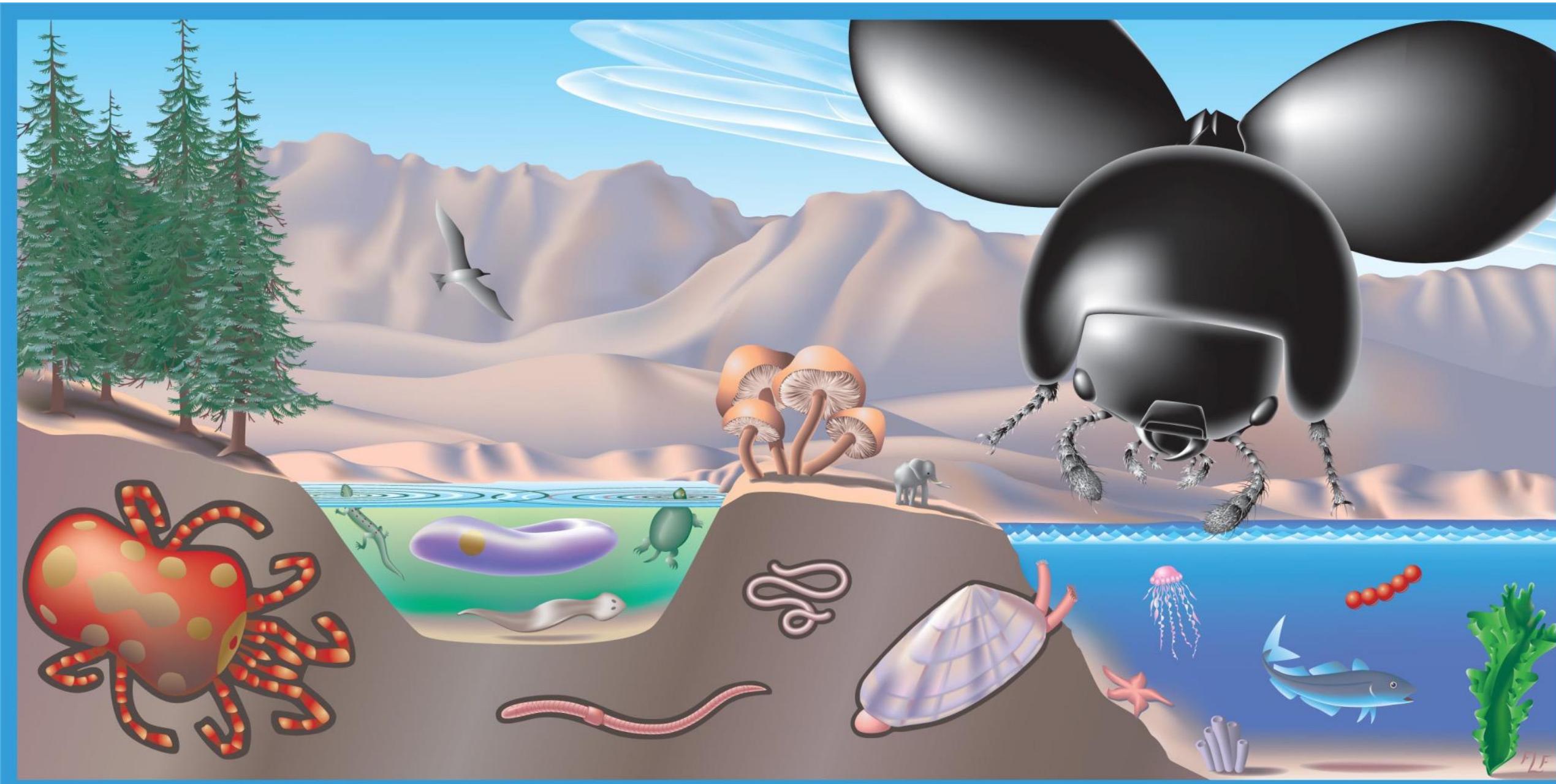
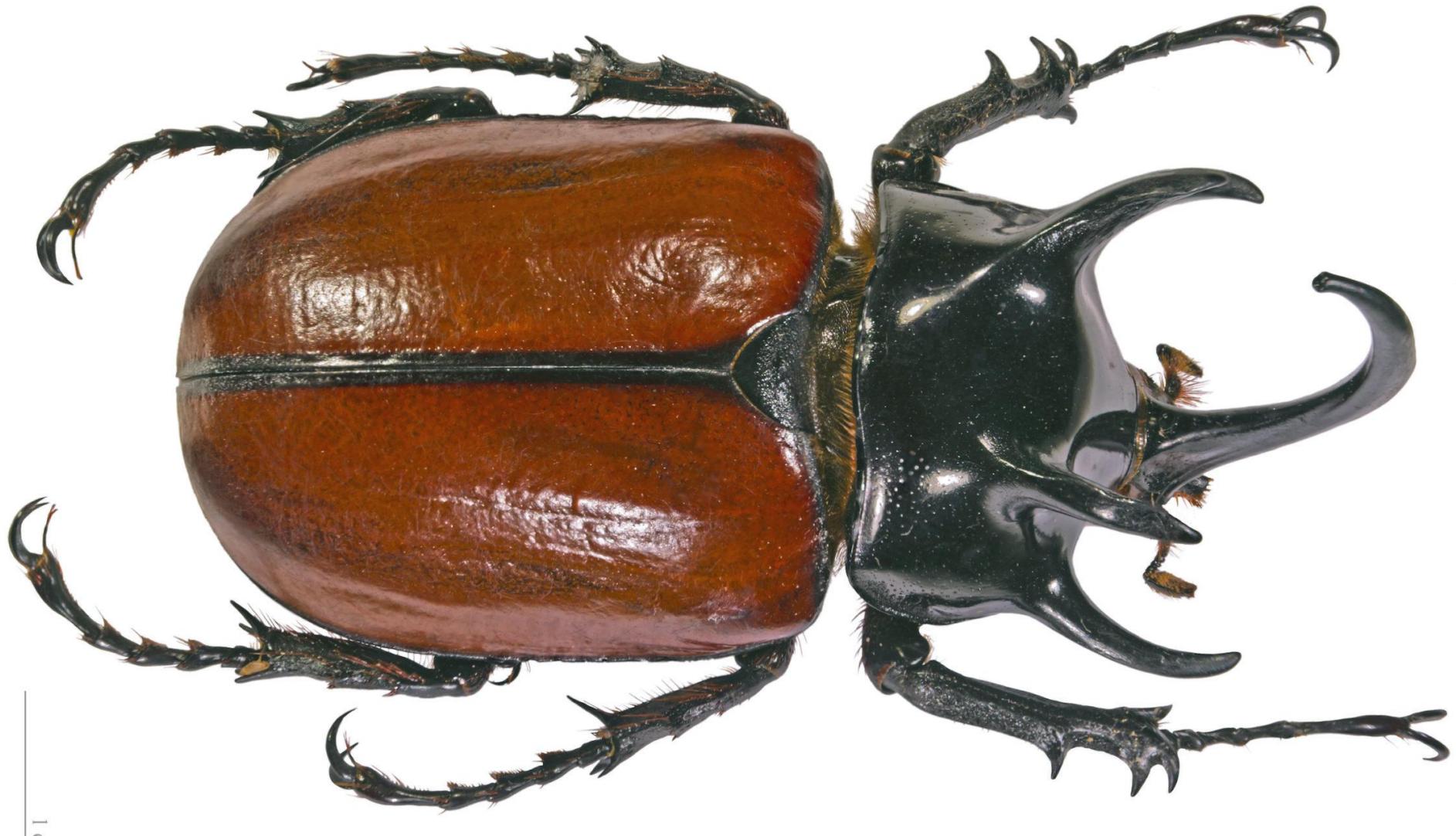


Coleoptera

Diversity and Identification







1 cm

How can you distinguish
different beetle families?

THINK

PAIR

SHARE

- Find a partner or two (If you see someone without a partner, invite them to join you!)
- Discuss:
How many Coleoptera families are present in this slide?





Carabidae



Passalidae



Scarabaeidae



Oedemeridae



Lucanidae



Trogossitidae



Tenebrionidae



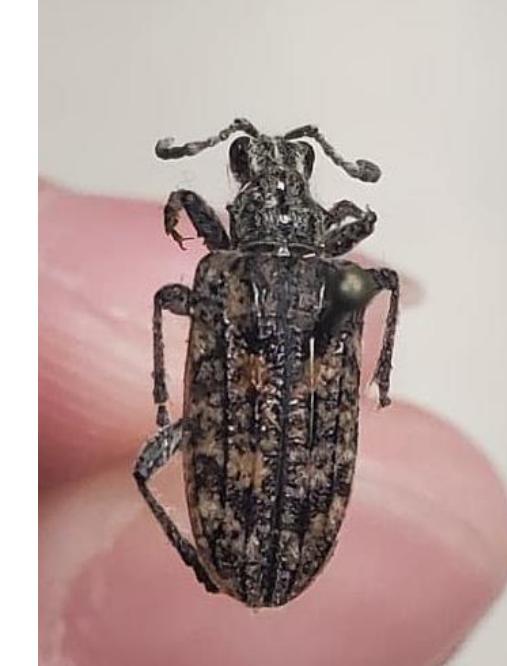
Pythidae

THINK

PAIR

SHARE

- Find a partner or two (If you see someone without a partner, invite them to join you!)
- Discuss:
How many Coleoptera families are present in this slide?



Cerambycidae



Cucujidae



Cerambycidae



Cerambycidae



Cerambycidae



- Find a partner or two and discuss:
- How many Coleoptera families are present in this slide?



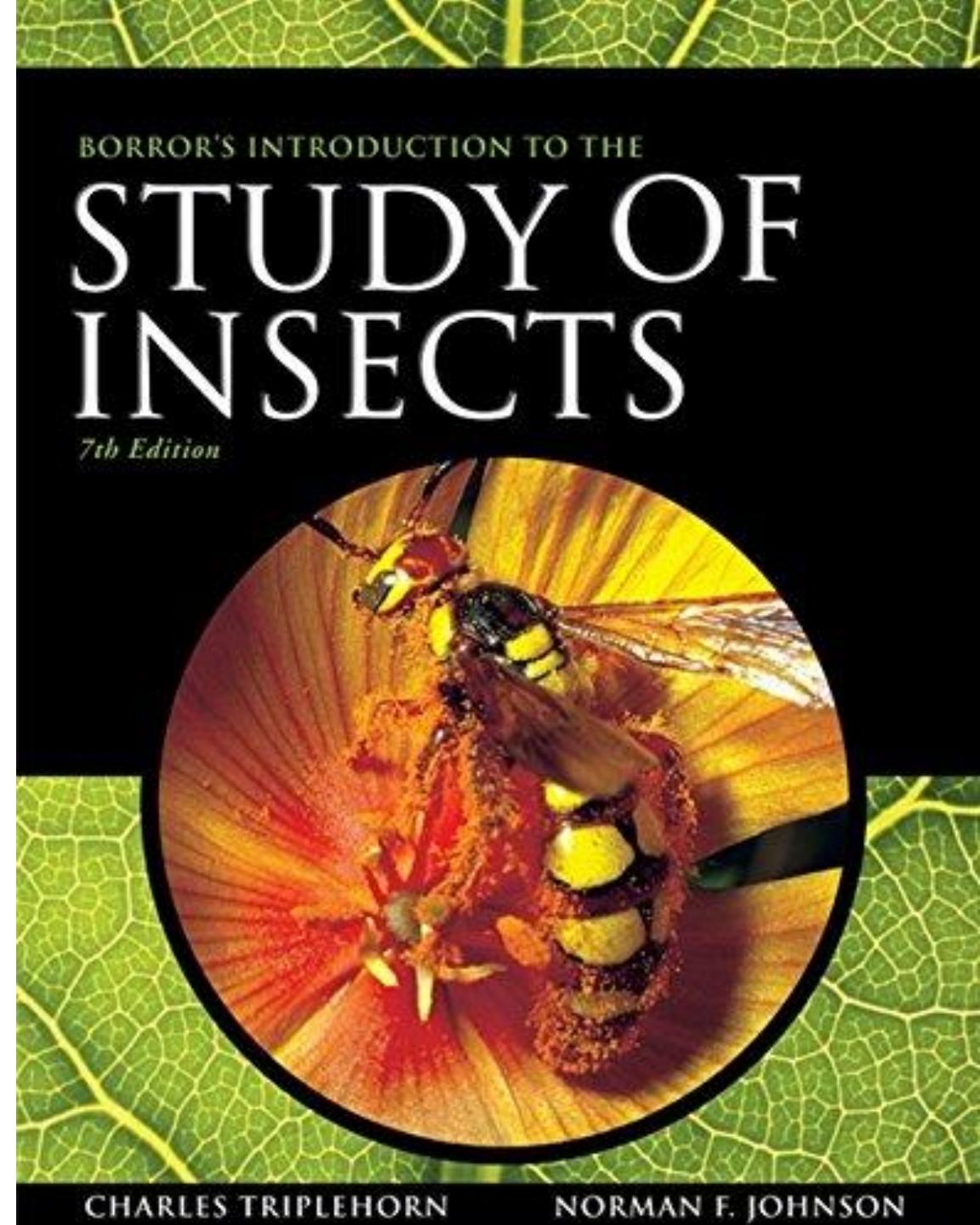
Only one – Chrysomelidae!



How can you distinguish
different beetle families?

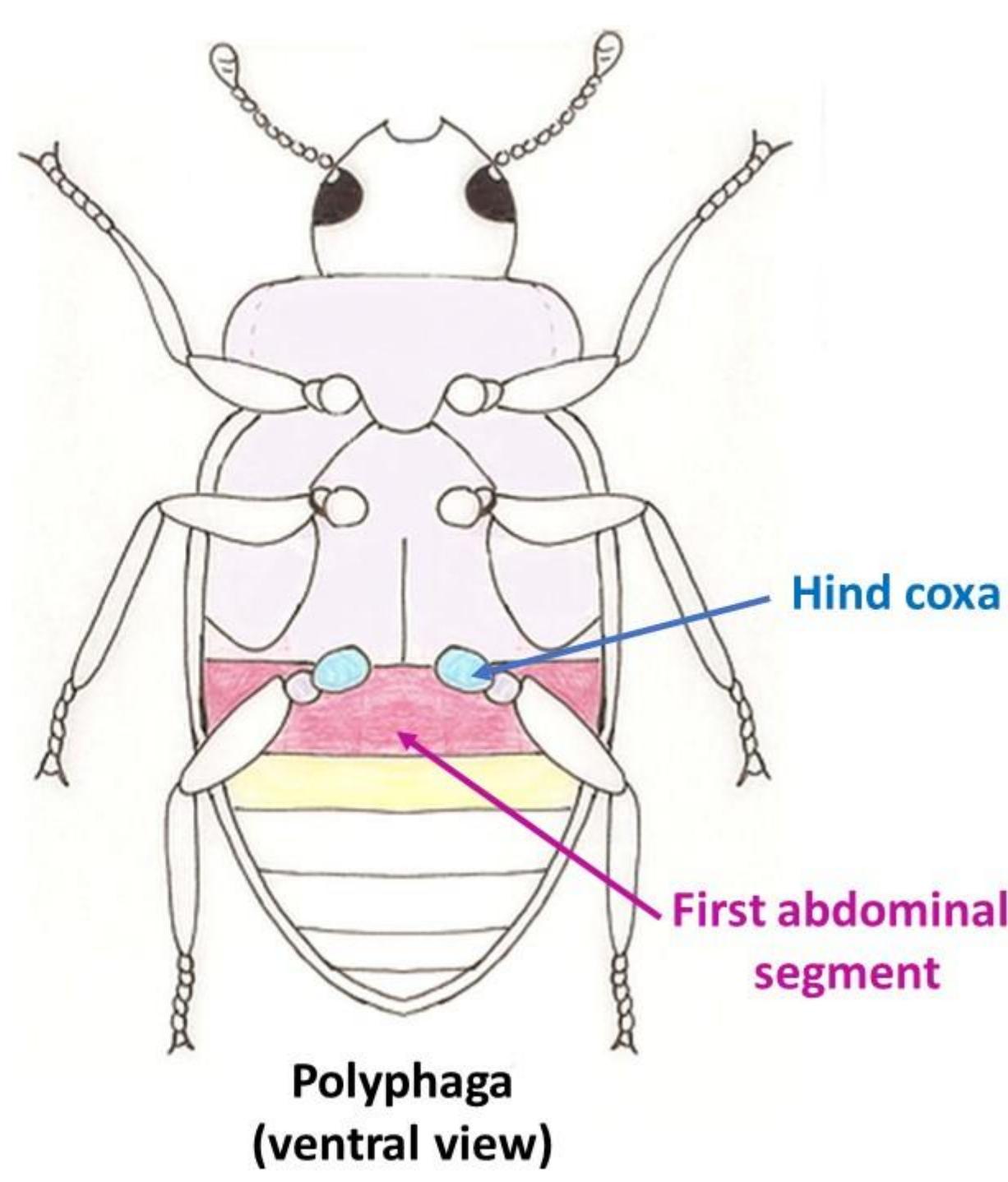
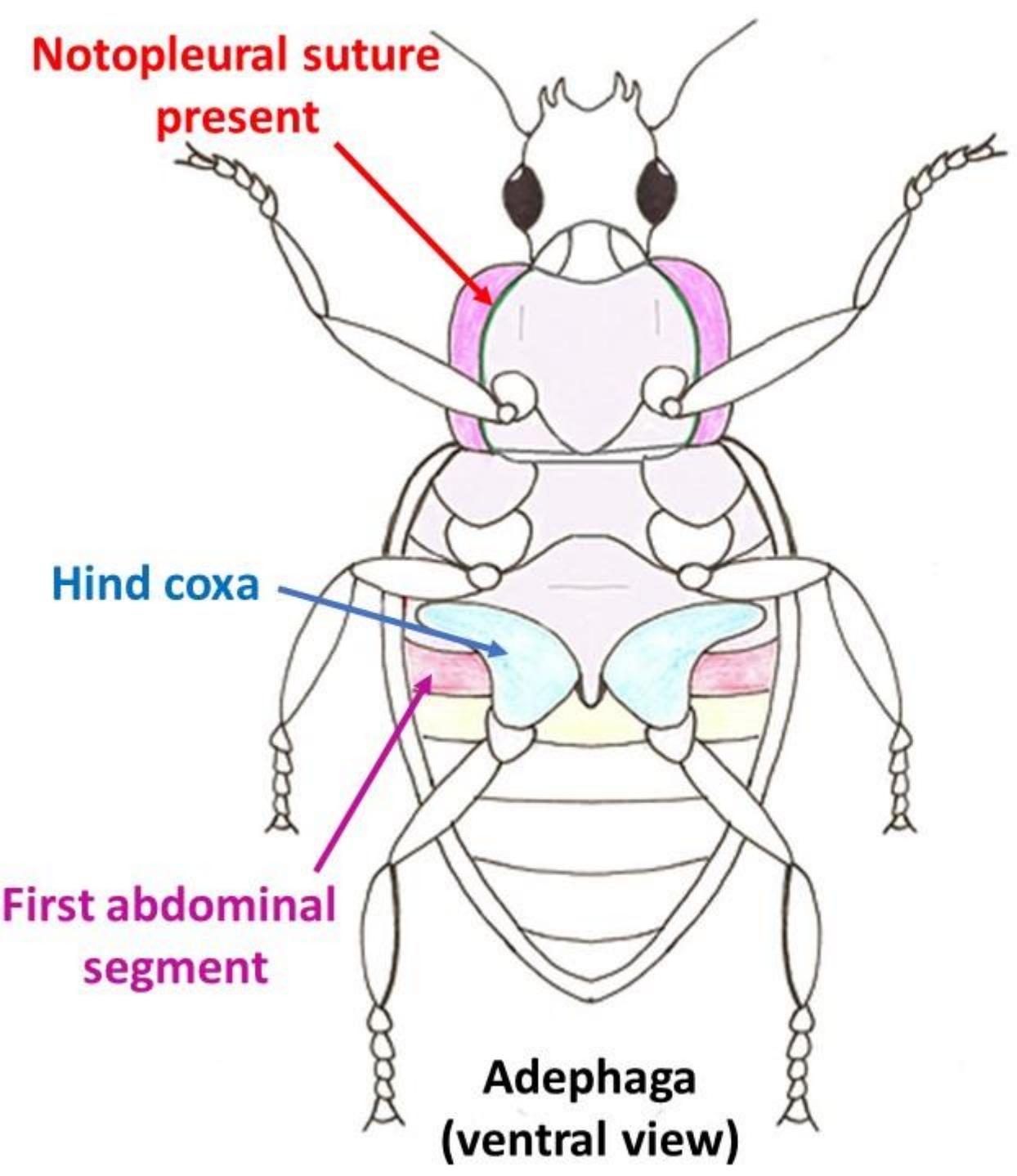
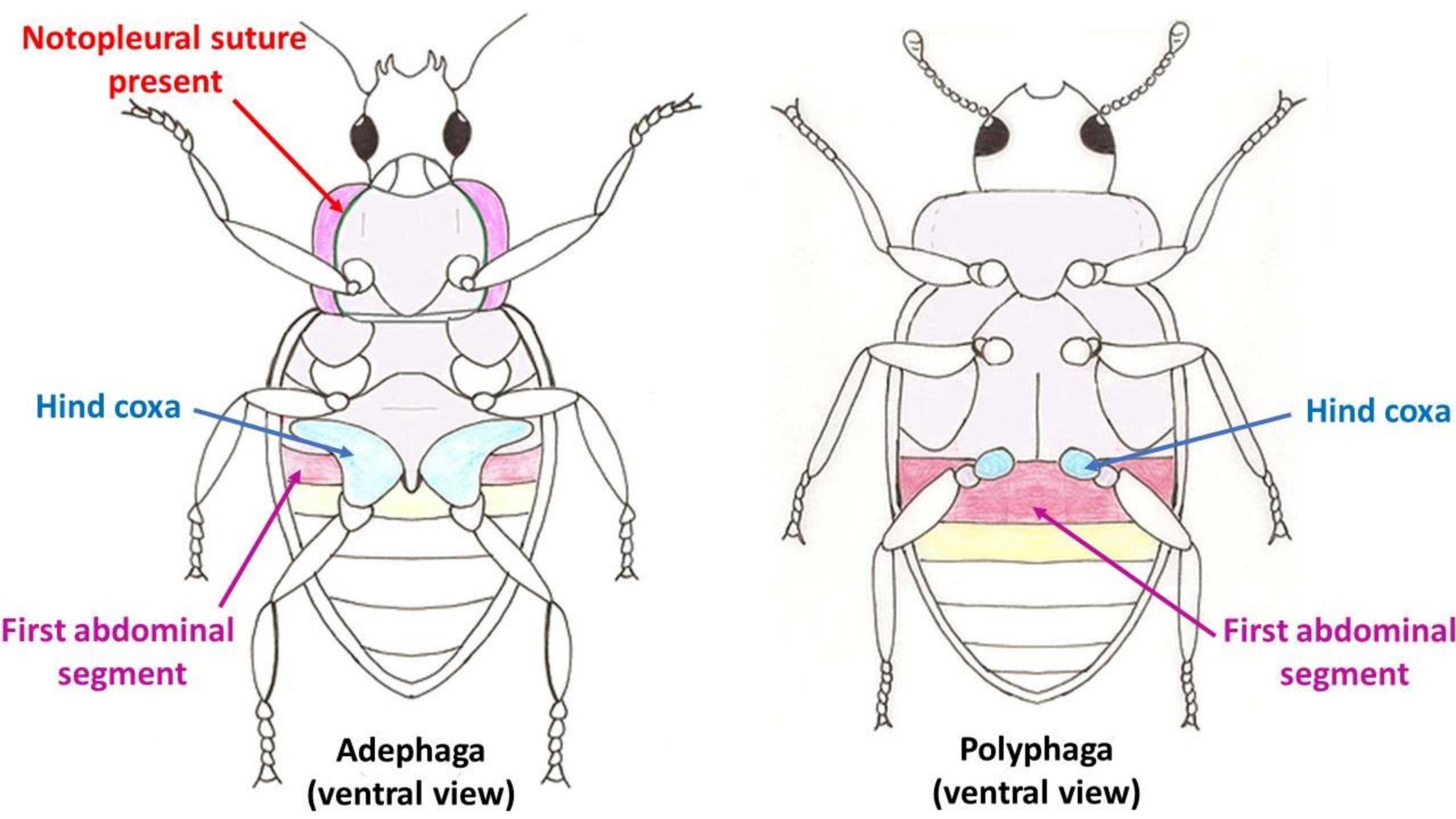
Identification Key

- Coleoptera divided into **four** suborders
- Archostemata and Myxophaga **exceedingly rare**
- Focus on **Adephaga** and **Polyphaga**

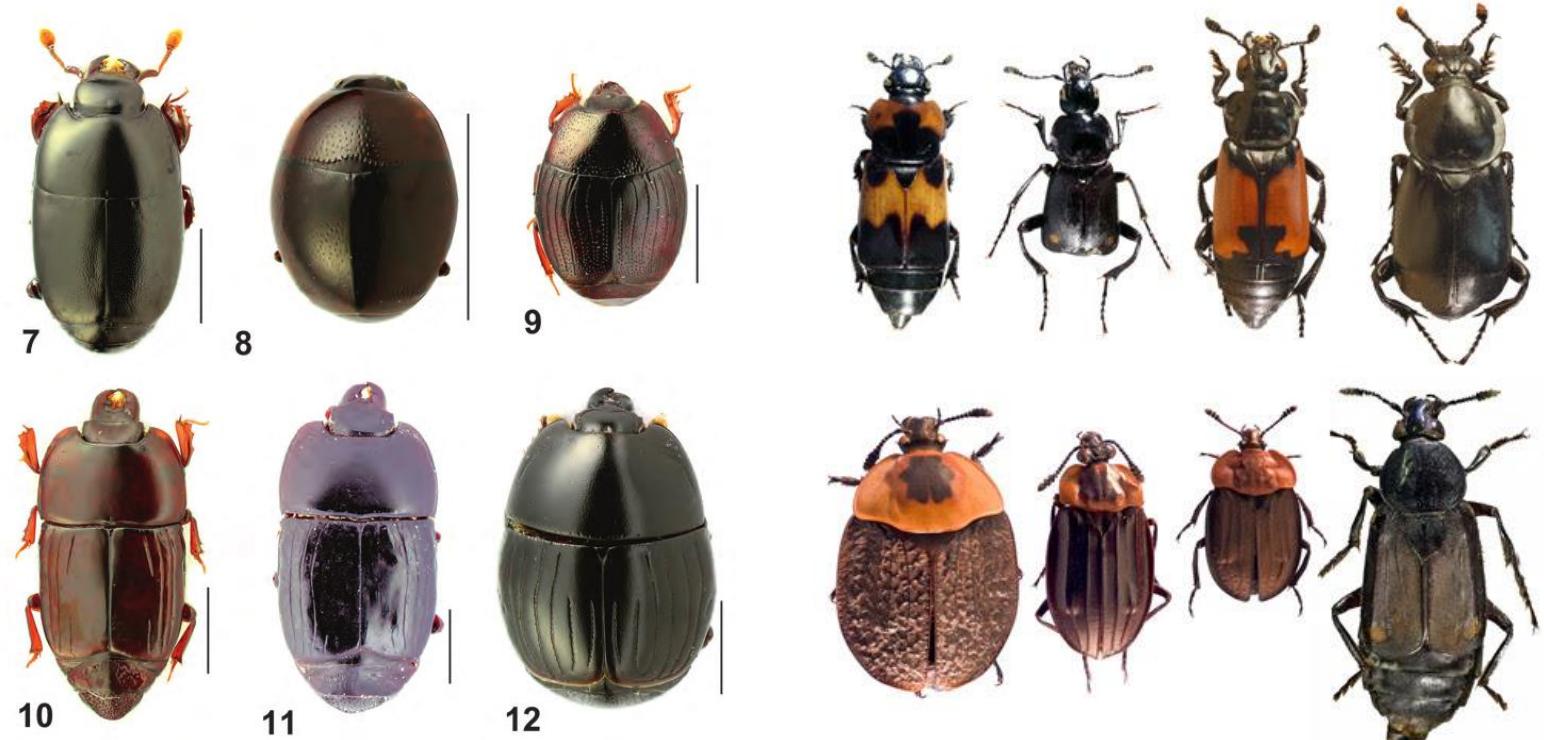
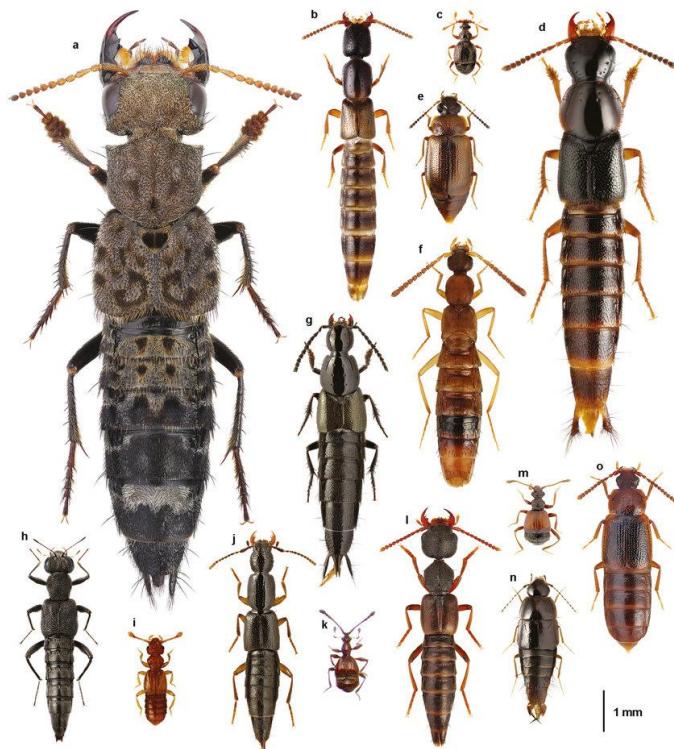


CHARLES TRIPLEHORN

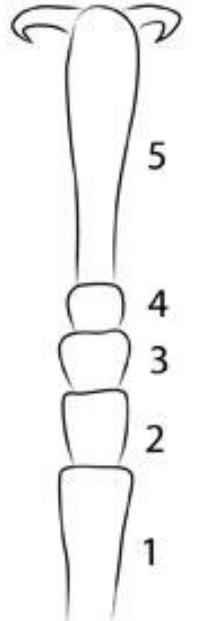
NORMAN F. JOHNSON



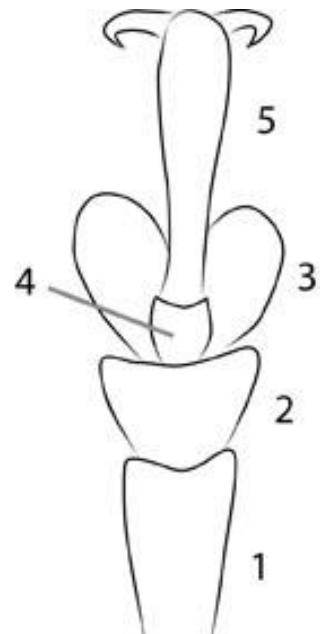
- “Elytra short and truncate”
- “Elytra very short, leaving 3 or more abdominal tergites exposed”
- “One or more abdominal terga exposed beyond elytra”



- “Tarsi apparently 4-4-4”
- “Tarsi pseudotetramerous”
- “Apparent penultimate tarsomere lobed below, enclosing and nearly hiding true fourth tarsomere”



pentamerous
tarsus



pseudotetramerous
tarsus

Fig. 1.1. Pseudotetramerous tarsi of *Brachysomida californica*. The fourth tarsal segment is reduced and hidden within the lobed third tarsomere, giving the appearance that there are just four total tarsal segments instead of five.



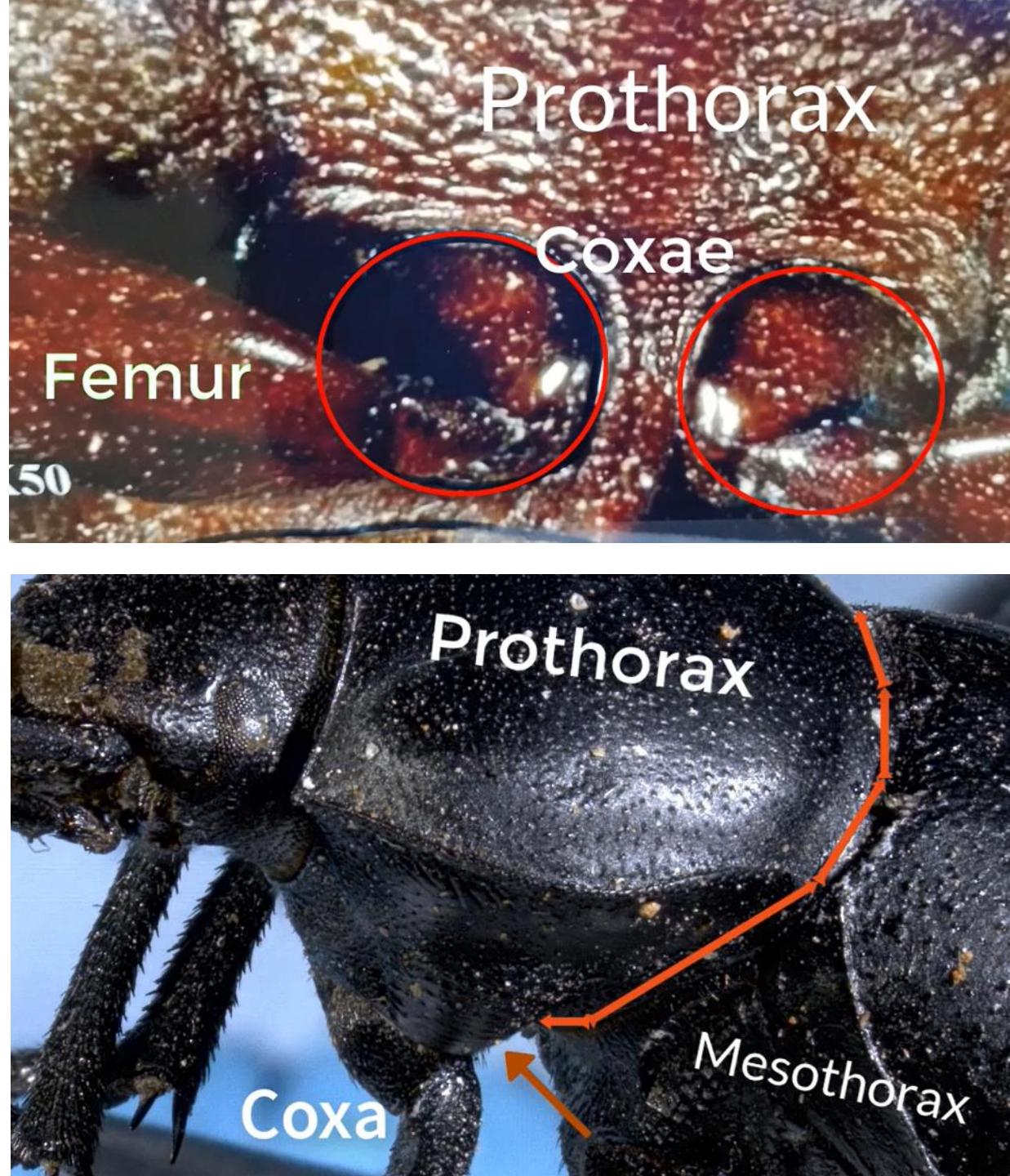
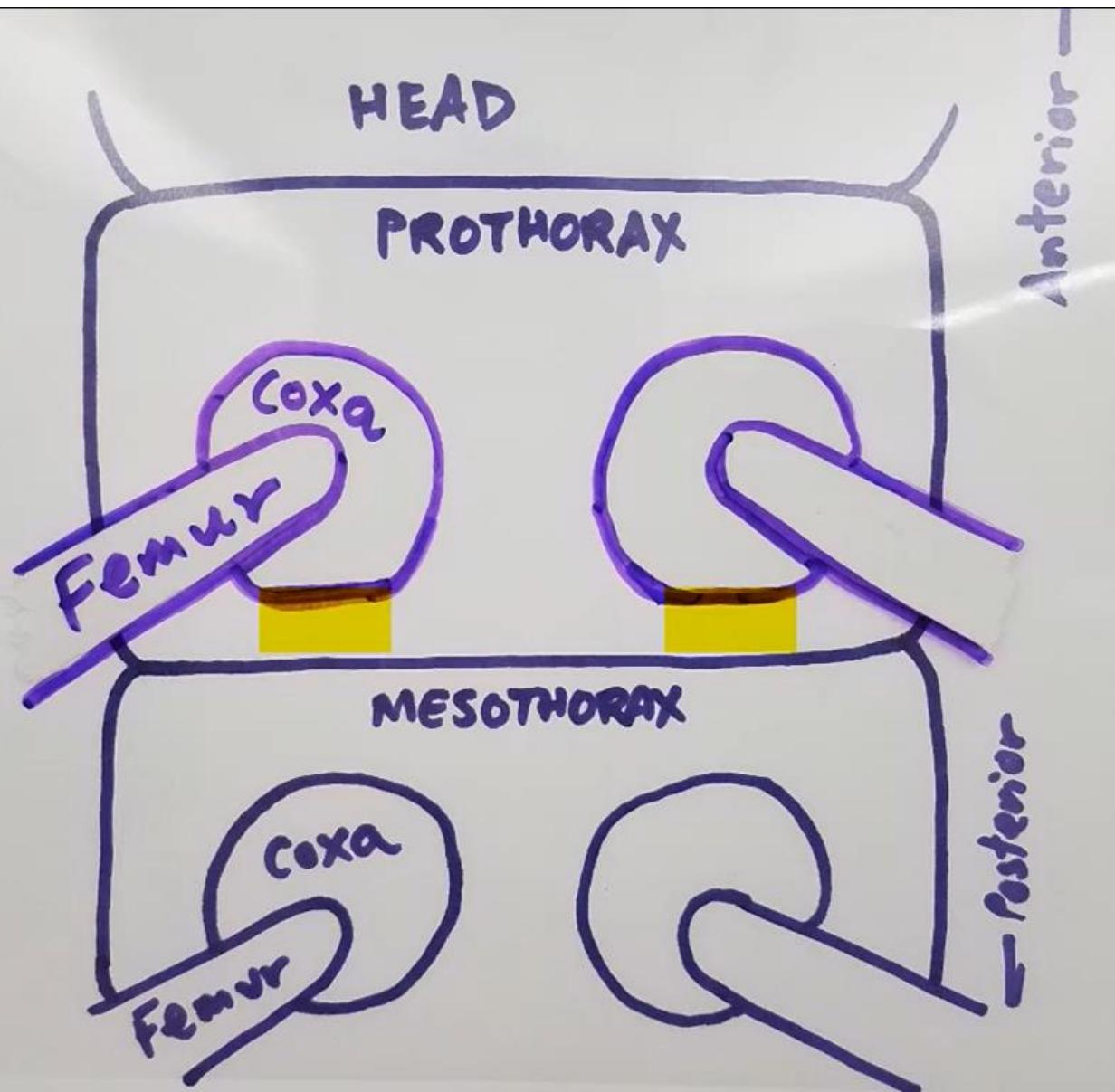
- Head rostrate



- Head concealed from above



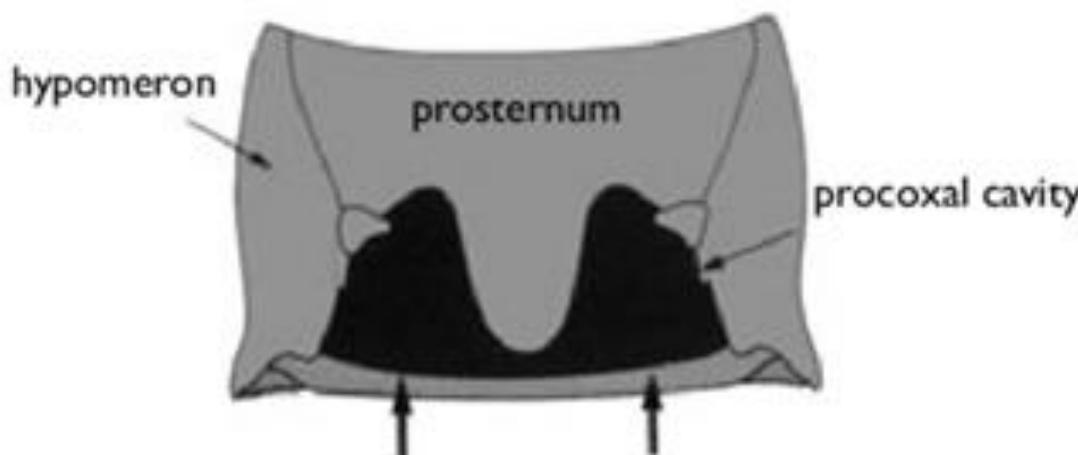
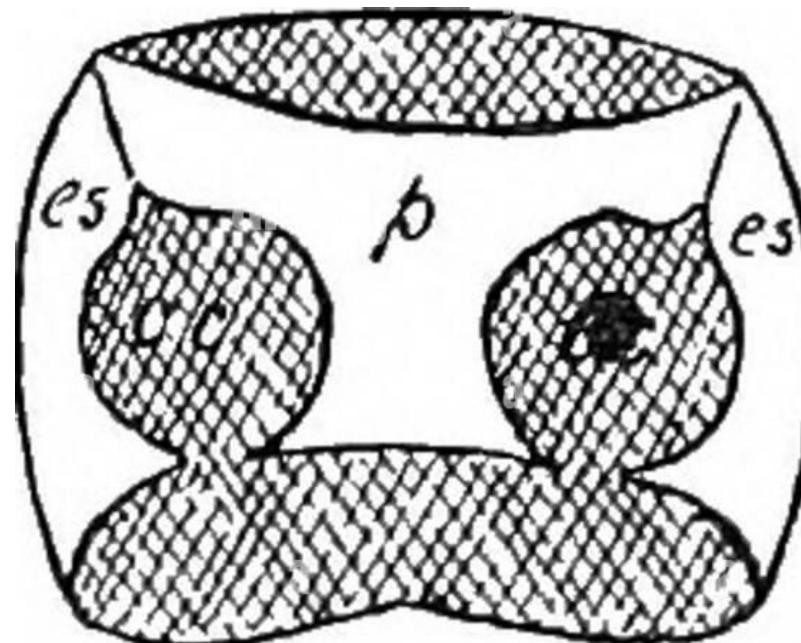
- Fore coxal cavity closed



- Fore coxal cavity open



notosternal suture
prosternum
prosternal process
hypomeron
procoxal cavity
(open)
mesosternum



- Punctate

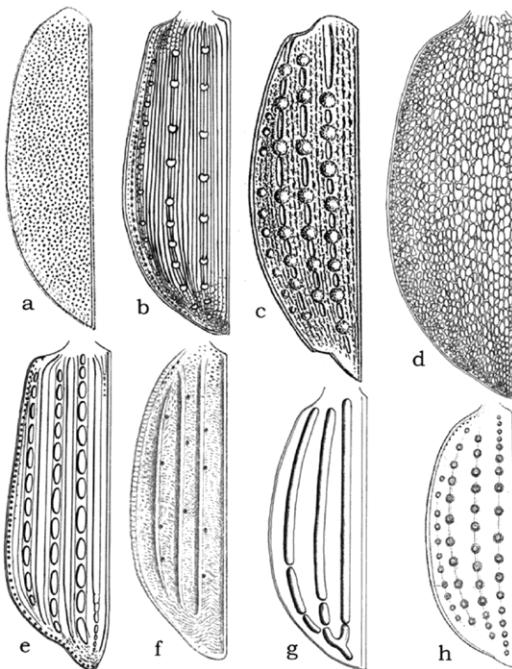


- Pubescent (hair)

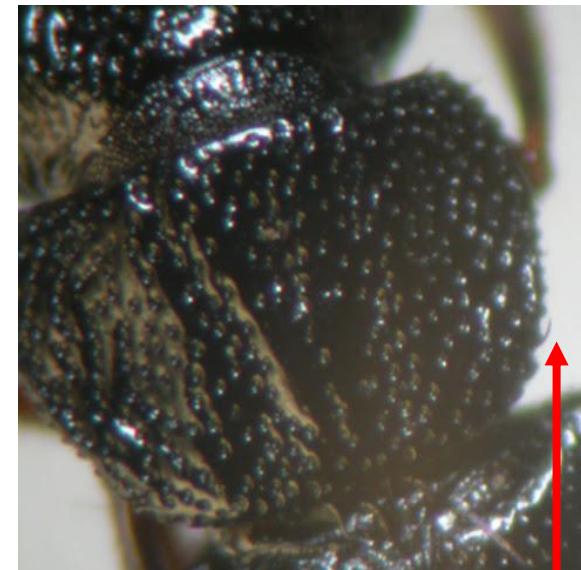


- Sculptured

- Often used synonymous with or alongside “punctate”



- Crenulate



Group activity

- Groups of 3-4 students
- Use the key to ID the specimens provided to you
- Be prepared to discuss your observations

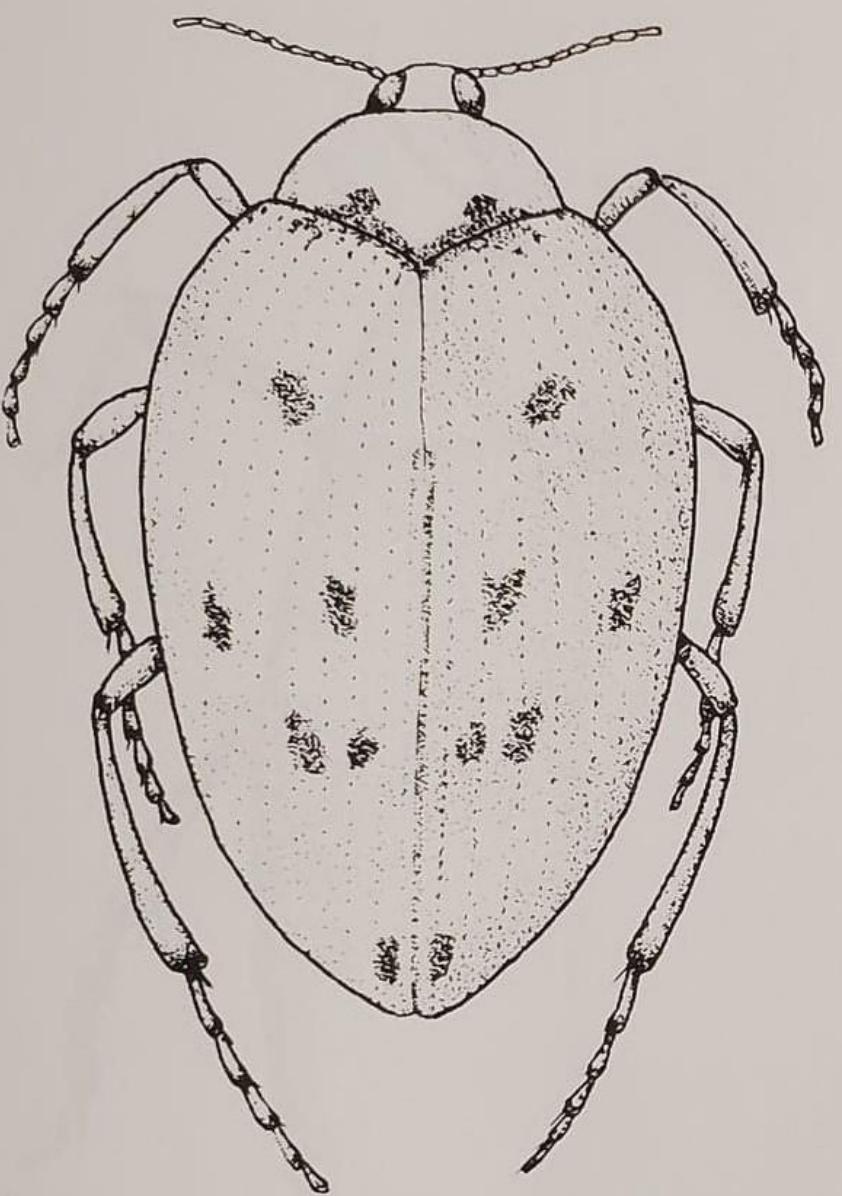
Specimen A:

Suborder:

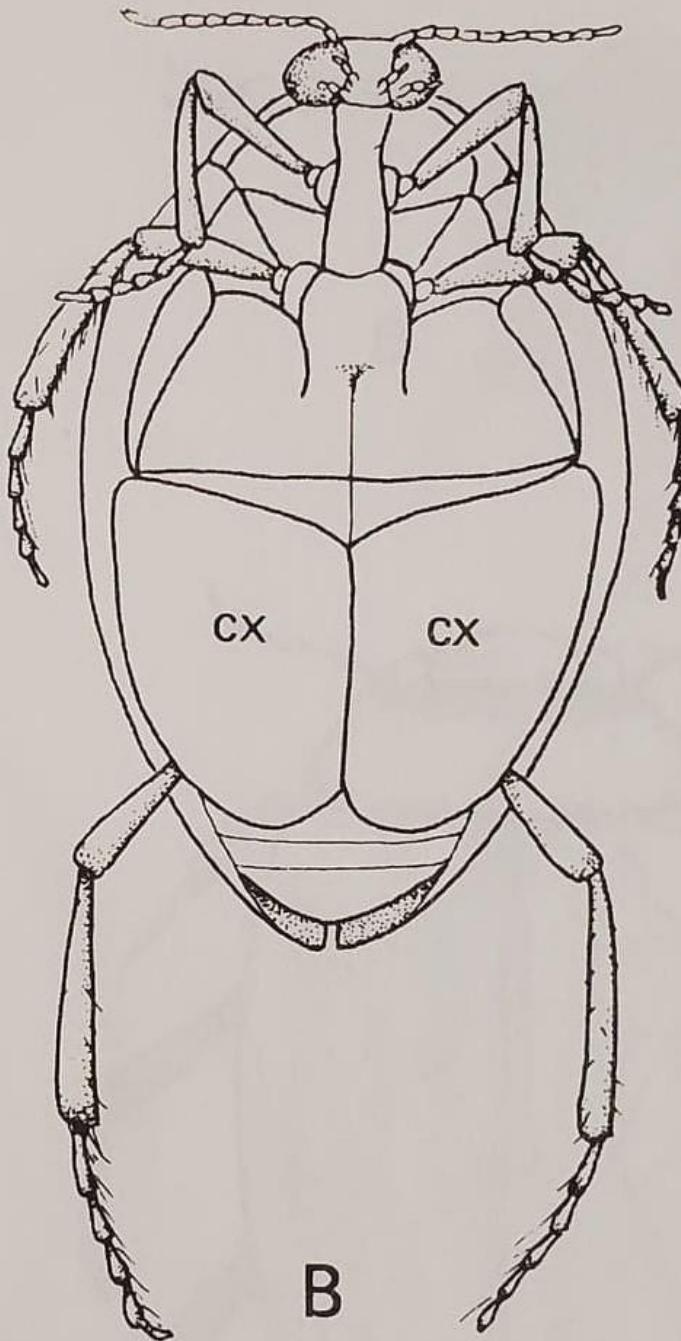
Family:

Steps on the key:

Diagnostic characters:



A

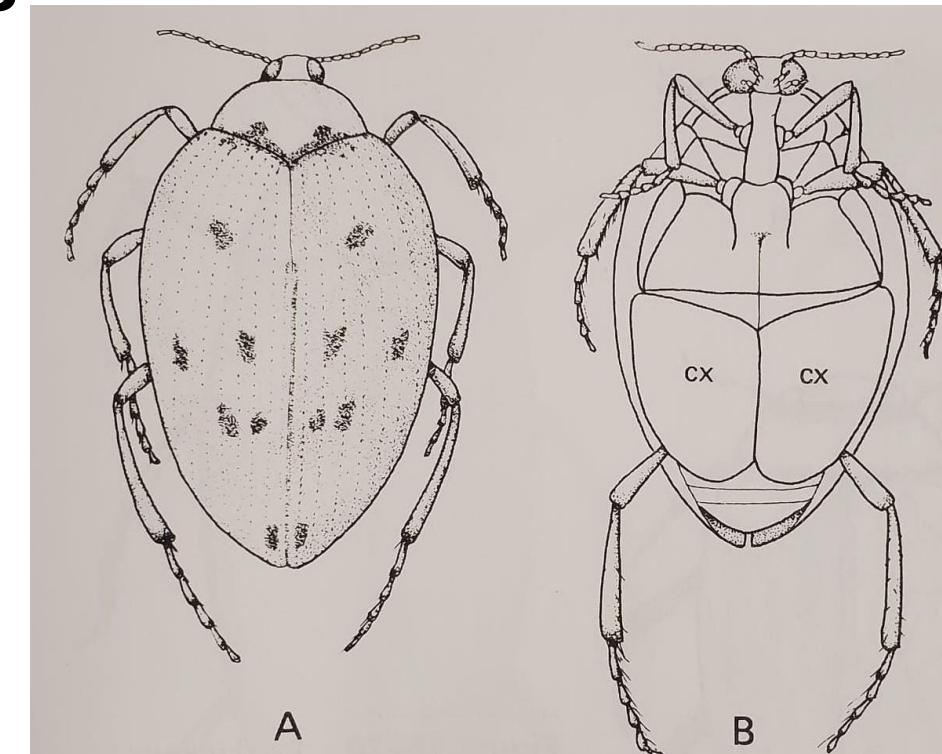


B

Steps on the key

1. Elytra present, complete, short, or reduced to flaplike stubs on the thorax.....**2**
- 1'. Elytra totally absent.....**193**

Notes:

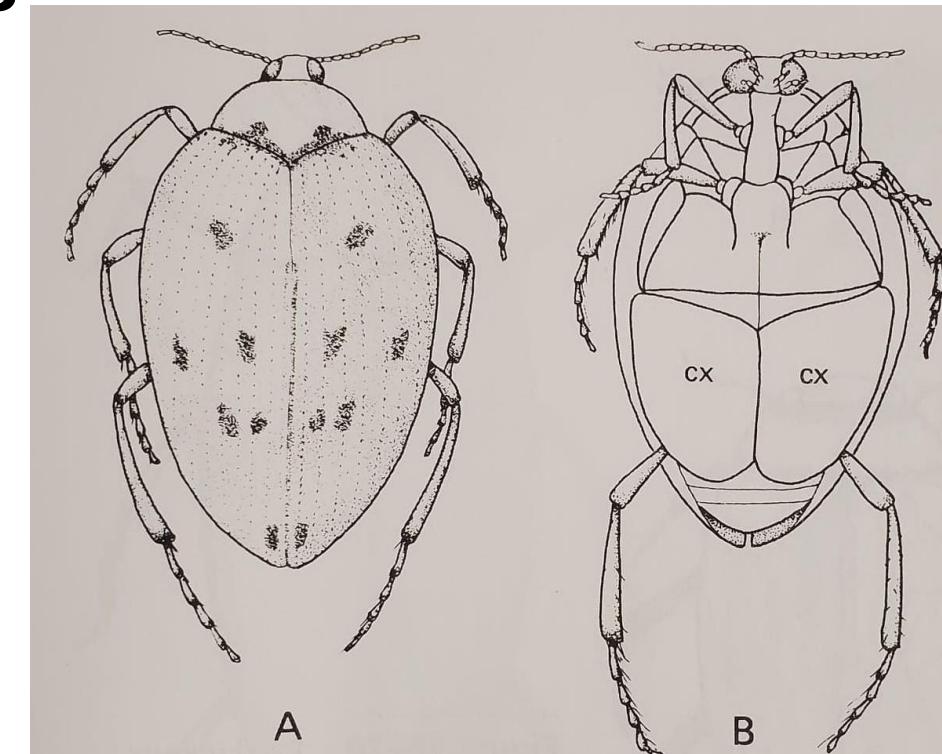


Steps on the key

1. Elytra present, complete, short, or reduced to flaplike stubs on the thorax.....**2**
- 1'. Elytra totally absent.....**193**

Notes:

1 – 2

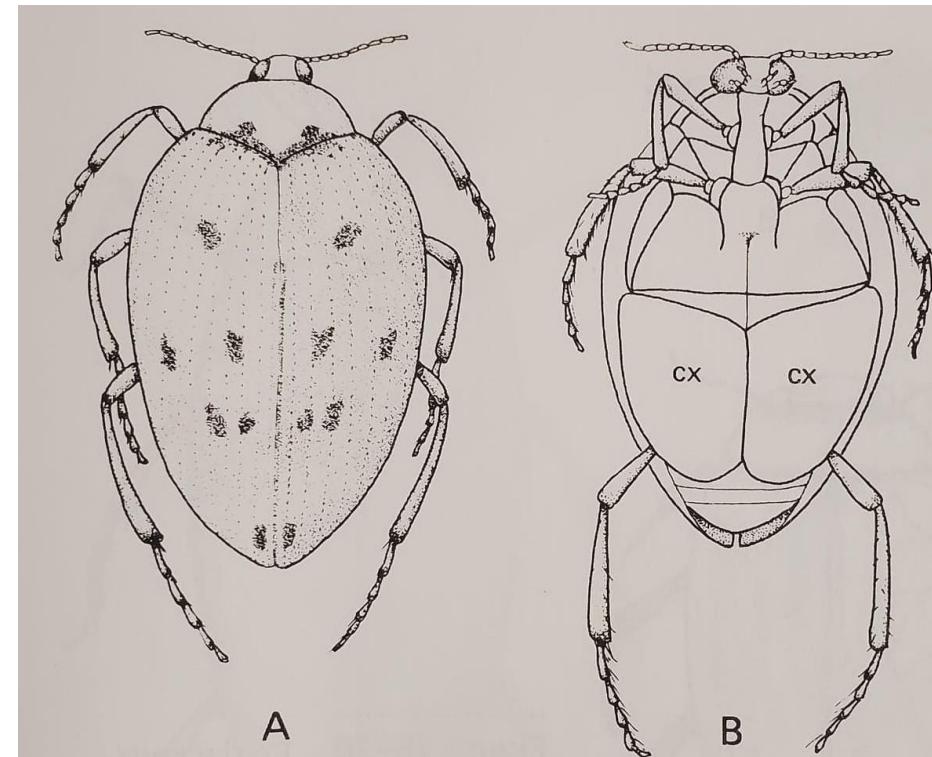


Steps on the key

- 2. Notopleural sutures present.....3
- 2'. Notopleural sutures absent.....12

Notes:

1 – 2

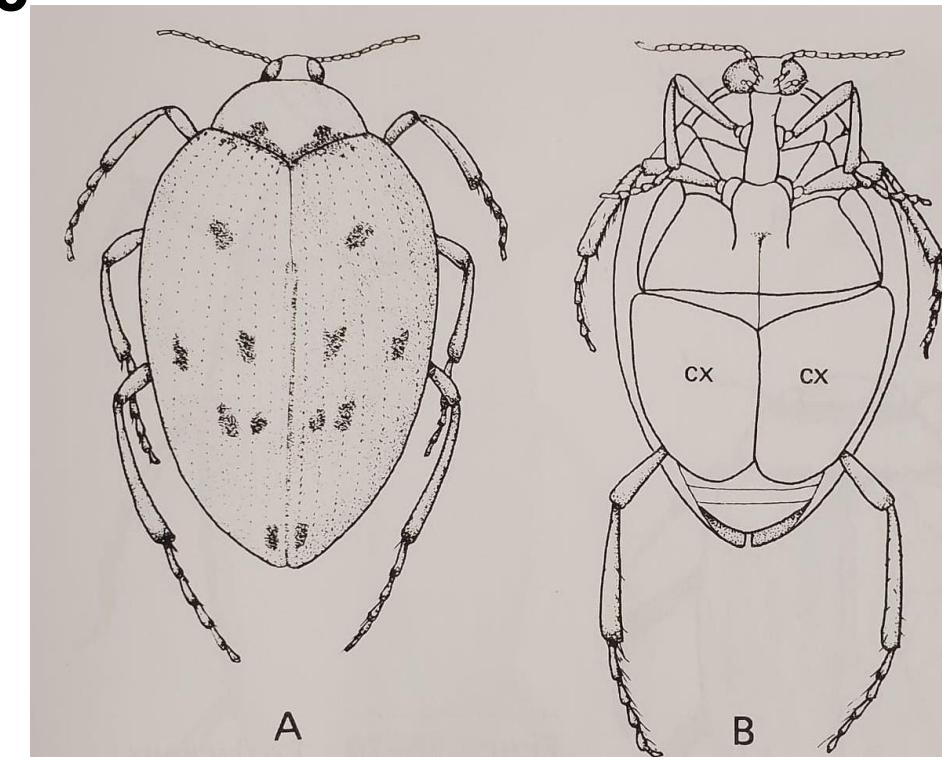


Steps on the key

3. Hind coxa immovably fused to metasternum
[...] 4
- 3'. Hind coxa free [...] 10

Notes:

1 – 2 – 3

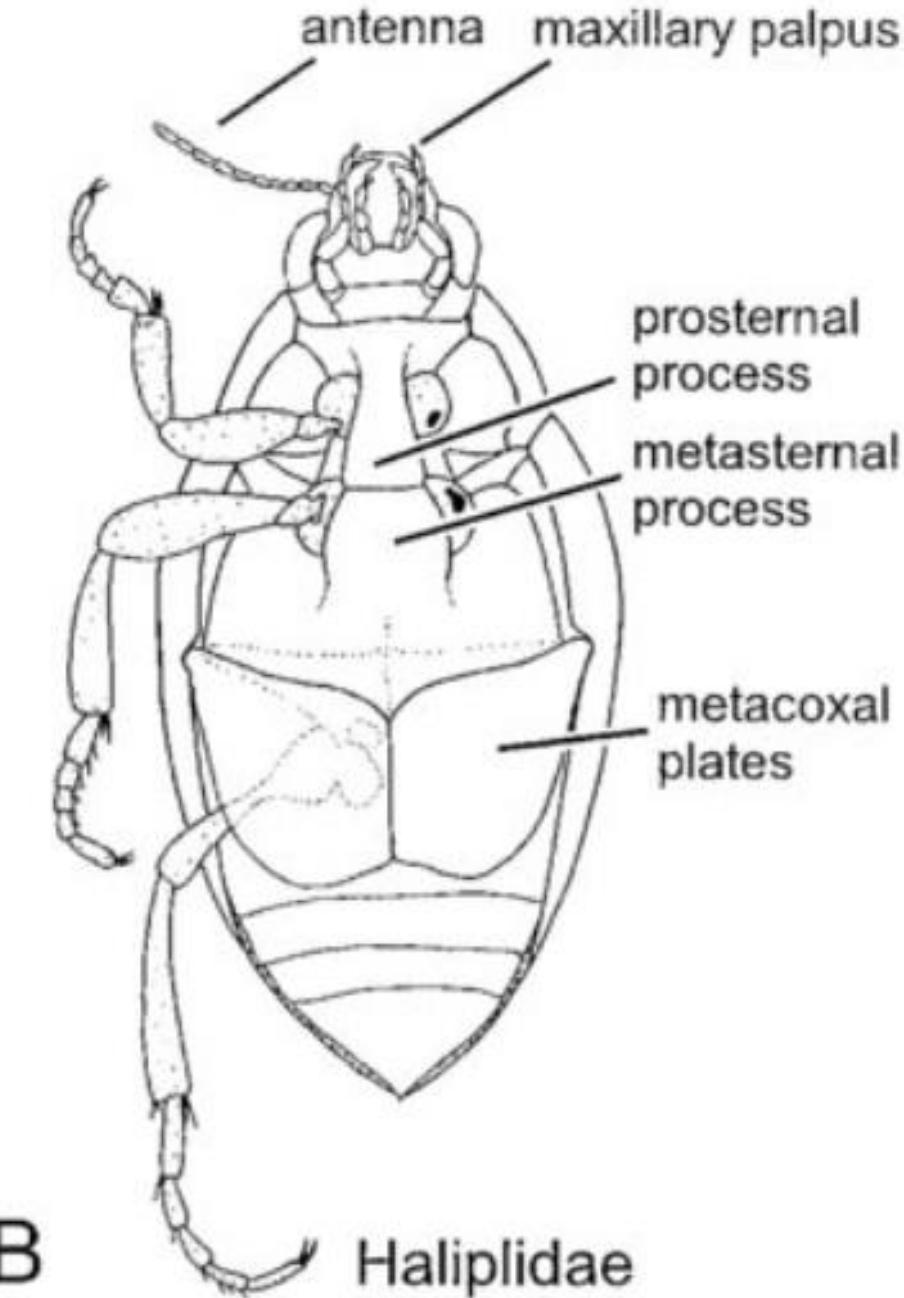


Steps on the key

4. Hind coxa greatly enlarged, a ventral plate concealing trochanter and basal half of femur, covering most of 3 basal ventrites.....**Haliplidae**
- 4'. [Other combination of characters].....5

Notes:

1 – 2 – 3 – 4

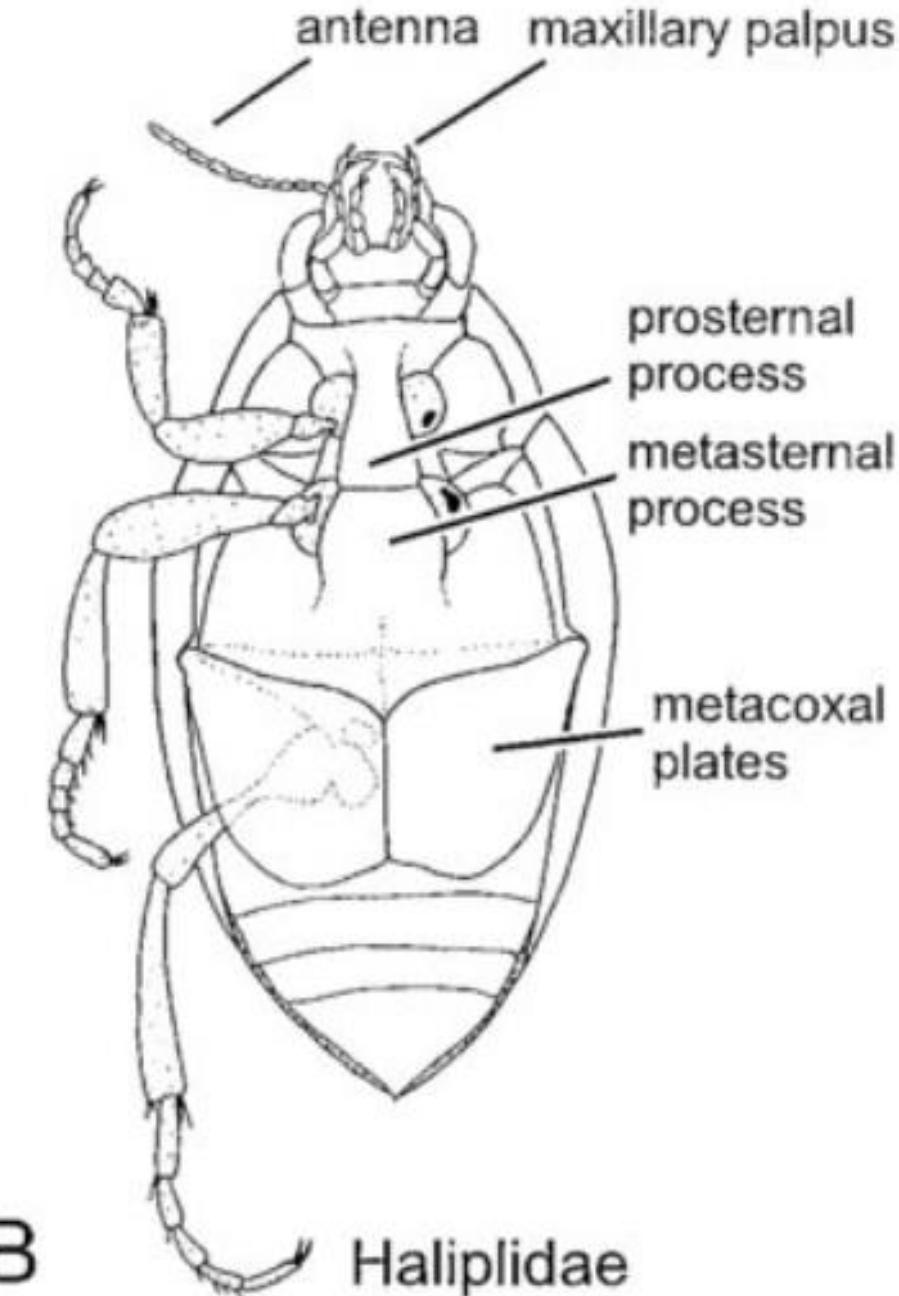


Steps on the key

4. Hind coxa greatly enlarged, a ventral plate concealing trochanter and basal half of femur, covering most of 3 basal ventrites.....**Haliplidae**
- 4'. [Other combination of characters].....5

Notes:

1 – 2 – 3 – 4 – **Haliplidae**



Steps on the key

Notes:
1 – 2 – 3 – 4 – Haliplidae



Salvador Vitanza, Ph.D.

Salvador Vitanza, Ph.D.

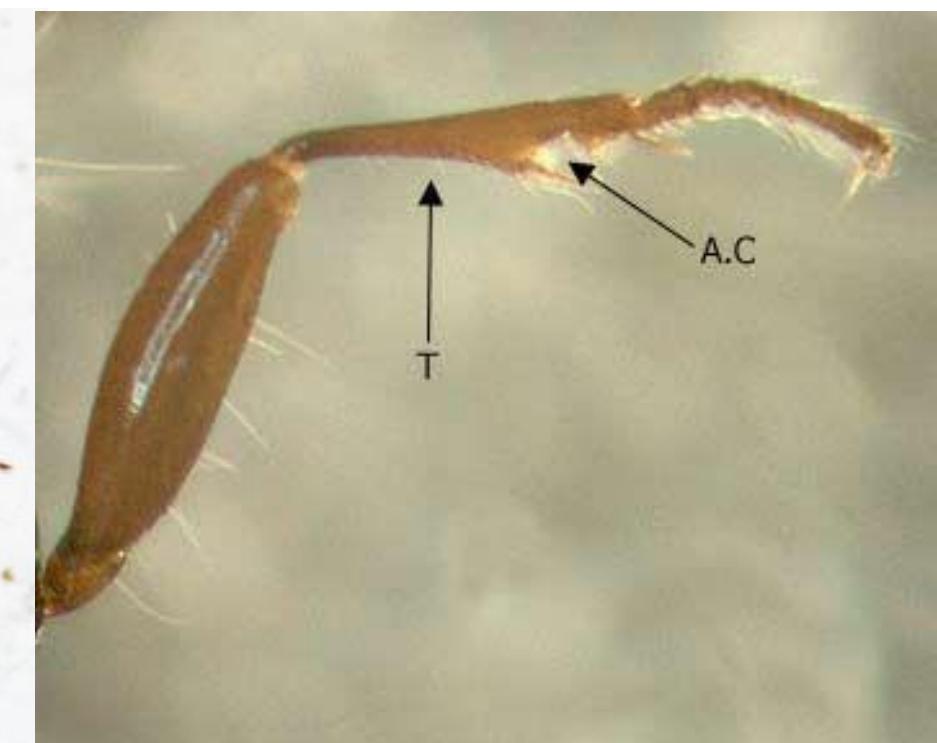


Discussion – Specimen A



Discussion – Specimen A

- Suborder: Adephaga
- Family: Carabidae



Discussion – Specimen B



Waco, TX
12 May 1971
R. Keop

8

Discussion – Specimen B

- Suborder: Polyphaga
- Family: Staphylinidae

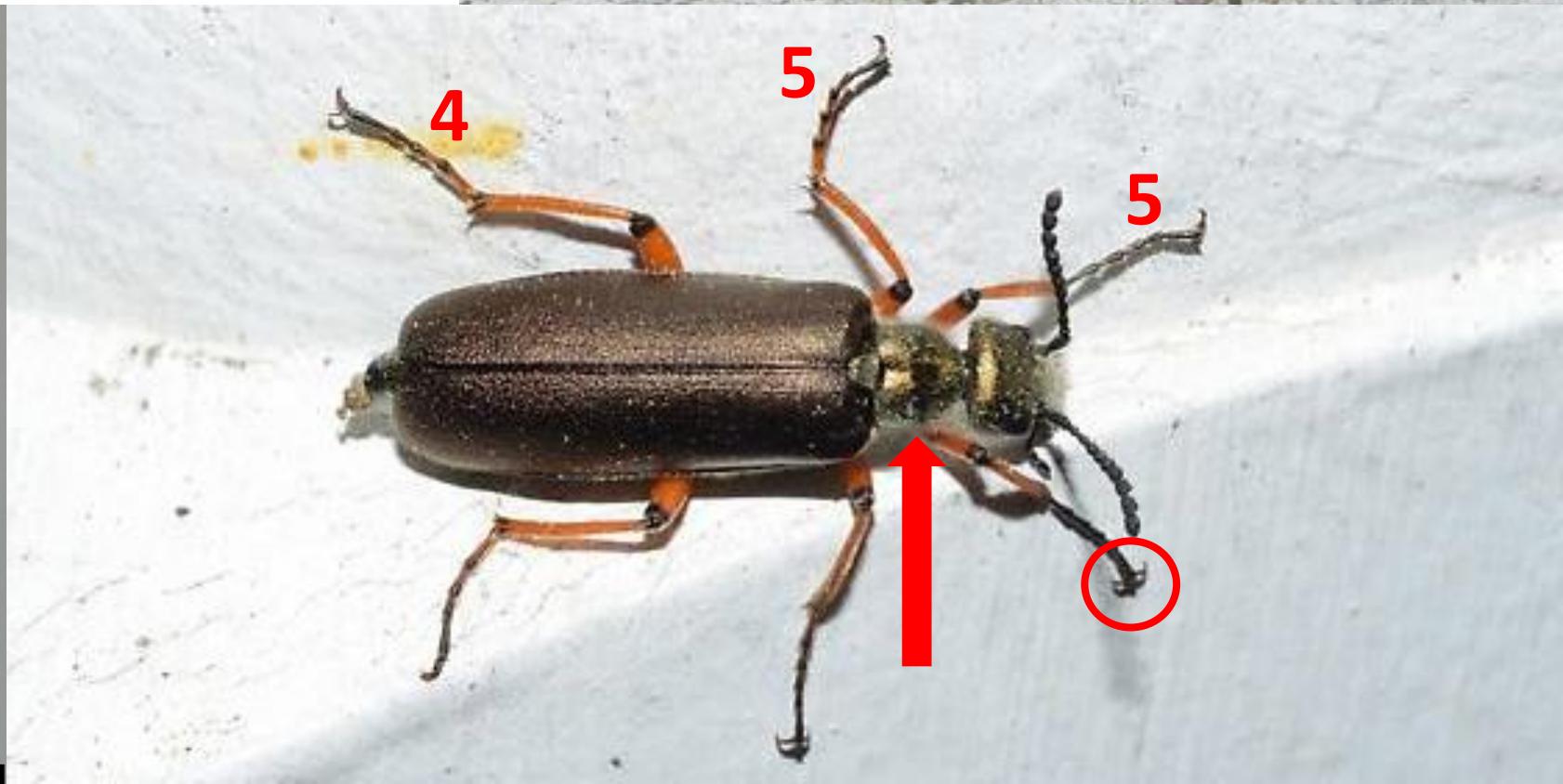


Discussion – Specimen C

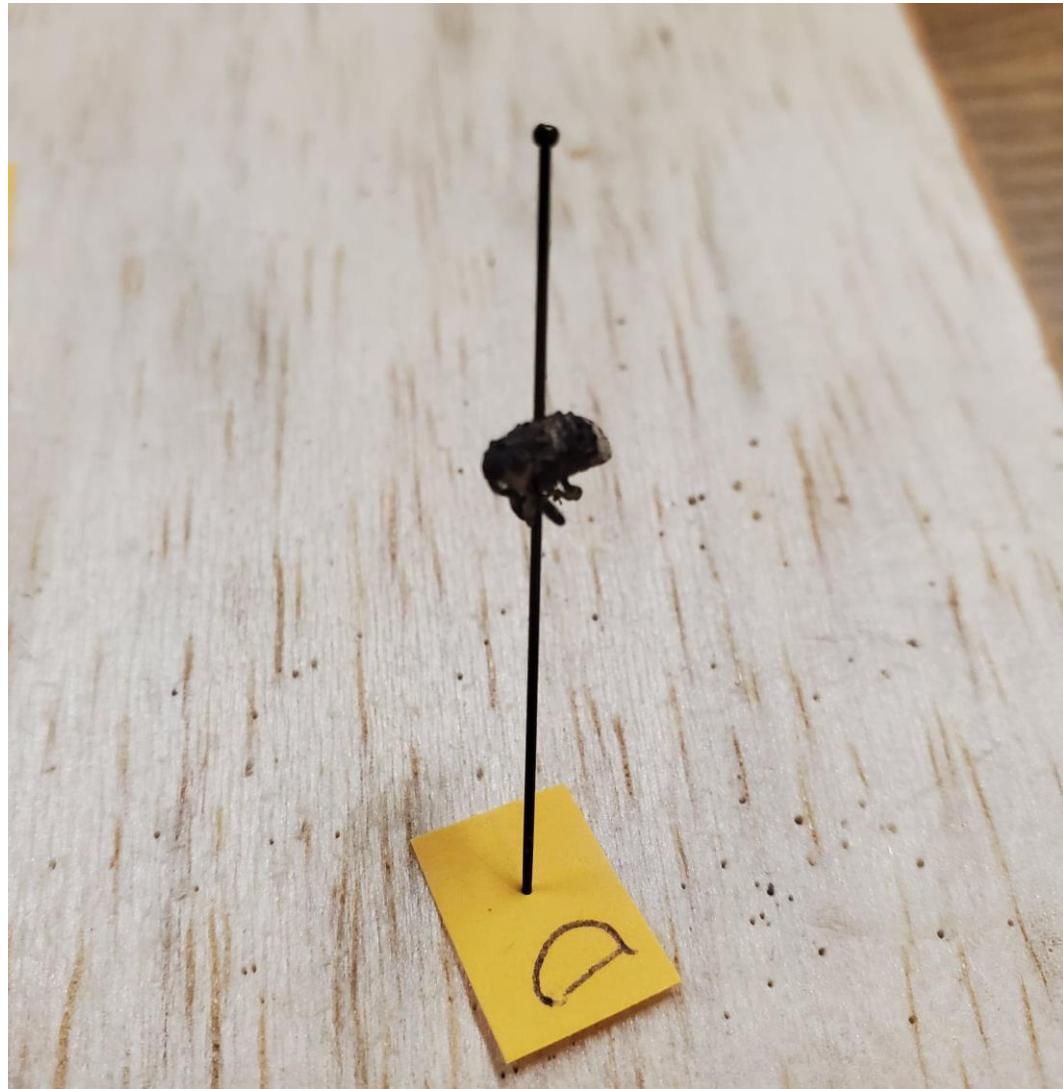


Discussion – Specimen C

- Suborder: Polyphaga
- Family: Meloidae

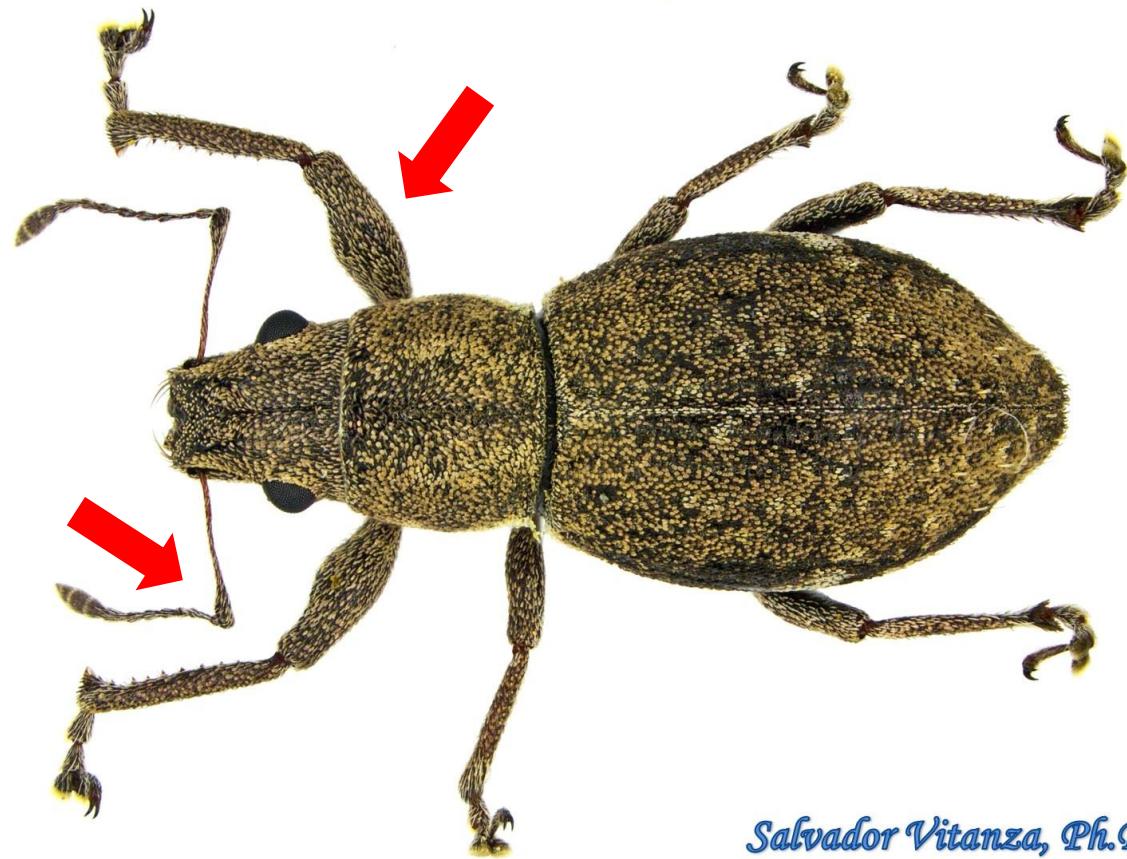


Discussion – Specimen D (bonus)



Discussion – Specimen D (bonus)

- Suborder: Polyphaga
- Family: Curculionidae



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