

Order Diptera

Family Chironomidae

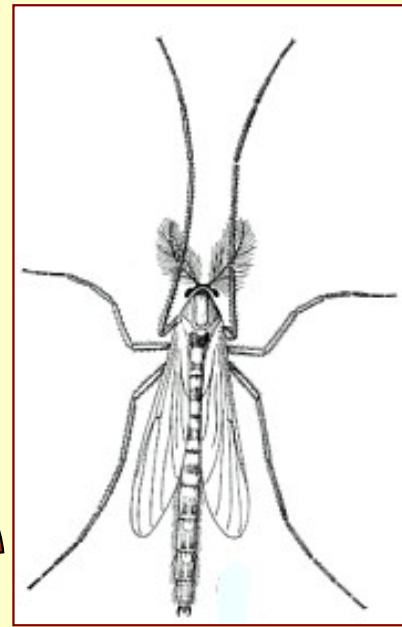


Austrian species inventory

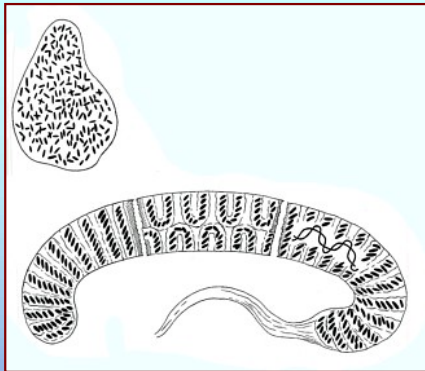
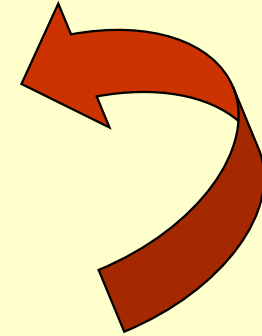
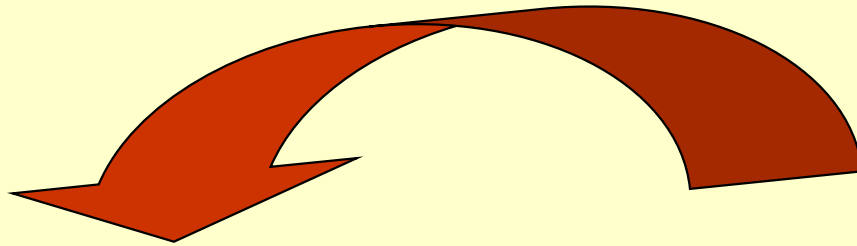
Podonominae	2
Buchonomyiinae	1
Tanypodinae	64
Diamesinae	41
Prodiamesinae	8
Orthoclaadiinae	237
Chironominae	
Chironomini	140
Pseudochironomini	1
Tanytarsini	100
	594

Chironomidae

Life cycle



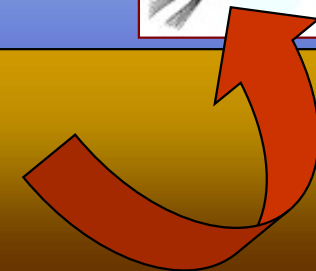
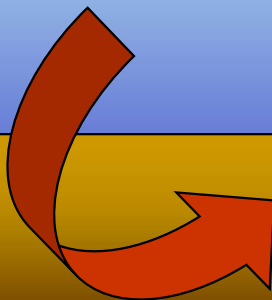
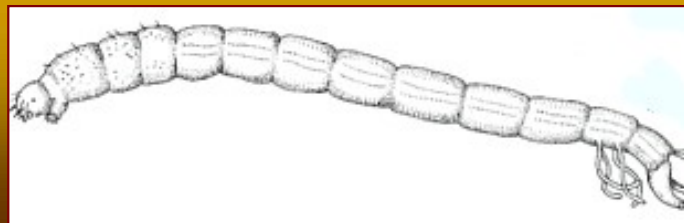
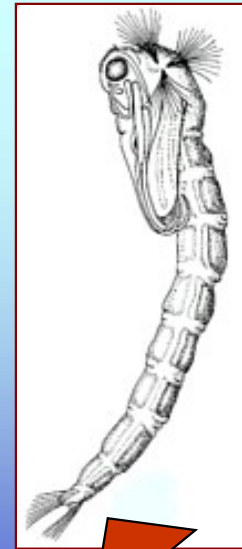
Imago
(5 days)



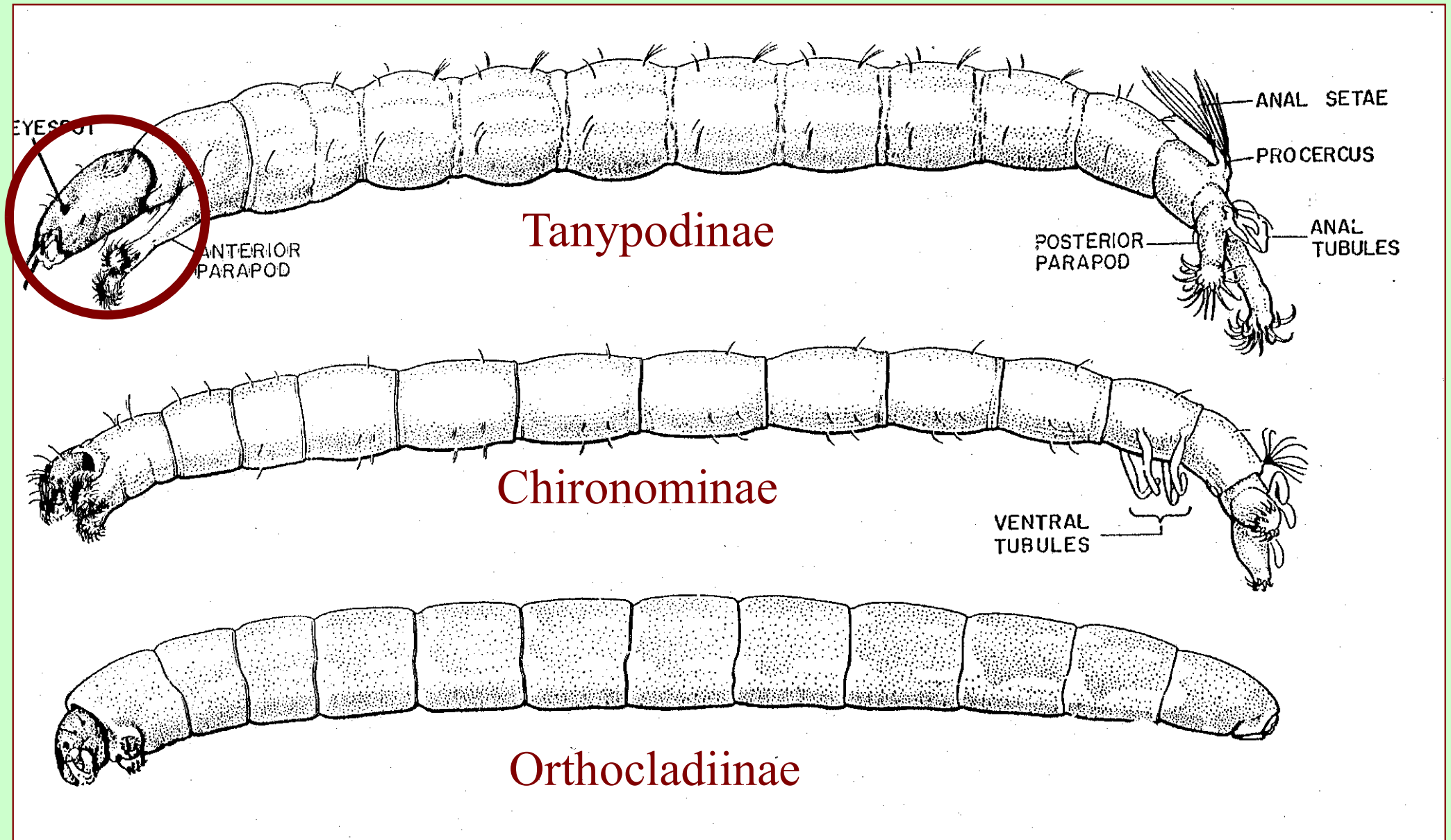
Egg
(approx. 10 days)

Pupa
(5-10 days)

4 larval instars
(approx. 340 days)

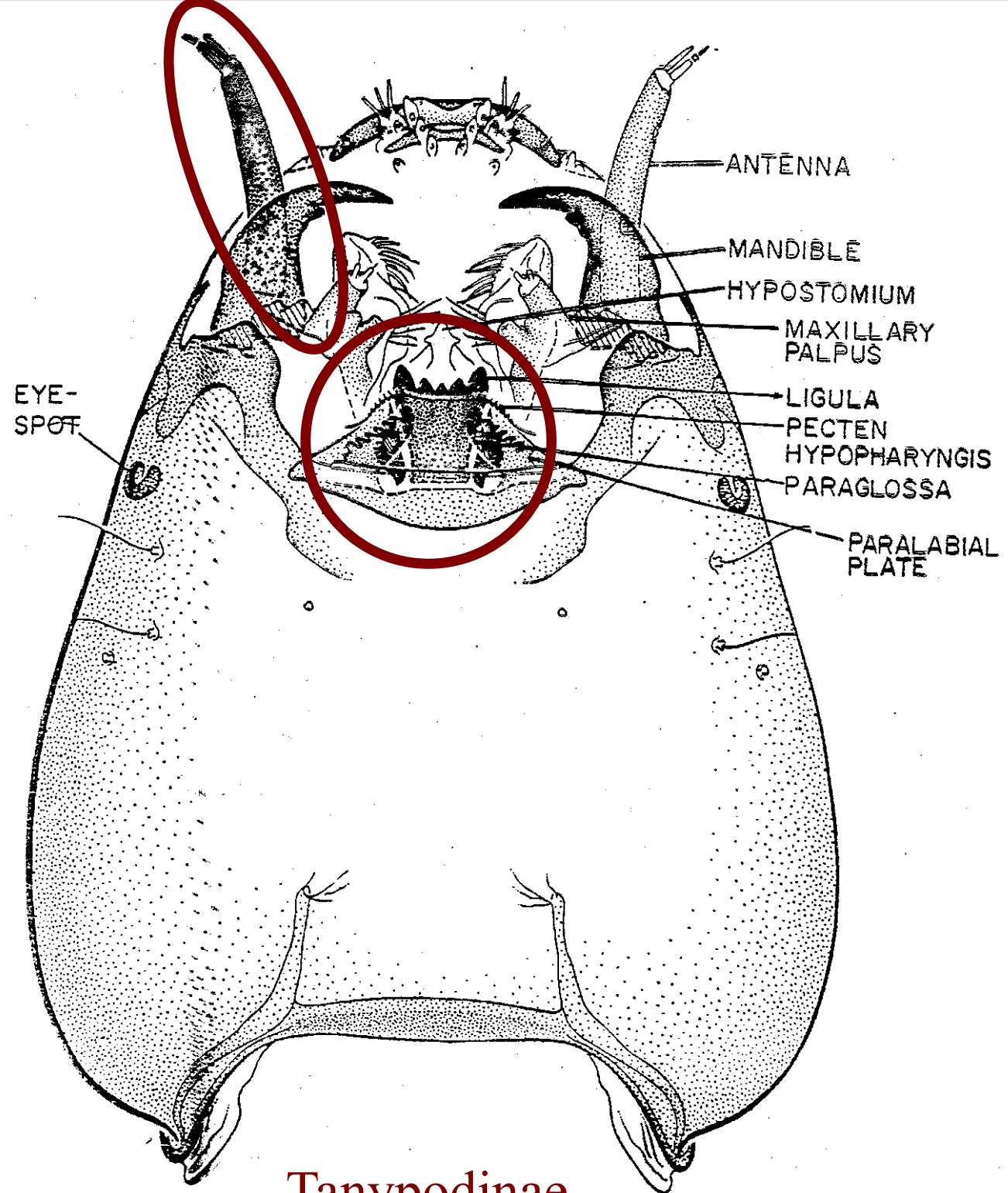


Chironomidae: Larval morphology



Chironomidae:

Larval morphology



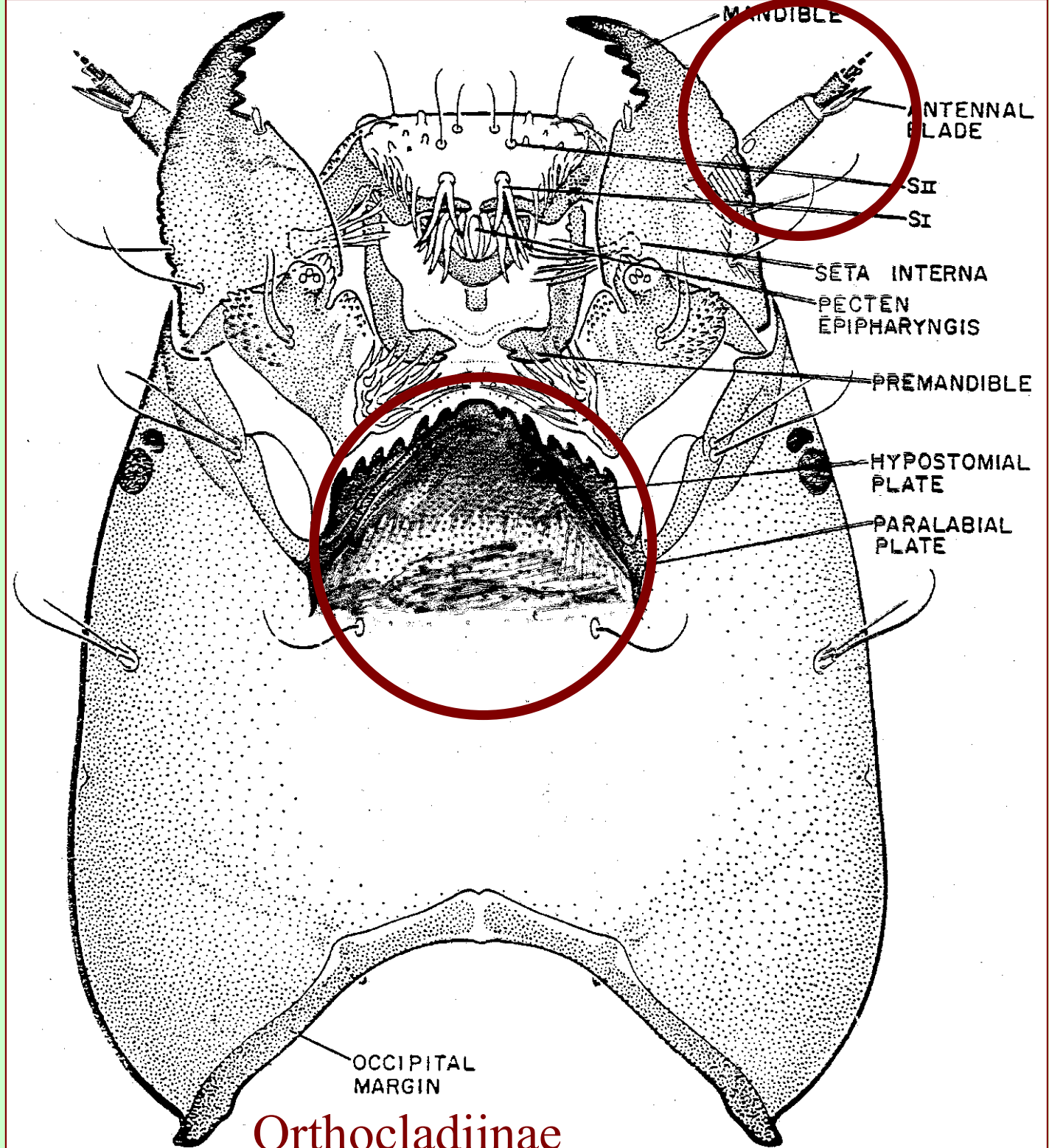
Tanypodinae



Tanypodinae
(Conchapelopia sp.)

Chironomidae:

Larval morphology

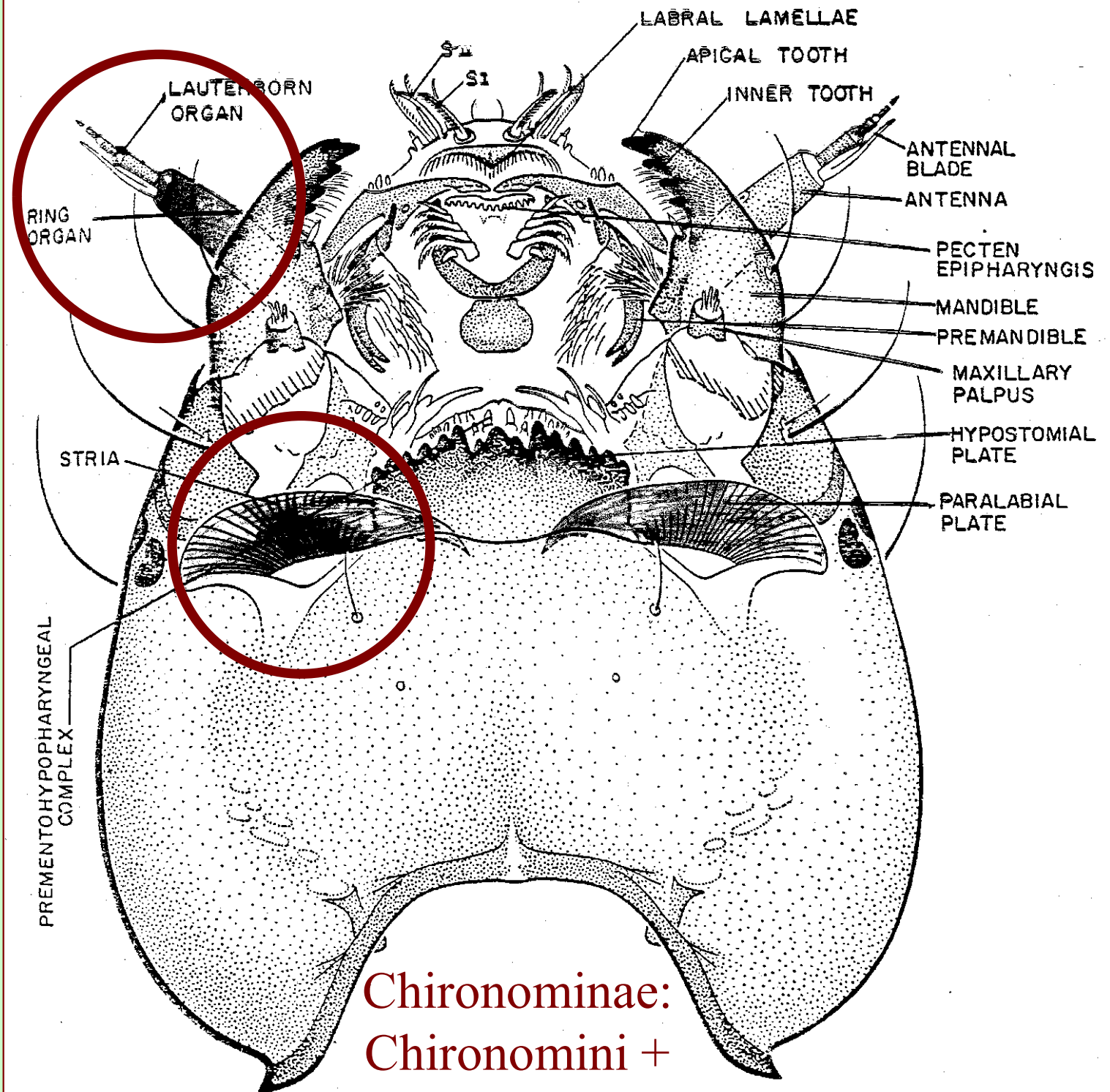




Eukiefferiella gracei

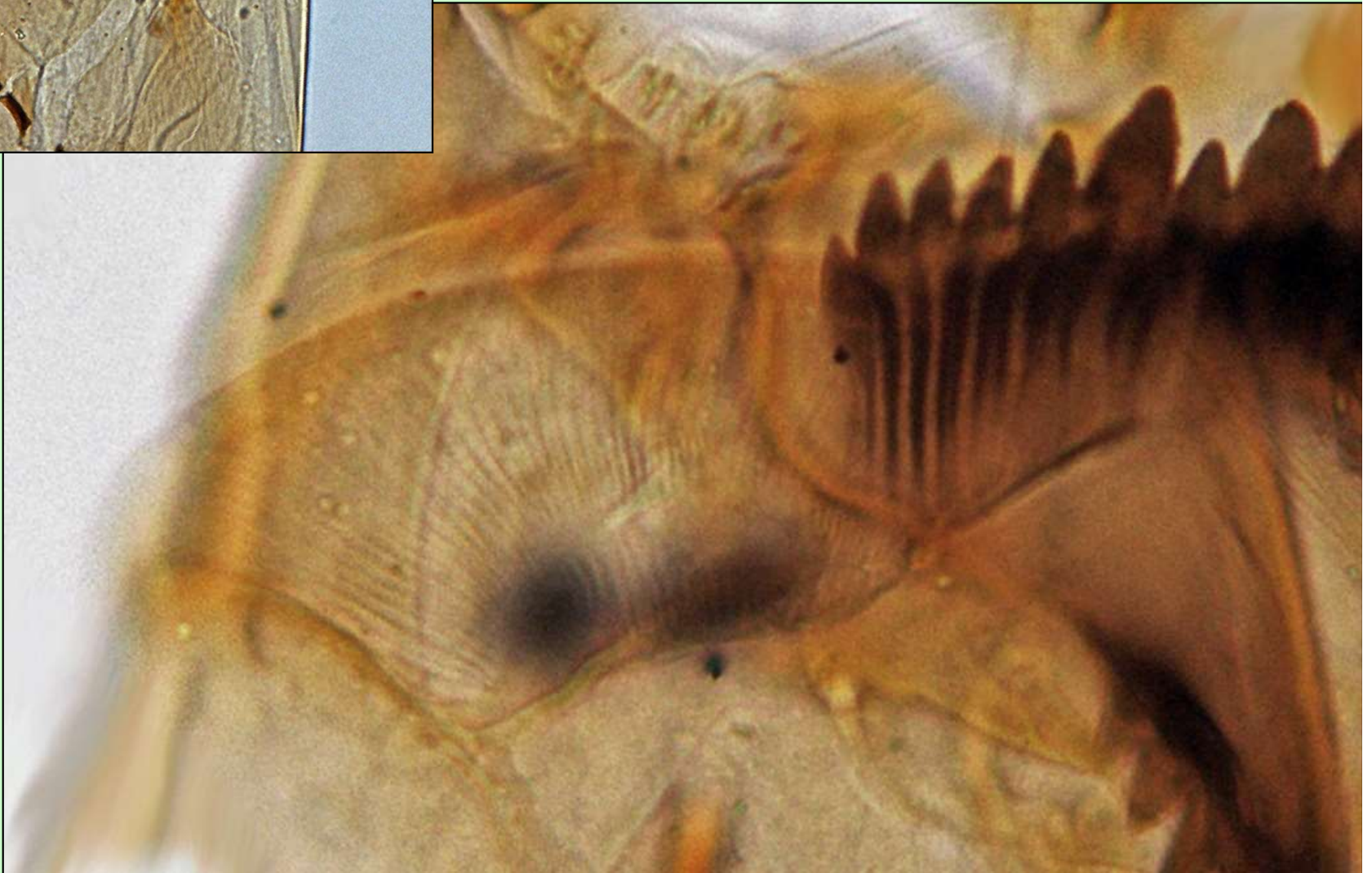
Chironomidae:

Larval morphology



Chironominae:
Chironomini +
Pseudochironomini

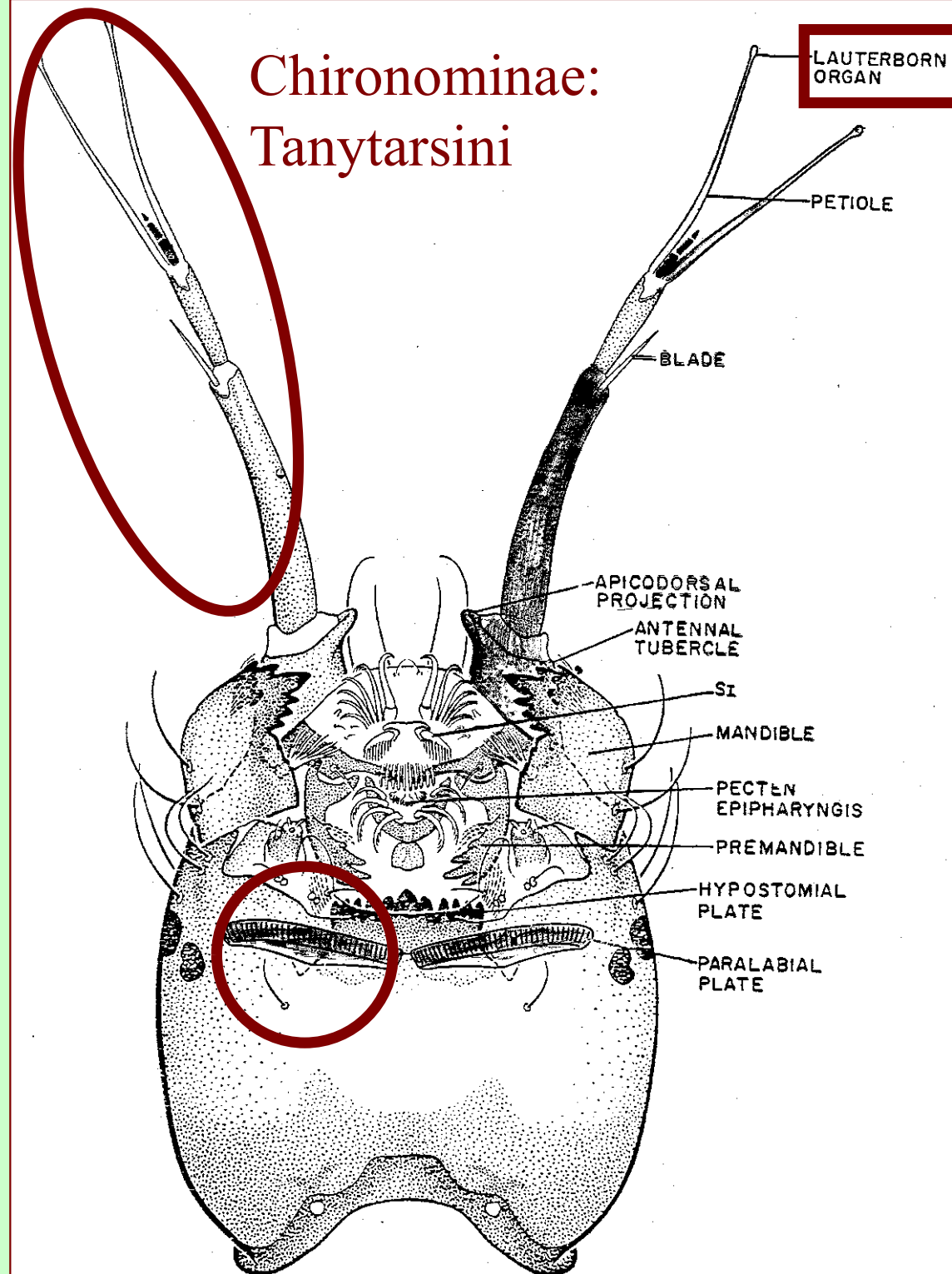
Chironomini
(Polypedilum scalaenum)



Chironomidae:

Larval morphology

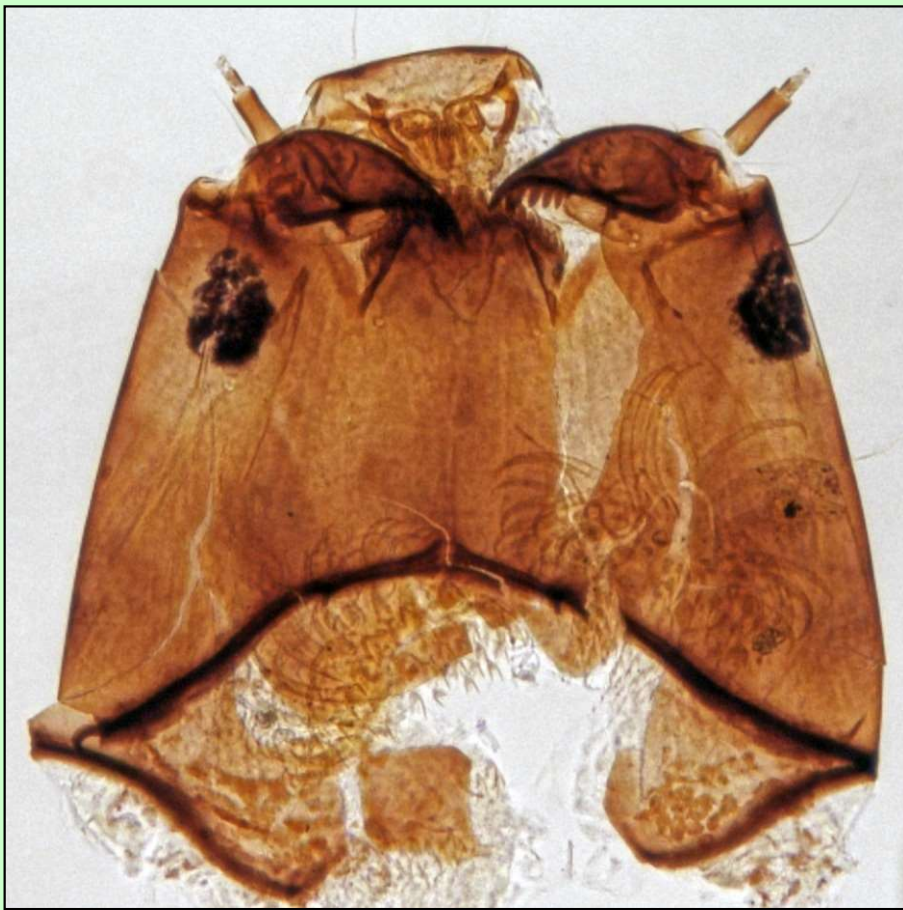
Chironominae: Tanytarsini





Tanytarsini
(Micropsectra atrofasciata)

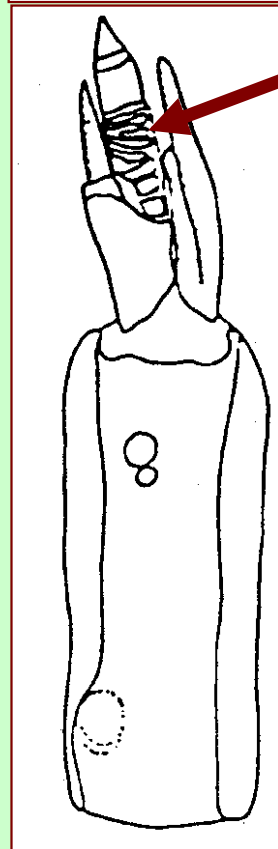




Diamesa sp.

Diamesinae

> sometimes
hairy head capsule



projection



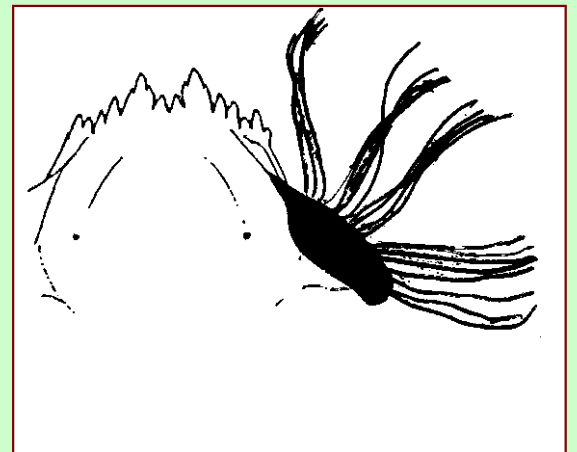
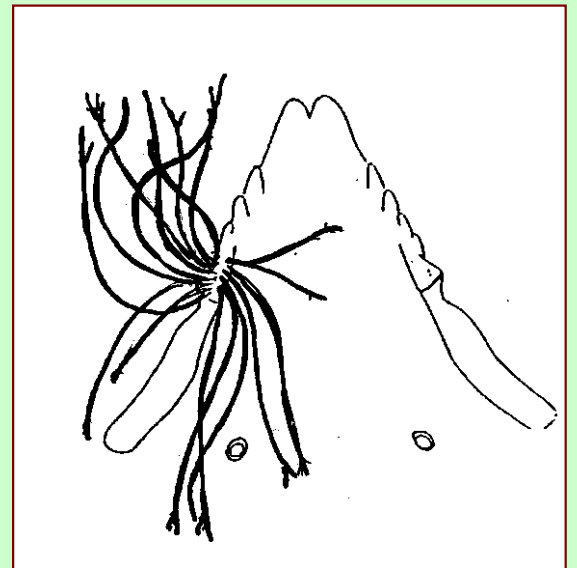
3rd antennal segment annulated

Prodiamesinae

„bearded“
hypostome

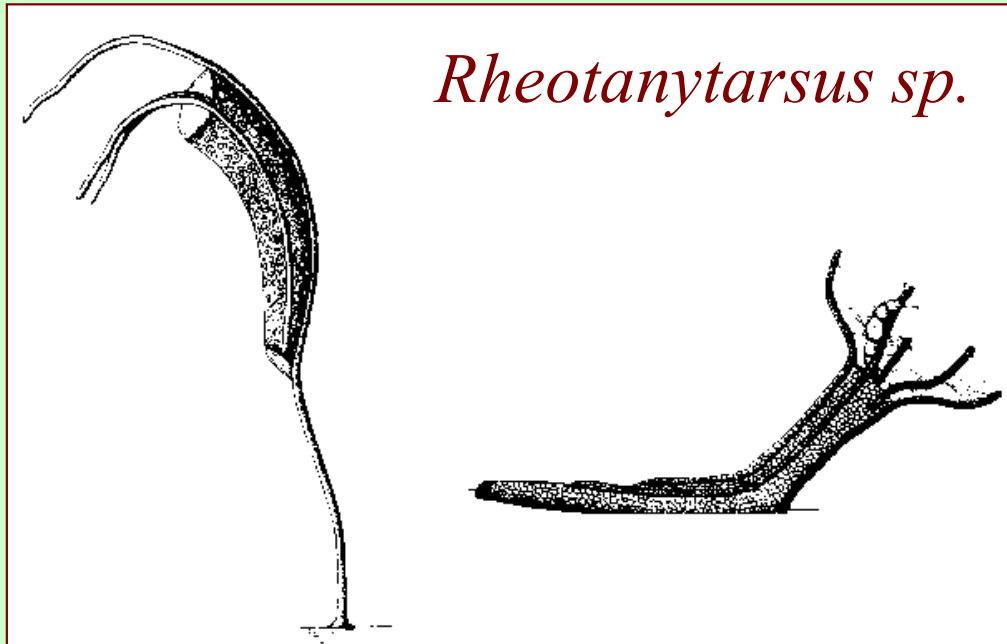


Prodiamesa olivacea



Chironomidae: feeding types

Filterers:



Chironomus plumosus:
mud tubes

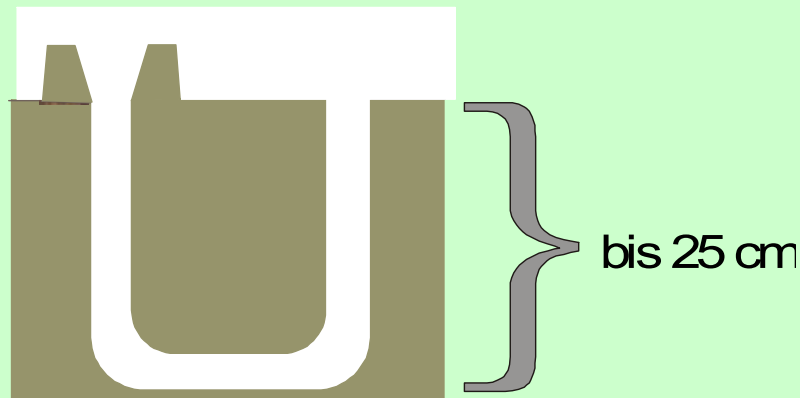
Lithotanytarsus sp.:
calcareous tubes

Chironomidae: feeding types

Sediment feeders:

many species of tribe Chironomini

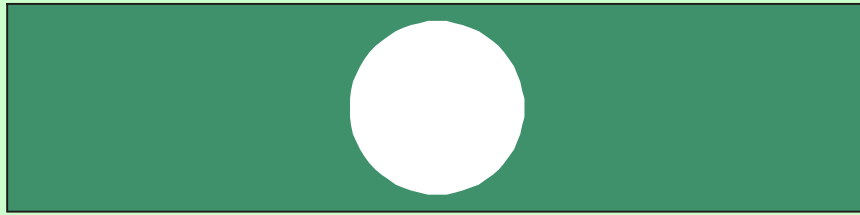
Phytophagous species:



- grazers in the profundal zone:
Sergentia sp.,
Heterotrissocladius sp.
- feeders on filamentous algae:
Psectrocladius sp. (*Spirogyra* spp.)

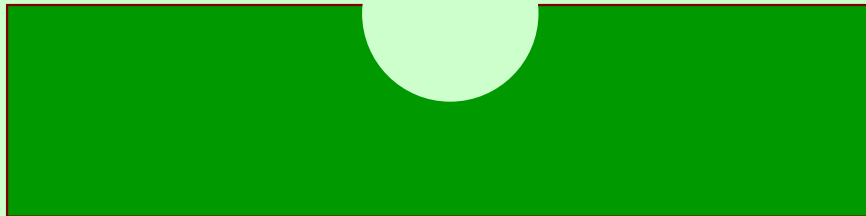
Chironomidae: feeding types

Phytophagous species:



- Mining species

Cricotopus brevipalpis
(*Potamogeton natans*)



Cricotopus trifasciatus

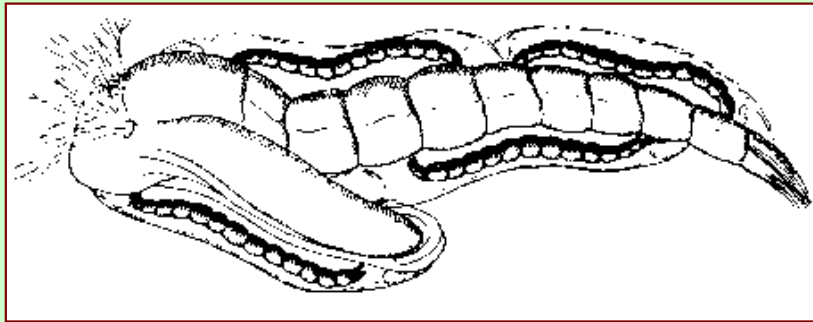
Chironomidae: feeding types

Carnivores:

- Tanypodinae: insect larvae
- *Xenochironomus* sp.: freshwater sponges
- *Cardiocladius* sp.: blackflies (larvae and pupae of Simuliidae)

Saprophagous species:

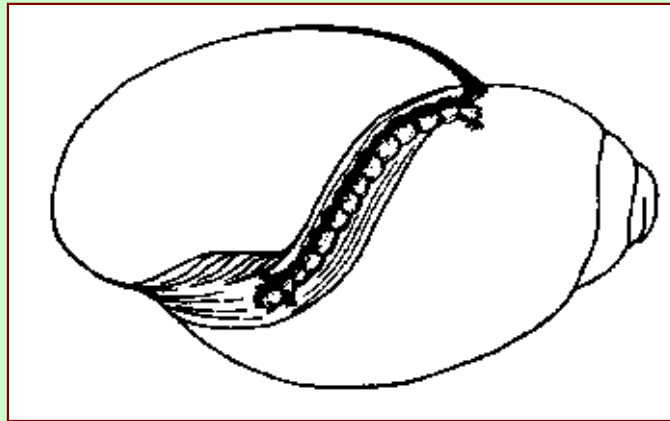
- *Parachironomus bacilliger*: dead Chironomus pupae



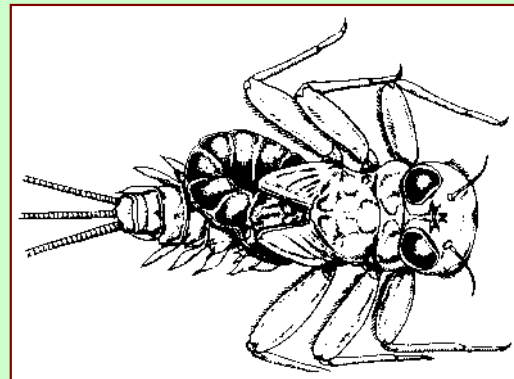
Chironomidae: feeding types

Parasites:

- *Parachironomus frequens*: colonies of Bryozoa
- *Parachironomus varus*: freshwater snails (*Physa fontinalis*, *Radix* spp.)

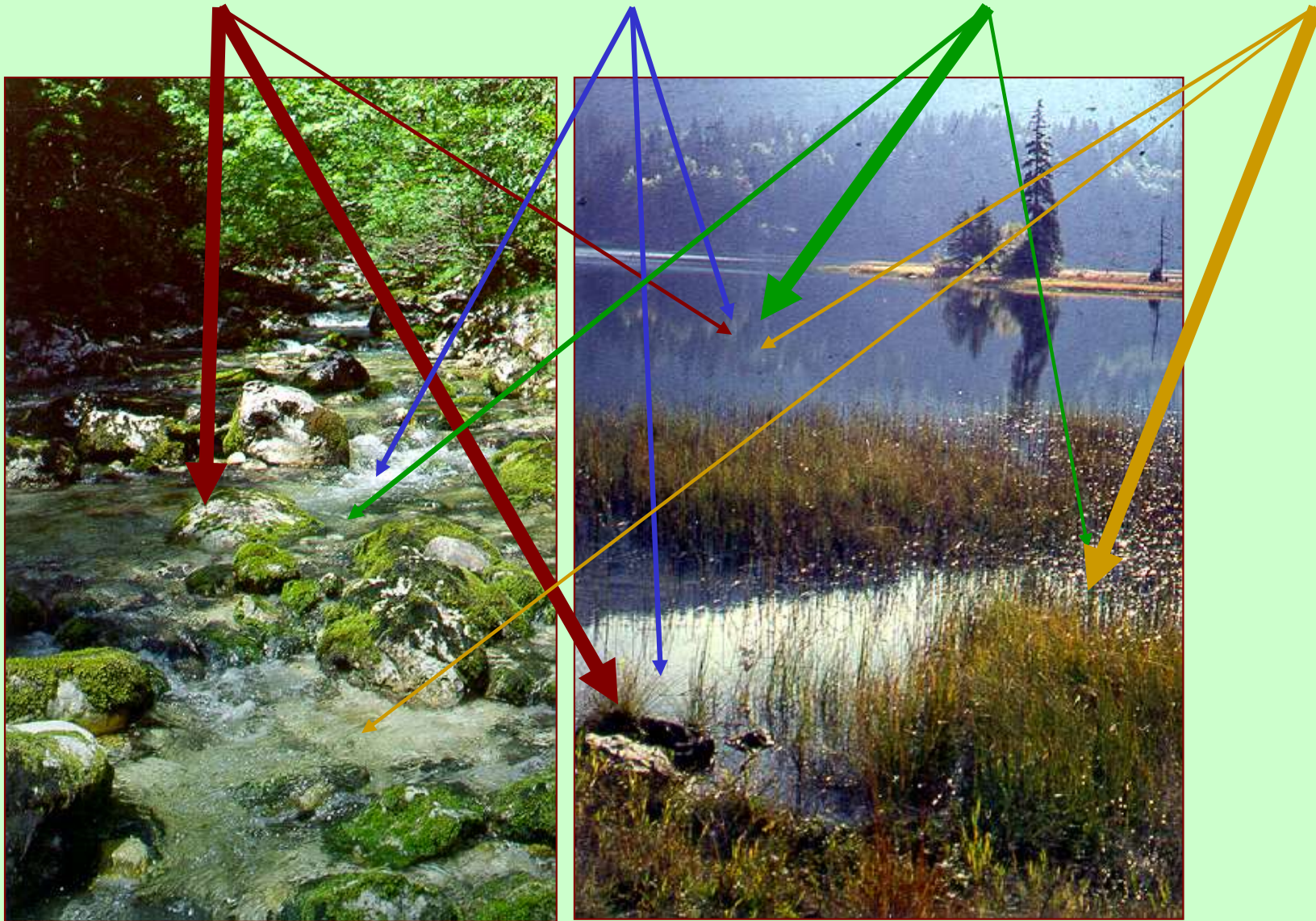


- *Symbiocladius rhithrogenae*: mayfly larvae



Chironomidae: habitats

Orthocladiinae **Tanypodinae** **Chironomini** **Tanytarsini**



Chironomidae as tools for bioindication

eutrophic

mesotrophic

oligotrophic

Nutrients

Oxygen

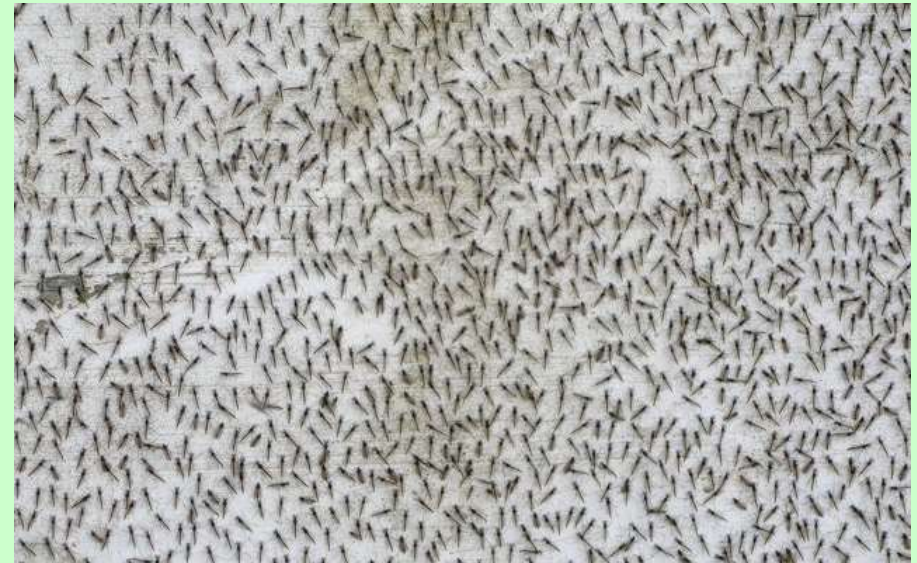
Chironomus plumosus,
Chironomus anthracinus

Sergentia sp.

Heterotrissocladius sp.

Tanytarsus spp.

Chironomidae emergence: nutrient transfer between aquatic and terrestrial habitats



Removal of nutrients from Lake Balaton, Hungary (t a^{-1}):

50 t C

10 t N

1 t P