



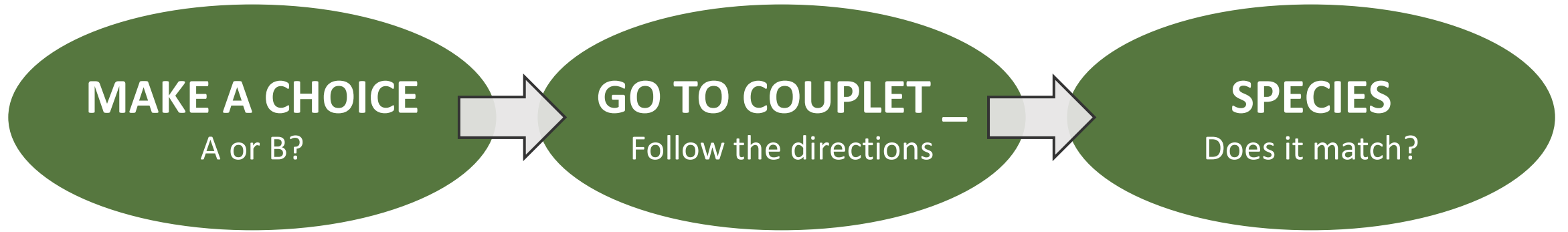
Canadian Grain
Commission

Commission canadienne
des grains

Stored-product beetles in Canada

A key to common species

Instructions



Just because you made it to a species *does not* mean it is the right one!
Compare to images and descriptions.

Species in this key

American black flour beetle (*Tribolium audax*)

Bean weevil (*Acanthoscelides obtectus*)

Black carpet beetle (*Attagenus unicolor*)

Black flour beetle (*Tribolium madens*)

Broad-horned flour beetle (*Gnatocerus cornutus*)

Cadelle (*Tenebroides mauritanicus*)

Cigarette beetle (*Lasioderma serricorne*)

Confused flour beetle (*Tribolium confusum*)

Dark mealworm (*Tenebrio obscurus*)

Drugstore beetle (*Stegobium paniceum*)

Foreign grain beetle (*Ahasverus advena*)

Granary weevil (*Sitophilus granarius*)

Hairy fungus beetle (*Typhaea stercorea*)

Hairy spider beetle (*Ptinus villiger*)

Larder beetle (*Dermestes lardarius*)

Larger grain borer (*Prostephanus truncatus*)

Lesser grain borer (*Rhyzopertha dominica*)

Lesser mealworm (*Alphitobius diapernus*)

Merchant grain beetle (*Oryzaephilus mercator*)

Mottled dermestid beetle (*Trogoderma inclusum*)

Pea weevil (*Bruchus pisorum*)

Plaster beetle (*Cartodere constricta*)

Red flour beetle (*Tribolium castaneum*)

Rice weevil (*Sitophilus oryzae*)

Rusty grain beetle (*Cryptolestes ferrugineus*)

Sawtoothed grain beetle (*Oryzaephilus surinamensis*)

Silken fungus beetle (*Atomaria species*)

Smalleyed flour beetle (*Palorus ratzeburgii*)

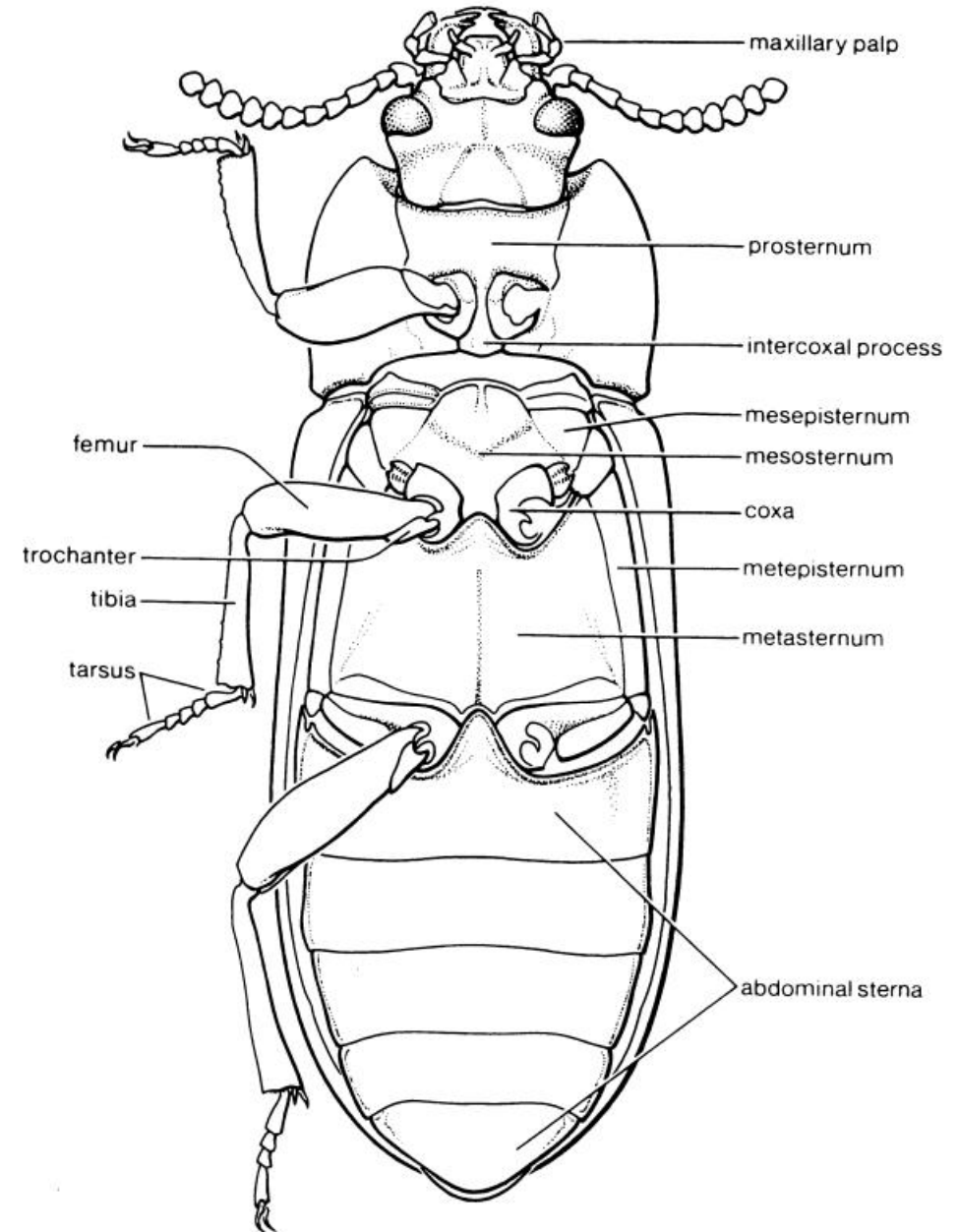
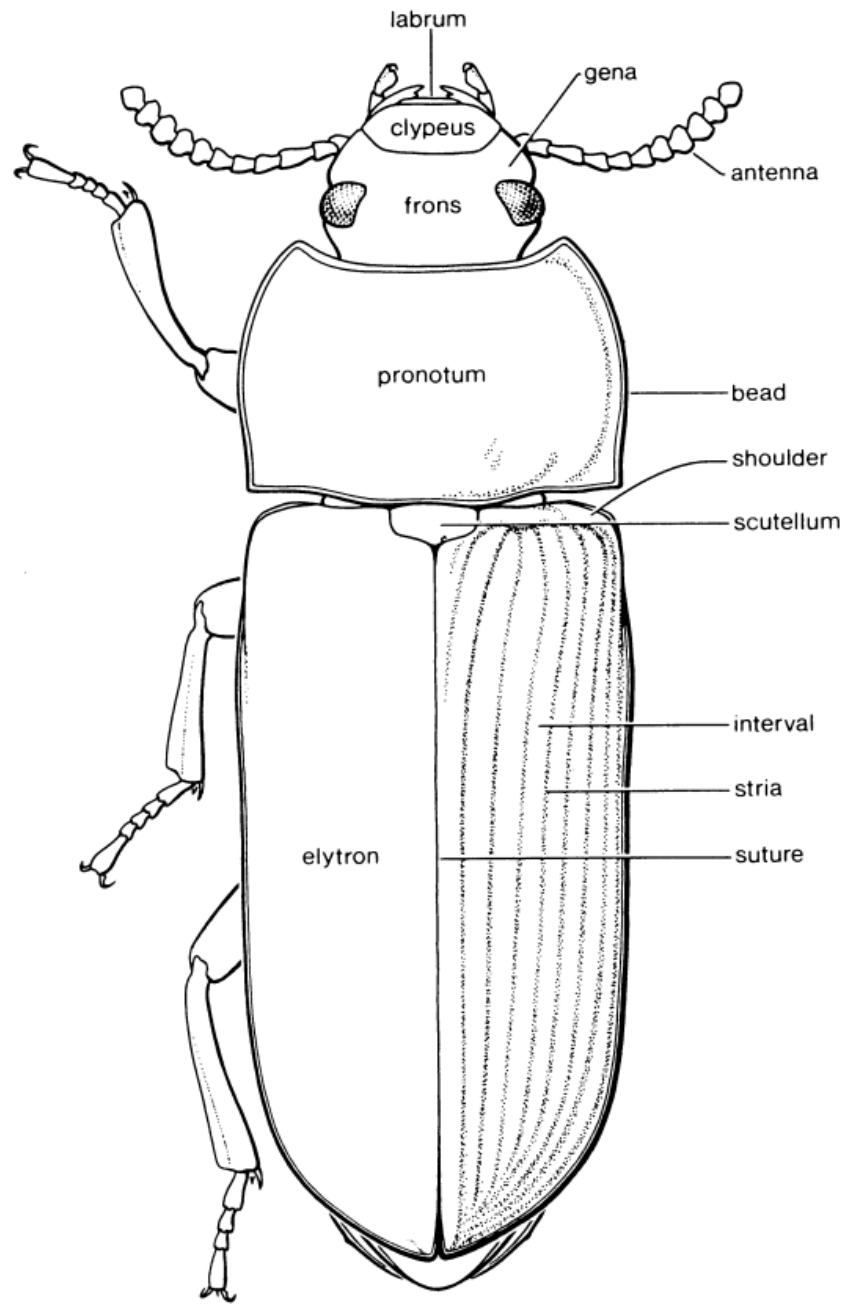
Spotted hairy fungus beetle (*Mycetophagus quadriguttatus*)

Warehouse beetle (*Trogoderma variabile*)

Whitemarked spider beetle (*Ptinus fur*)

Yellow mealworm (*Tenebrio molitor*)

NOTE: Always compare to descriptions because your species may not be included in this key



Start of key



Fig. 1.1

1A. Length 1 mm or less.

Go to couplet 2

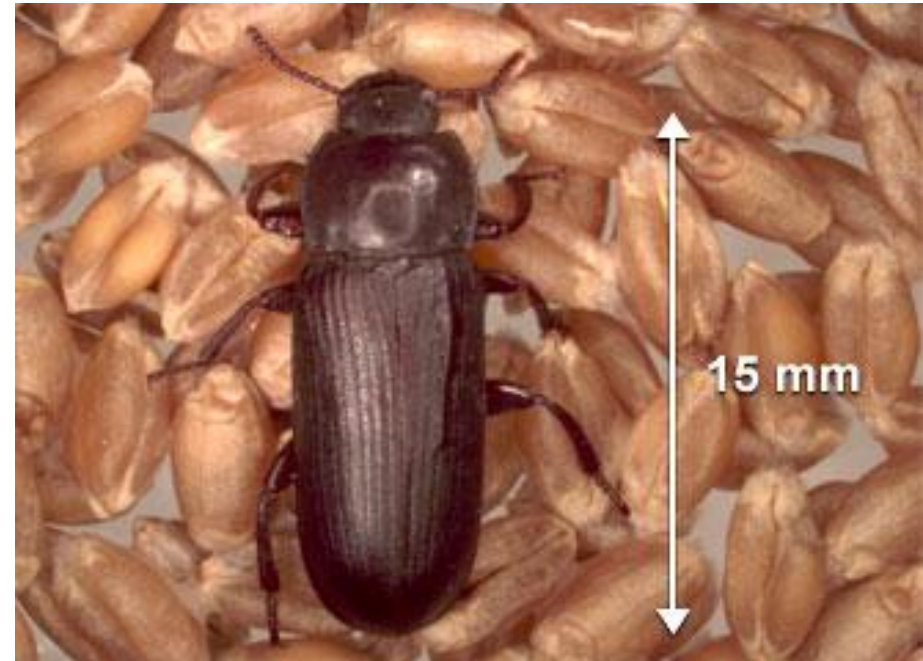


Fig. 1.2

1B. Length greater than 1 mm.

Go to couplet 3

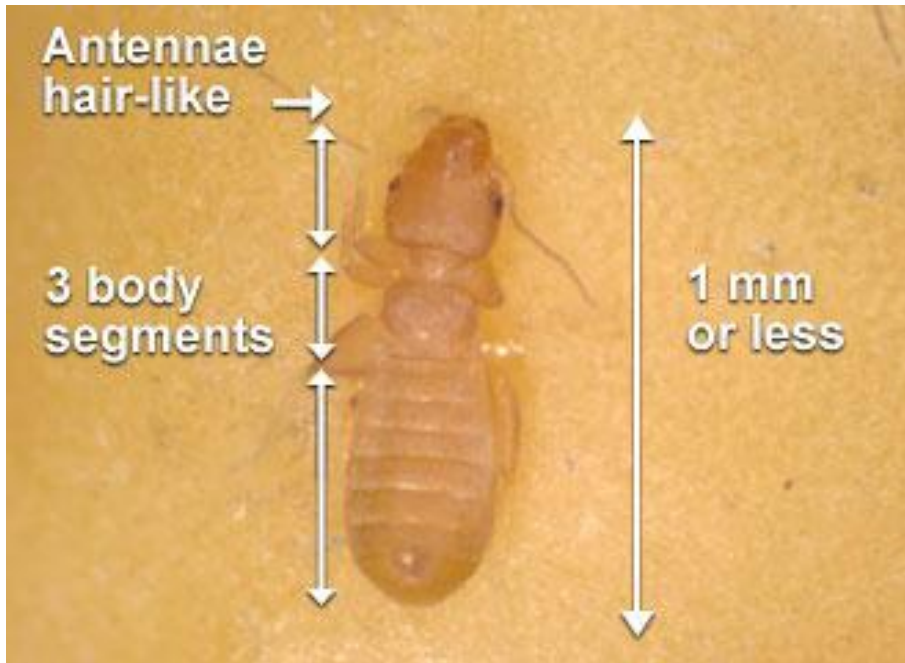


Fig. 2.1

2A. Antennae long and hair-like, body clearly in three segments, 6 legs.

Psocids (booklice)

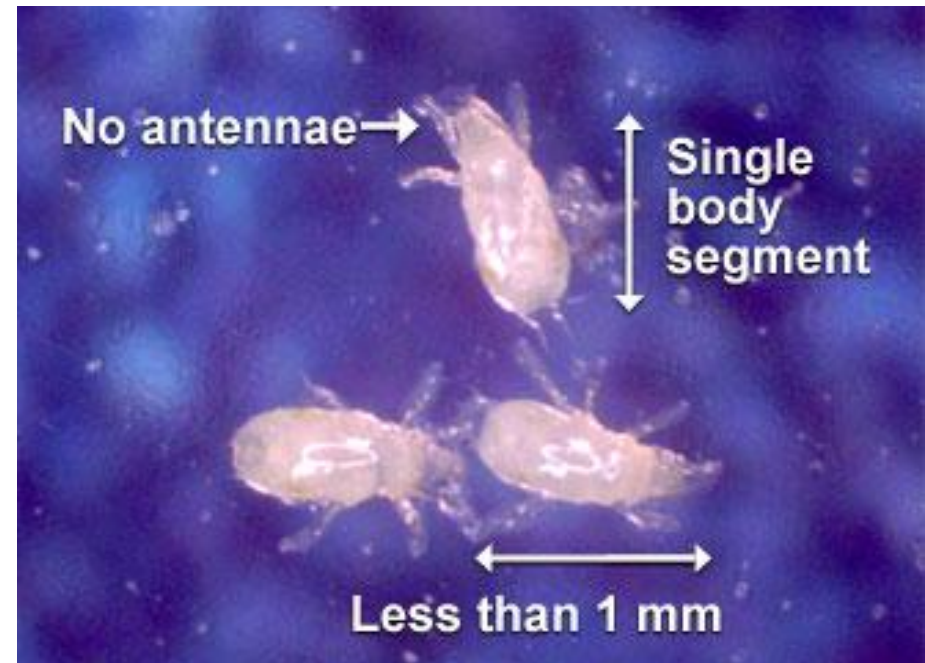


Fig. 2.2

2B. Antennae absent, single body segment, 8 legs.

Grain mites

NOTE: these *are not* beetles but are included because they are common

Return to couplet 1



Fig. 3.1

3A. Large insect (11 mm or more)

Go to couplet 4



Fig. 3.2

3B. Small insect (up to 10 mm)

Go to couplet 5

Return to couplet 3

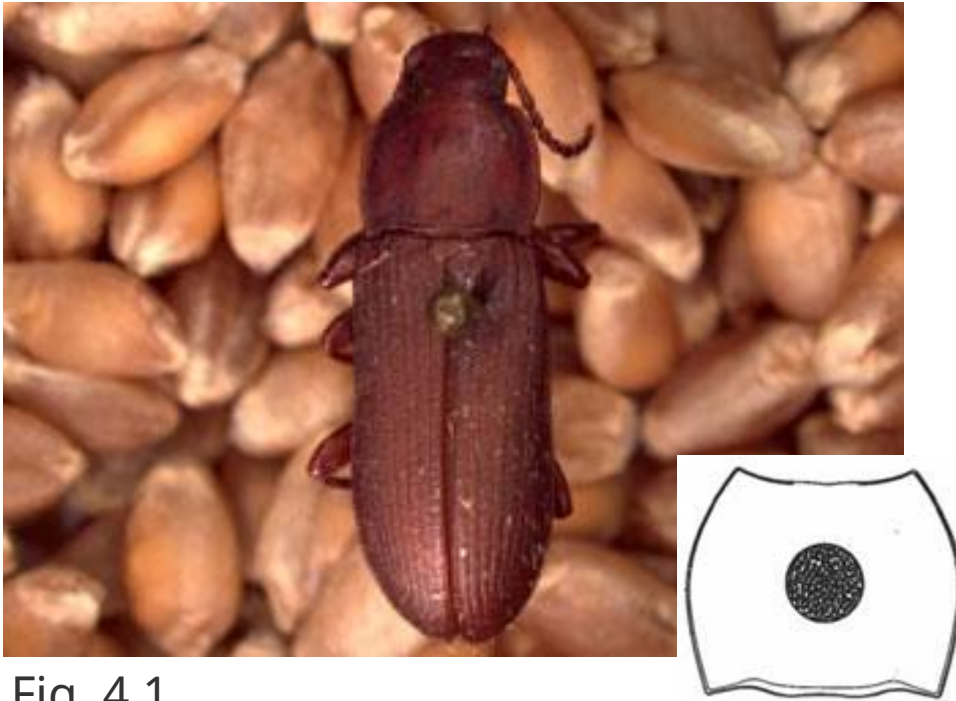


Fig. 4.1

4A. Disc of pronotum with punctures touching, usually separated by a distance less than their own diameter. Upper surface dull.

Dark mealworm (*Tenebrio obscurus*)



Fig. 4.2

4B. Disc of pronotum with punctures not touching, usually separated by a distance equal to or greater than their own diameter. Upper surface slightly shiny.

Yellow mealworm (*Tenebrio molitor*)

Return to couplet 3



Fig. 5.1

5A. Head prolonged into a snout.

Go to couplet 6



Fig. 5.2

5B. Head NOT prolonged into a snout.

Go to couplet 7

Return to couplet 5



Fig. 6.1

6A. Four red to brown spots on back (elytra), pits on pronotum round. (may be the maize weevil, *Sitophilus zeamais*, cannot tell apart by external features).

Rice weevil (*Sitophilus oryzae*)



Fig. 6.2

6B. No spots on back (elytra), uniformly dark brown, pits on pronotum oval.

Granary weevil (*Sitophilus granarius*)

Return to couplet 5



Fig. 7.1

7A. Head with dorsal median ocellus (eye).

Go to couplet 8



Fig. 7.2

7B. Head without dorsal median ocellus (eye).

Go to couplet 10

Return to couplet 7



Fig. 8.1

8A. Integument of elytra uniformly coloured, without pattern

Black carpet beetle
(*Attagenus unicolor*)



Fig. 8.2

8B. Integument of elytra bicoloured, with defined pattern.

Go to couplet 9

Return to couplet 8



Fig. 9.1

9A. Inside of eye with distinct notch.

Mottled dermestid beetle
(*Trogoderma inclusum*)



Fig. 9.2

9B. Eye with medial margin entire or only slightly notched.

Warehouse beetle
(*Trogoderma variabile*)

Return to couplet 7

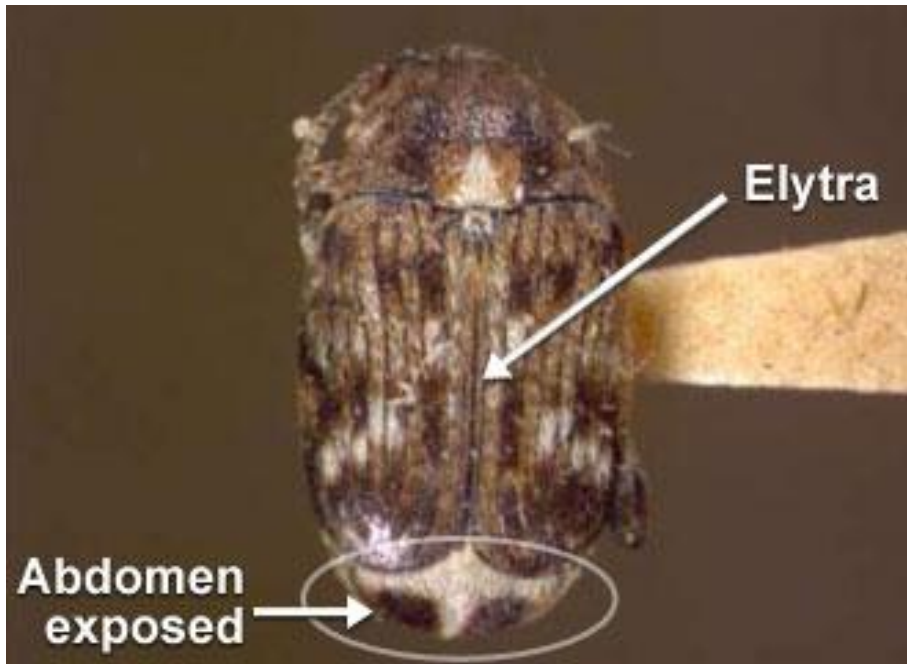


Fig. 10.1

10A. Elytra short, exposing at least 1 abdominal tergum.

Go to couplet 11



Fig. 10.2

10B. Elytra completely covering the abdomen or exposing only part of the last abdominal tergite.

Go to couplet 12

Return to couplet 10



Fig. 11.1

11A. Length of body 3.8 to 5.1 mm. Last abdominal tergum exposed with black and white hairs. Hind femur with 1 large pre-apical spine on inner margin.

Pea weevil (*Bruchus pisorum*)



Fig. 11.2

11B. Length of body 2.0 to 3.7 mm. Last abdominal tergum exposed with yellowish hairs. Hind femur with 1 large and 2 or 3 small, pre-apical spines on inner margin.

Bean weevil (*Acanthoscelides obtectus*)

Return to couplet 10

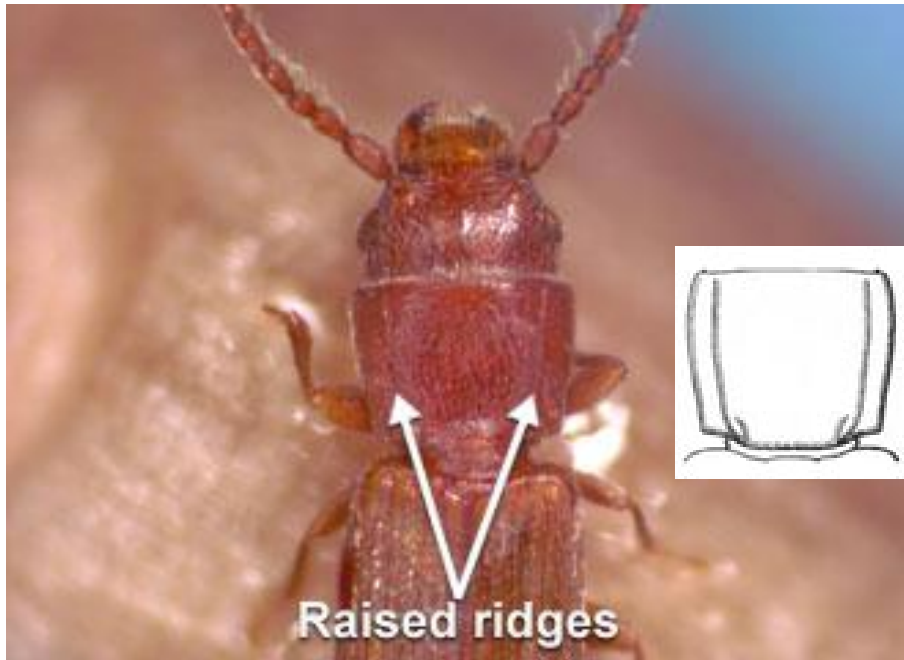


Fig. 12.1

12A. Pronotum with slightly raised ridges (sub-lateral carina on each side of pronotum). In Canada, most commonly the rusty grain beetle, but *Cryptolestes* species are difficult to tell apart.



Fig. 12.2

12B. Pronotum without slightly raised ridges (no sub-lateral carina on each side of pronotum).

Go to couplet 13

Rusty grain beetle (*Cryptolestes ferrugineus*)

Return to couplet 12

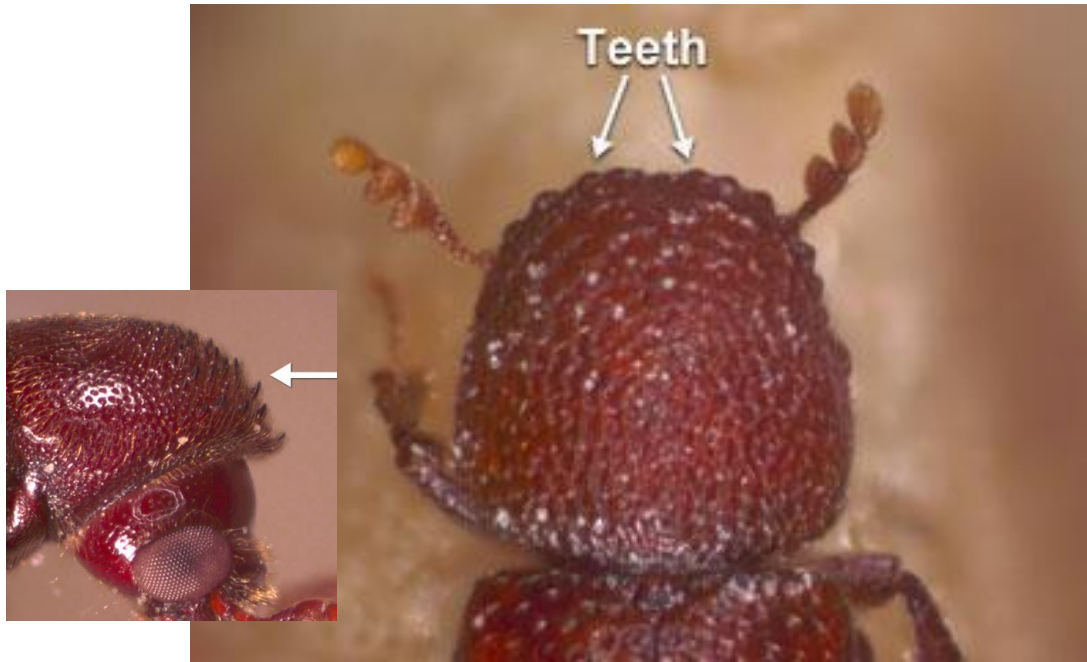


Fig. 13.1

13A. Pronotum with rasp-like teeth on anterior half.

Go to couplet 14

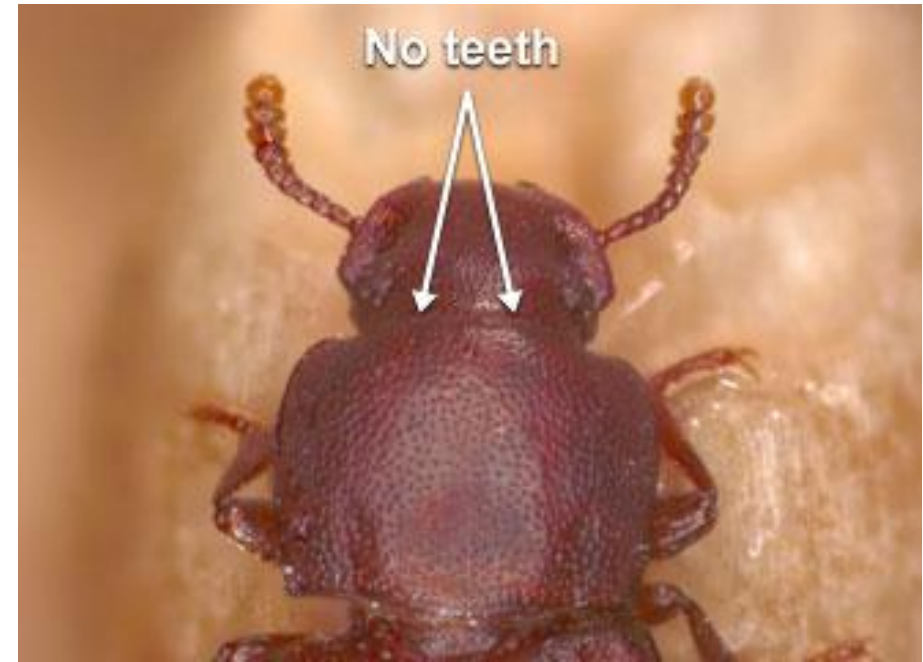


Fig. 13.2

13B. Pronotum without rasp-like teeth on anterior half.

Go to couplet 15

Return to couplet 13



Fig. 14.1

14A. Small beetle (3 mm or less).
Posterior ends of elytra rounded.

Lesser grain borer
(*Rhyzopertha dominica*)

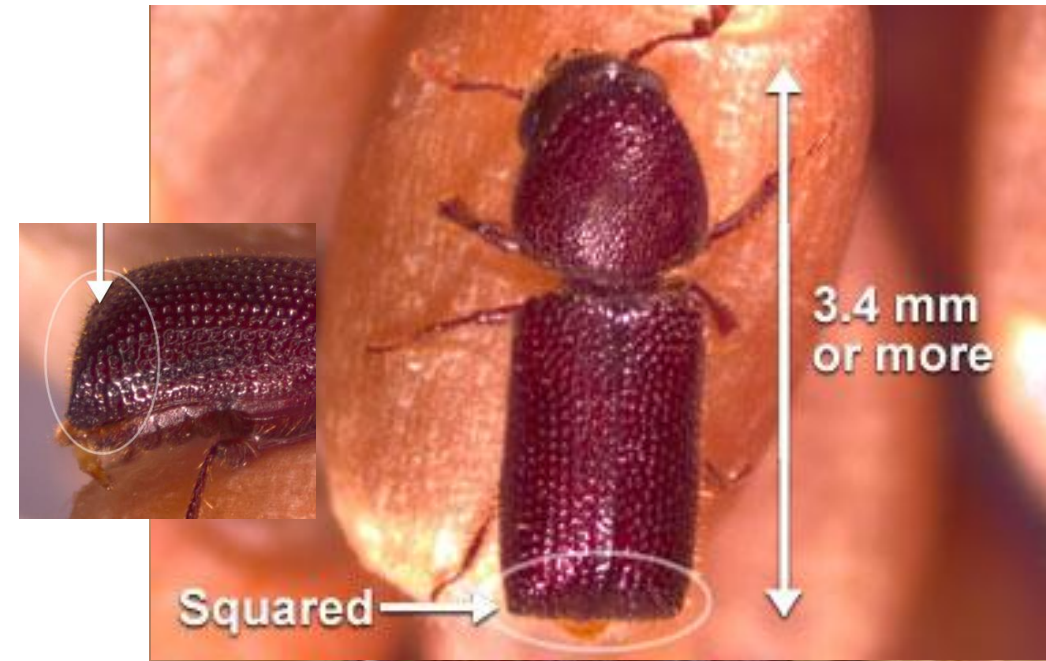


Fig. 14.2

14B. Longer beetle (3.4 mm or more).
Posterior ends of elytra squared.

Larger grain borer
(*Prostephanus truncatus*)

Return to couplet 13

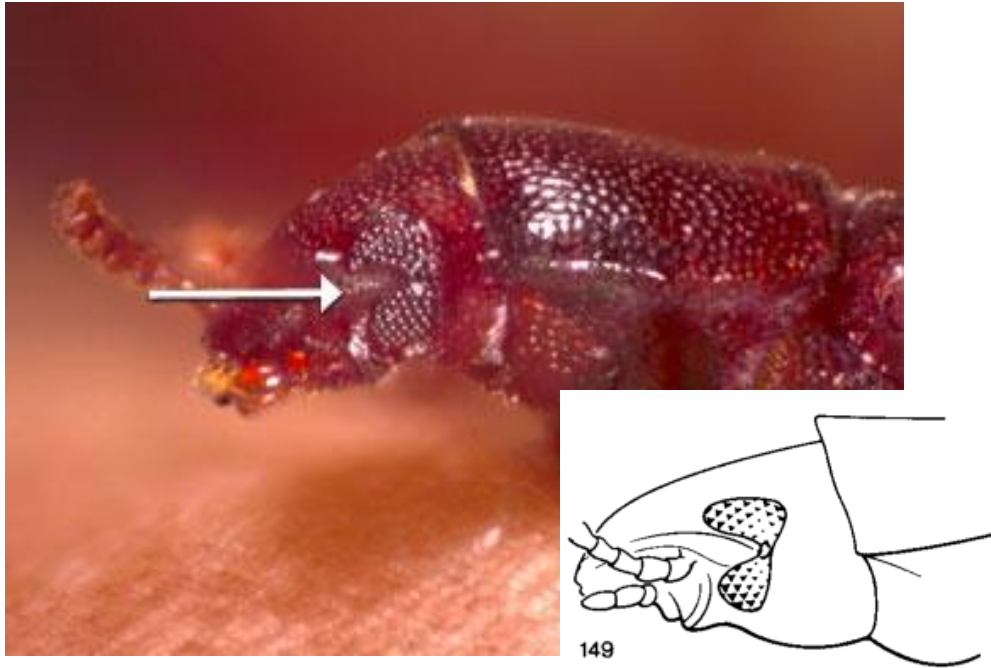


Fig. 15.1

15A. Eye divided by side margin of the head (canthus).

Go to couplet 16

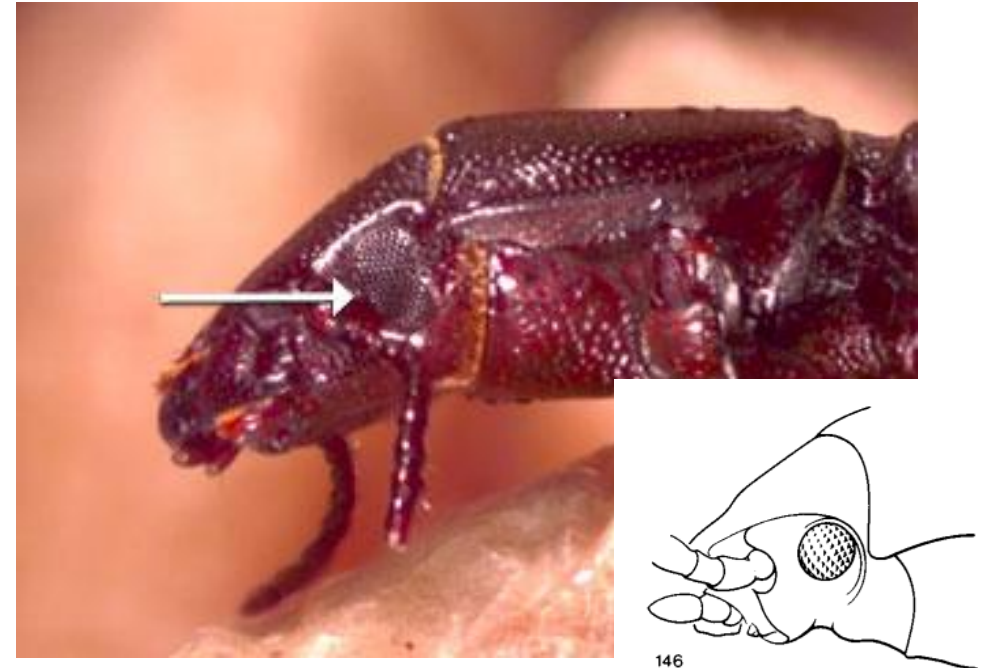


Fig. 15.2

15B. Eye NOT divided by side margin of the head (canthus).

Go to couplet 20

Return to couplet 15

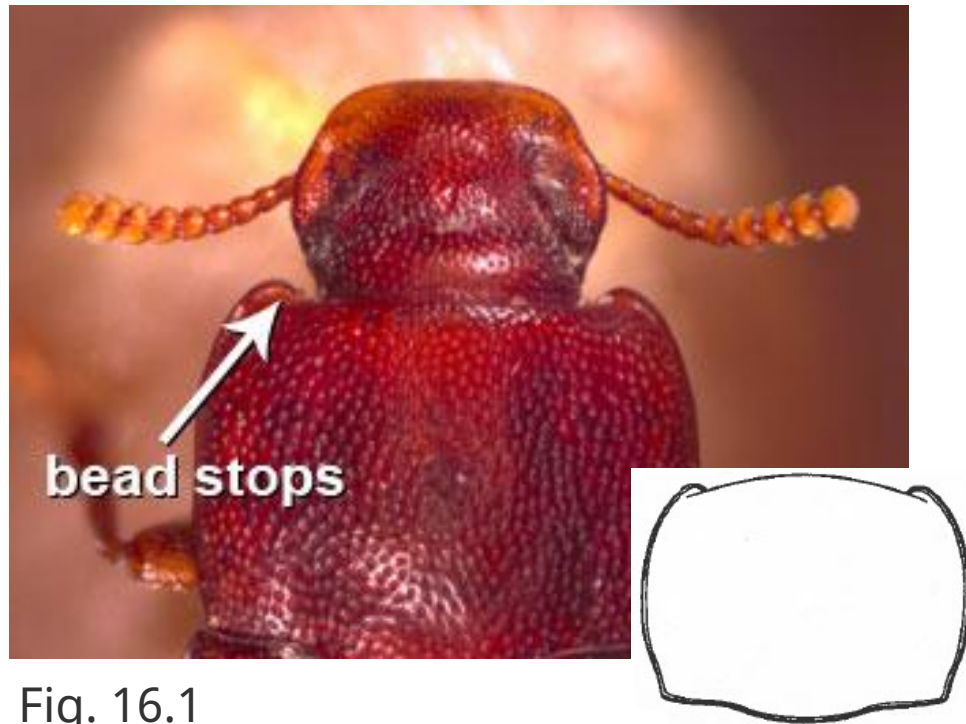


Fig. 16.1

16A. Pronotum with lateral bead interrupted at anterior angle.

Go to couplet 17

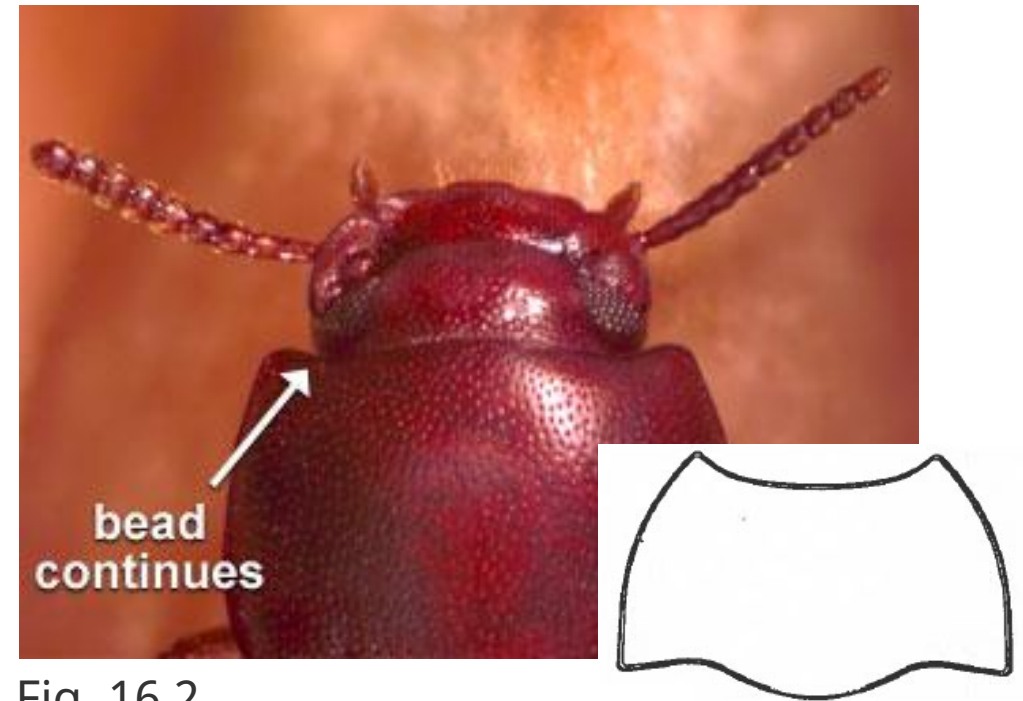


Fig. 16.2

16B. Pronotum with lateral bead continuing on anterior margin.

Go to couplet 33

Return to couplet 16

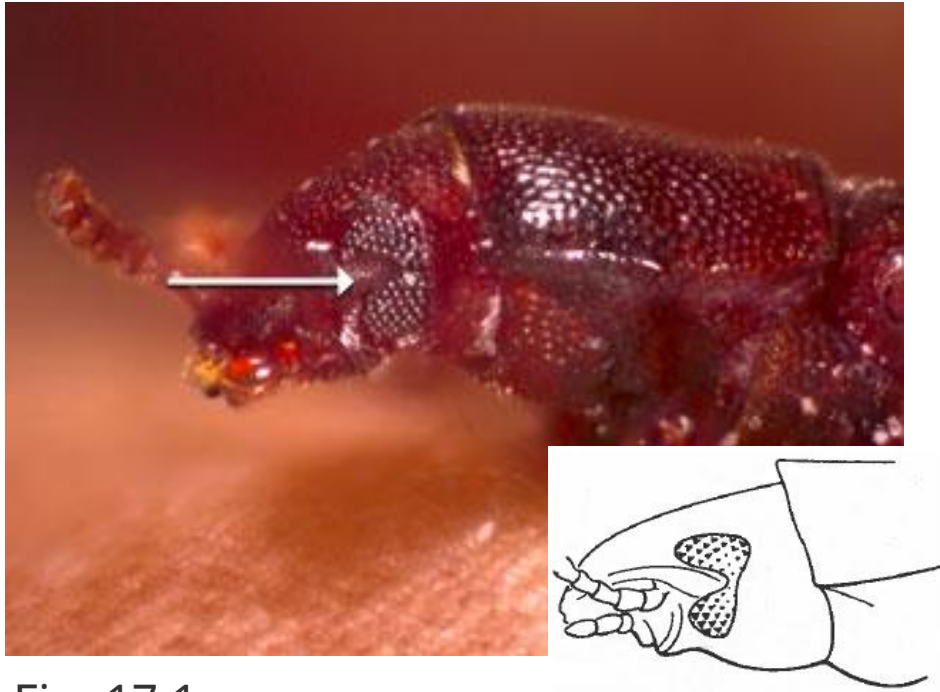


Fig. 17.1

17A. Eye 1 or 2 facets wide laterally at level of cut.

Confused flour beetle
(*Tribolium confusum*)

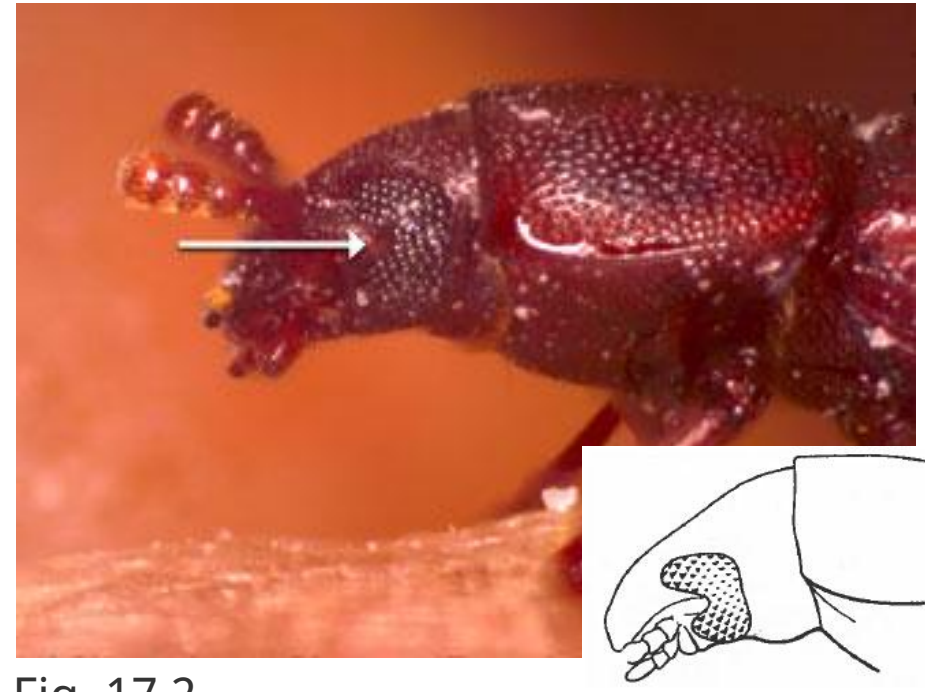


Fig. 17.2

17B. Eye 3 or 4 facets wide laterally at level of cut.

Go to couplet 18

Return to couplet 17



Fig. 18.1

18A. Eye on ventral surface (underneath) almost as wide as distance between the eyes.

Red flour beetle
(*Tribolium castaneum*)

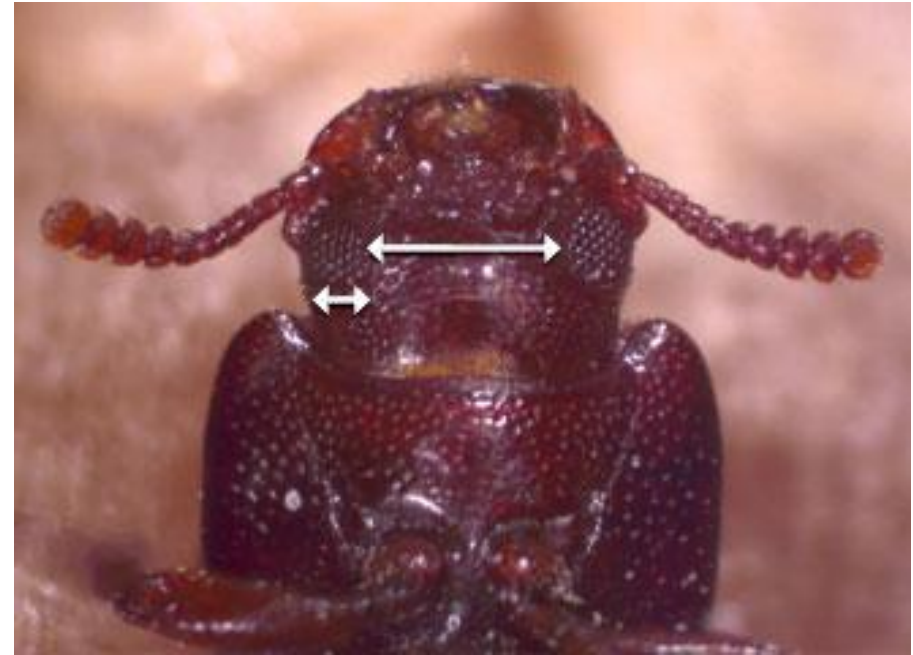


Fig. 18.2

18B. Eye on ventral surface (underneath) narrower than the distance between the eyes.

Go to couplet 19

Return to couplet 18

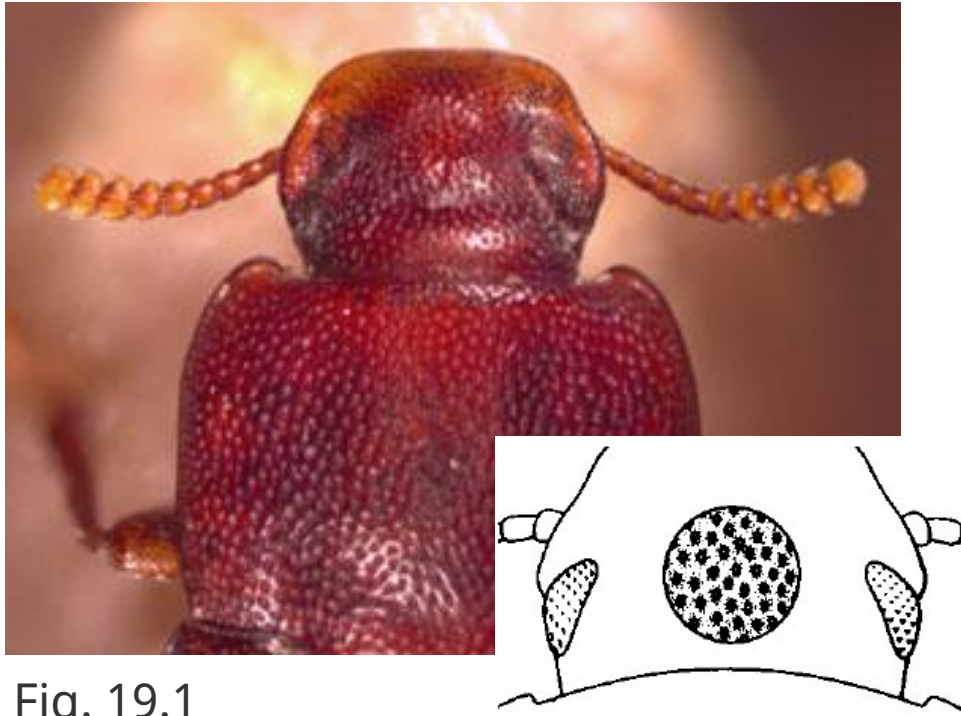


Fig. 19.1

19A. Punctures on head sparser, usually separated by distance greater than diameter of punctures.

Black flour beetle
(*Tribolium madens*)

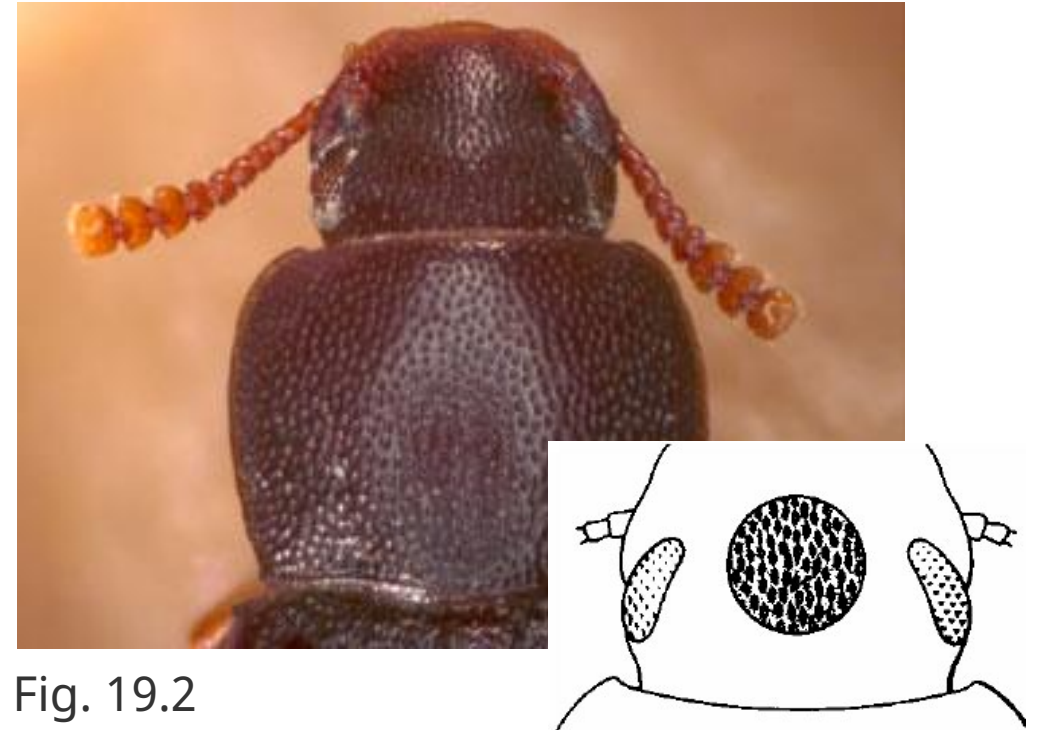


Fig. 19.2

19B. Punctures on head denser, usually separated by distance shorter than diameter of punctures.

American black flour beetle
(*Tribolium audax*)

Return to couplet 15



Fig. 20.1

20A. Elytra without pubescence (short hairs). Visible only at high magnification.

Go to couplet 21



Fig. 20.2

20B. Elytra with distinct pubescence (short hairs), visible easily.

Go to couplet 23

Return to couplet 20

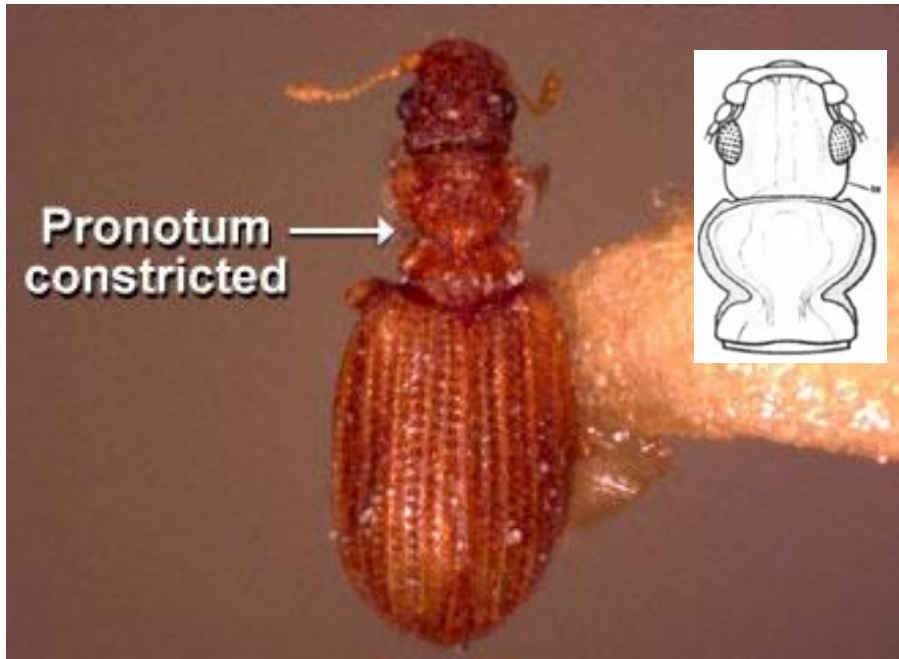


Fig. 21.1

21A. Pronotum markedly constricted behind middle and with two longitudinal ridges on each side of the middle

Plaster beetle
(*Cartodere constricta*)



Fig. 21.2

21B. Pronotum NOT constricted behind middle and lacking longitudinal ridges.

Go to couplet 22

Return to couplet 21



Fig. 22.1

22A. Length of body 2.3 to 3.0 mm (note size relative to seed in image. Antennae without club.

Smalleyed flour beetle
(*Palorus ratzeburgi*)



Fig. 22.2

22B. Length of body 6.0 to 10 mm (note size relative to seed in image), antennae with last 5 articles forming a feebly differentiated club.

Cadelle
(*Tenebroides mauritanicus*)

Return to couplet 20



Fig. 23.1

23A. Antennae without club.

Go to couplet 24



Fig. 23.2

23B. Antennae with a more or less distinct club.

Go to couplet 26

Return to couplet 23



Fig. 24.1

24A. Antennae short, serrate. Head hidden under pronotum in dorsal view.

Cigarette beetle
(*Lasioderma serricorne*)



Fig. 24.2

24B. Antennae very long, filiform, reaching at least middle of elytra in females, nearly as long as body in males. Head partially visible from above.

Go to couplet 25

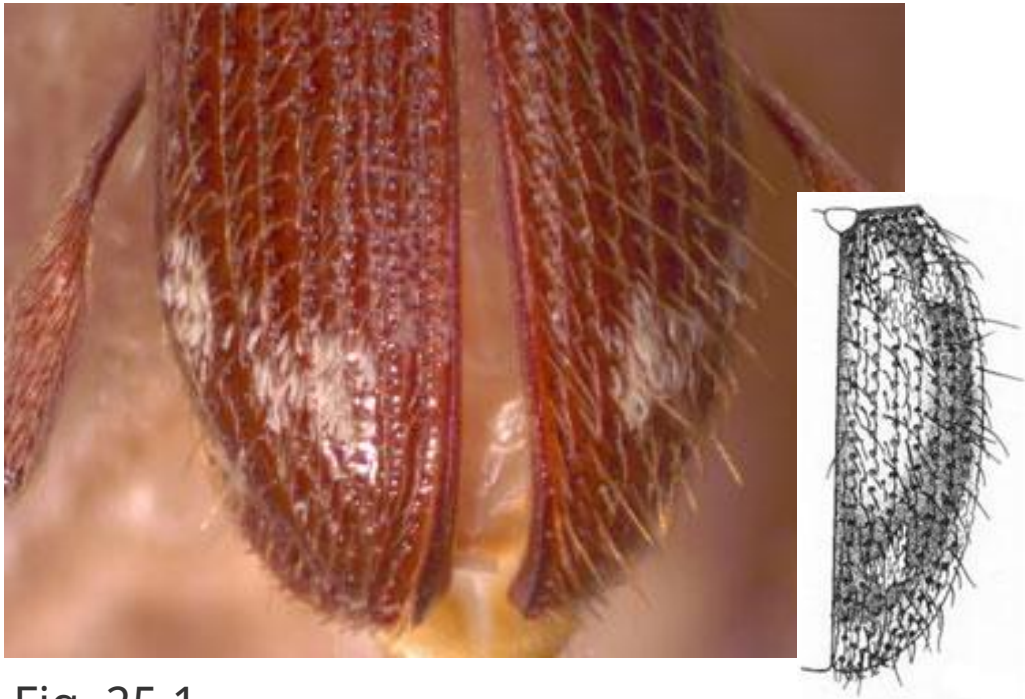


Fig. 25.1

25A. Erect setae of elytral intervals unequal in length, some setae on 3th, 5th and 7th intervals about twice as long as those of other intervals.

Hairy spider beetle (*Ptinus villiger*)

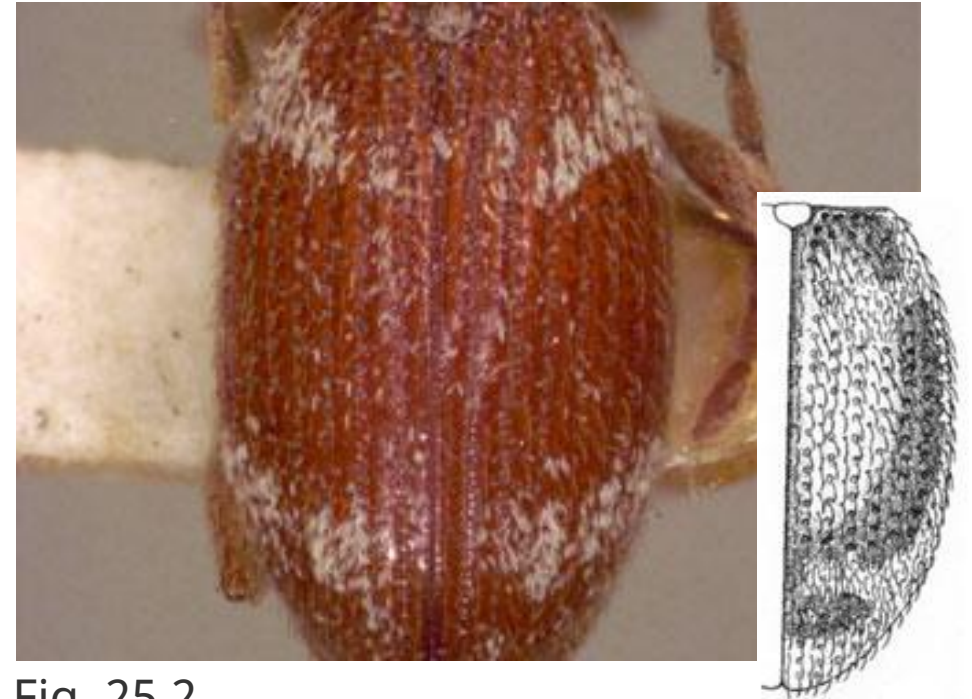


Fig. 25.2

25B. Erect setae of elytral intervals subequal in length, or some setae on 3th, 5th and 7th intervals only slightly longer than those of other intervals.

Whitemarked spider beetle (*Ptinus fur*)

Return to couplet 23



Fig. 26.1

26A. Length of body 7 mm or more.
Elytra dark with a contrasting band of
whitish hairs.

Larder beetle
(*Dermestes lardarius*)

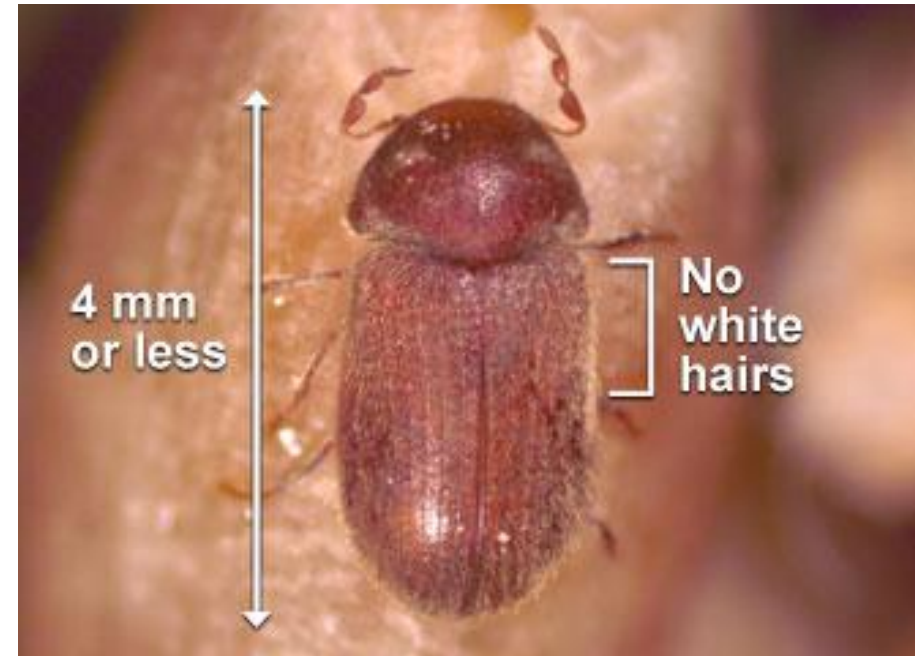


Fig. 26.2

26B. Length of body 4 mm or less, elytra
without wide band of whitish hairs.

Go to couplet 27

Return to couplet 26

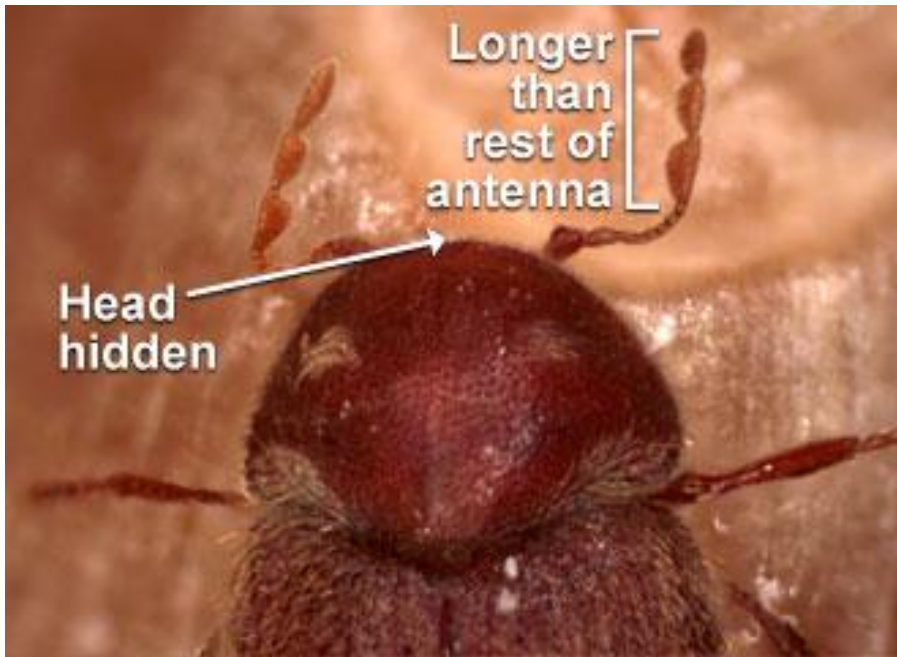


Fig. 27.1

27A. Last 3 segments of antenna longer than rest of antenna. Head hidden when viewed from above.

Drugstore beetle
(*Stegobium paniceum*)



Fig. 27.2

27B. Last three segments of antenna shorter than the rest of antenna. Head visible when viewed from above.

Go to couplet 28

Return to couplet 27



Fig. 28.1

28A. Pronotum with anterior angles prominent.

Go to couplet 29



Fig. 28.2

28B. Pronotum with anterior angles widely rounded, no knobs

Go to couplet 31

Return to couplet 28



Fig. 29.1

29A. Pronotum wider than long, with lateral side slightly crenulate (small, rounded teeth present).

Foreign grain beetle
(*Ahasverus advena*)

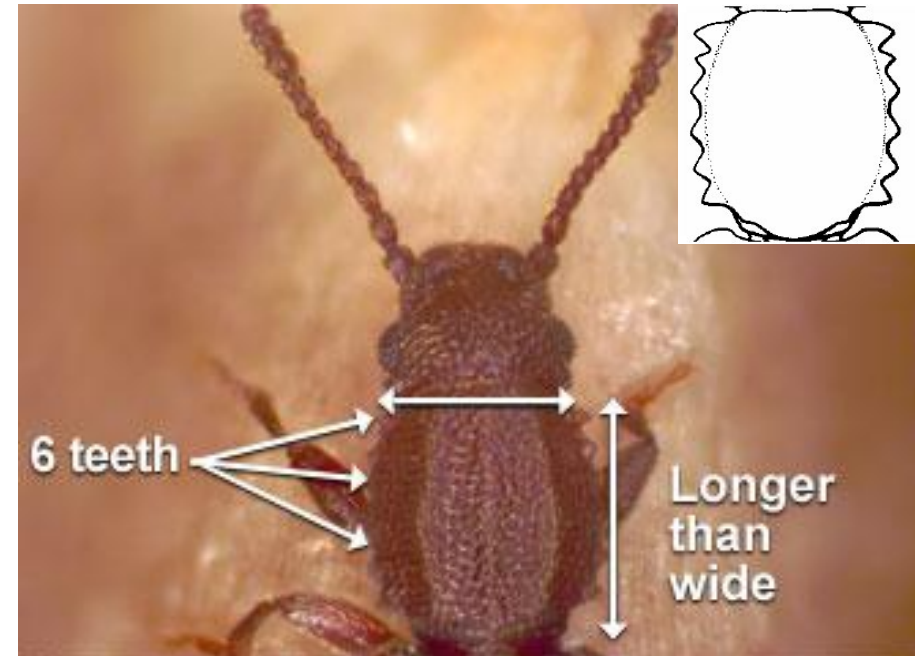


Fig. 29.2

29B. Pronotum longer than wide, with 6 large teeth.

Go to couplet 30

Return to couplet 29

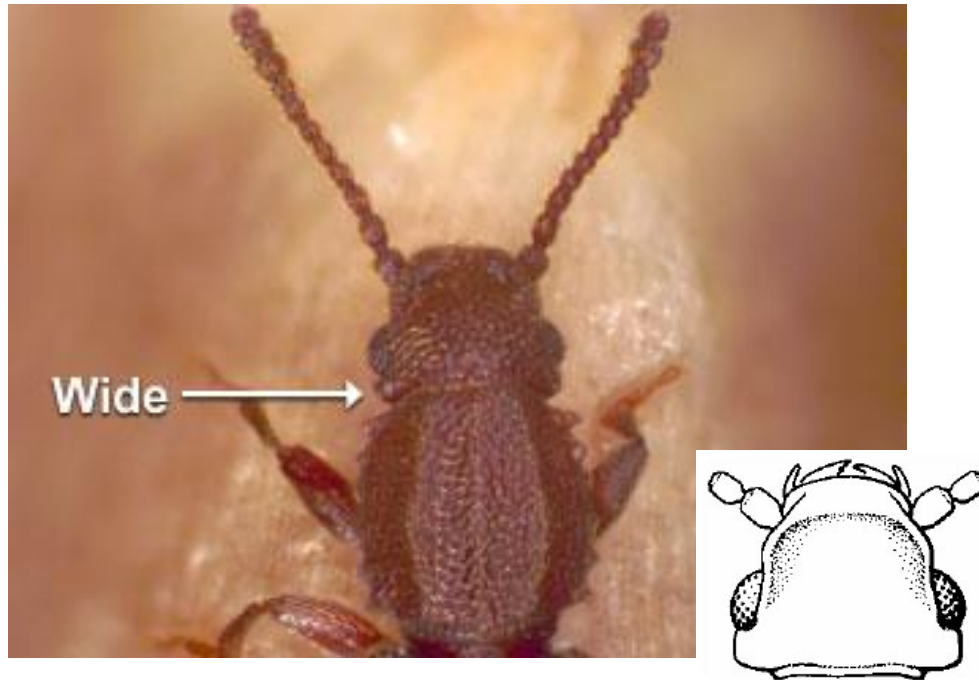


Fig. 30.1

30A. Length of temple equal to, or more than, half the vertical diameter of the eye.

Sawtoothed grain beetle
(*Oryzaephilus surinamensis*)

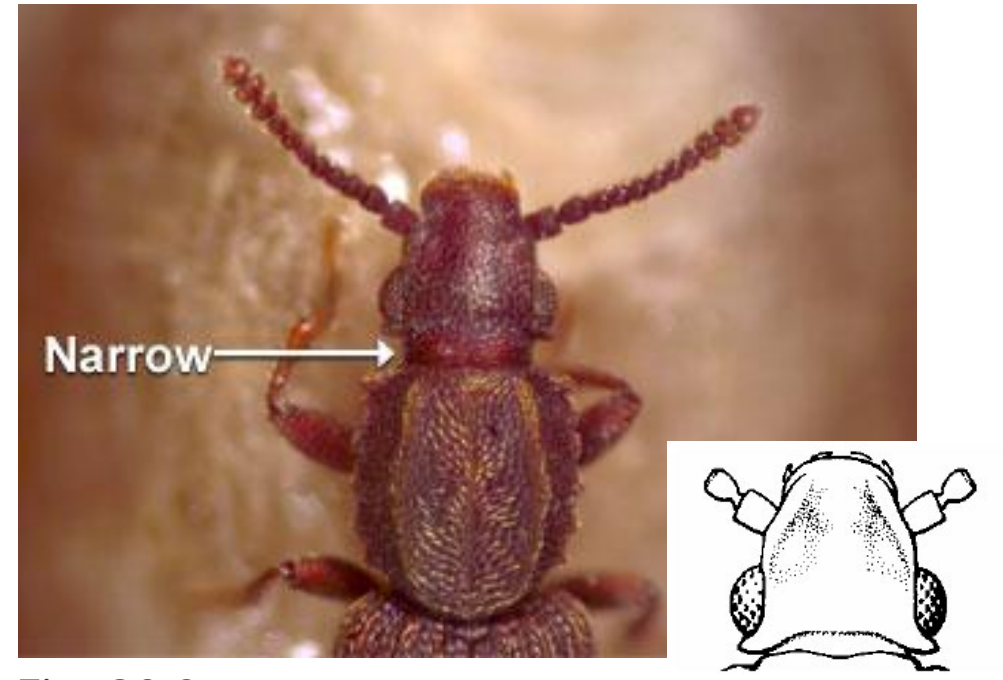


Fig. 30.2

30B. Length of temple less than half the vertical diameter of the eye.

Merchant grain beetle
(*Oryzaephilus mercator*)

Return to couplet 28

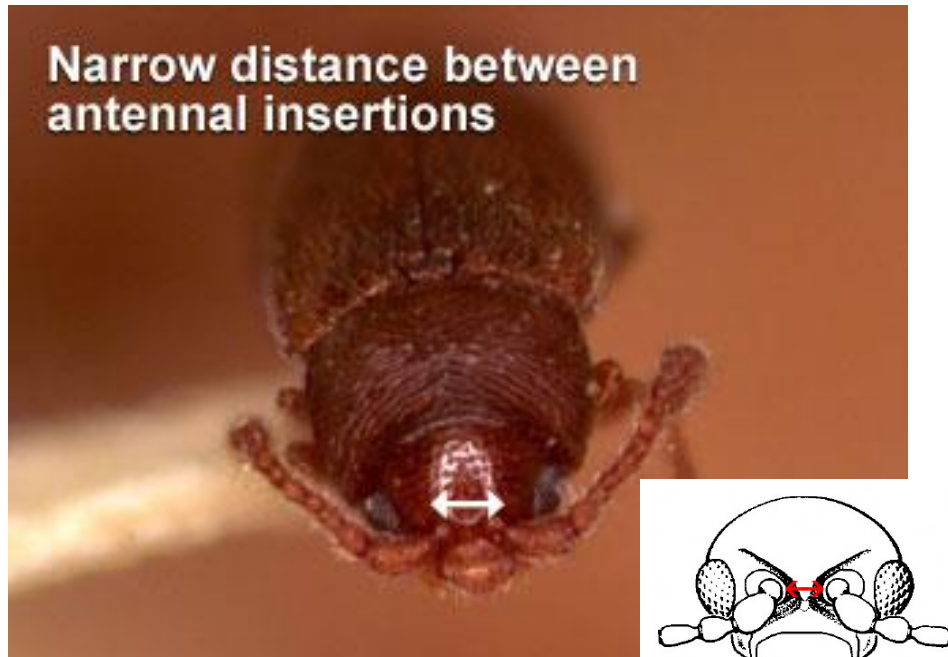


Fig. 31.1

31A. Antennal insertions situated at the middle of the front, between the eyes.

Silken fungus beetles
(*Atomaria* species)

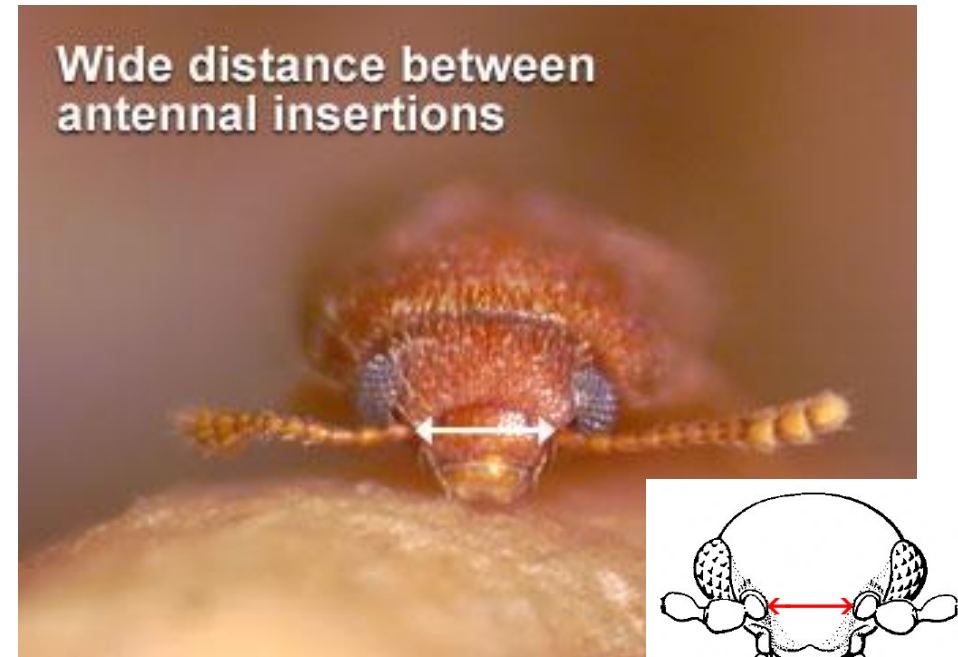


Fig. 31.2

31B. Antennal insertions on side of the head, in front of the eyes, more widely separated.

Go to couplet 32

Return to couplet 31

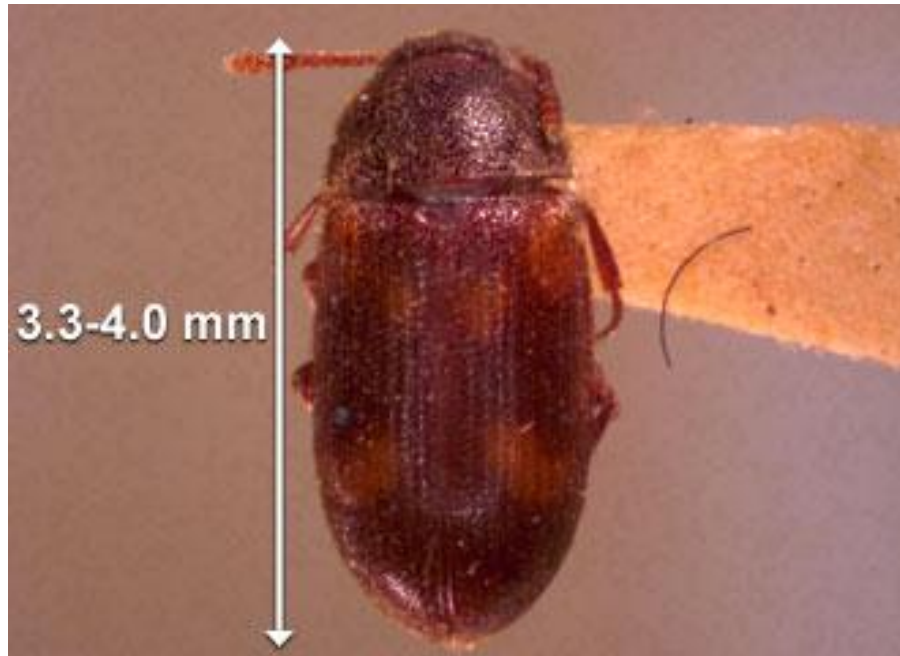


Fig. 32.1

32A. Larger (length of body 3.3 to 4.0 mm), elytral integument bi-coloured.

Spotted hairy fungus beetle
(*Mycetophagus quadriguttatus*)



Fig. 32.2

32B. Smaller (length of body 2.0 to 3.1 mm), elytral integument uniformly coloured, reddish brown.

Hairy fungus beetle
(*Typhaea stercorea*)

Return to couplet 16



Fig. 33.1

33A. Small (less than 5 mm) reddish-brown species. Males and females morphologically distinctive. Males with horns on front and mandibles.

Broad-horned flour beetle (*Gnatocerus cornutus*)



Fig. 33.2

33B. Larger (more than 5 mm), slightly less elongate, almost black species. No horns on front or pronounced mandibles.

Lesser mealworm (*Alphitobius diaperinus*)