vlasulja)



Cerianthus membranaceus
(opnena voskovica)

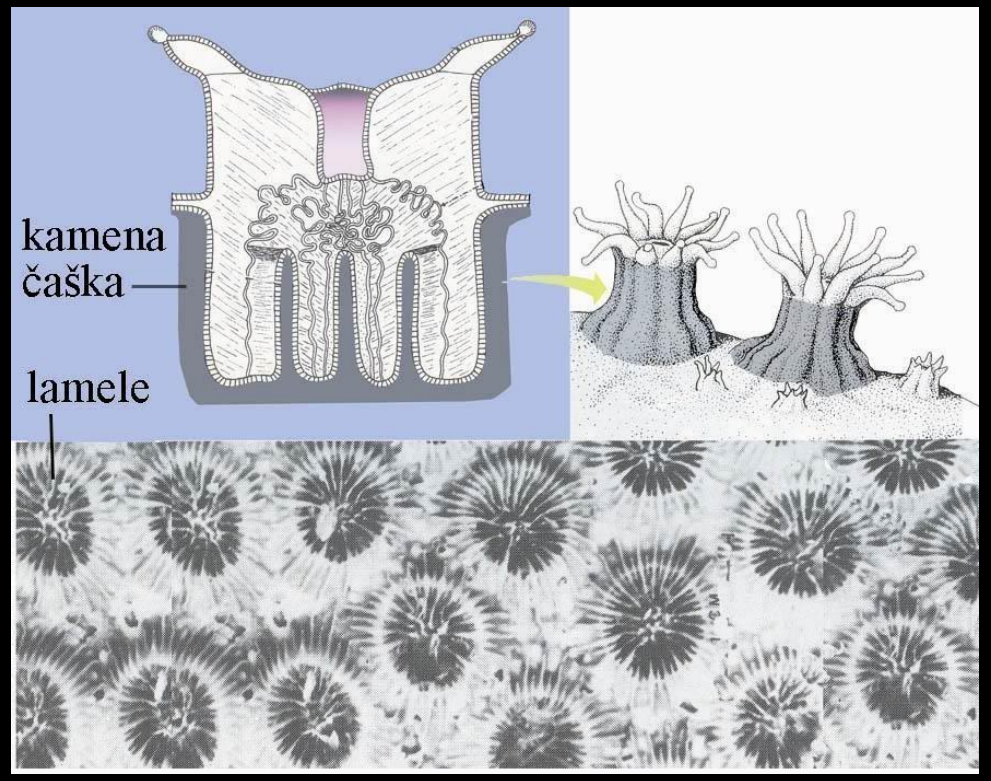
Građa egzoskeleta Hexacorallia

red: Scleractinia/Madreporaria (kameni koralji)





Caryophyllia inornata



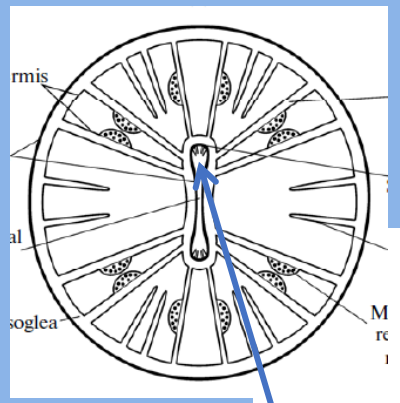


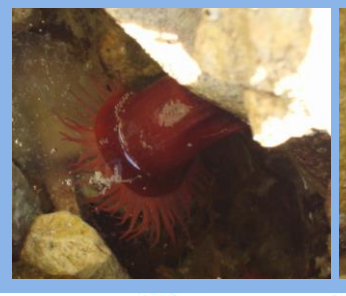
Razred: Anthozoa (koralji)

Podrazred: Hexacorallia

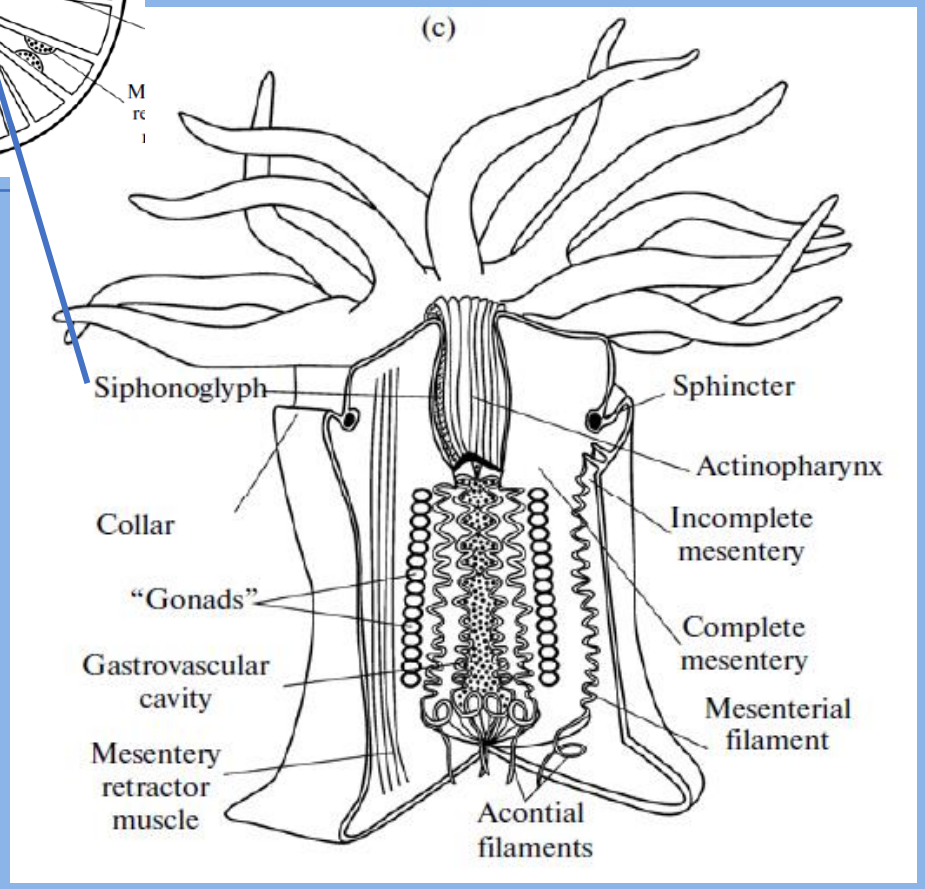
POLIP:

- **ždrijelo:** između usta i GVŠ
  - trepetljikavi žlijebovi (**sifonoglifi**) → strujanje vode u gastrovaskularnu šupljinu









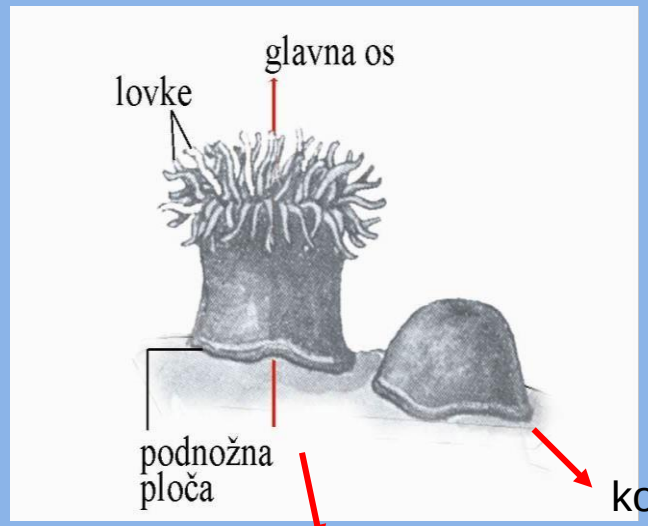
- **gastrovaskularna šupljina:**
  - podijeljena na **gastralne džepove**
    - **potpune septe** – srasle sa ždrijelom
    - **nepotpune septe** – strše slobodno u šupljinu
      - **6** ili umnožak od **6**
      - septalni otvori

Razred: ANTHOZOA - koralji
Podrazred: HEXACORALLIA
***Actinia equina* - crvena moruzgva**

https://www.youtube.com/watch?v=ysOmq71fcMk&ab_channel=ErnieKovacs

A. equina - vanjski izgled

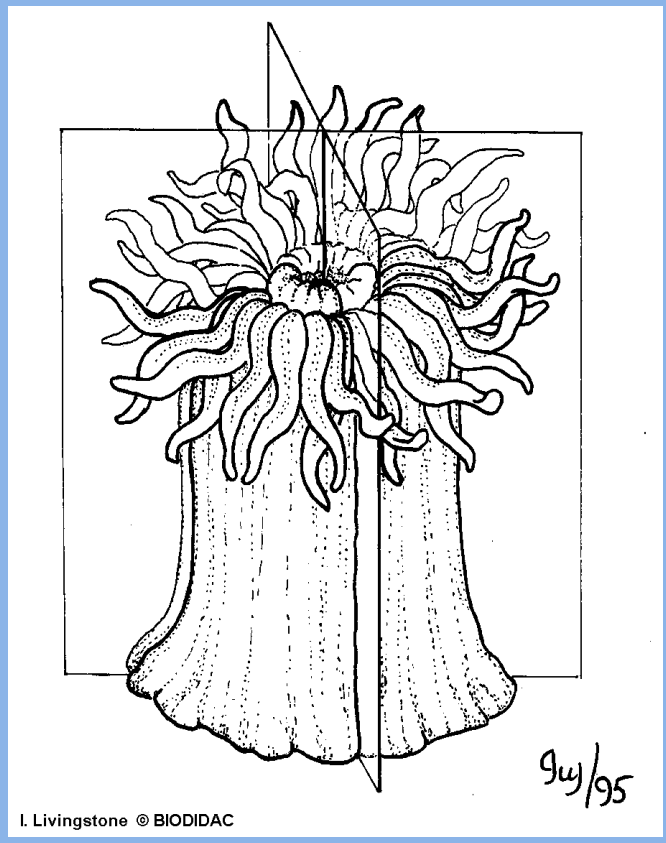
- **LOVKE**
- **USNI OTVOR**
- **USNO POLJE**
- **STIJENKA TIJELA (KOLUMNA)**
- **PODNOŽNA PLOČA**



kontrahirana – oseka

ispružena - plima

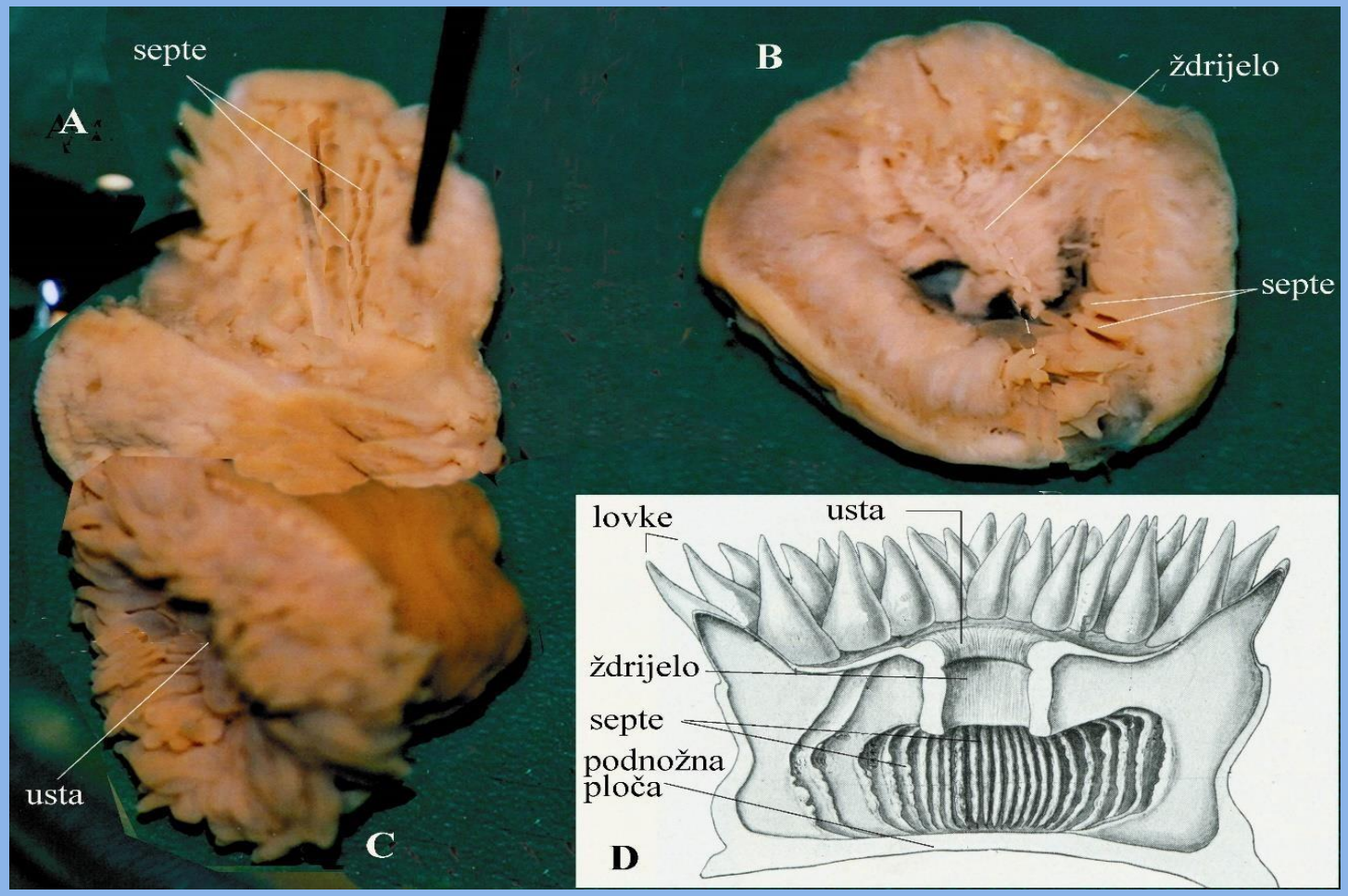




Razred: ANTHOZOA - koralji
Podrazred: HEXACORALLIA
***Actinia equina* - crvena moruzgva**

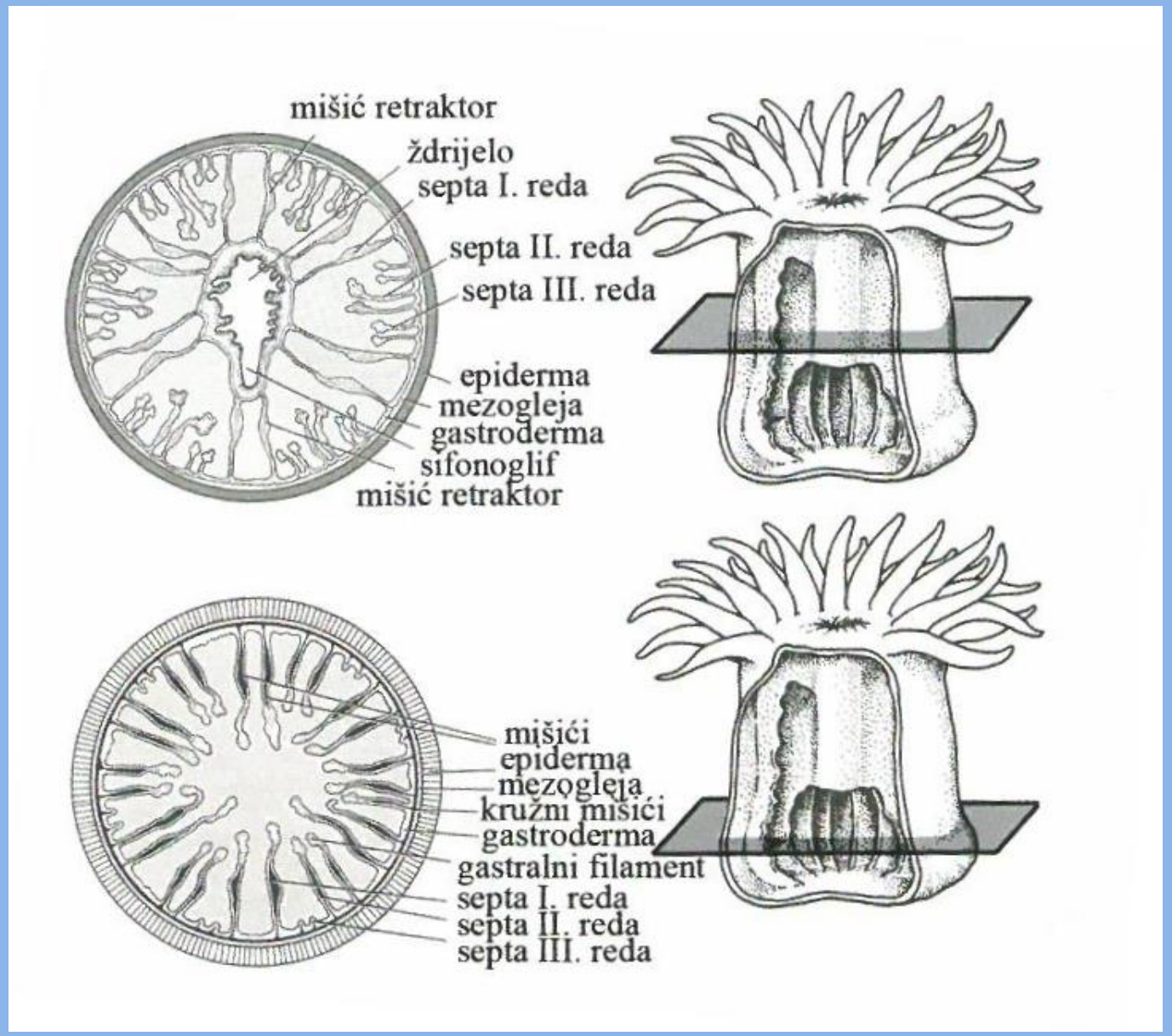
A. equina – uzdužni presjek

- **LOVKE**
- **USTA**
- **ŽDRIJELO**
- **SEPTE**
- **PODNOŽNA PLOČA**

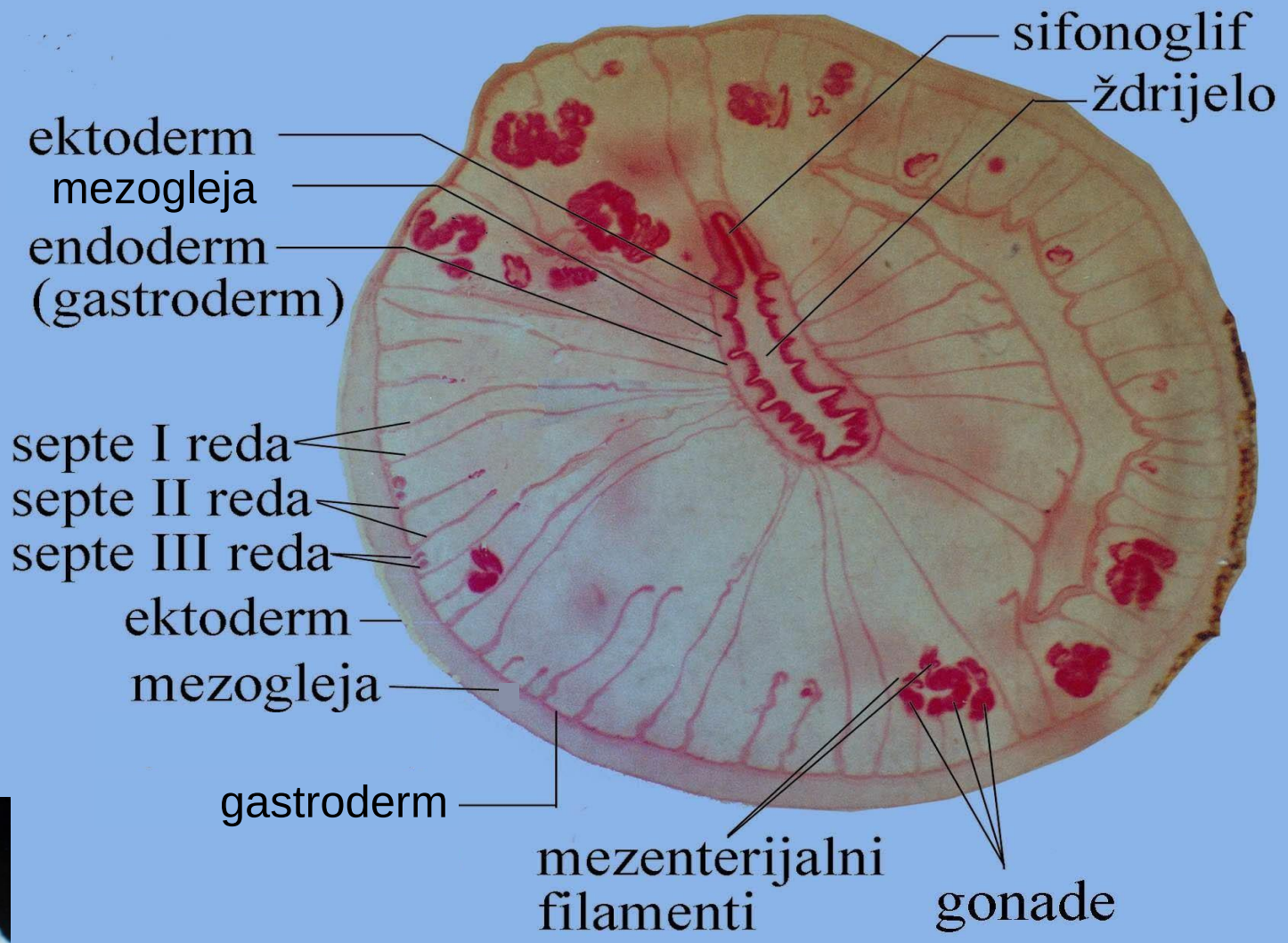


Razred: Anthozoa (koralji)

- *Actinia equina* (crvena moruzgva)
  - **poprečni** presjek kroz tijelo:
    - u visini ždrijela,
    - u visini gastrovaskularne šupljine







***Sagartia dohrnii* - poprečni presjek u visini ždrijela**

https://www.youtube.com/watch?v=P8Jf5PXDSpU&feature=emb_logo&ab_channel=KarenCangialosi

Razred: ANTHOZOA - koralji
Podrazred: HEXACORALLIA
***Sagartia dohrnii* (*Amphianthus dohrnii**)**

**** novo ime vrste***

***Sagartia dohrnii* - poprečni presjek u visini ždrijela**

- **ŽDRIJELO**
- **PREGRADA I REDA (POTPUNA SEPTA)**
- **PREGRADA II REDA (NEPOTPUNA SEPTA)**
- **PREGRADA III REDA (NEPOTPUNA SEPTA)**
- **GASTROVASKULARNA ŠUPLJINA**
- **EPIDERM**
- **MEZOGLEJA**
- **GASTRODERM**

- **SULKUS (SIFONOGLIF)**
- **SULKALNA STRANA**
- **ASULKALNA STRANA**
- **GASTRALNI (MEZENTERIJALNI) FILAMENTI**
- **GONADE**
- **MIŠIĆ RETRAKTOR NA SEPTI**

Podrazred: Octocorallia



Veretillum cynomorium
(narančasti veretilum)



Alcyonium palmatum
(blijeda ručica)



Eunicella cavolinii
(morsko stabalce)



Corallium rubrum
(crveni koralj)



Pennatula rubra
(crveno perce)

Razred: Anthozoa (koralji)

Podrazred: Octocorallia

- *Alcyonium palmatum* (blijeda ručica)
  - zadružni koralji – osnovu čini želatinozna mezogleja – **CENENHIM**
    - pojedinačni polip – **ANTOKODIJI**
    - gastrovaskularne šupljine antokodija povezane cijevima – **SOLENIJE**
  - 8 lovki (+ pinule)
  - gastrovaskularna šupljina – **8** septa → **8** gastralnih džepova



Razred: Anthozoa (koralji)

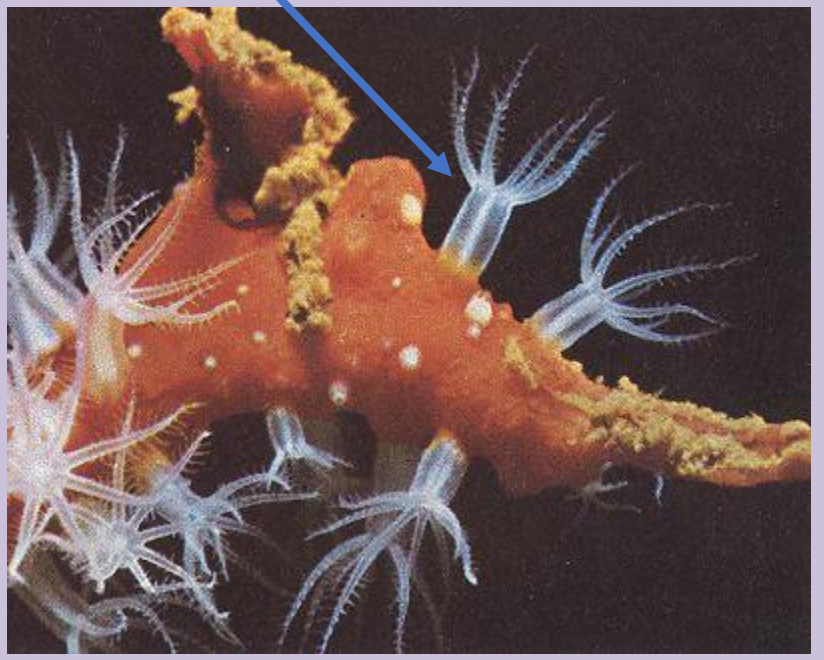
Podrazred: Octocorallia

- *Alcyonium palmatum* (blijeda ručica)

ANTOKODIJI







Podrazred: OCTOCORALLIA

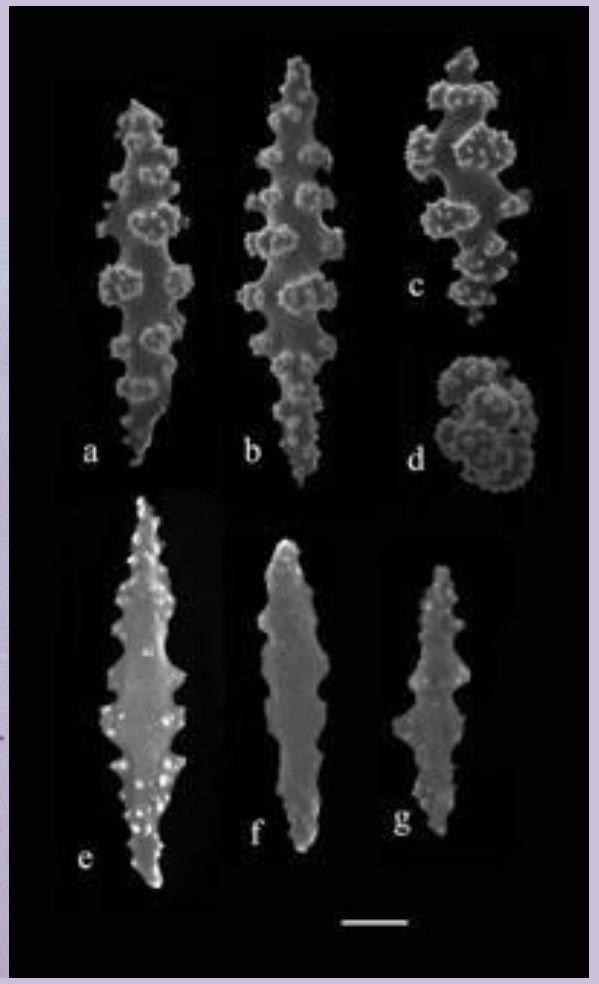
***Alcyonium palmatum* - blijeda ručica ili kožnati koralj**

***A. palmatum* – habitus**



***A. palmatum* – sklerodermiti**





- **ANTOKODIJ**
- **CENENHIM**

Razred: Anthozoa (koralji)

Podrazred: Octocorallia

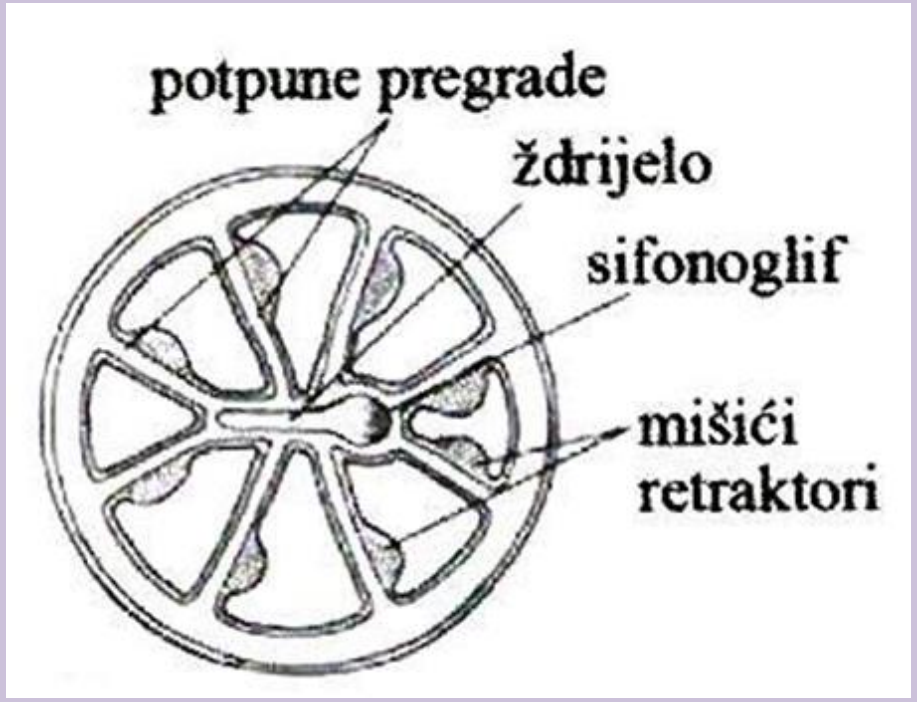
- *Alcyonium palmatum* (blijeda ručica)

U VISINI GVŠ



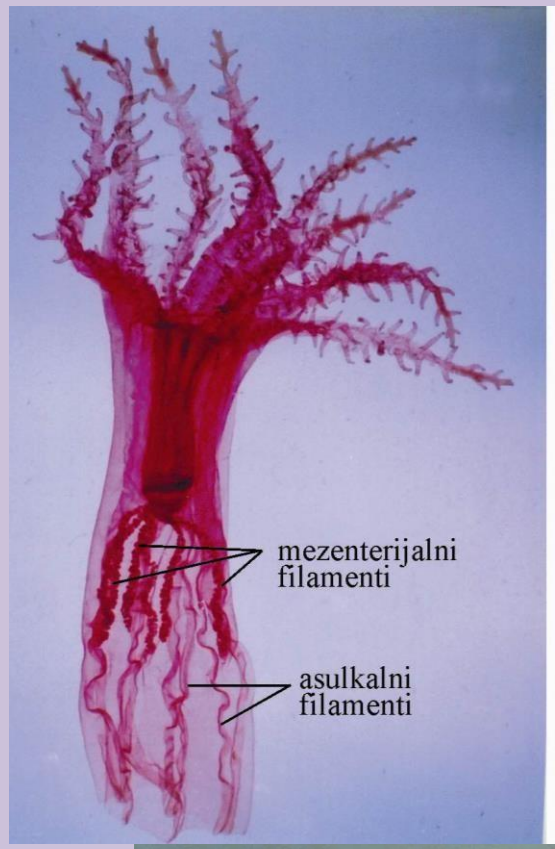
poprečni presjek kroz **antokodij**

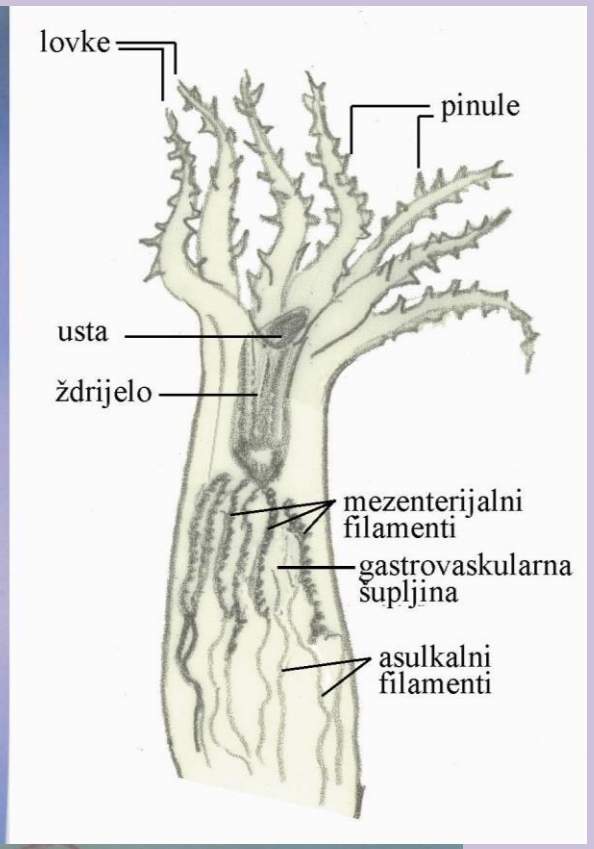
U VISINI ŽDRIJELA

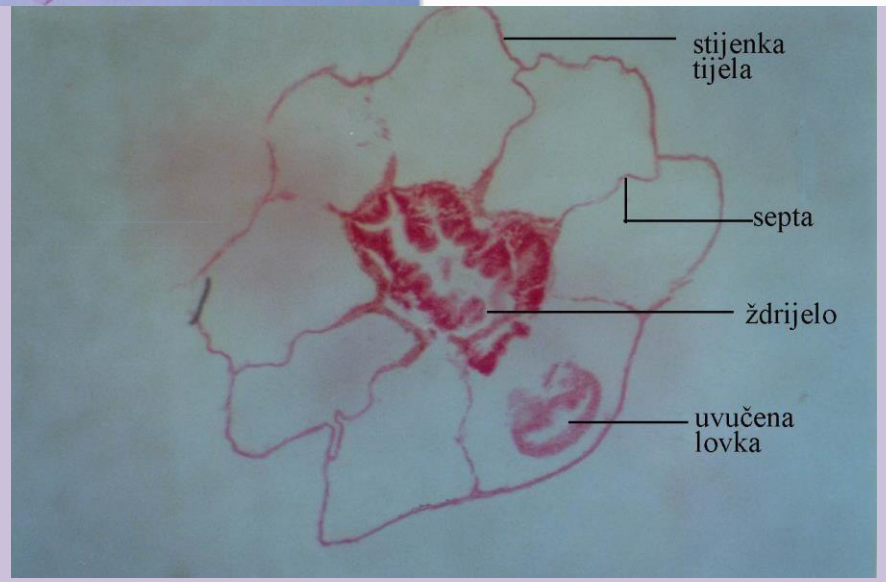




Veretillum cynomorium







Podrazred: OCTOCORALLIA

***Veretillum cynomorium* – narančasti veretilum**

***V. cynomorium* - građa polipa**

- **ANTOKODIJ**
- **LOVKE (8)**
- **PINULE**
- **PREGRADA (8)**
- **GASTRALNI FILAMENT (6) (žljezdane stanice)**
- **ASULKALNI FILAMENT (2) (stanice s bičevima)**
- **USNI OTVOR**
- **ŽDRIJELO**

ANTHOZOA	SCYPHOZOA	HYDROZOA
morski	morski	morski/slatkovodni
polip	polip i meduza	polip i meduza
pojedinačni i zadružni	pojedinačni	pojedinačni i zadružni
gonade – gastrodermalnog podrijetla	gonade – gastrodermalnog podrijetla	gonade – epidermalnog podrijetla
mezogleja sa stanicama	mezogleja sa stanicama	mezogleja bez stanica
žarnice u epidermi i u gastrodermi	žarnice u epidermi i u gastrodermi	žarnice u epidermi
polip:		
• GVŠ – 6 ili 8 pregrada • ždrijelo prisutno • usta na ravnoj usnoj ploči	• GVŠ – 4 pregrade • nema • usni čunj	• GVŠ – bez pregrada • nema • usni čunj
meduza:		
-	• nema velum • GVŠ s 4 pregrade • puno mezogleje	• velum prisutan • GVŠ nepodijeljena (4 radijalna kanala prisutna) • malo mezogleje