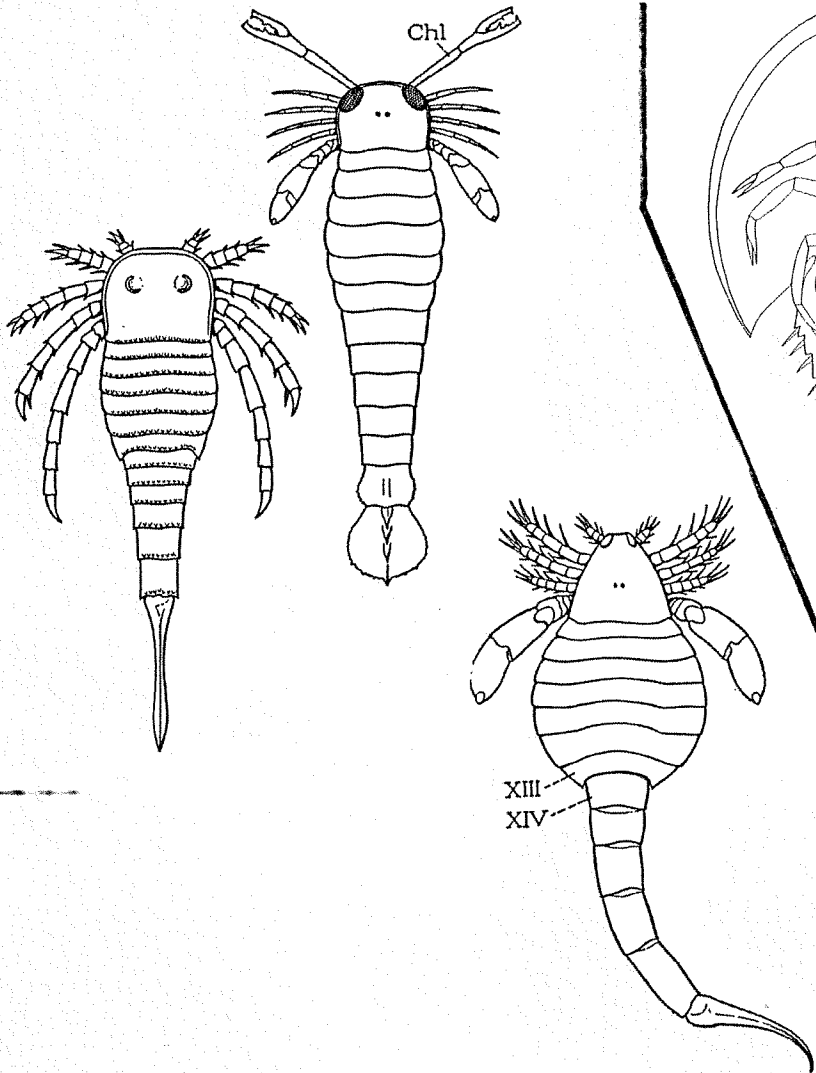
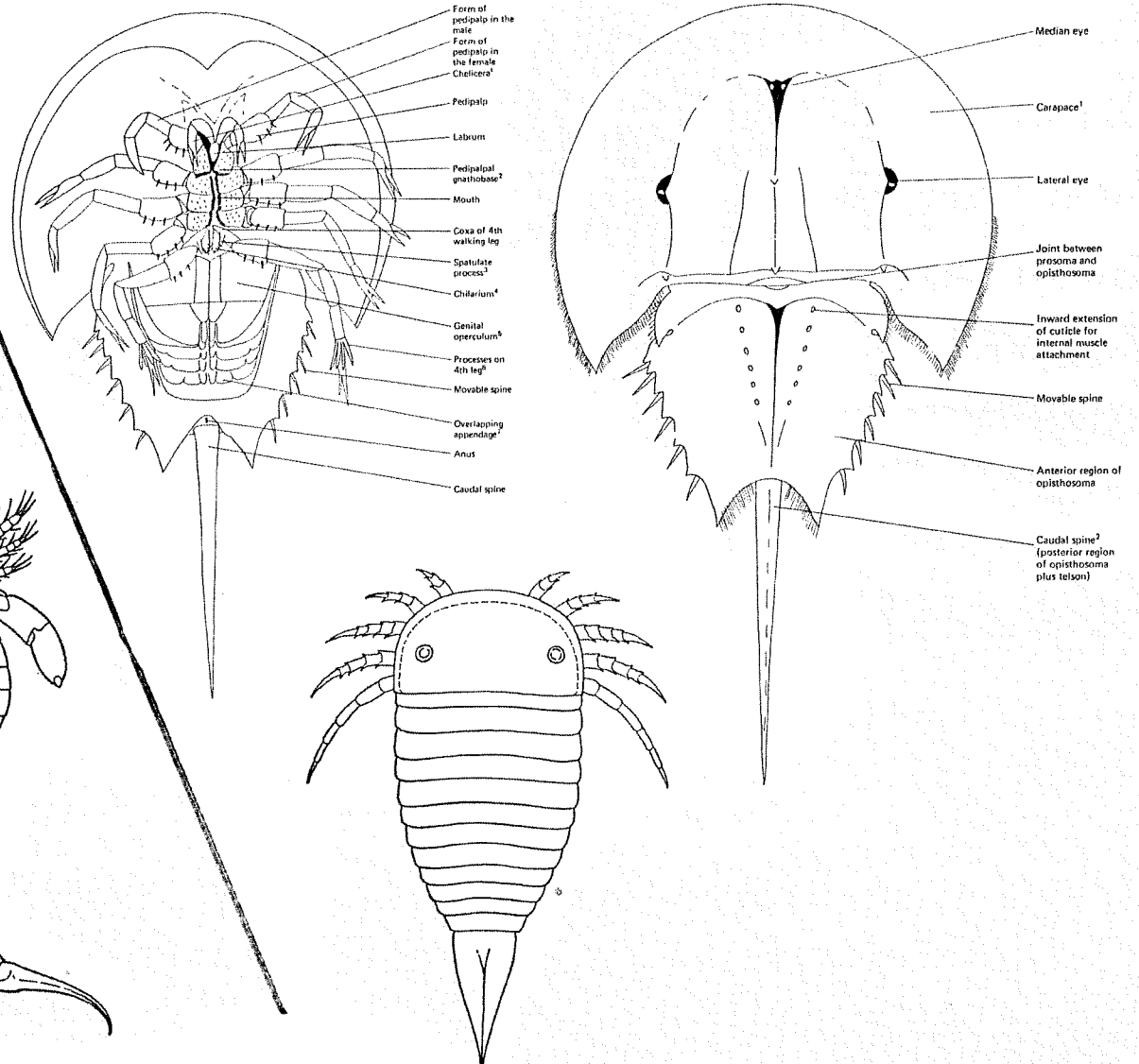


# Class Merostomata

## Subclass Eurypterida

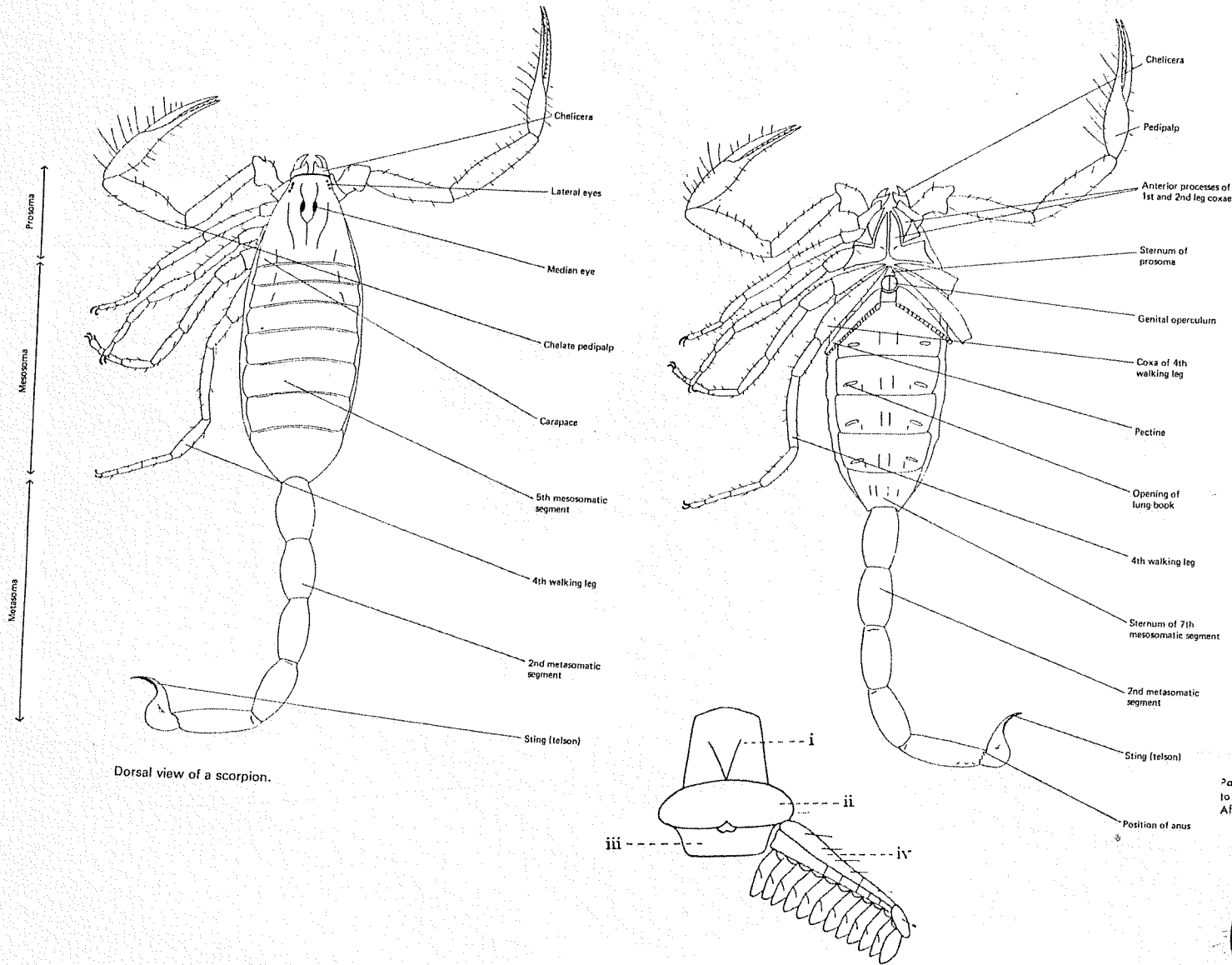


## Subclass Xiphosura



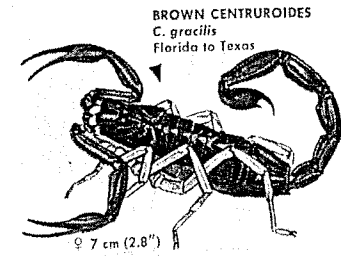
# Class Arachnida

## Order Scorpiones: Scorpions

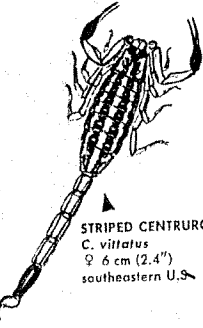


Dorsal view of a scorpion.

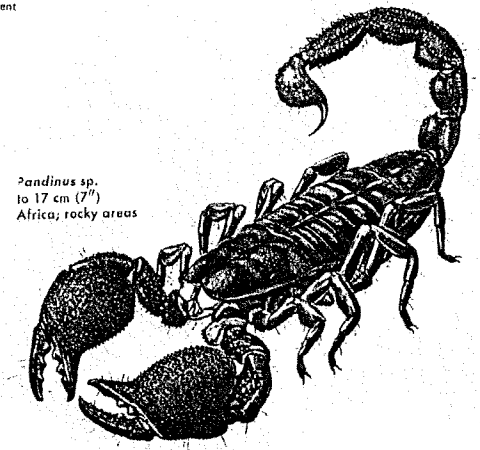
Sternum and pectine of Euscorpium. (i) Sternum; (ii) genital operculum; (iii) sternite; (iv) pectine.



**BROWN CENTRUROIDES**  
*C. gracilis*  
Florida to Texas



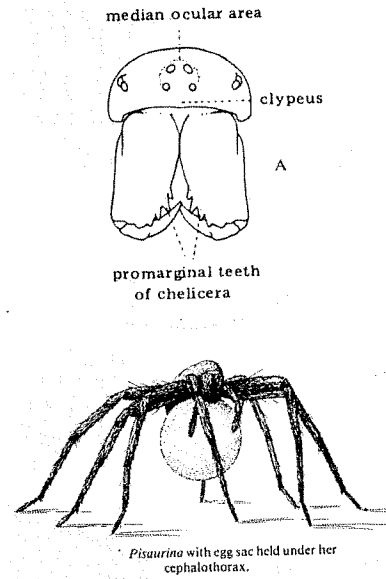
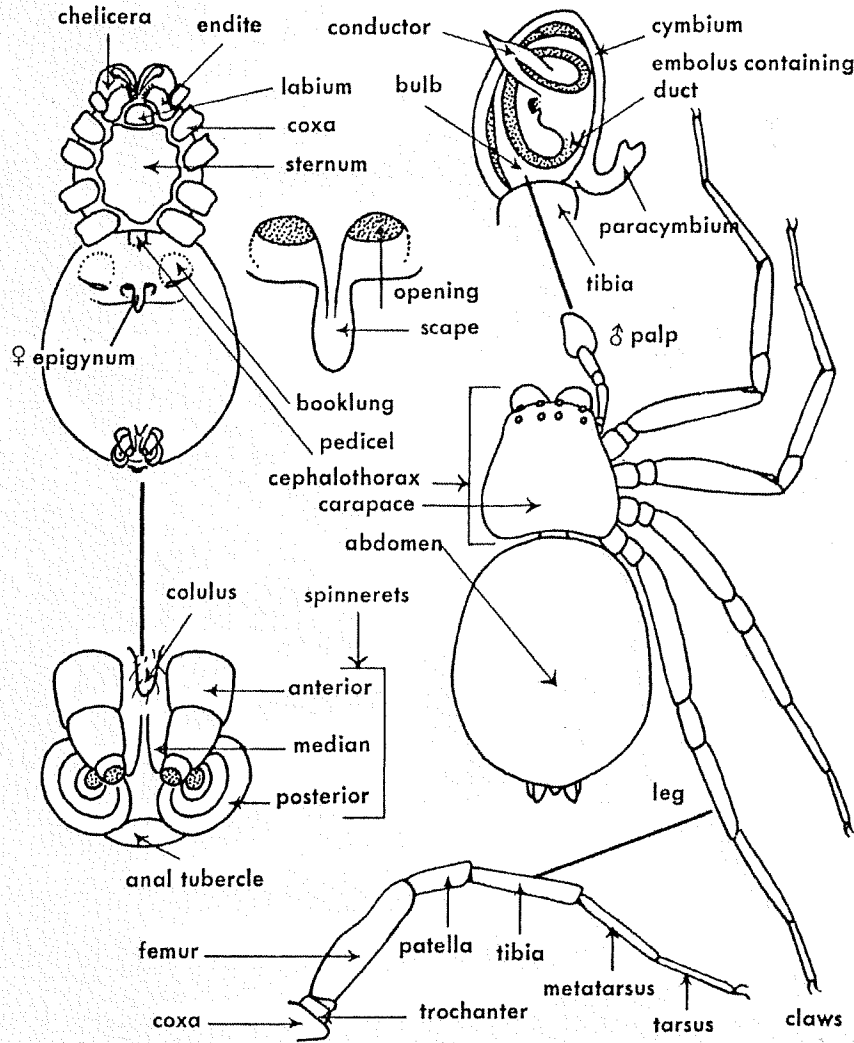
**STRIPED CENTRUROIDES**  
*C. vittatus*  
♀ 6 cm (2.4")  
southeastern U.S.



**Pandinus sp.**  
to 17 cm (7")  
Africa; rocky areas

# Class Arachnida

## Order Araneae: Spiders



Spider getting ready to balloon

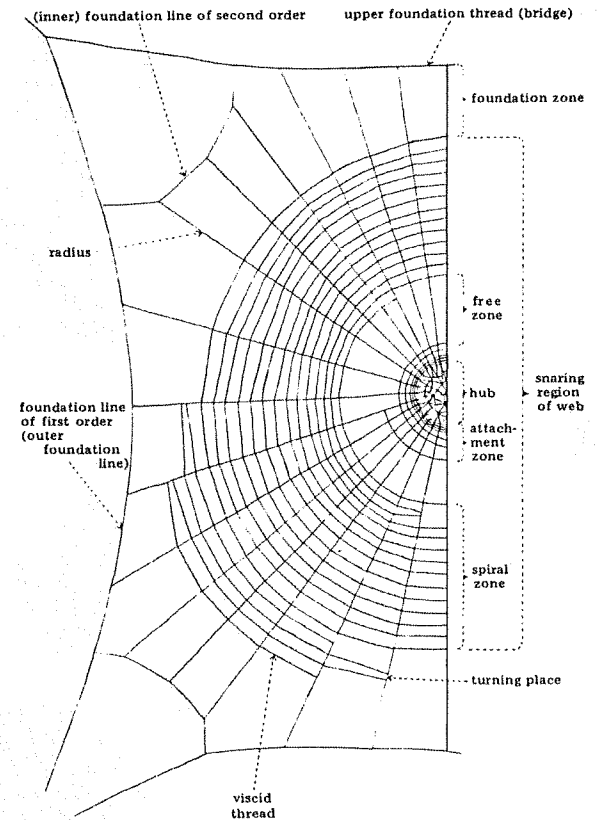
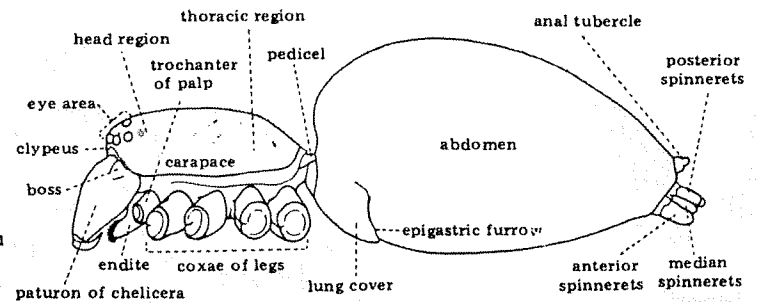
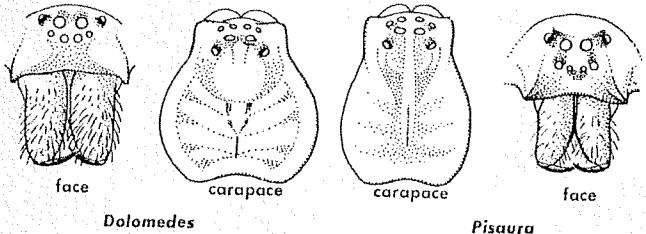


Figure 329. Diagram of the web of an orb-weaving spider.



# Class Arachnida

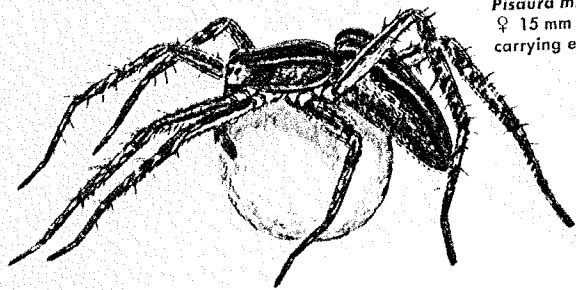
## Order Araneae: Spiders



*Dolomedes*

*Pisaura*

### NURSERY WEB SPIDERS (Pisauridae)

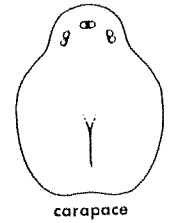
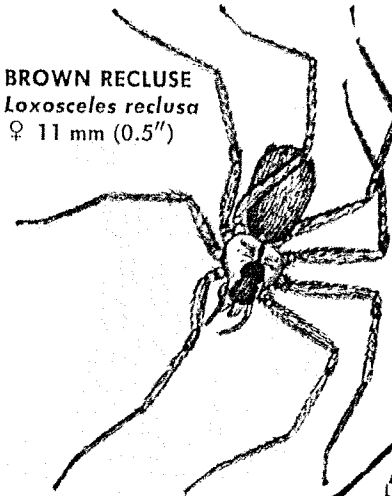


*Pisaura mirabilis*  
♀ 15 mm (0.6")  
carrying egg sac

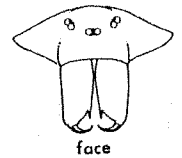
*Pisaurina mira*  
♀ 16 mm (0.6")  
eastern U.S., Canada

### BROWN SPIDERS (Loxoscelidae)

**BROWN RECLUSE**  
*Loxosceles reclusa*  
♀ 11 mm (0.5")



carapace

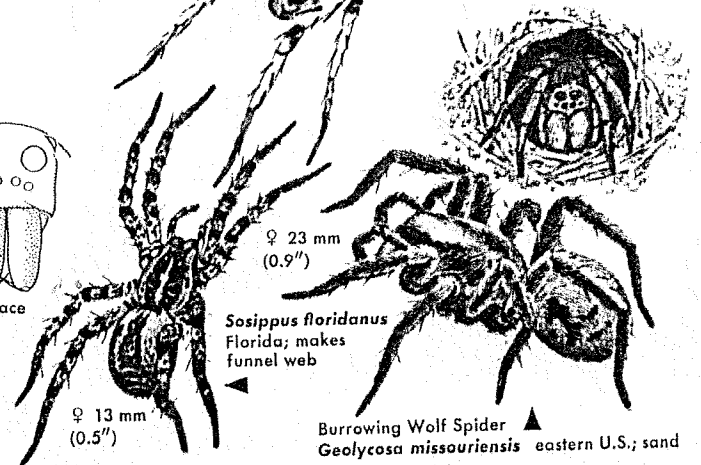


face

♀ 14 mm (0.6")

*A. littoralis*  
U.S., Canada; sand

*Geolycosa* in entrance



♀ 23 mm (0.9")

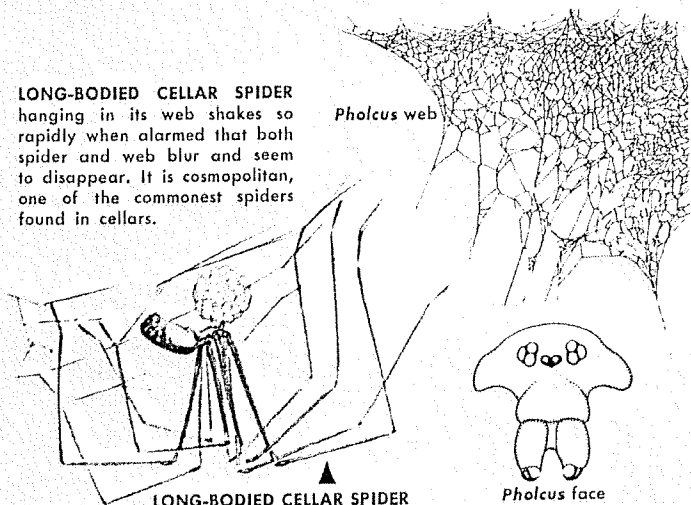
*Sosippus floridanus*  
Florida; makes funnel web

♀ 13 mm (0.5")

Burrowing Wolf Spider  
*Geolycosa missouriensis* eastern U.S.; sand

LONG-BODIED CELLAR SPIDER hanging in its web shakes so rapidly when alarmed that both spider and web blur and seem to disappear. It is cosmopolitan, one of the commonest spiders found in cellars.

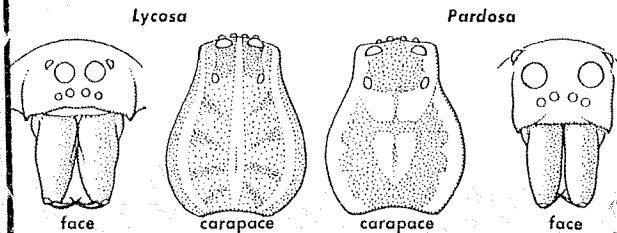
*Pholcus* web



LONG-BODIED CELLAR SPIDER  
*Pholcus phalangioides*  
♀ 8 mm (0.3")  
cosmopolitan; cellars carrying eggs



*Pholcus* face



*Lycosa*

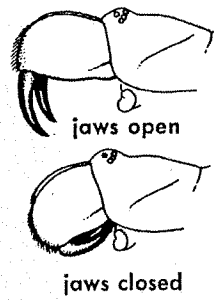
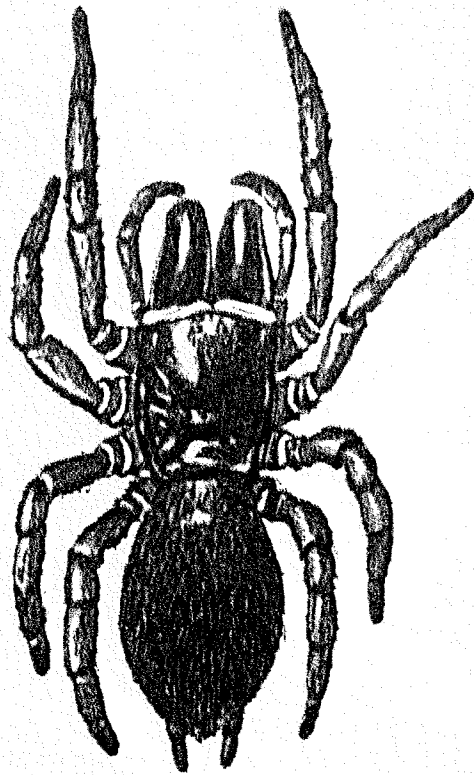
*Pardosa*

### WOLF SPIDERS

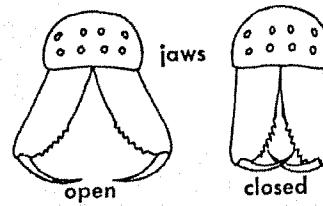
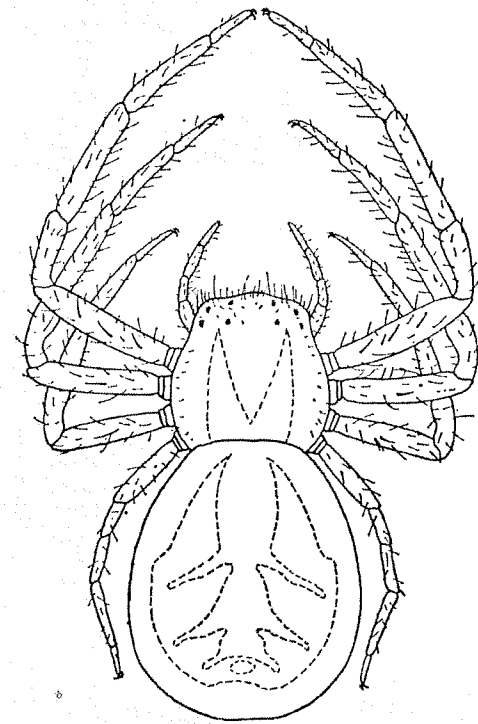
# Class Arachnida

## Order Araneae: Spiders

### MYGALOMORPHS Suborder Orthognatha

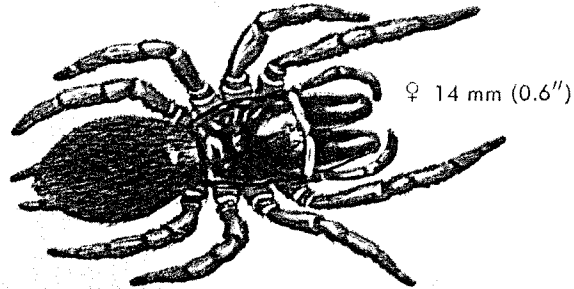
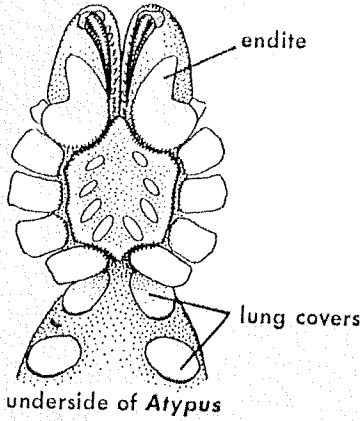


### TRUE SPIDERS Suborder Labidognatha

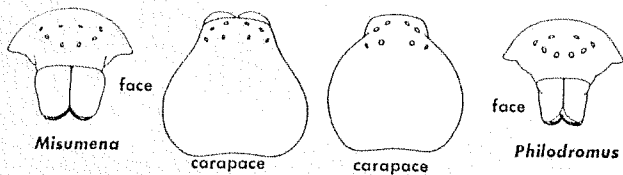
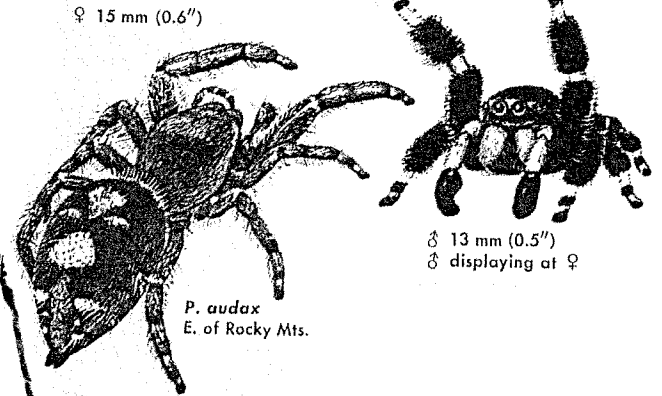
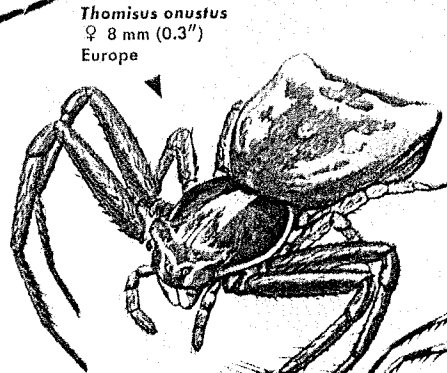
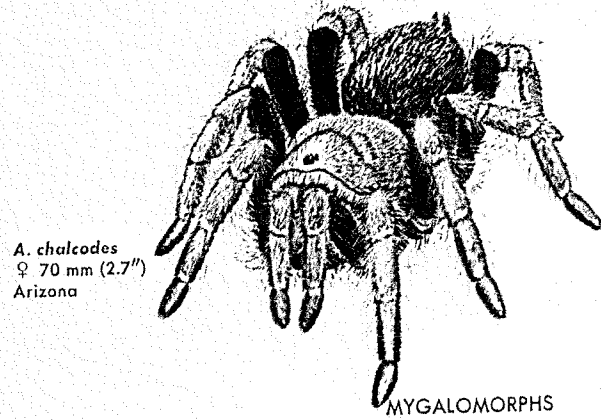
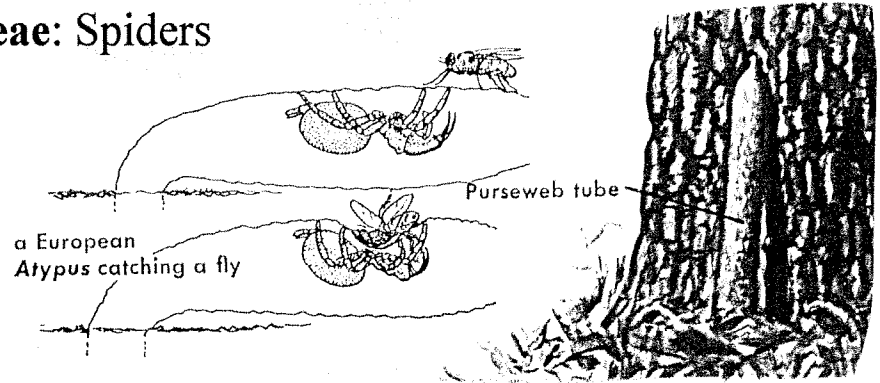


# Class Arachnida

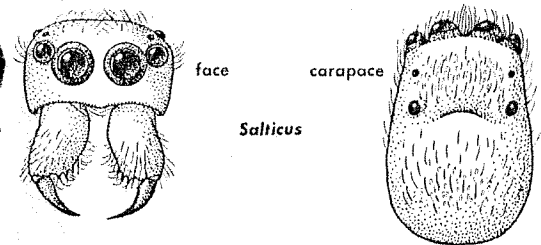
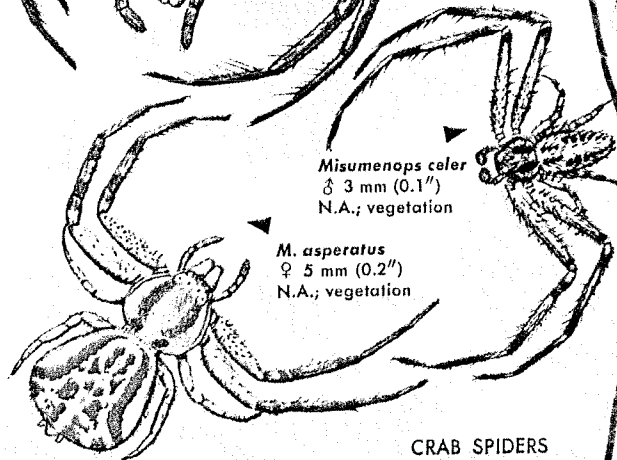
## Order Araneae: Spiders



**PURSEWEB SPIDER**  
*Atypus bicolor*  
eastern U.S.



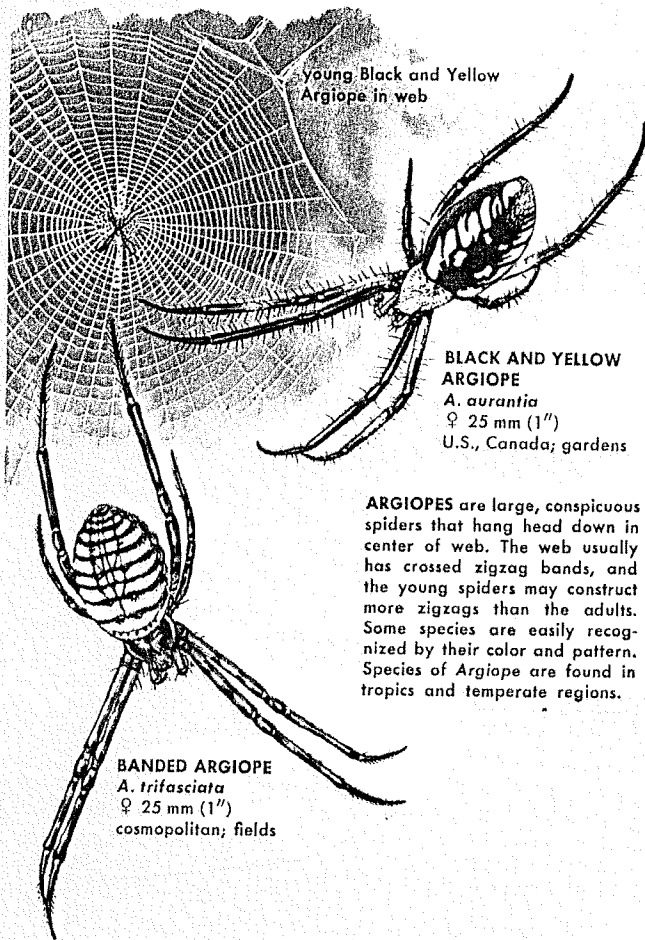
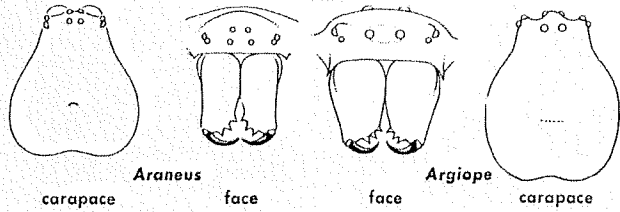
**CRAB SPIDERS (Thomisidae)**



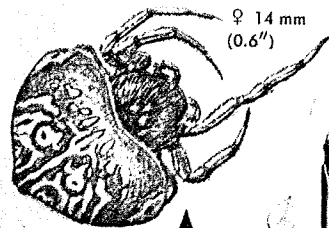
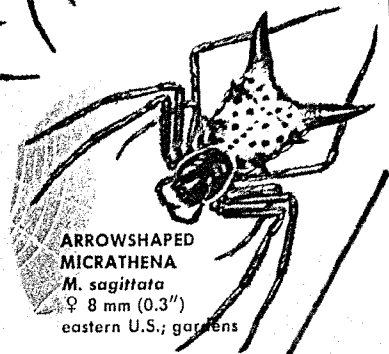
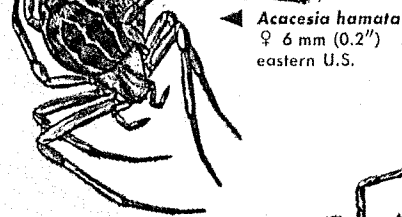
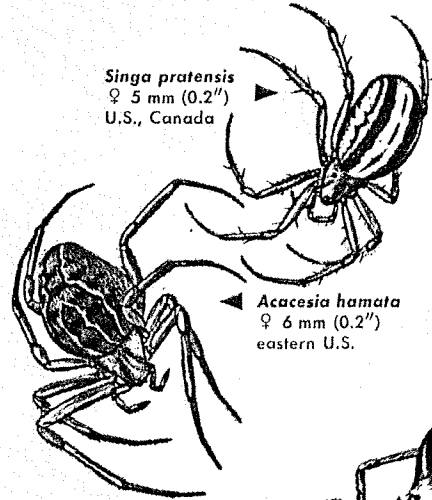
# Class Arachnida

## Order Araneae: Spiders

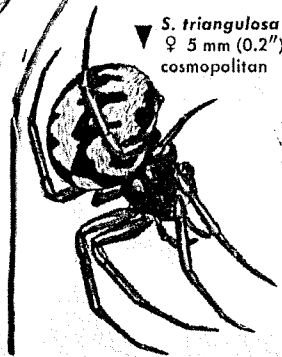
### ORB-WEAVERS



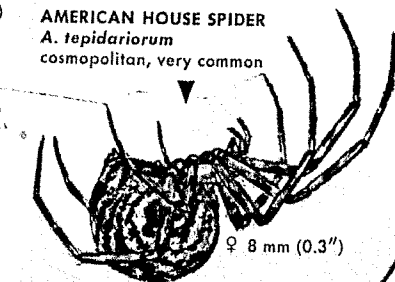
**ARGIOPEs** are large, conspicuous spiders that hang head down in center of web. The web usually has crossed zigzag bands, and the young spiders may construct more zigzags than the adults. Some species are easily recognized by their color and pattern. Species of *Argiope* are found in tropics and temperate regions.



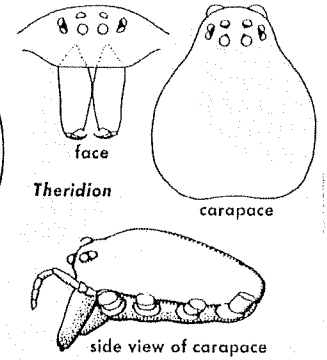
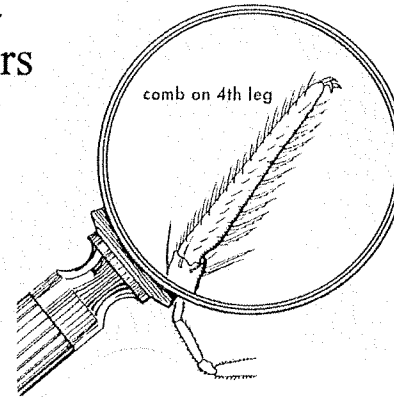
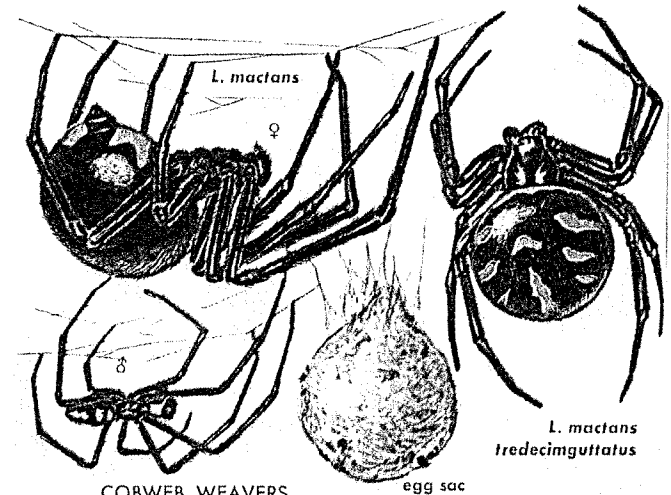
Bolas Spiders have lost web-making ability; they capture passing moths by throwing a sticky globule dangling on a silk line.



**AMERICAN HOUSE SPIDER**  
*A. tepidariorum*  
cosmopolitan, very common

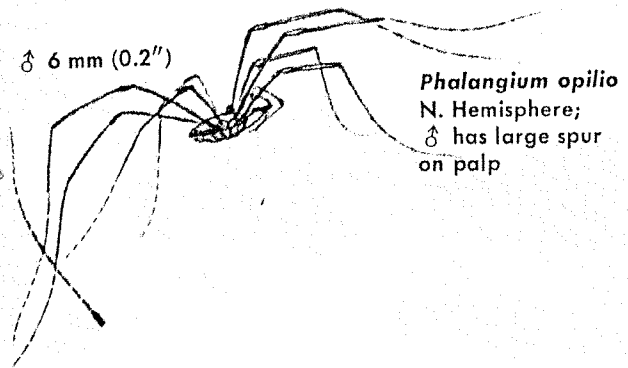
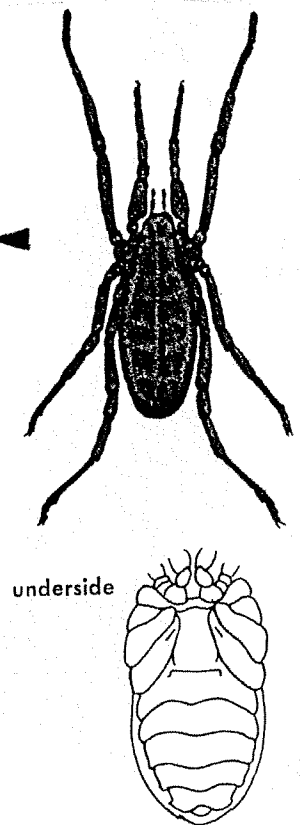
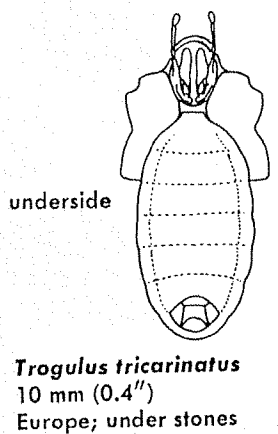
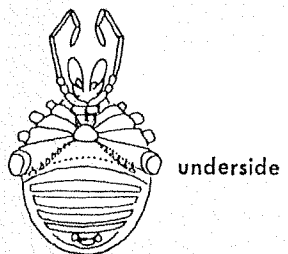
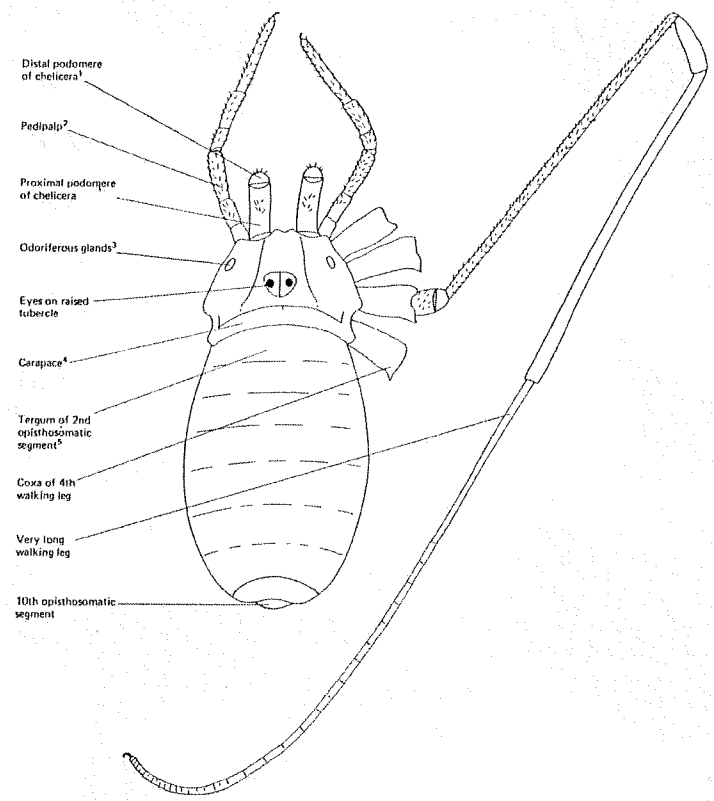
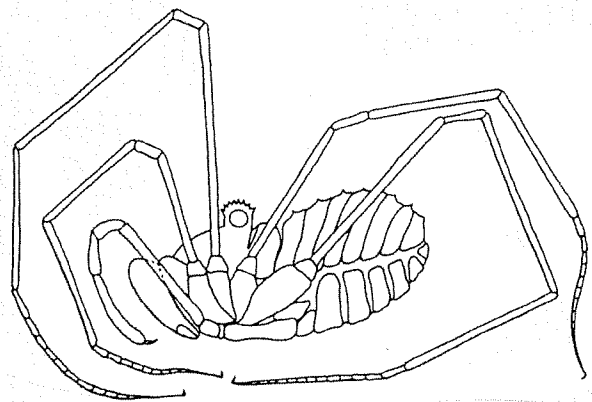
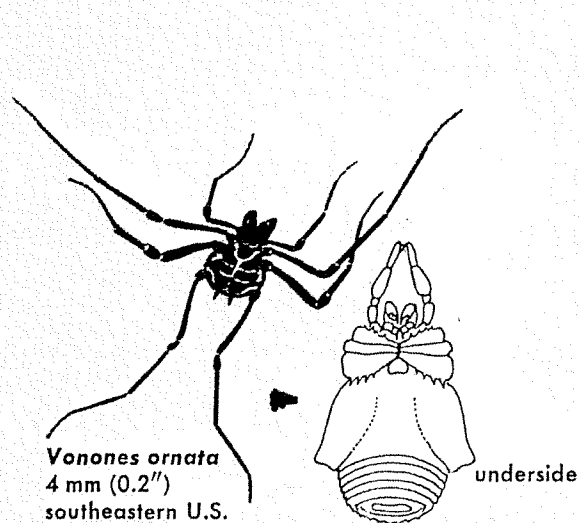


### COBWEB WEAVERS



# Class Arachnida

## Order Opiliones: Harvestmen, Daddy-longlegs

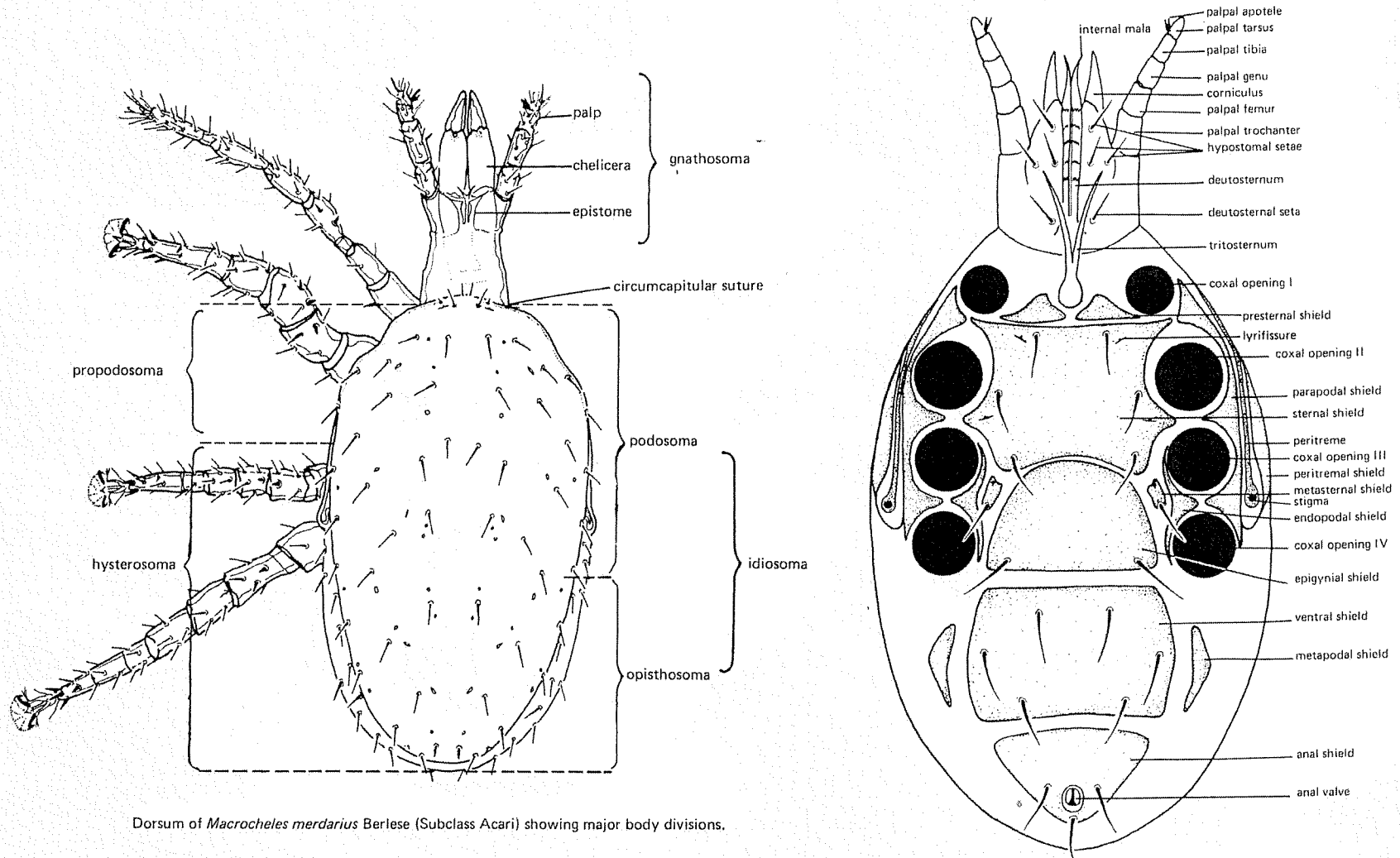


HARVESTMEN



# Class Arachnida

## Order Acari: Mites and Ticks

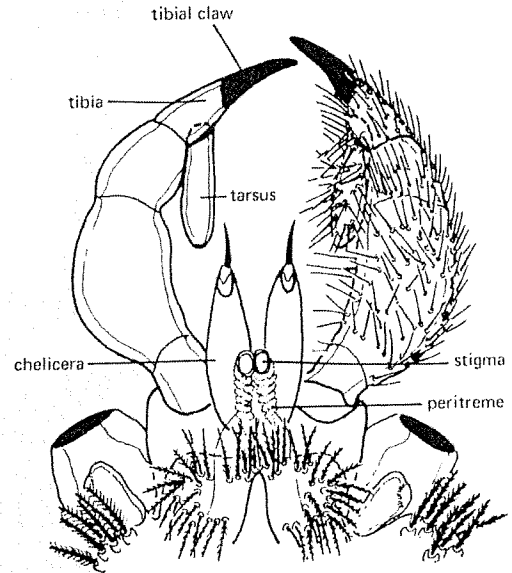
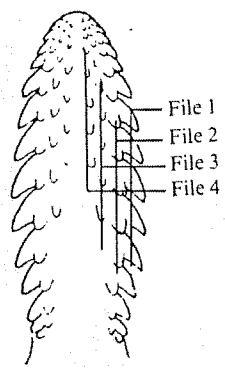
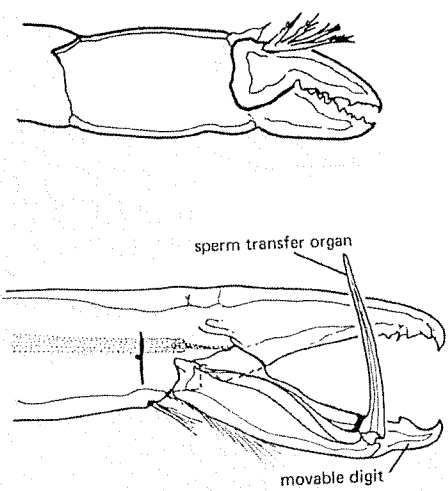
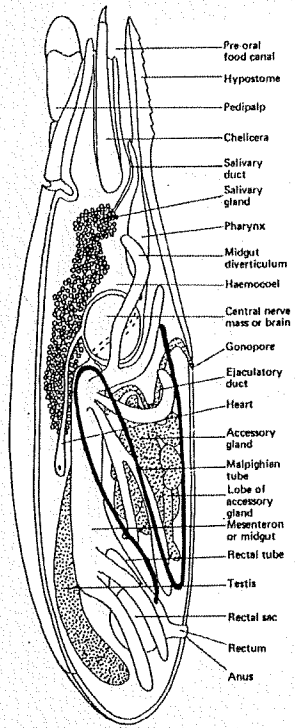


Dorsum of *Macrocheles merdarius* Berlese (Subclass Acari) showing major body divisions.

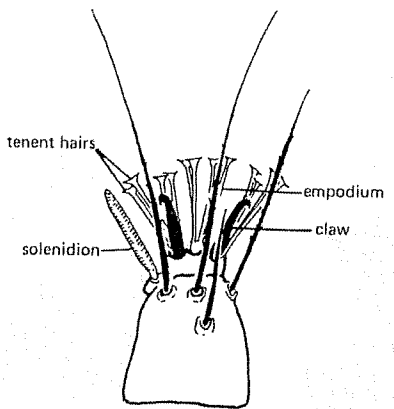
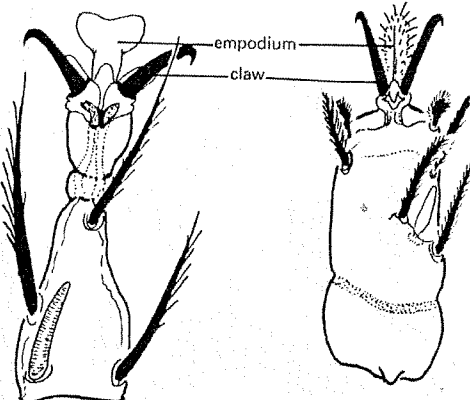
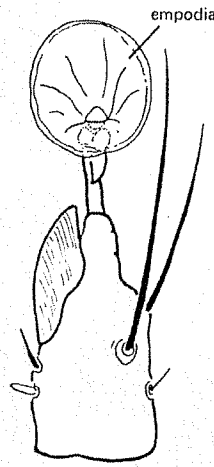
Venter of a generalized mesostigmatid mite.

# Class Arachnida

## Order Acari: Mites and Ticks



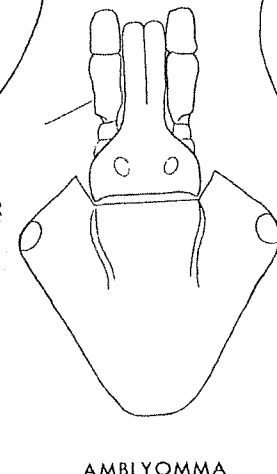
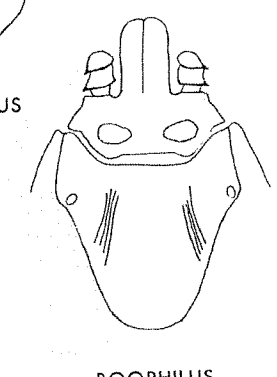
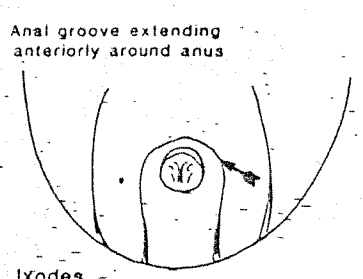
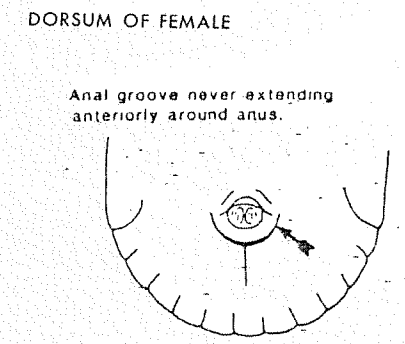
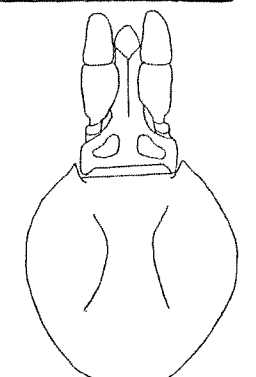
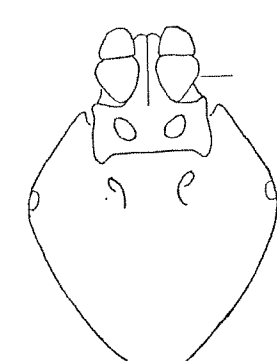
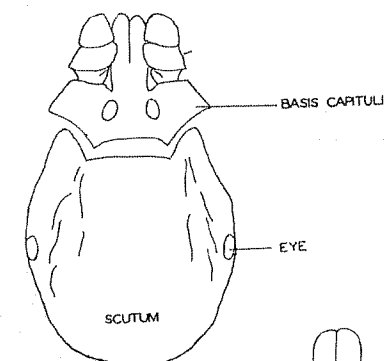
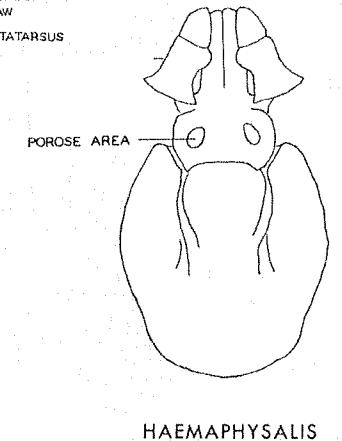
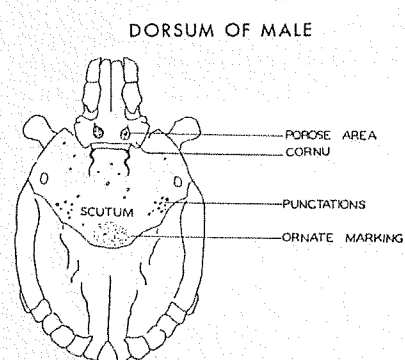
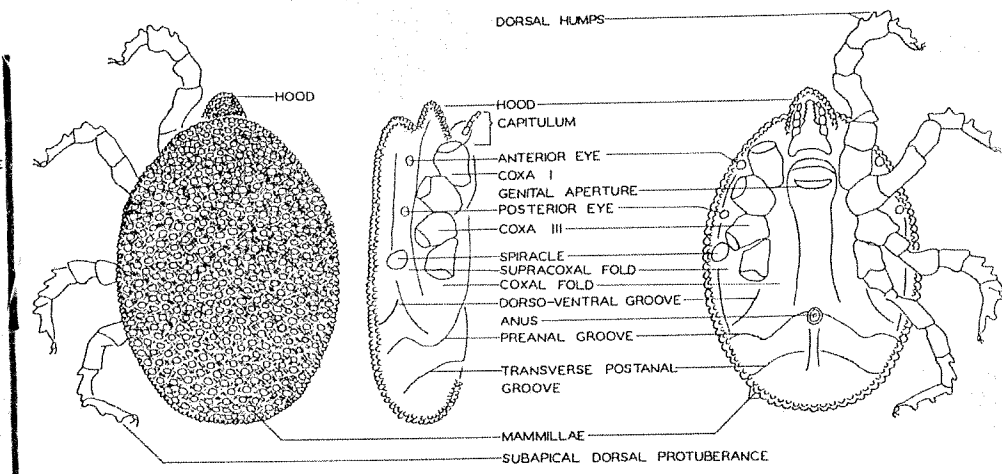
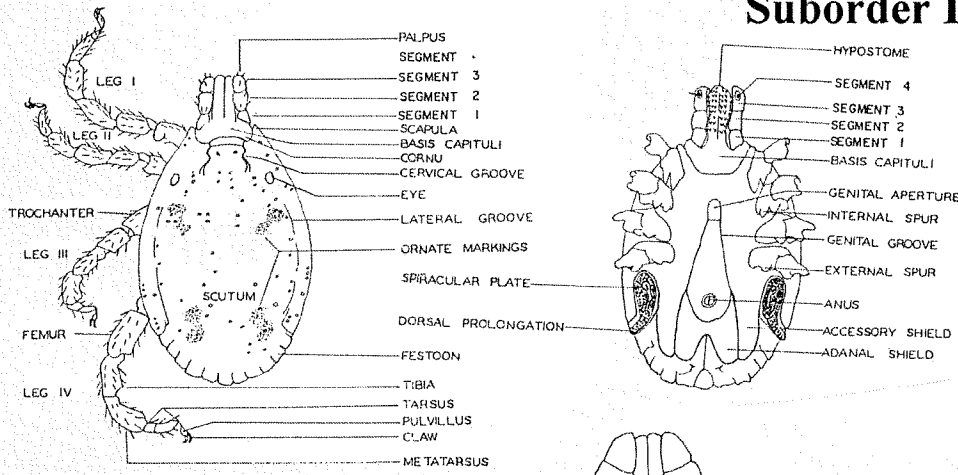
Gnathosoma of *Trombidium* sp. (Wyoming) showing the palpal thumb-claw complex.



# Class Arachnida

## Order Acari: Mites and Ticks

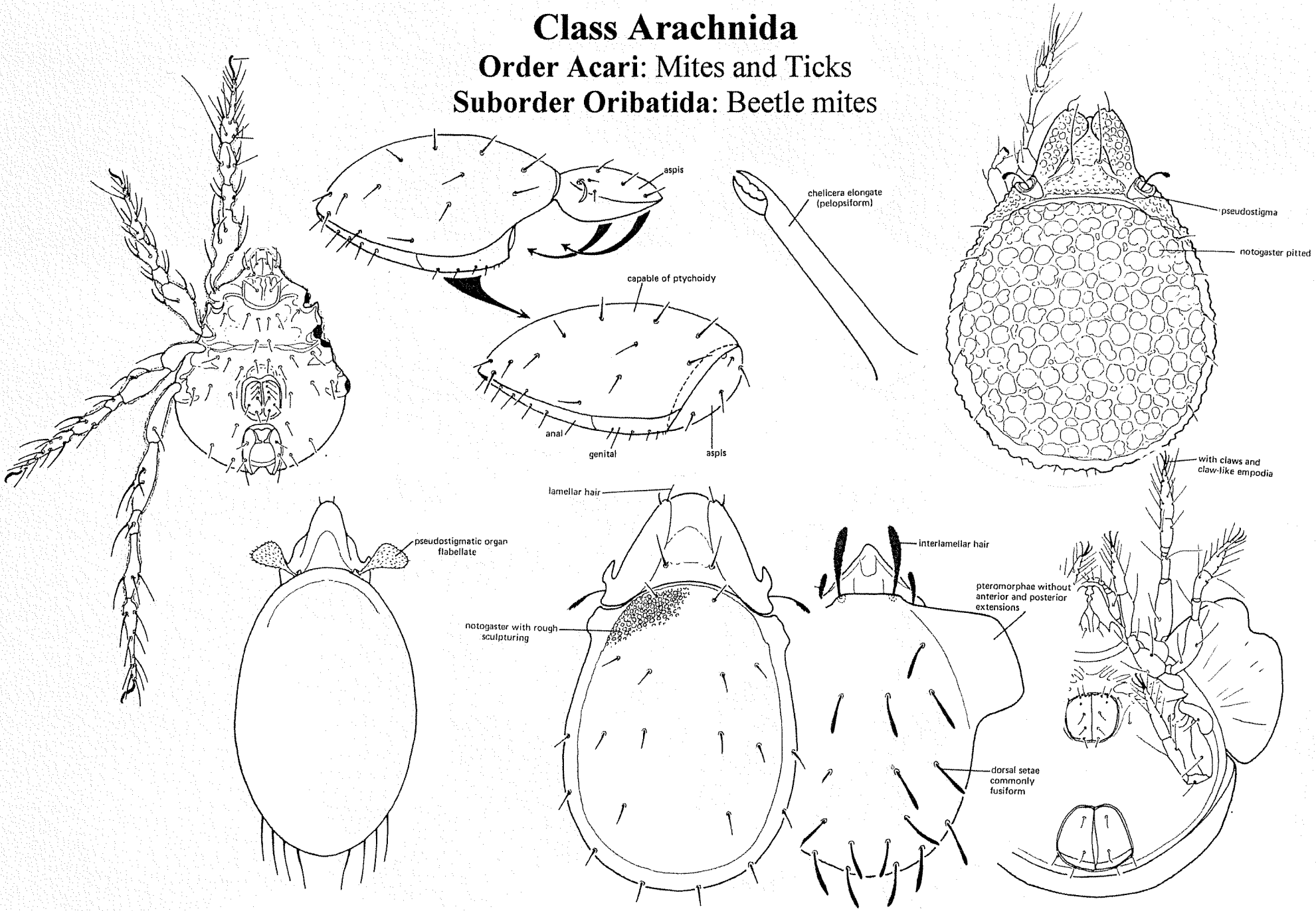
### Suborder Ixodida: Ticks



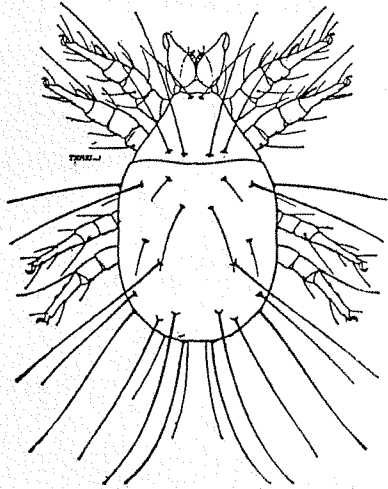
# Class Arachnida

## Order Acari: Mites and Ticks

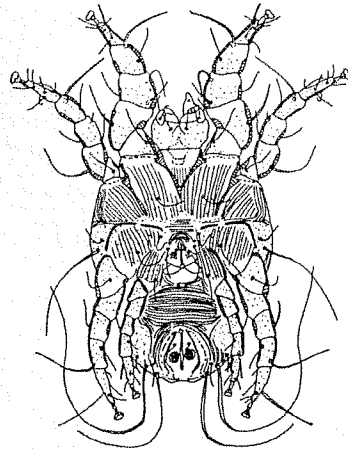
### Suborder Oribatida: Beetle mites



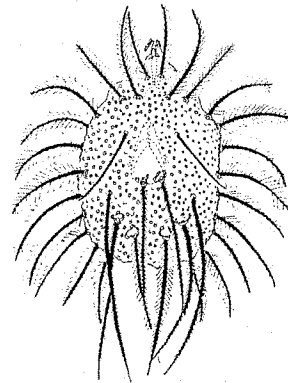
**Class Arachnida**  
**Order Acari: Mites and Ticks**  
**Suborder Astigmata: Dust mites, Mange mites etc.**



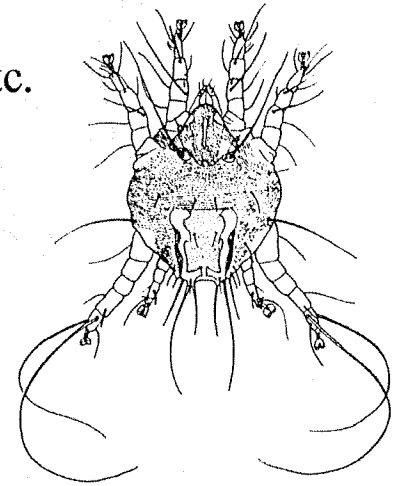
♂ dorsal



♂ ventral

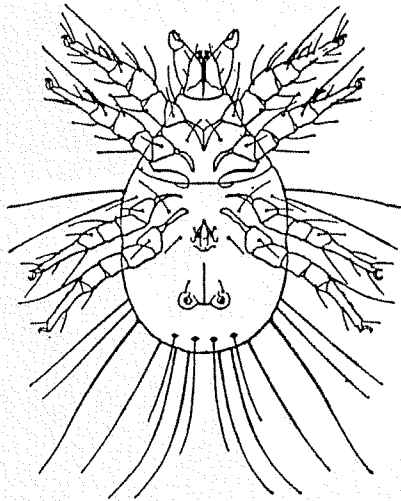


♂ dorsal

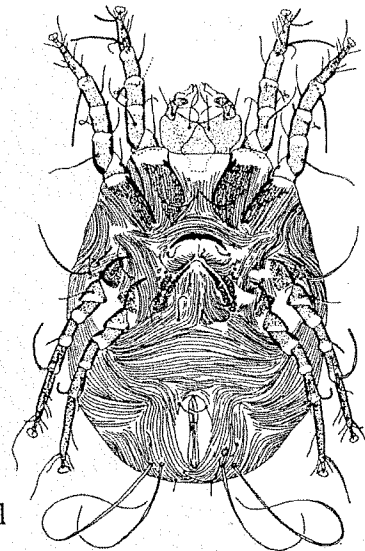


♂ dorsal

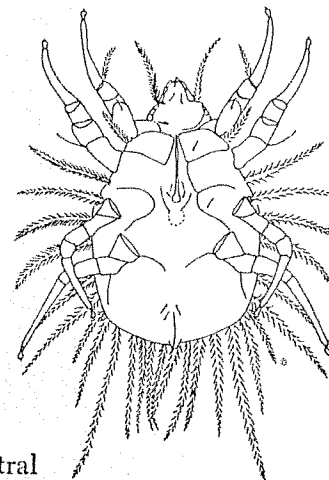
*Otodectes cynotis*



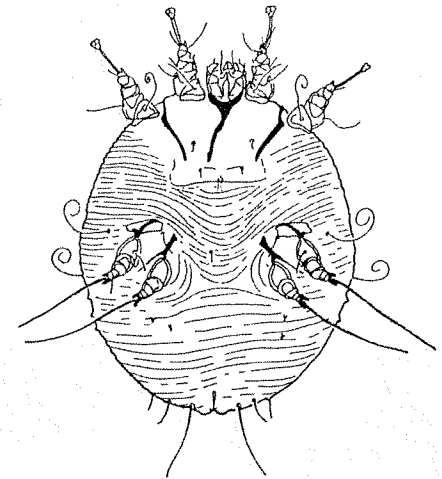
♂ ventral



♀ ventral



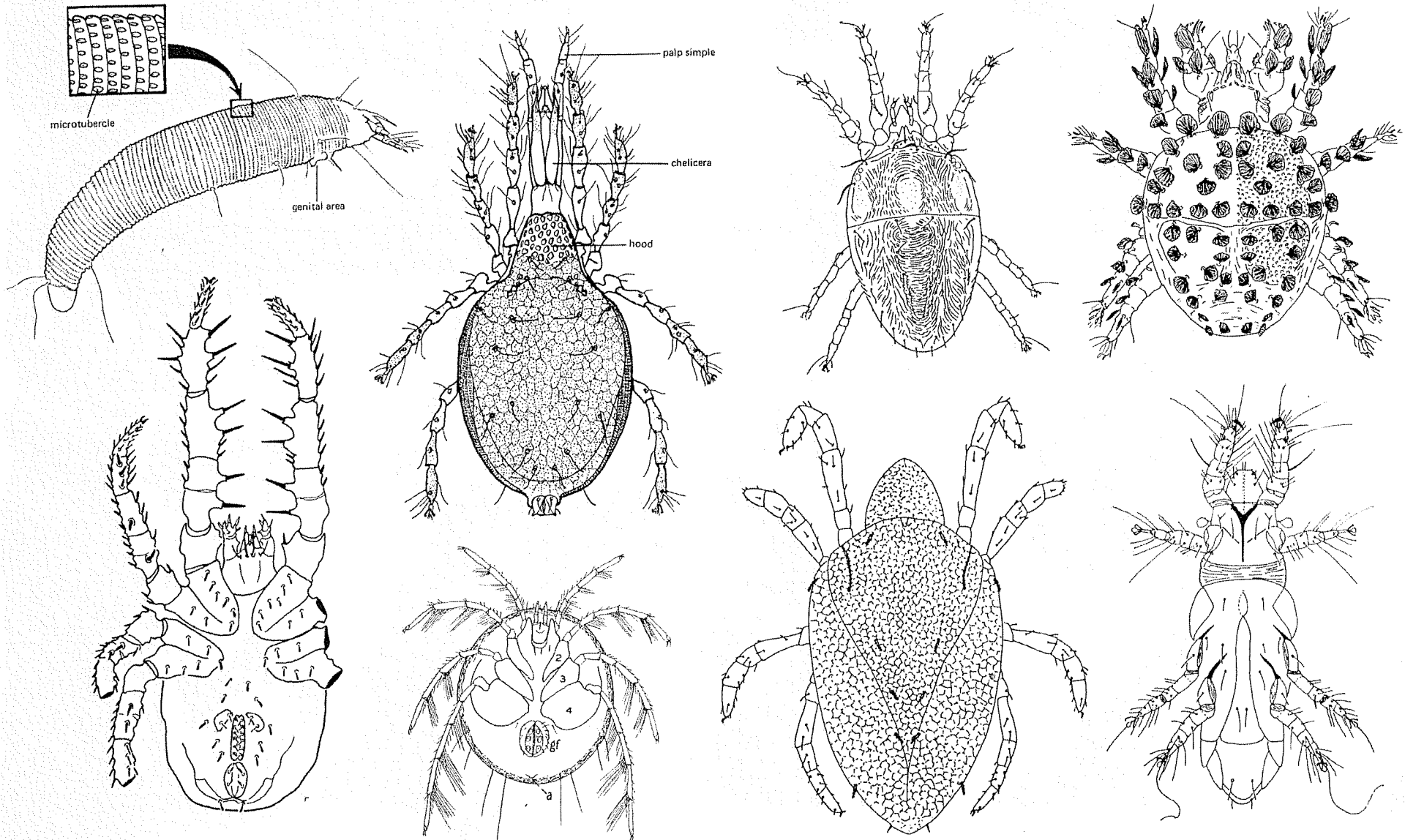
♂ ventral



*Sarcoptes scabiei*

**Class Arachnida**  
**Order Acari: Mites and Ticks**  
**Suborder Prostigmata:**

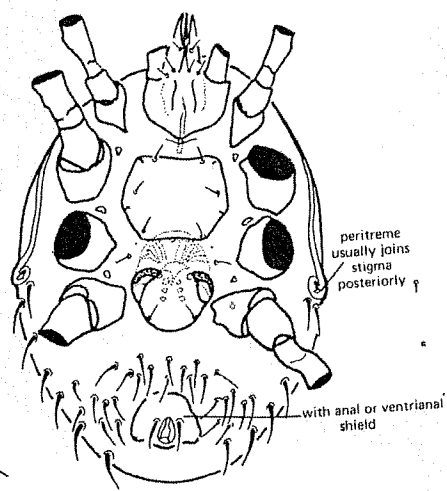
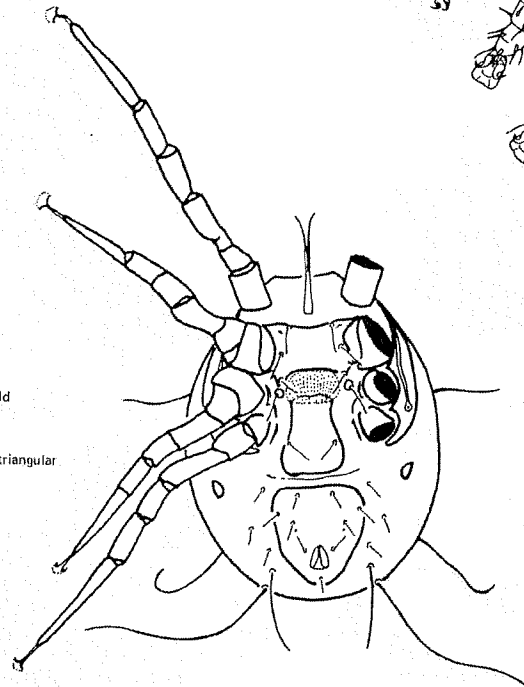
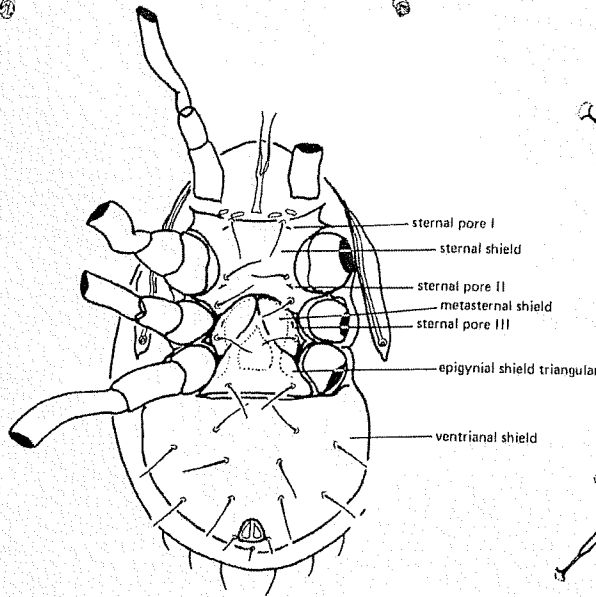
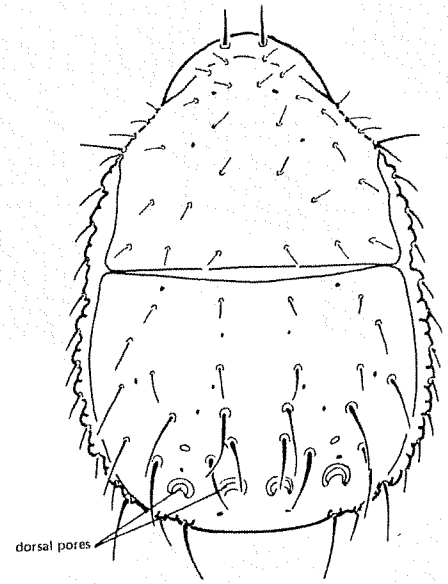
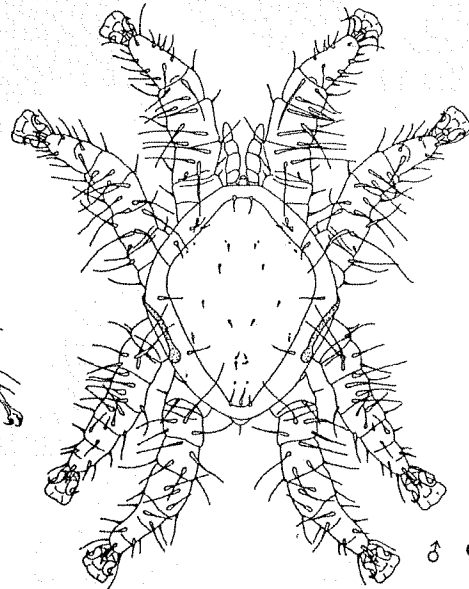
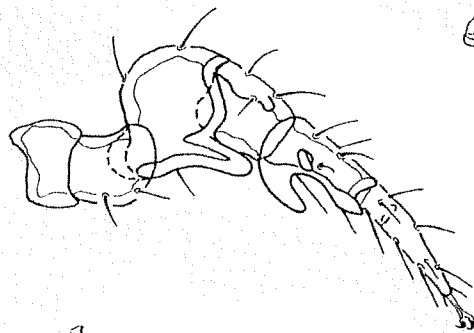
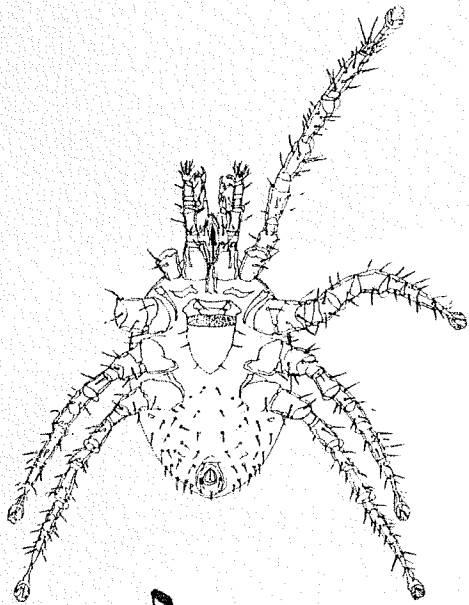
Spider mites, Clover mites, Water mites, Chiggers, Gall mites etc.



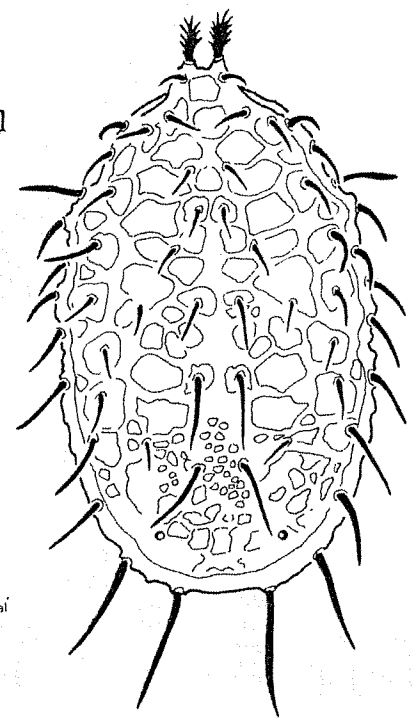
# Class Arachnida

## Order Acari: Mites and Ticks

### Suborder Mesostigmata: Peritreme mites

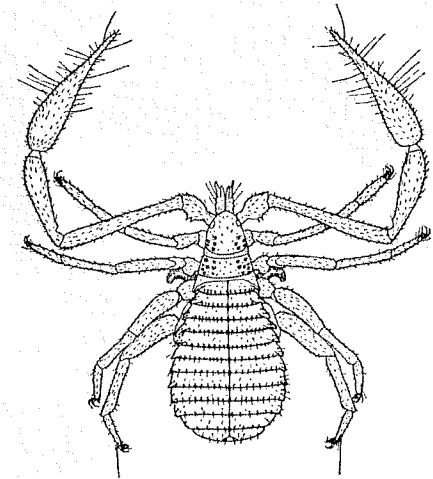
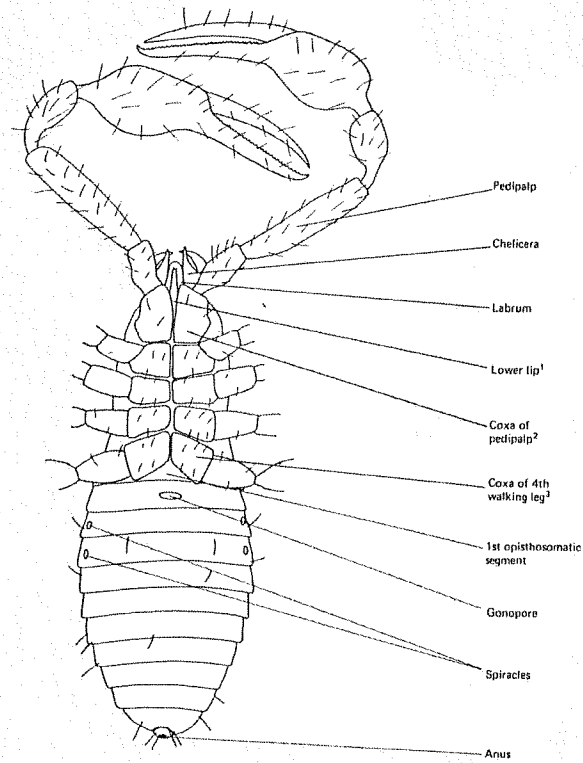
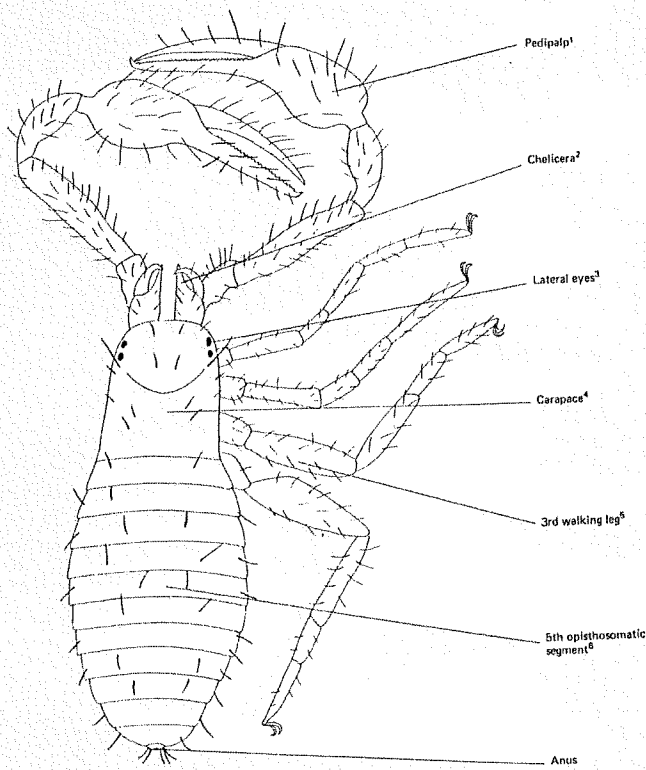


♂ dorsal

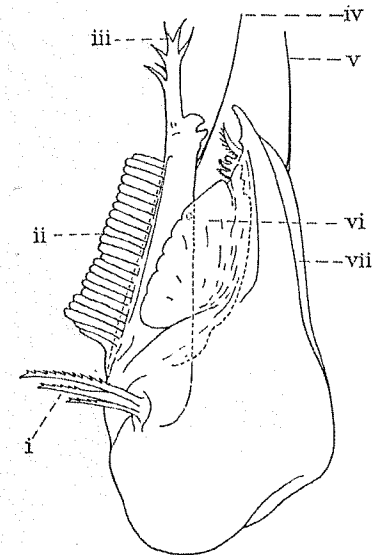


# Class Arachnida

## Order Pseudoscorpiones: Pseudoscorpions



Pseudoscorpion, dorsal aspect. Species, *Chelifer cancelloides*.

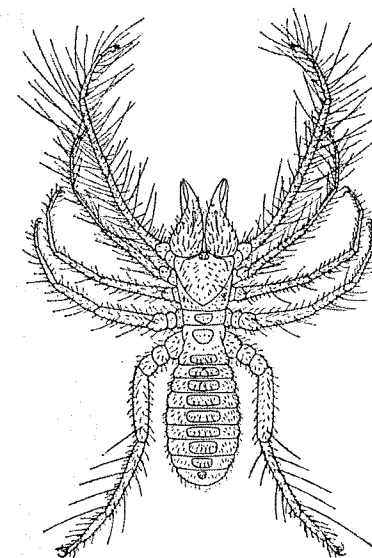
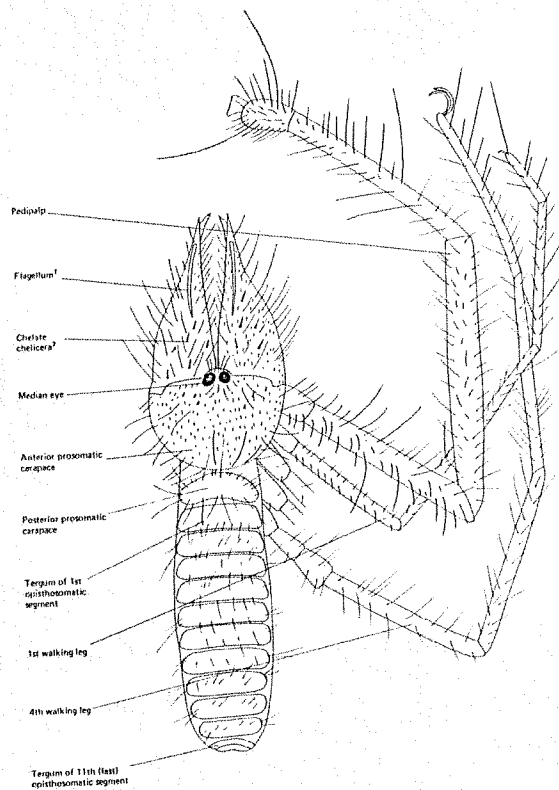
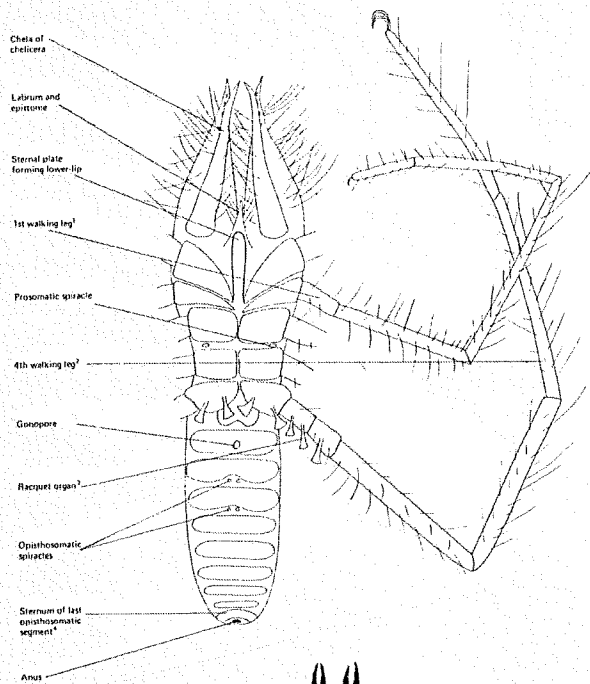


1. Chelicera of a pseudoscorpion. After Chamberlin. (i) Flagellum; (ii) serrula exterior; (iii) galea; (iv) galcal seta; (v) laminal seta; (vi) lamina interior; (vii) lamina exterior.

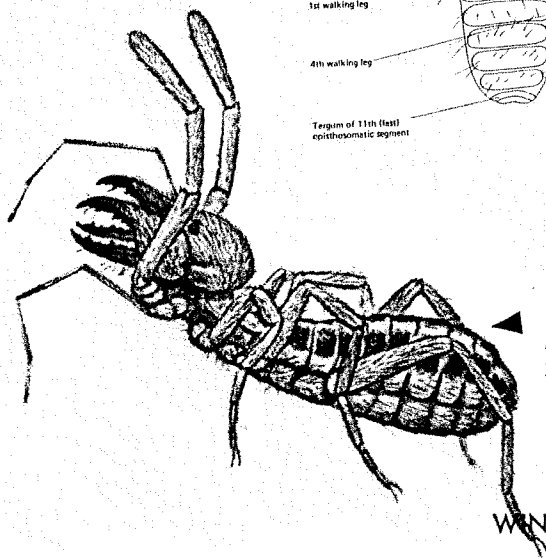
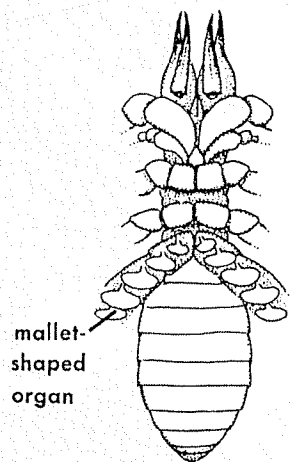


# Class Arachnida

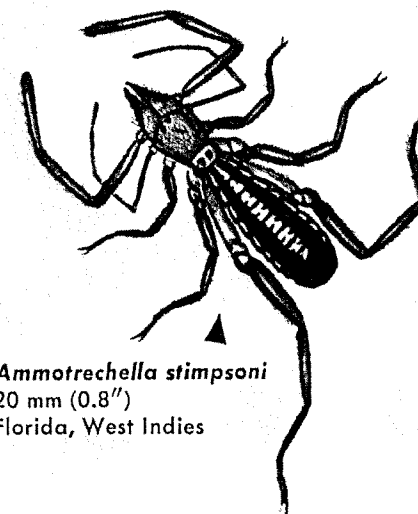
## Order Solifugae: Windscorpions



<sup>1</sup> Solifugae; dorsal aspect. Species *Galeodes arabs*.



*E. pallipes*  
26 mm (1")  
N. Dakota to Arizona

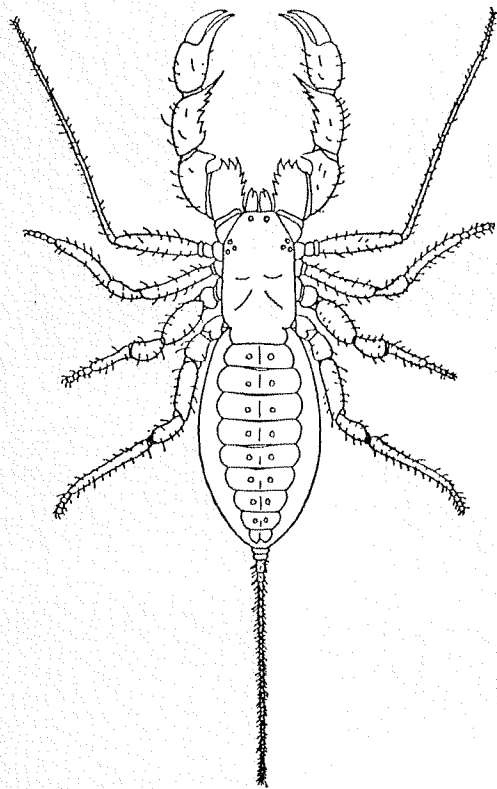


*Ammotrechella stimpsoni*  
20 mm (0.8")  
Florida, West Indies

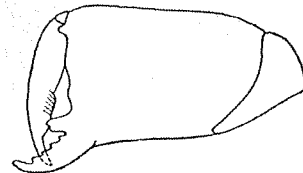
WINDSCORPIONS

# Class Arachnida

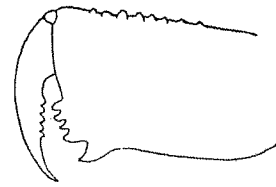
## Order Uropygi Whipscorpions/ Vinegaroons



Uropygi; dorsal aspect. Species, *Thelyphonus insularis*.

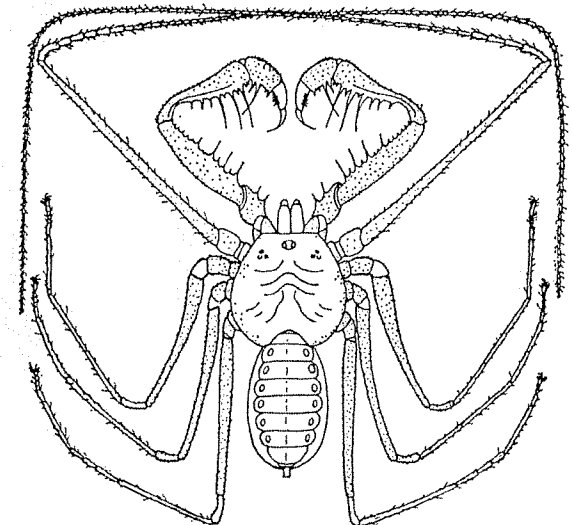


Chelicera of *Thelyphonus*.

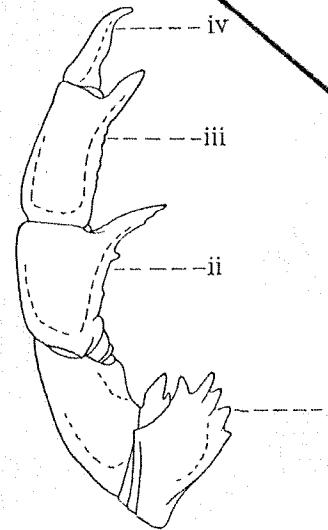


Chelicera of *Stegophrynus*.

## Order Amblypygi Tailless whipscorpions



Amblypygi; dorsal aspect. Species, *Stegophrynus dammermani*.



Pedipalp of *Thelyphonus*. After Graveley. (i) Trochanter; (ii) tibia; (iii) transtarsus; (iv) tarsus.

# Class Arachnida

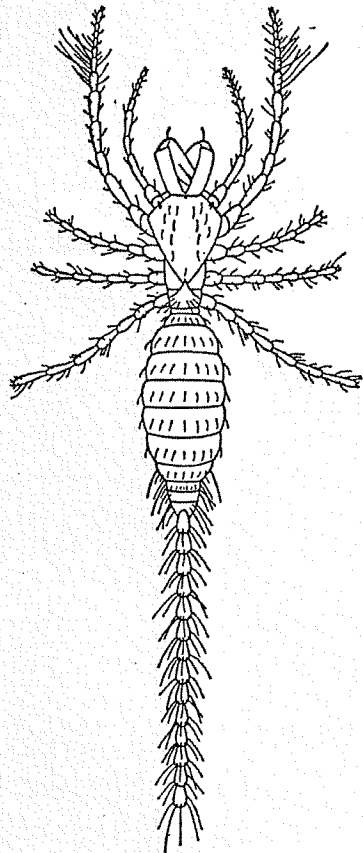
## Minor orders

### Palpigradi

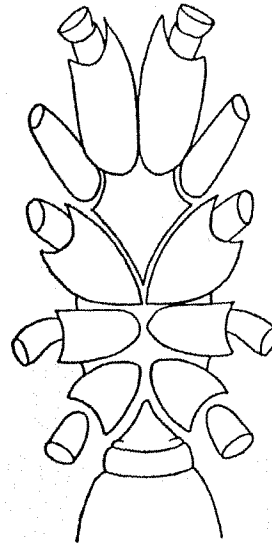
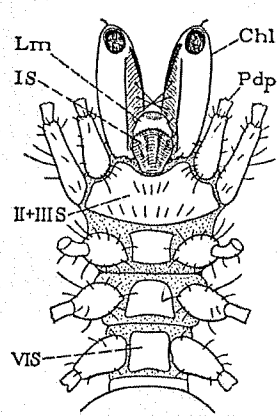
Micro whipscorpions

### Schizomida

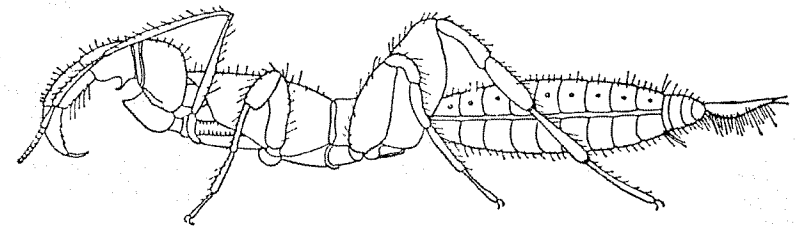
Short-tailed whipscorpions



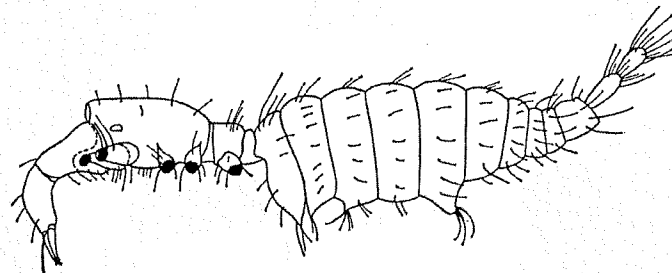
Palpigradi: dorsal aspect. Species, *Koenenia mirabilis*.



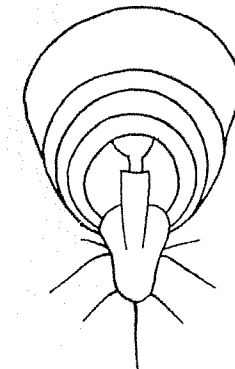
Schizomida; ventral aspect. Species *Nyctalops crassicaudatus*.



Schizomida; lateral aspect. Species, *Nyctalops crassicaudatus*.



*Koenenia mirabilis*: lateral aspect.

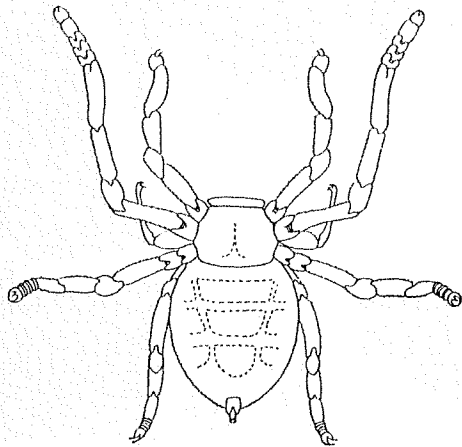
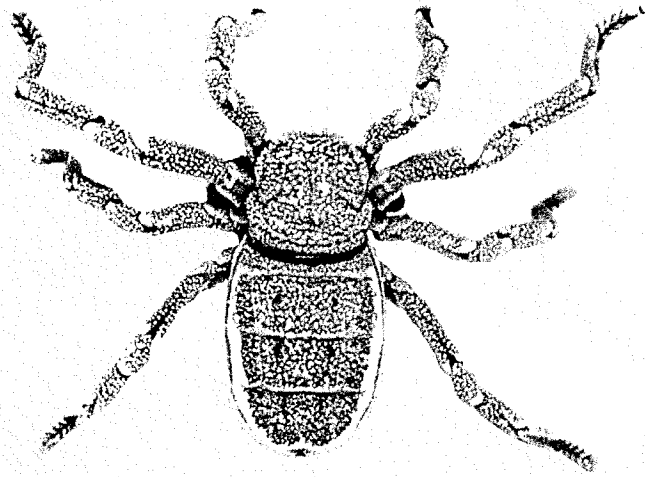


Telson of *Nyctalops*.

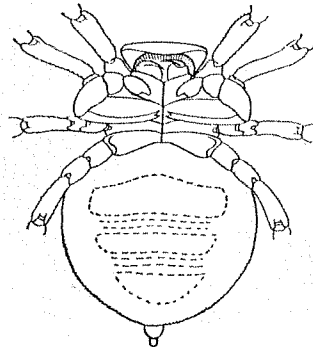
# Class Arachnida

## Minor orders

### Ricinulei

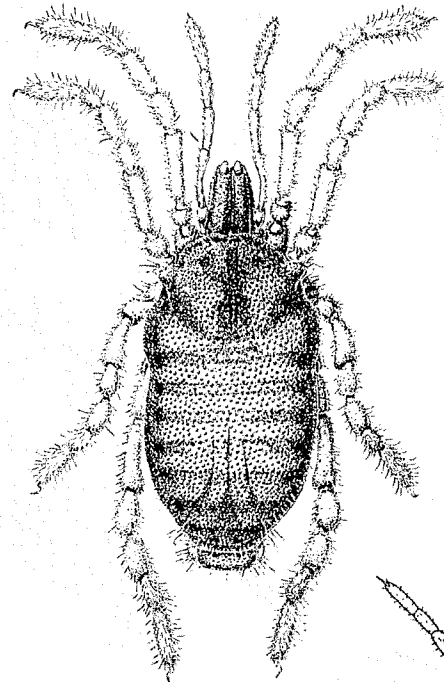


Ricinulei; dorsal aspect. Species, *Ricinoides crassipalpe*.

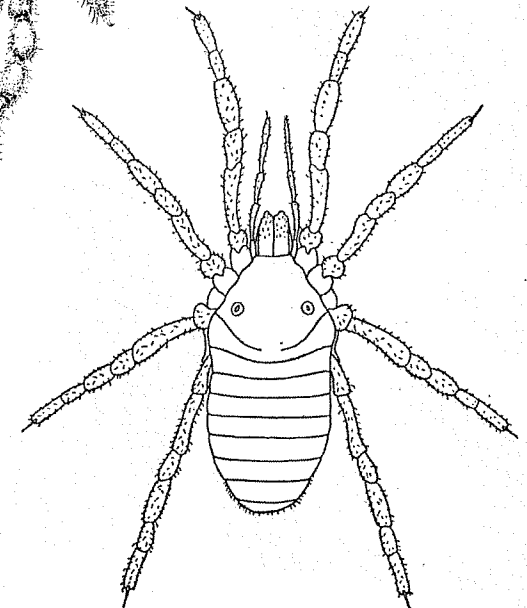


Ricinulei; ventral aspect. Species, *Ricinoides crassipalpe*.

### Cyphophthalmi



*Siro rubens*; dorsal aspect.

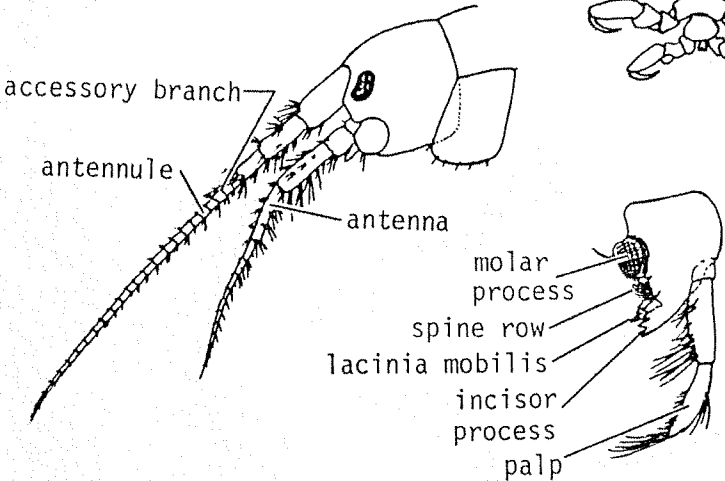
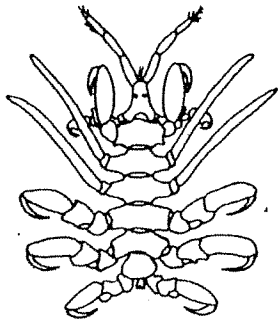
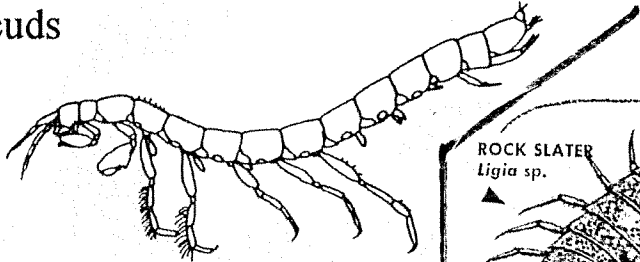
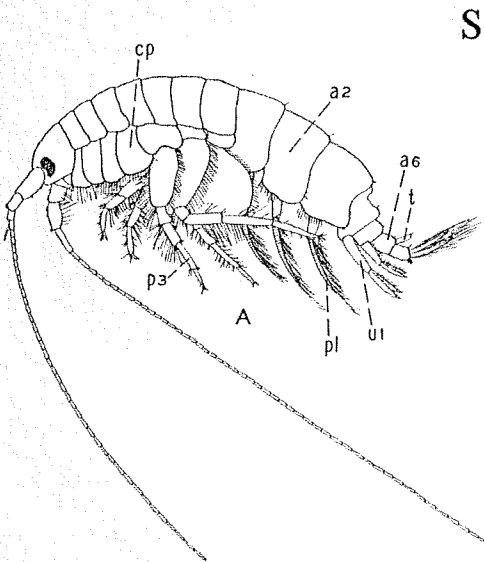


Dorsal aspect of *Purcellia illustrans*, one of the Cyphophthalmi.

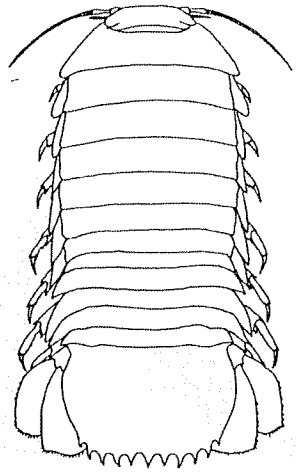
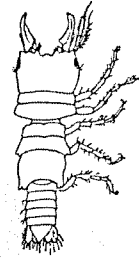
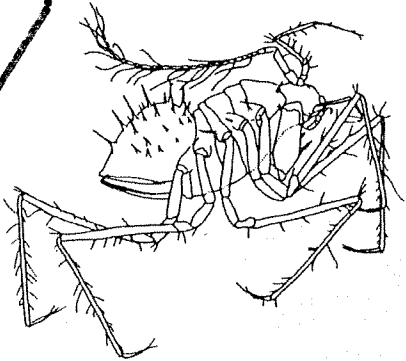
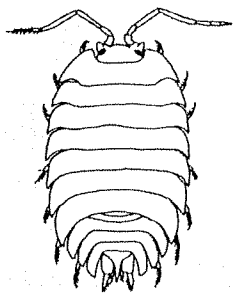
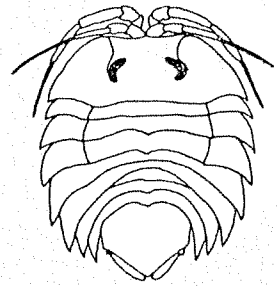
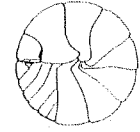
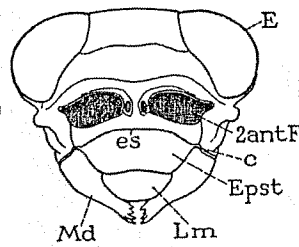
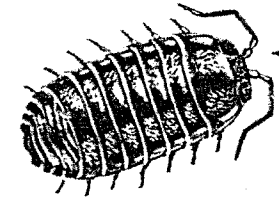
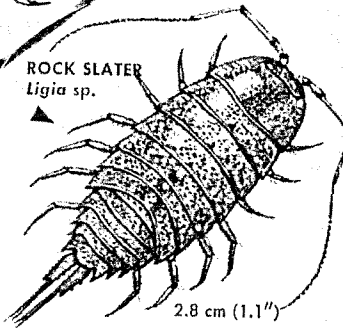
# Subphylum Crustacea

## Class Malacostraca

### Amphipoda Scuds



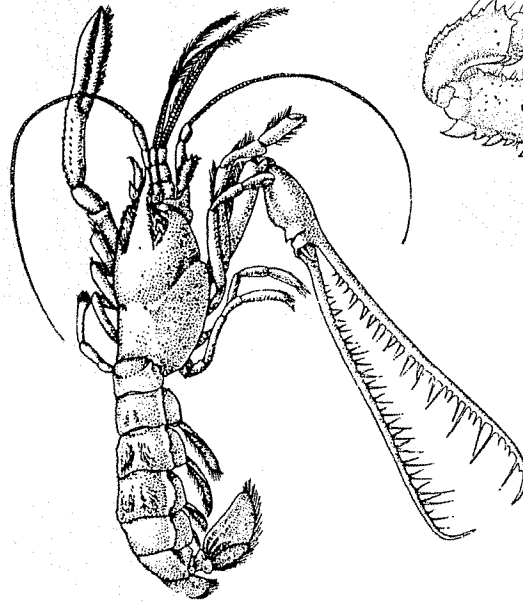
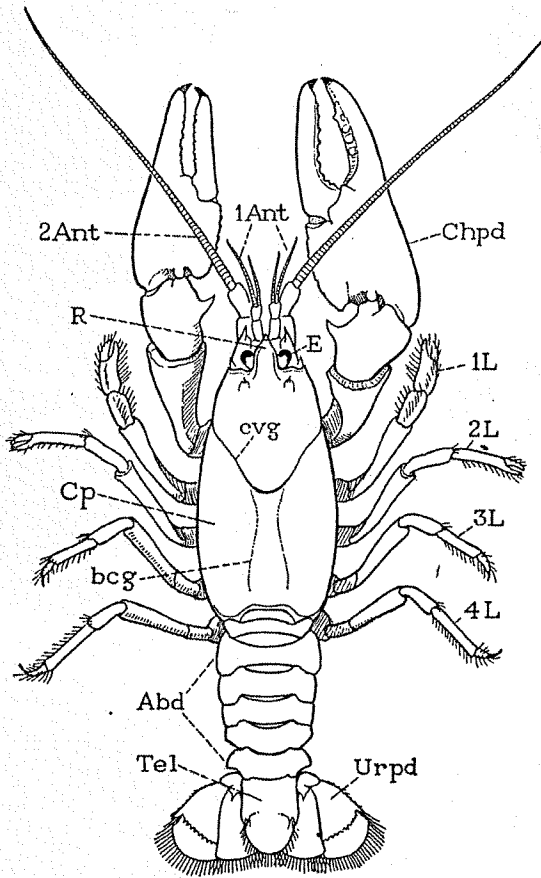
### Isopoda Pillbugs, Woodlice



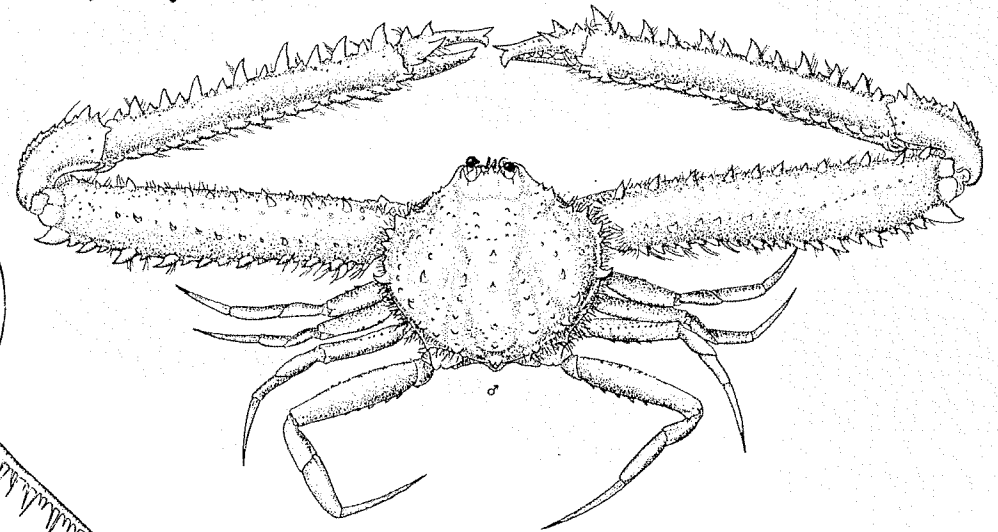
# Subphylum Crustacea

## Class Malacostraca

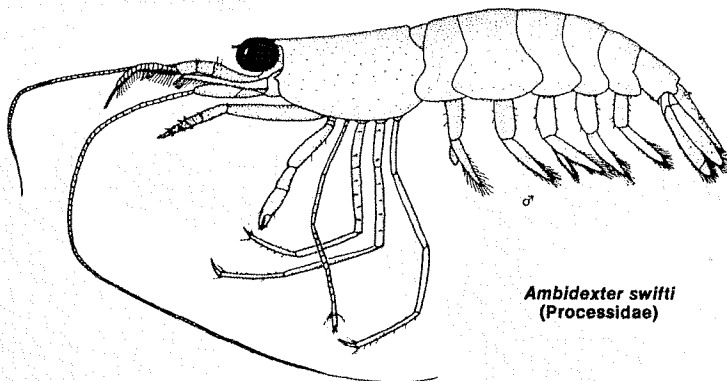
### Order Decapoda: Crabs, Crayfish, Lobsters



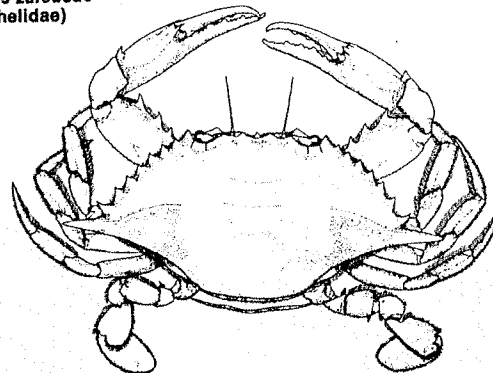
*Thaumastocheles zaleucus*  
(Thaumastocheilidae)



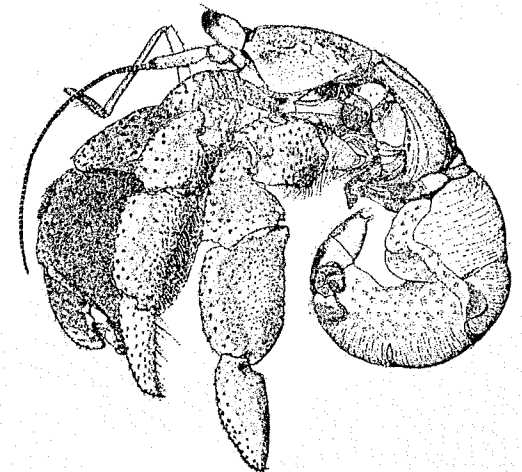
*Mimilambrus wileyi* (Mimilambridae)



*Ambidexter swifti*  
(Processidae)



*Callinectes sapidus* (Portunidae)

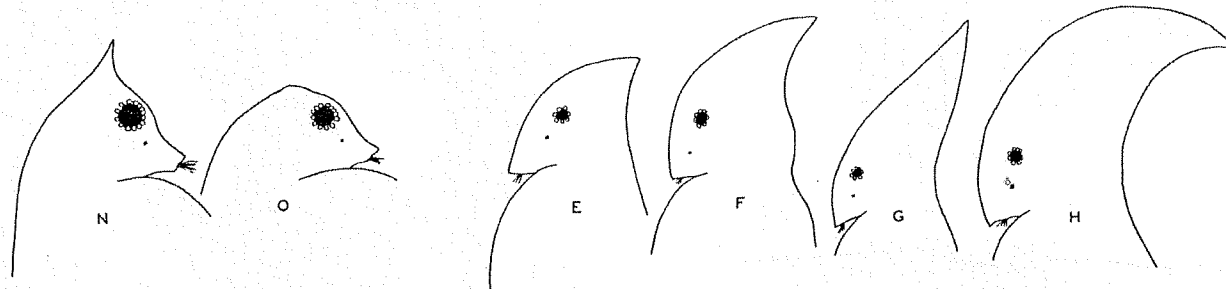
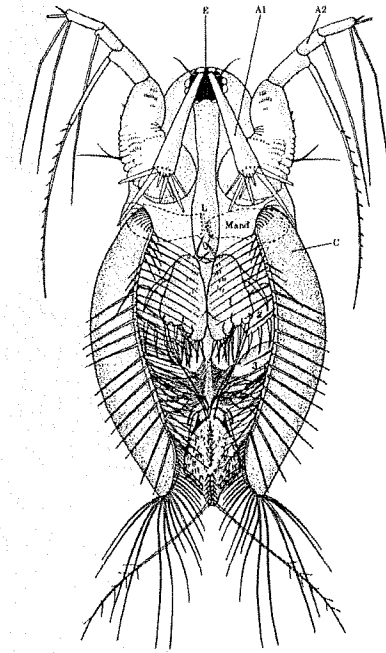
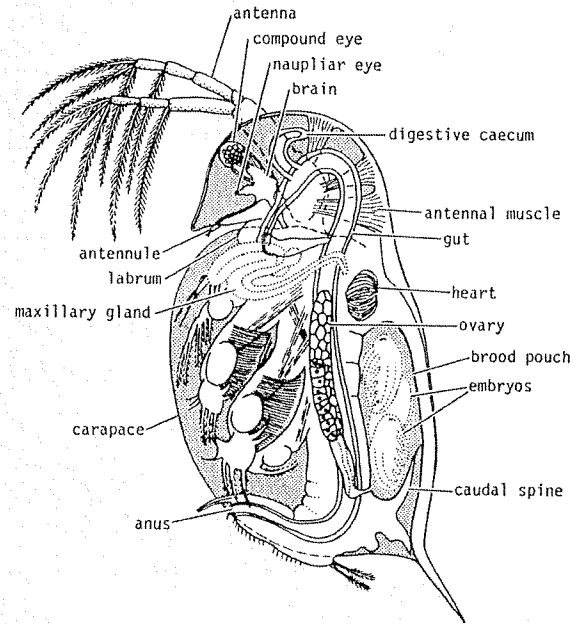
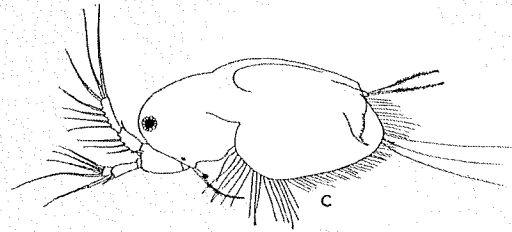
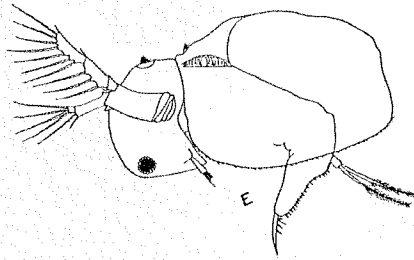


*Coenobita clypeatus* (Coenobitidae)

# Subphylum Crustacea

## Class Branchiopoda

### Order Cladocera: Water fleas



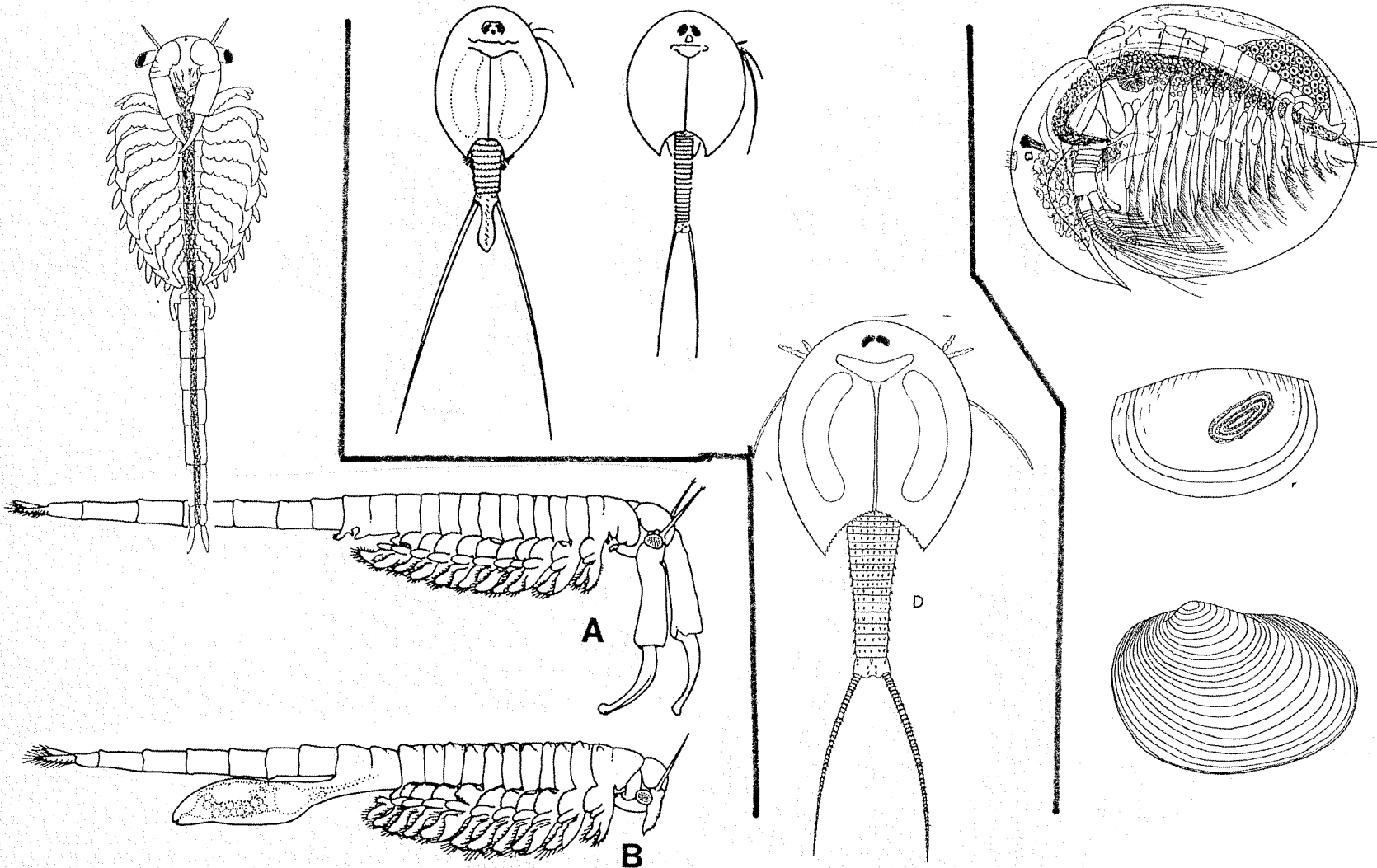
# Subphylum Crustacea

## Class Branchiopoda

**Anostraca**  
Fairy shrimp

**Notostraca**  
Tadpole shrimp

**Conchostraca**  
Clam shrimp



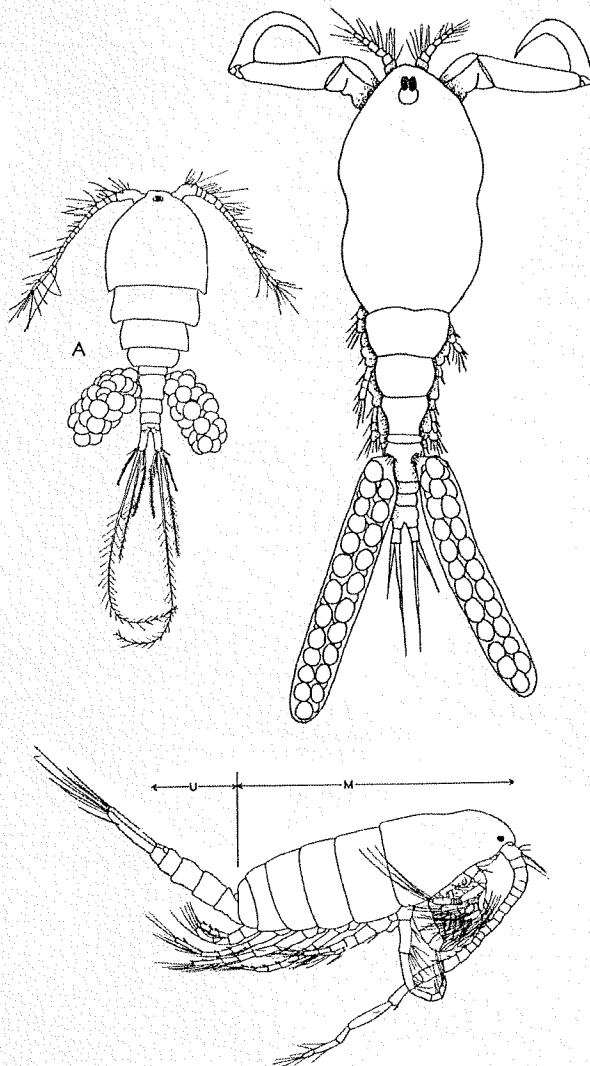


# Subphylum Crustacea

## other classes

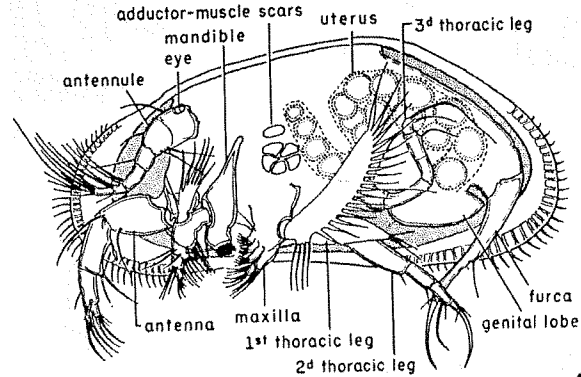
### Copepoda

#### Copepods

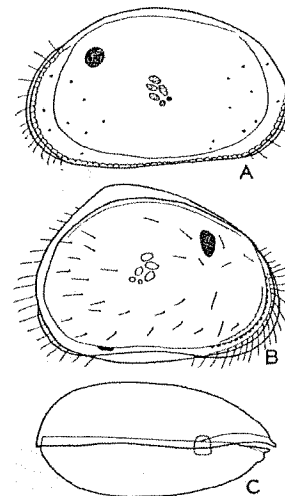
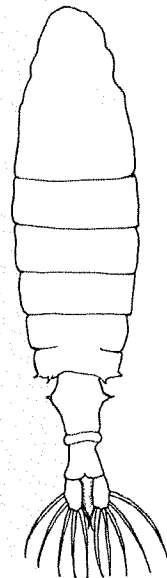


### Ostracoda

#### Seed shrimp

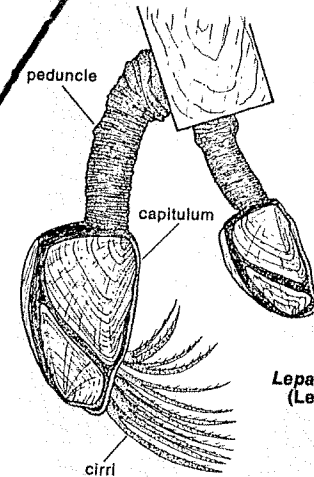
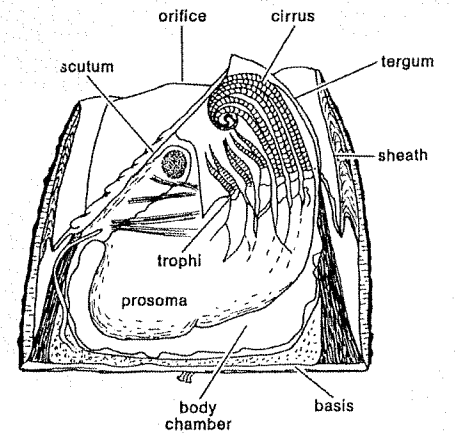


0.1 0.2 0.5 mm.

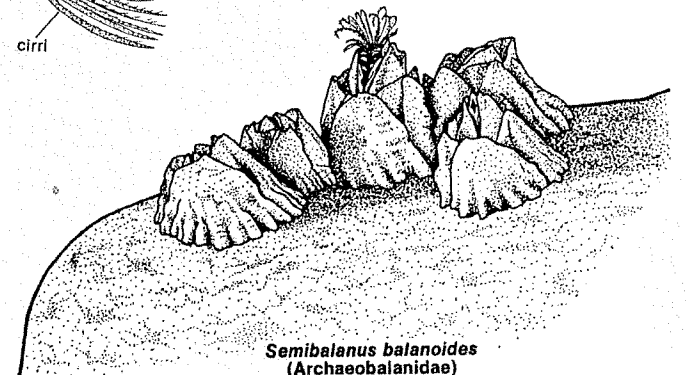


### Cirripedia

#### Barnacles



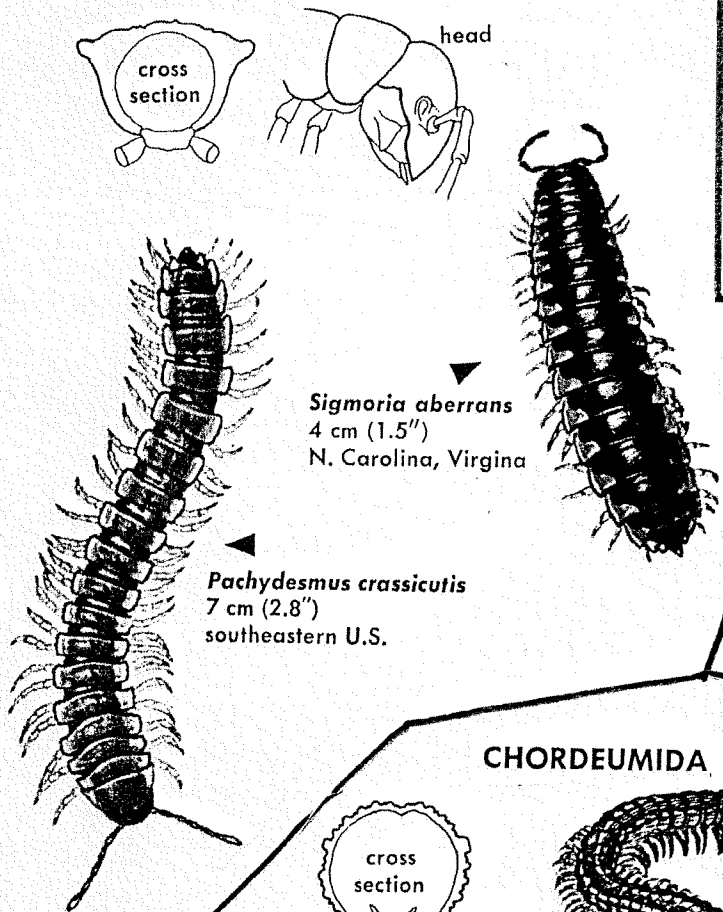
*Lepas anatifera*  
(Lepadidae)



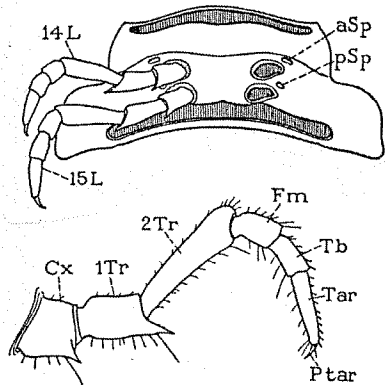
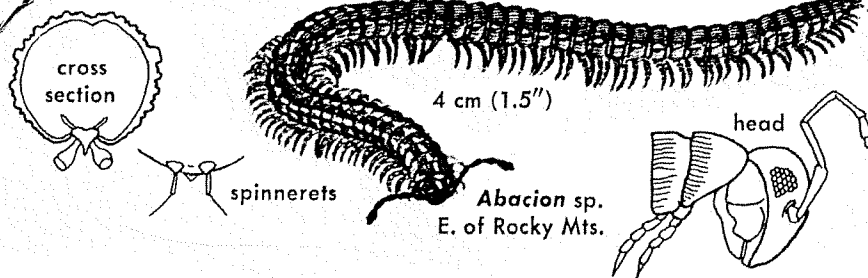
*Semibalanus balanoides*  
(Archaeobalanidae)

# Class Diplopoda Millipedes

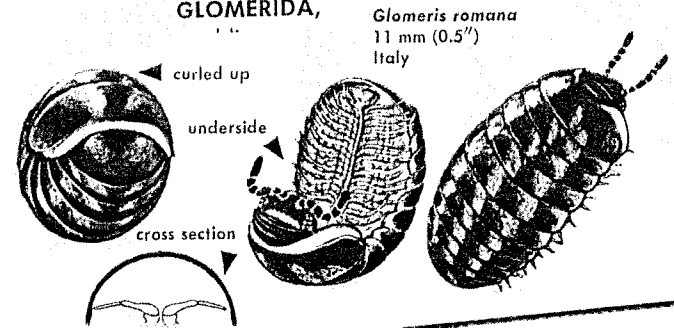
## POLYDESMIDA



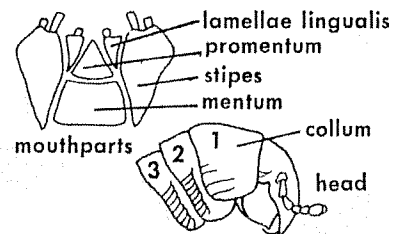
## CHORDEUMIDA



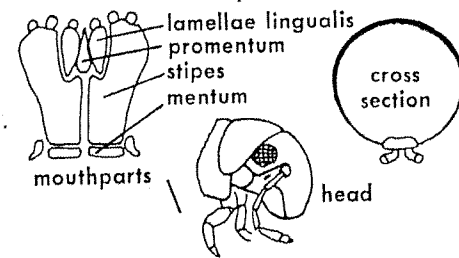
## GLOMERIDA,



## CAMBALIDA

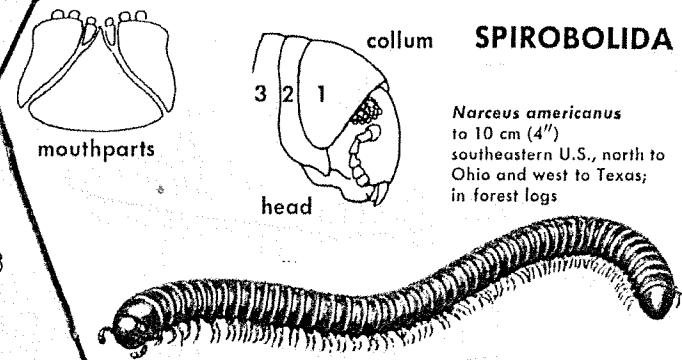


## JULIDA



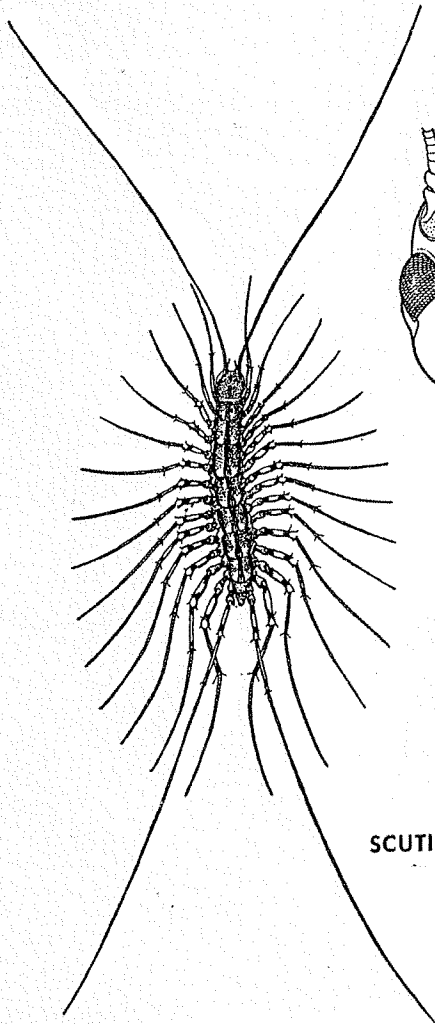
## collum

## SPIROBOLIDA

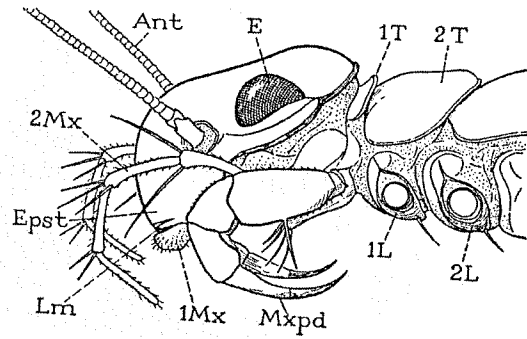
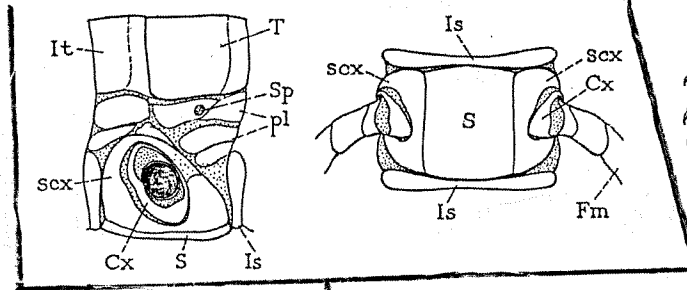
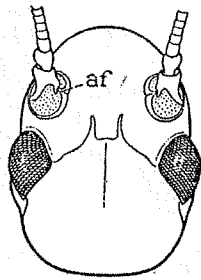


# Class Chilopoda

## Centipedes

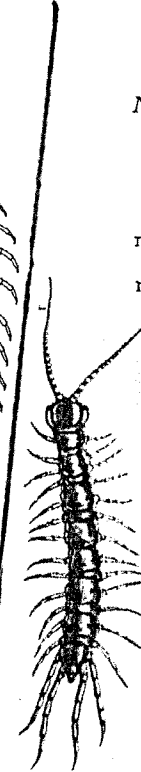
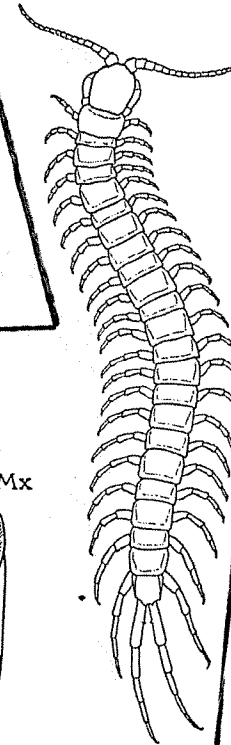
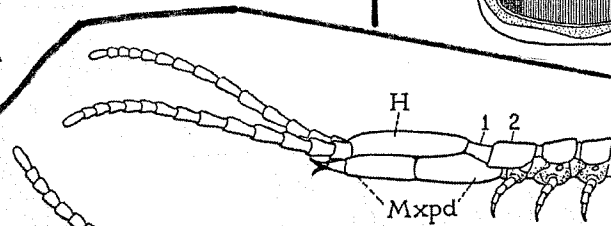
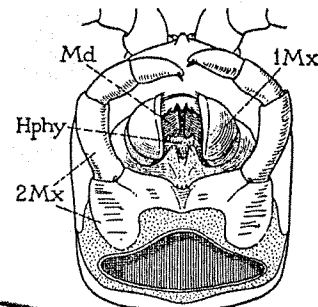


Chilopoda, *Scutigera coleoptrata* (L.). The house centipede.

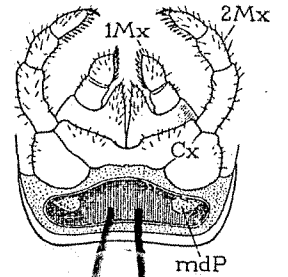
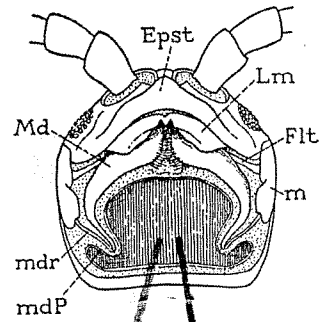


### SCUTIGEROMORPHA

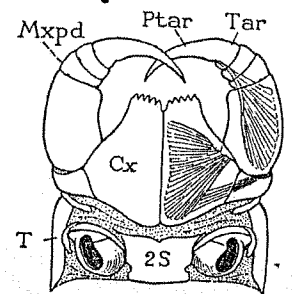
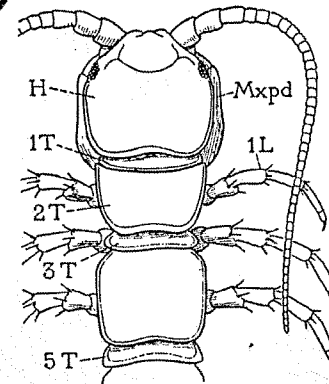
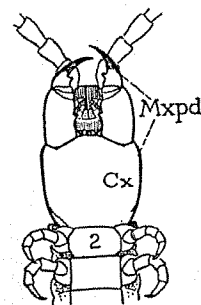
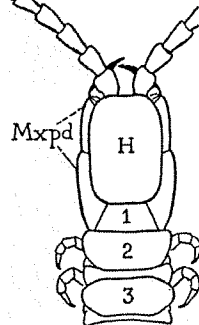
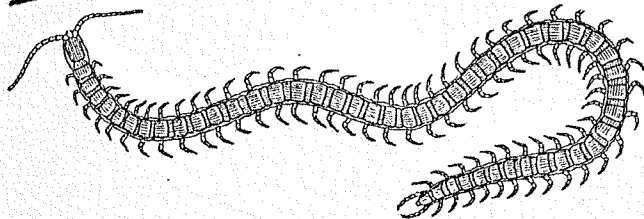
### SCOLOPENDROMORPHA



### LITHOBIOMORPHA,



### GEOPHILOMORPHA,



# Class Pauropoda

Pauropods

# Class Symphyla

Garden centipedes

