



KEY TO THE GENERA OF THE CERAMBYCIDAE OF WESTERN NORTH AMERICA



Version 18 VIII 2021

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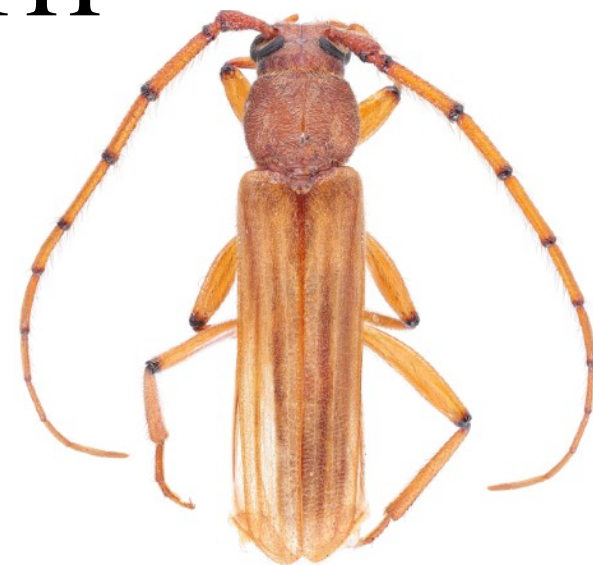
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Contributions and Acknowledgements

James R. LaBonte, ODA (Oregon Department of Agriculture: Design and compilation of this identification aid.

Joshua B. Dunlap: Acquisition of most of the images.

Daniel R. Clark: Design input and testing.

Thomas E. Valente, ODA: Design input and testing.

Joshua J. Vlach, ODA: Design input and testing.

Thomas Shahan, Thomas Valente, Steve Valley – additional images

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Introduction

This identification aid is a comprehensive key to the genera of western North American Cerambycidae (roundheaded or long-horned wood borers). It also includes several genera (and species) that are either established in the region or that are targets of USDA and other exotic cerambycid surveys. Keys to commonly trapped or encountered (based on ODA's years of wood borer surveys) indigenous species are also included. *This aid will be most reliable west of the Rocky Mountains. It may not function well with taxa found in the desert West and east of the Rockies. Currently, the key treats 123 genera (many which have only one species) and goes to species level for 118 species.

This aid is designed to be used by individuals with a wide range of taxonomic expertise. Images of all character states are provided.

Use of This Key: I

This key is designed like a traditional dichotomous key, with couplets. However, PowerPoint navigational features have been used for efficiency. Buttons linking non-sequential couplets and enabling return to an originating couplet are indicated by . All slides have this button, , to move immediately to the beginning of the key.

If there are more images than can fit on a single slide, the multiple slides for the couplet are indicated by “I”, “II”, etc., following the couplet number at the top of the slide.

Taxonomic jargon has been kept to a minimum. Most terms and character states are explained via the images and associated labels. The first several slides following the introduction illustrate the basic body parts of cerambycids and the terms applied

Use of This Key: II

to them. Several slides illustrating families that are frequently confused with cerambycids and some key differentiating features are included thereafter. A single slide explaining a few technical terms follows those. The key follows. Scientific names of exotic target species are followed by superscript ^{ET}. Those of established non-target exotic species are followed by superscript ^{EE}. When there is only one species in North America (NA) or Western North America (WNA), the couplet will terminate at that species. Where there are multiple species in NA or WNA, the number of species will be indicated.

Realistic limitations and expectations:

It is likely that native species, and even genera, not treated in this key, will be encountered. Ranges for many species are poorly

Use of This Key: III

known and those for some species are also changing due to climate change and human transport. Furthermore, the influx of exotic cerambycids continues and exotics new to western North America (including species indigenous to other areas of this continent), the U.S., and North America are being found with dismayingly frequency. Specimens from either set of taxa may not key readily. Such specimens should be submitted to a cooperating entomologist competent with Cerambycidae.

Monochamus and *Tetropium* are two particularly taxonomically challenging genera which include exotic species that are known to be or could be destructive. Unfortunately, the characters distinguishing species are often subtle and variable. Any specimen in these genera that doesn't readily key out to a native species or that looks unusual should be regarded with concern and submitted to a cerambycidist.

Use of This Key: IV

IMPORTANT NOTE:

Although every effort has been made to design all couplets as strict dichotomies, cerambycids express a great diversity of structures and this is sometimes reflected within genera or species. Rather than pretend this variability does not exist, it is accounted for by some genera or species keying to several parts of the key. When this occurs, the alternate couplet path will be noted on the portrait of the taxon in question.

How the Images Were Acquired

Without the amazing images, this key could not have been made. These images enabled the extensive use of visual comparisons of diagnostic characters and avoidance of much technical terminology. Except where noted, all images were created by ODA imaging technicians Joshua B. Dunlap and Steve Valley. Images were acquired using Canon EOS 5DSR cameras integrated with Dun, Inc.'s Visionary Digital LK and Passport II photo stacking systems and associated Camlift Controller software. Lighting for the Passport system was provided by 600 EX Speedlites, while Profoto D2 500 AirTTL lights were used for the Visionary Digital system. RAW photo files were processed on a Windows OS PC using Adobe Bridge and then stacked using Zerene Stacker software. The stacked images were edited and finalized in Adobe Photoshop CC 2018.

A Few Technical Terms

Acuminate: strongly and abruptly tapered to a narrow apex

Arcuate: arched

Attenuate: strongly but more-or-less evenly narrowed apically

Carina: an elevated ridge (plural is “Carinae”)

Emarginate: broadly notched

referencing Legs: Pro – front leg or a part thereof (e.g., “profemur” = femur of front leg);

likewise, Meso – middle leg and Meta – hind leg

Pubescence: short, fine, closely set hair-like structures

Punctate: with punctures

Rugae: ridges or wrinkles

Rugose-punctate: with ridges and punctures

Serrate: with notched edges like the teeth of a saw

Seta: relatively long, stiff hair-like structures (plural is “Setae”)

Sinuate: winding or wavy

Spine: a narrow protuberance acutely pointed or very narrowly rounded at the apex

Strigae: fine, impressed lines or streaks. “Strigate” = with strigae.

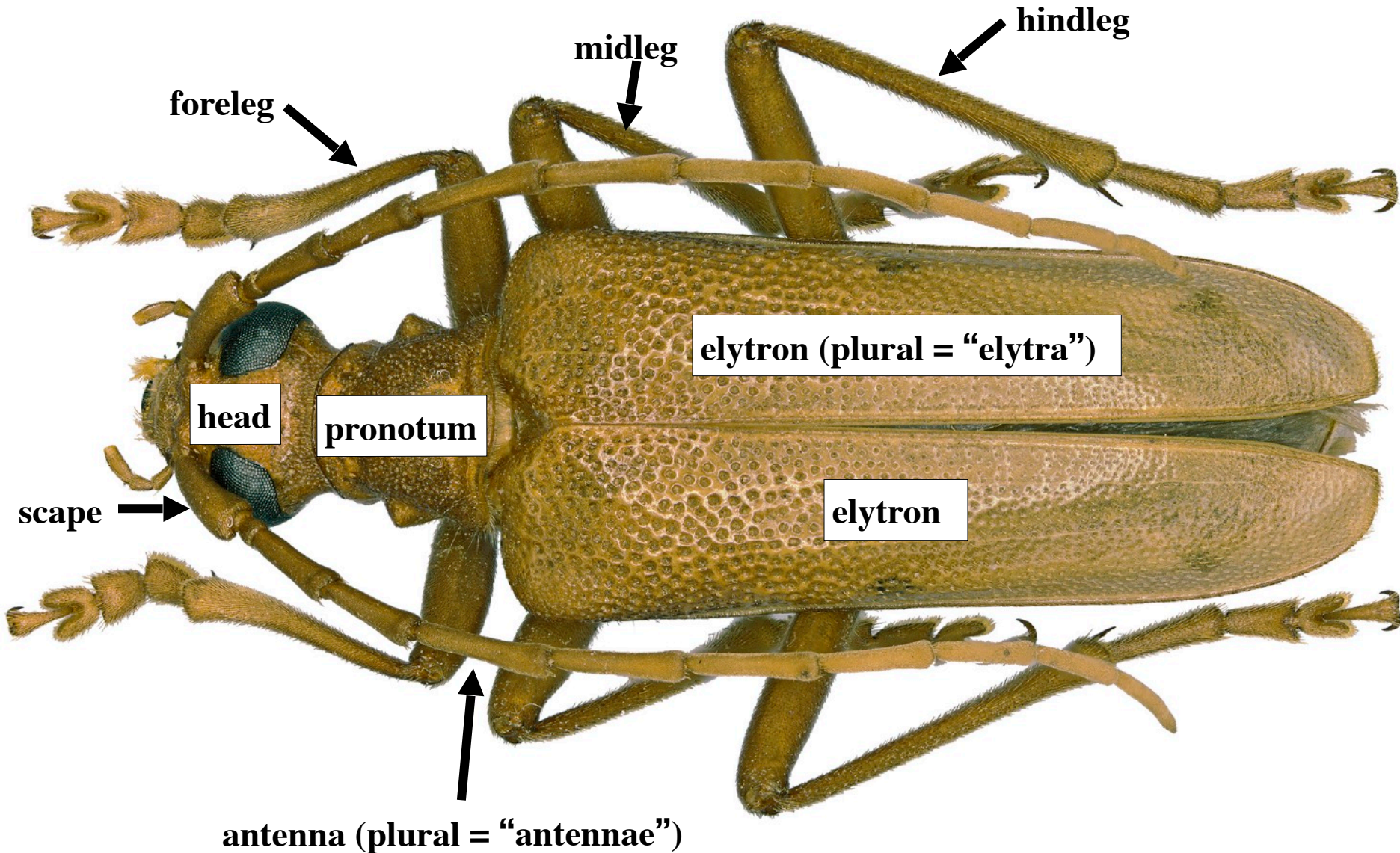
Sulcate: deeply grooved

Transverse: running across the longitudinal axis at right angles

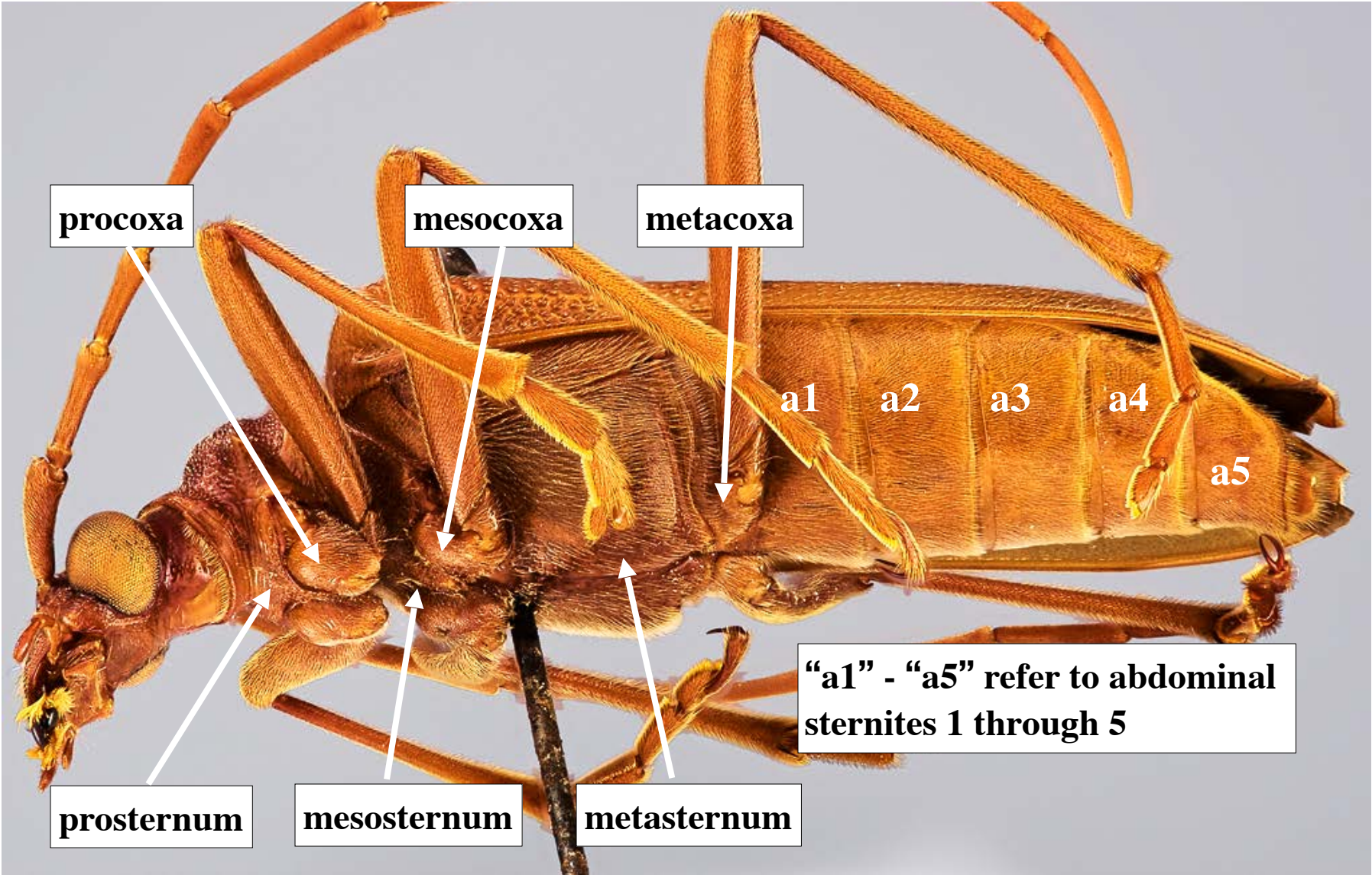
Truncate: squared off

Tubercle: a broad protuberance, often rounded at the apex but can be obtusely pointed

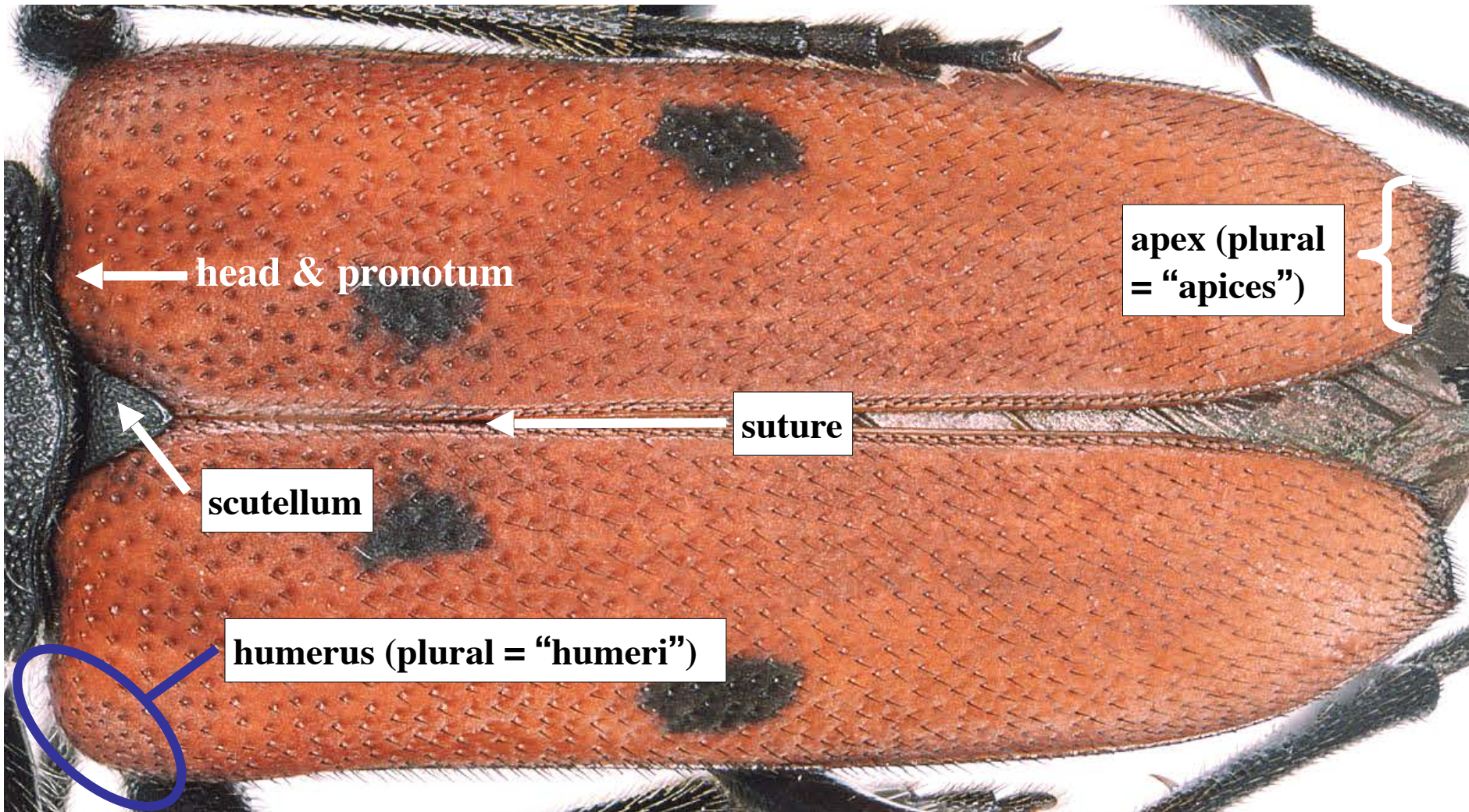
Body Parts of Cerambycidae: Dorsum



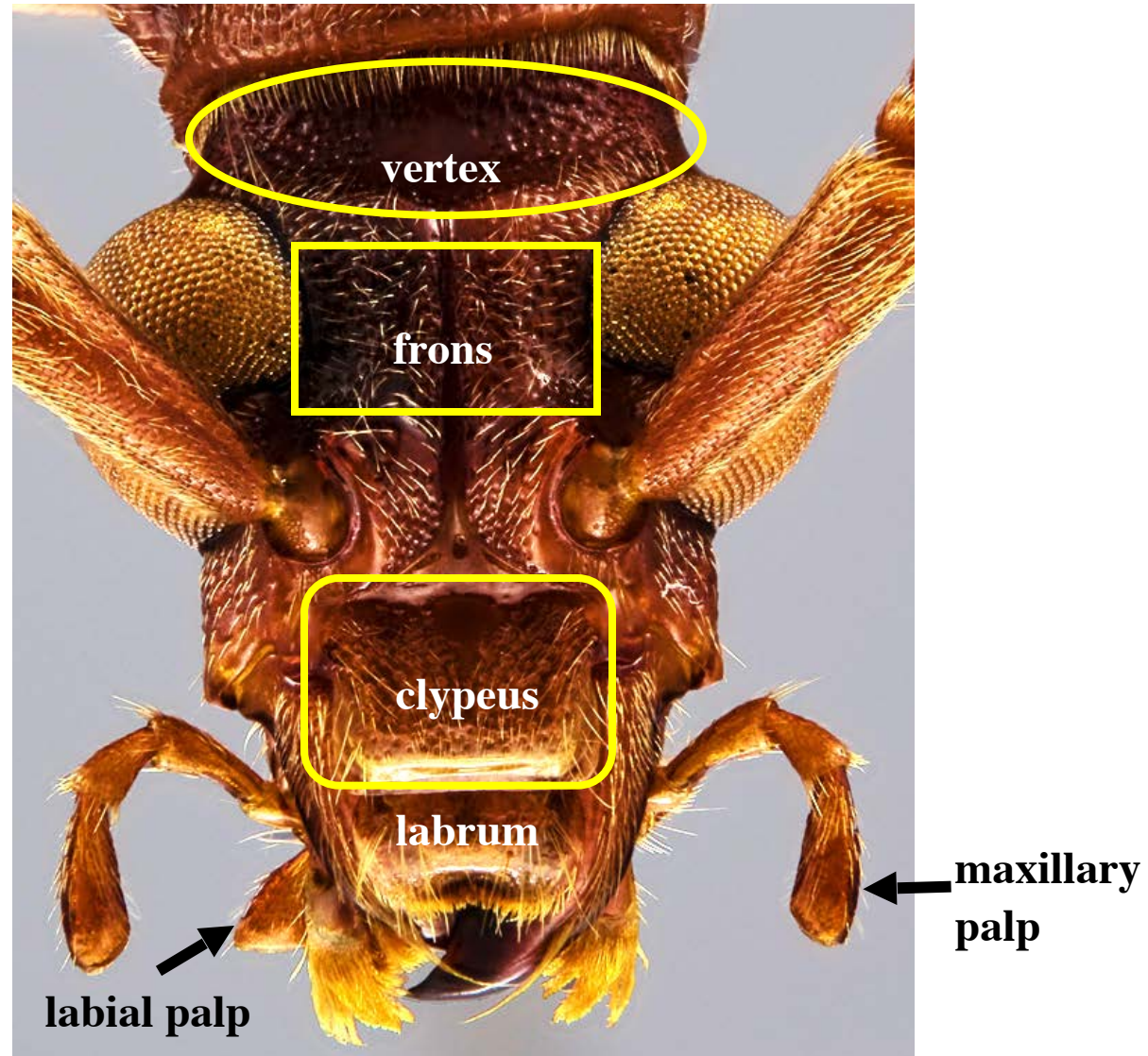
Body Parts of Cerambycidae: Venter



Body Parts of Cerambycidae: Elytra



Body Parts of Cerambycidae: Head



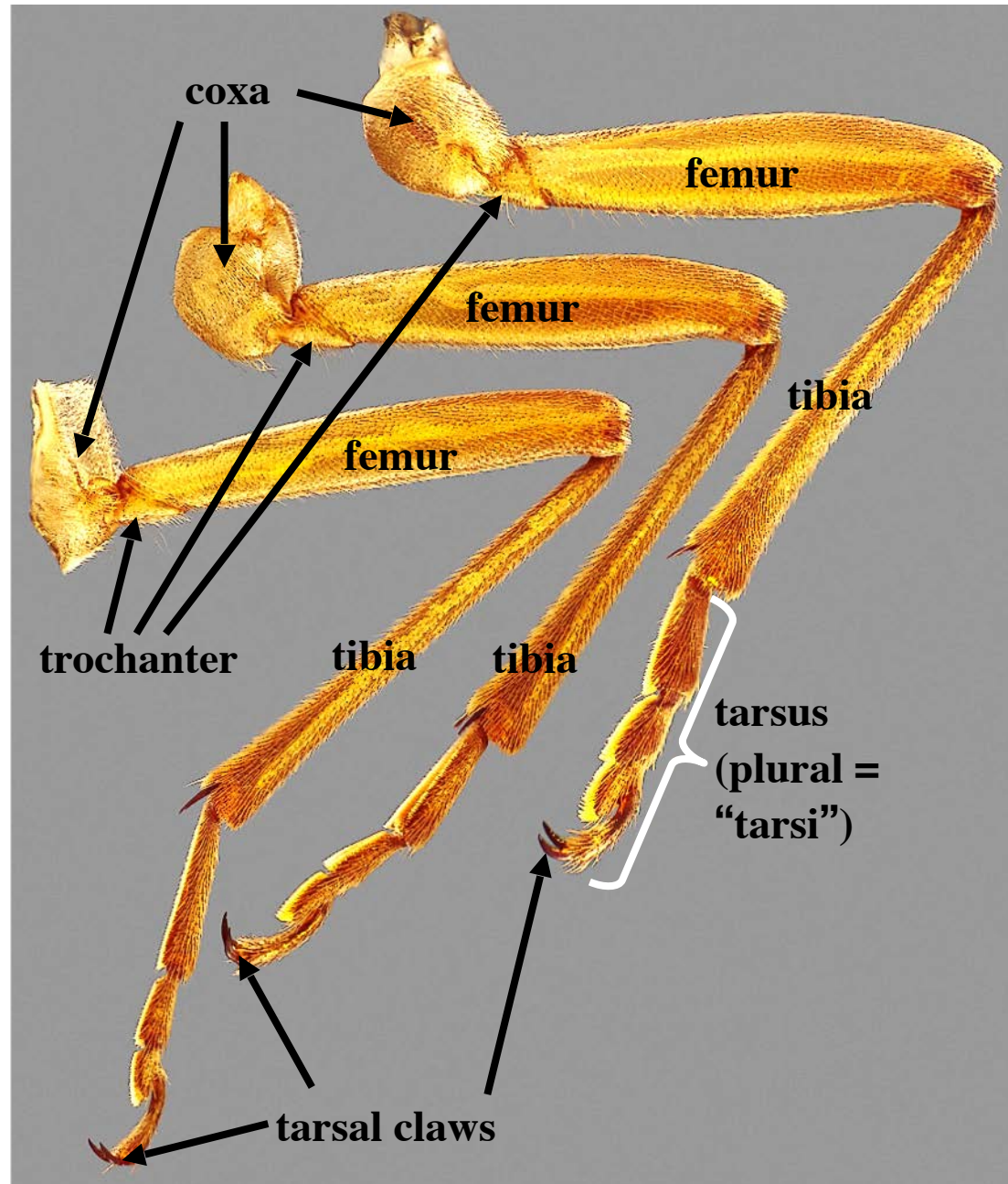
Body Parts of Cerambycidae: Legs

Top right leg is front leg
thus the parts are:

Procoxa
Protrochanter
Profemur
Protibia
Protarsus

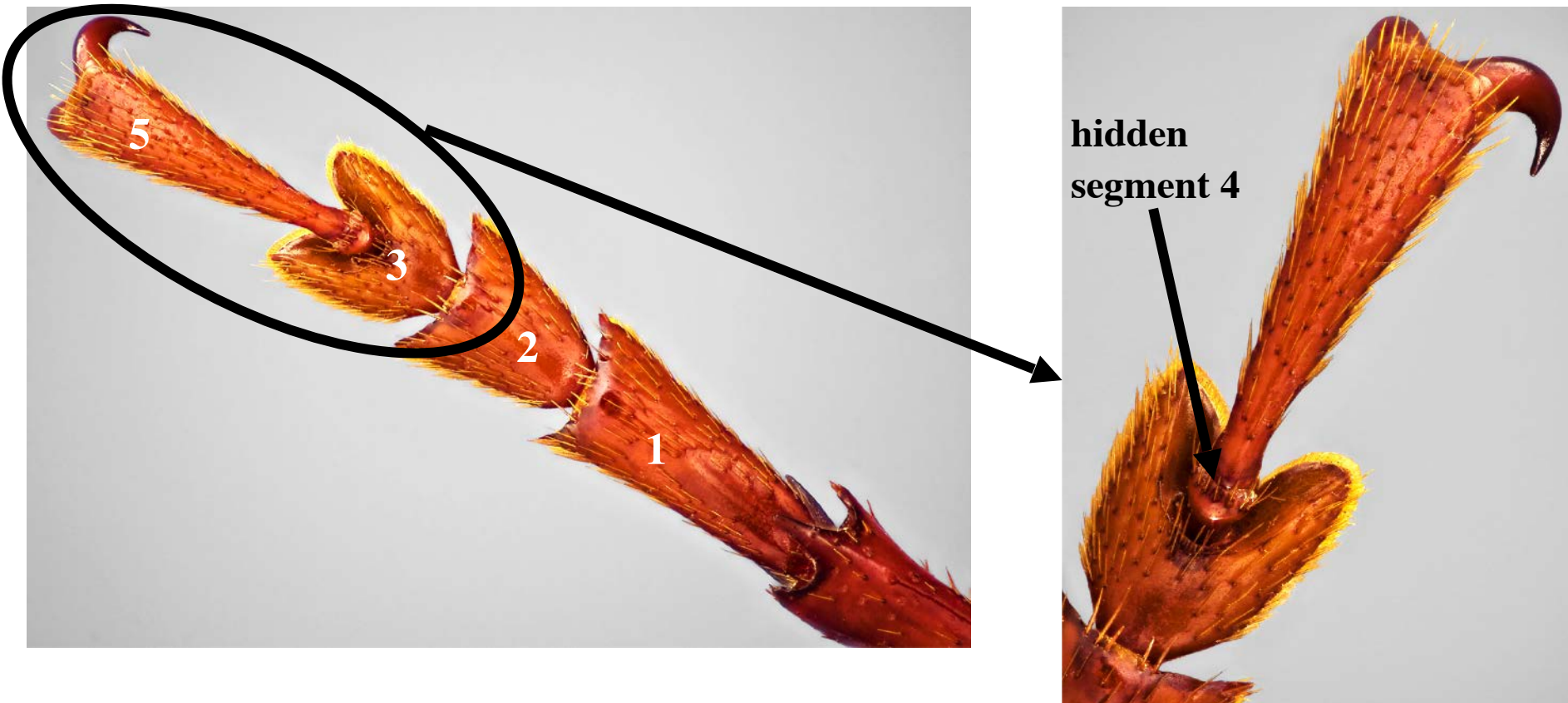
Middle leg in middle, thus:
Meso-...

Lower left leg is hind leg,
thus:
Meta-...



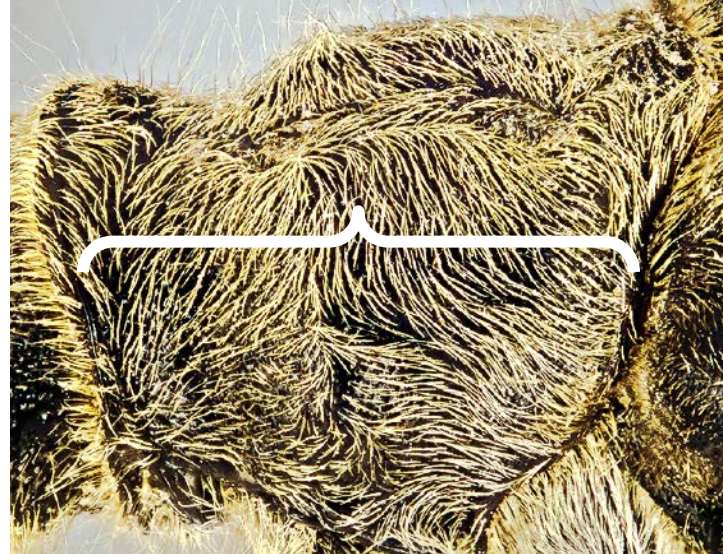
Features Typical of Cerambycids: I

All 3 sets of tarsi appear to be comprised of 4 segments each (except for a few very primitive cerambycids which have all tarsi clearly composed of 5 segments). In cerambycids, each tarsus really has 5 segments, but the 4th is very small and hidden between the lobes of the 3rd segment.



Features Typical of Cerambycids: II

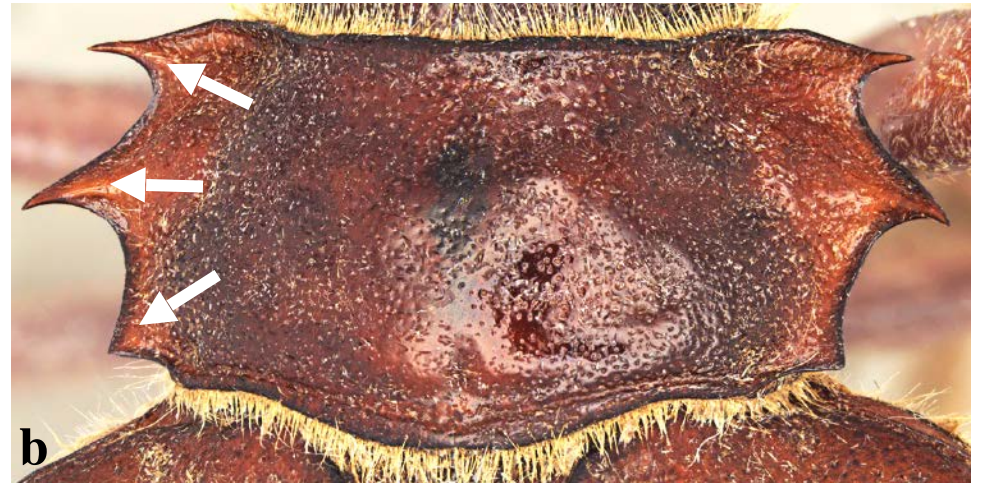
Pronotum without sharp lateral margins



Features Typical of Cerambycids: III

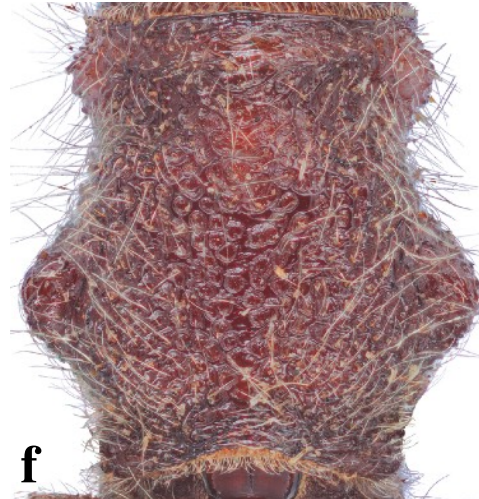
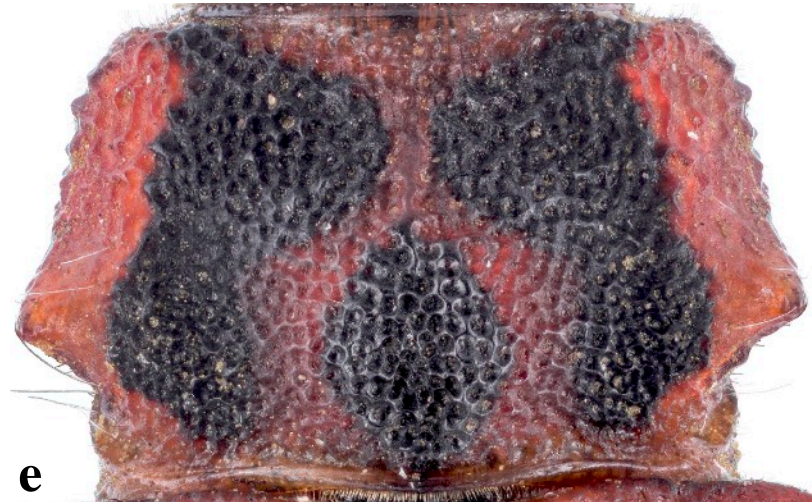
“Spine” vs “tubercle” is an artificial dichotomy along a continuum of protuberances. If uncertain of your interpretation of this character, go both ways in a couplet to check it. a-d are spines, e-h are tubercles, i could be interpreted as either.

Spines

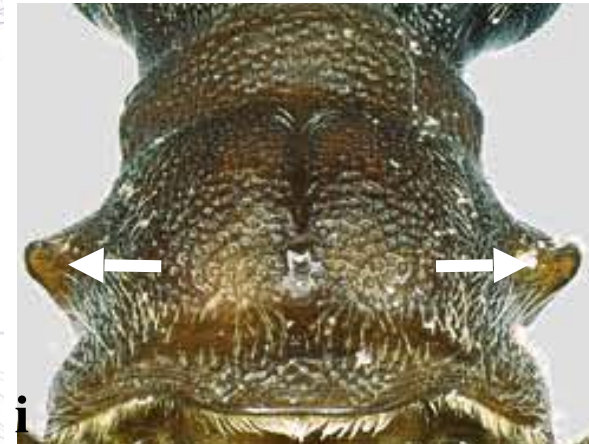


Features Typical of Cerambycids: IIIa

Tubercles



Spines?
Tubercle?



Features Typical of Cerambycids: IV

Antennae long and slender, extending beyond the hind margin of the pronotum



atypically short antennae



Features Typical of Cerambycids: V

Elytra generally lack distinct striae (thin carinae may be present)



Features Typical of Cerambycids: VI

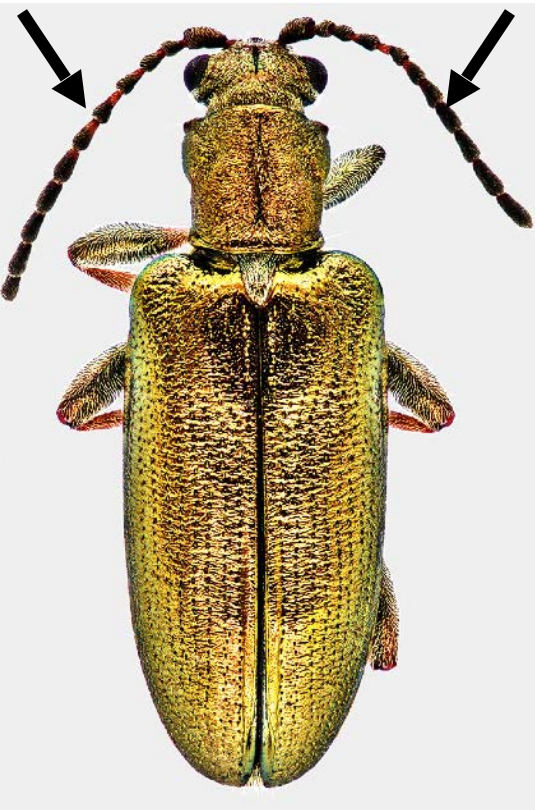
Antennae are inserted on prominences



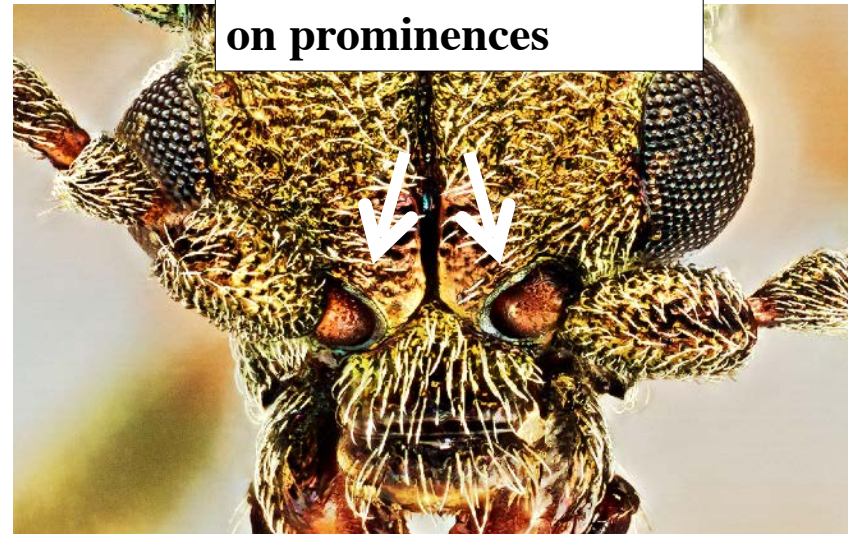
Non-Cerambycids: Chrysomelidae I

All tarsi 5-segmented with a hidden 4th segment (like Cerambycidae)

Antennae shorter than
half length of body

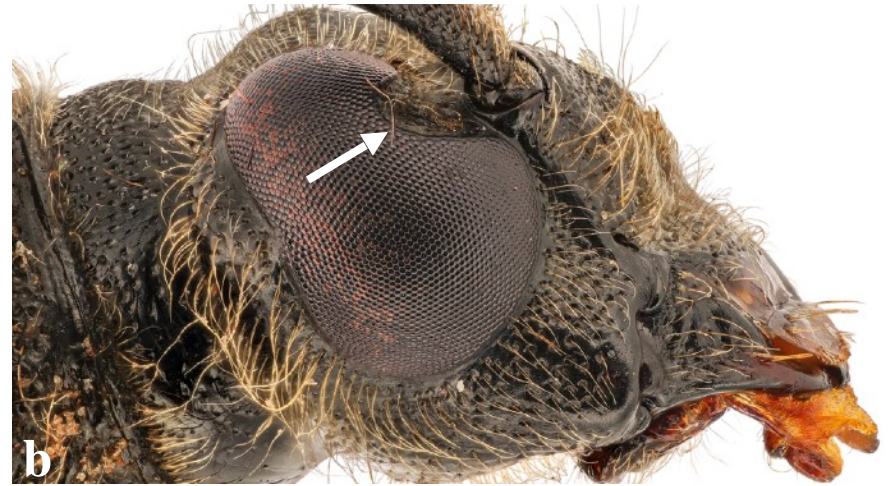


Antennae not inserted
on prominences



Non-Cerambycids: Chrysomelidae II

Almost all chrysomelids have rounded eyes without emarginations (a). In contrast, most cerambycids have more oval eyes with distinct notches along the anterior margin (sometimes splitting the eye!) (b). However, some cerambycids have eyes similar in shape to those of chrysomelids (c).



Non-Cerambycids: Cantharidae

All tarsi clearly 5-segmented



Lateral margins of pronotum sharp, carinate



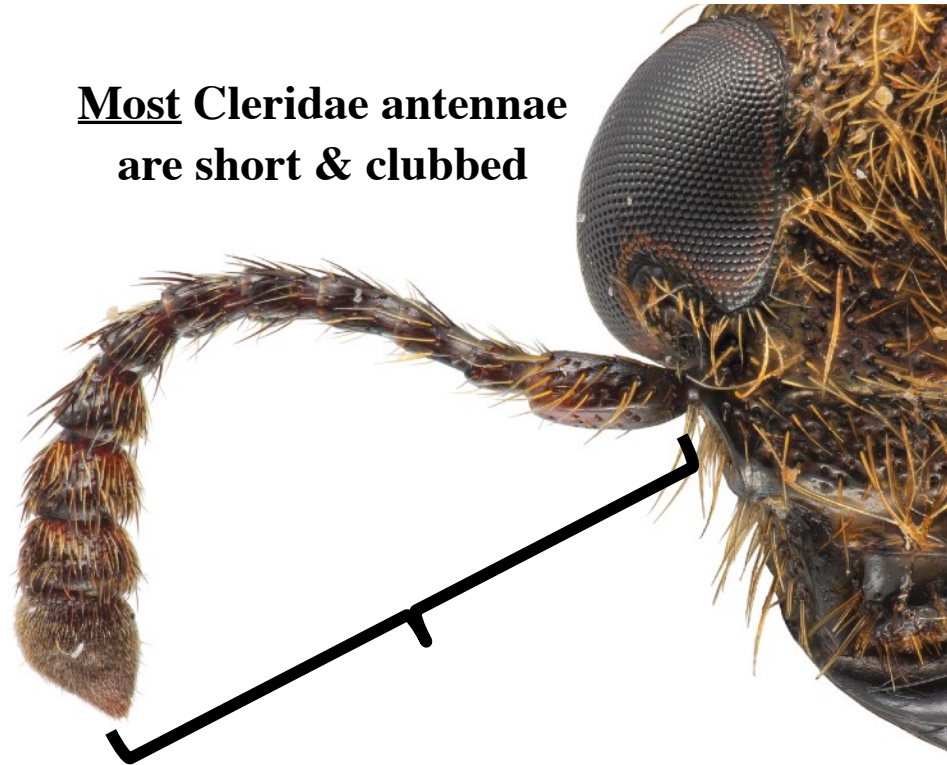
Non-Cerambycids: Cleridae



All tarsi are clearly 5-segmented

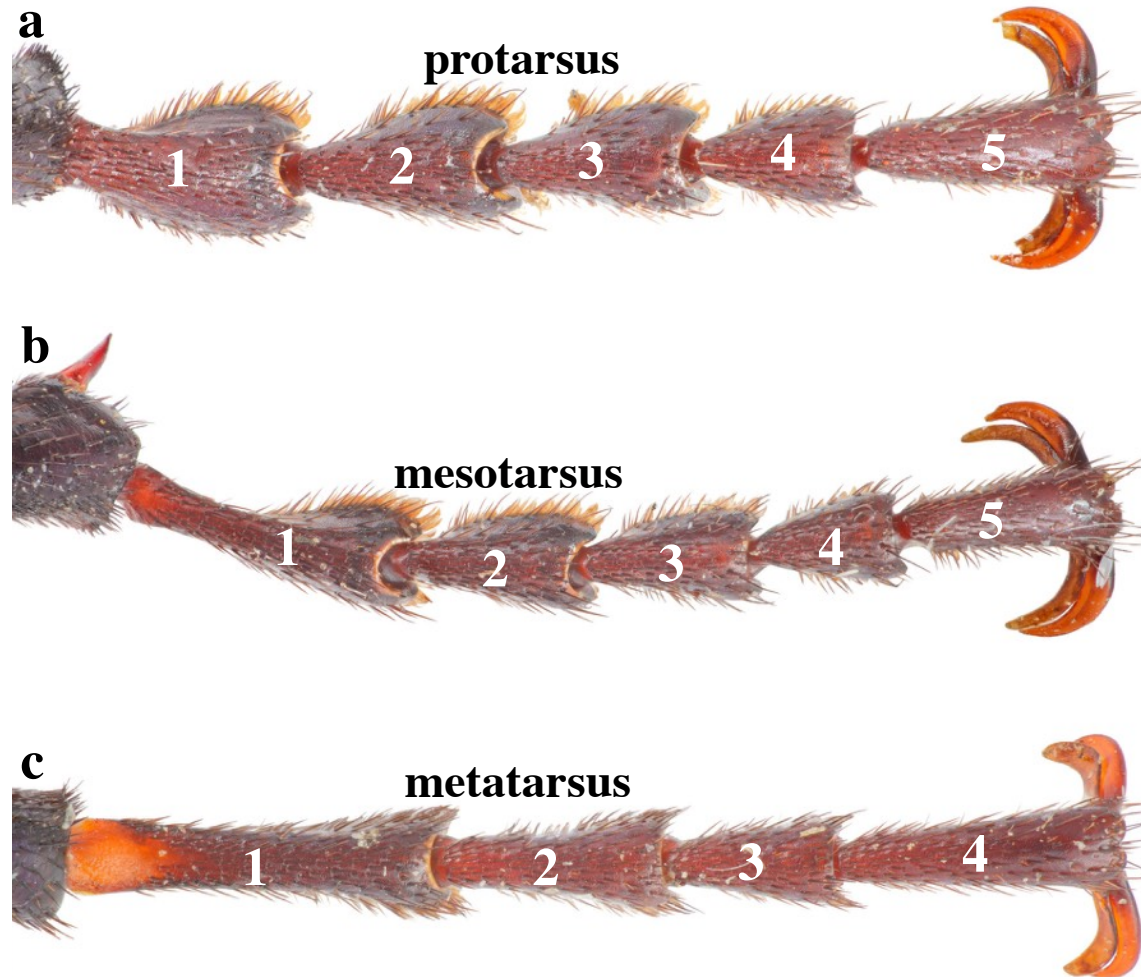


**Most Cleridae antennae
are short & clubbed**



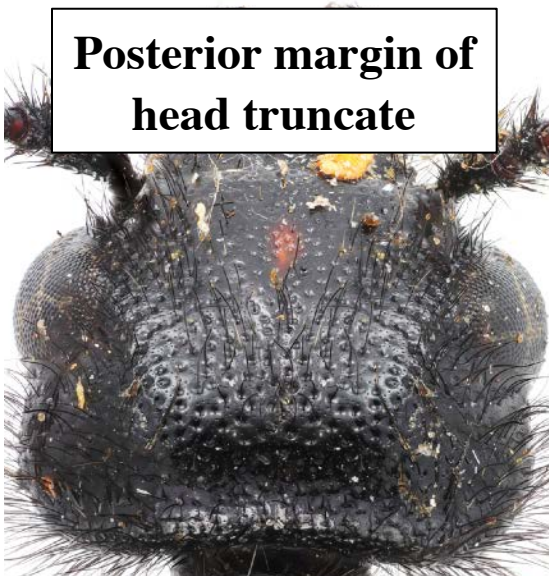
Non-Cerambycids with 5-segmented pro- and mesotarsi and 4-segmented metatarsi (5-5-4)

There are several common beetle families that can be confused with Cerambycidae that all have 5-segmented pro- and meso-tarsi (**a-b**) and 4-segmented metatarsi (**c**). These include Meloidae, Oedemeridae, Pyrochroidae, and Stenotrachelidae.

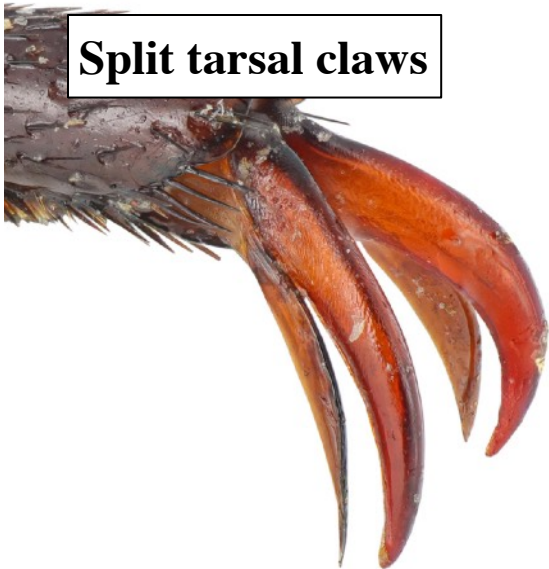


**Non-Cerambycids with 5-5-4 tarsi:
Meloidae**

**Posterior margin of
head truncate**



Split tarsal claws



**Non-Cerambycids with 5-5-4 tarsi:
Oedemeridae**



**Non-Cerambycids with 5-5-4 tarsi:
Pyrochroidae**



**Non-Cerambycids with 5-5-4 tarsi:
Stenotrachelidae**

**Sides of the head behind
the eyes are convergent**



Cerambycids that can be confused with another family (Lucanidae) I

Several primitive cerambycids (**a-b**) are superficially similar to some members of the stag beetles (Lucanidae) (**c**), with long mandibles, short antennae, 5-5-5 tarsi, and stout bodies. However, cerambycids have filamentous (**d**) or sometimes serrate (**e**) antennae while all lucanids have elbowed, clubbed antennae (**f**).



Cerambycids that can be confused with another family (Lucanidae) II

Cerambycid antennae



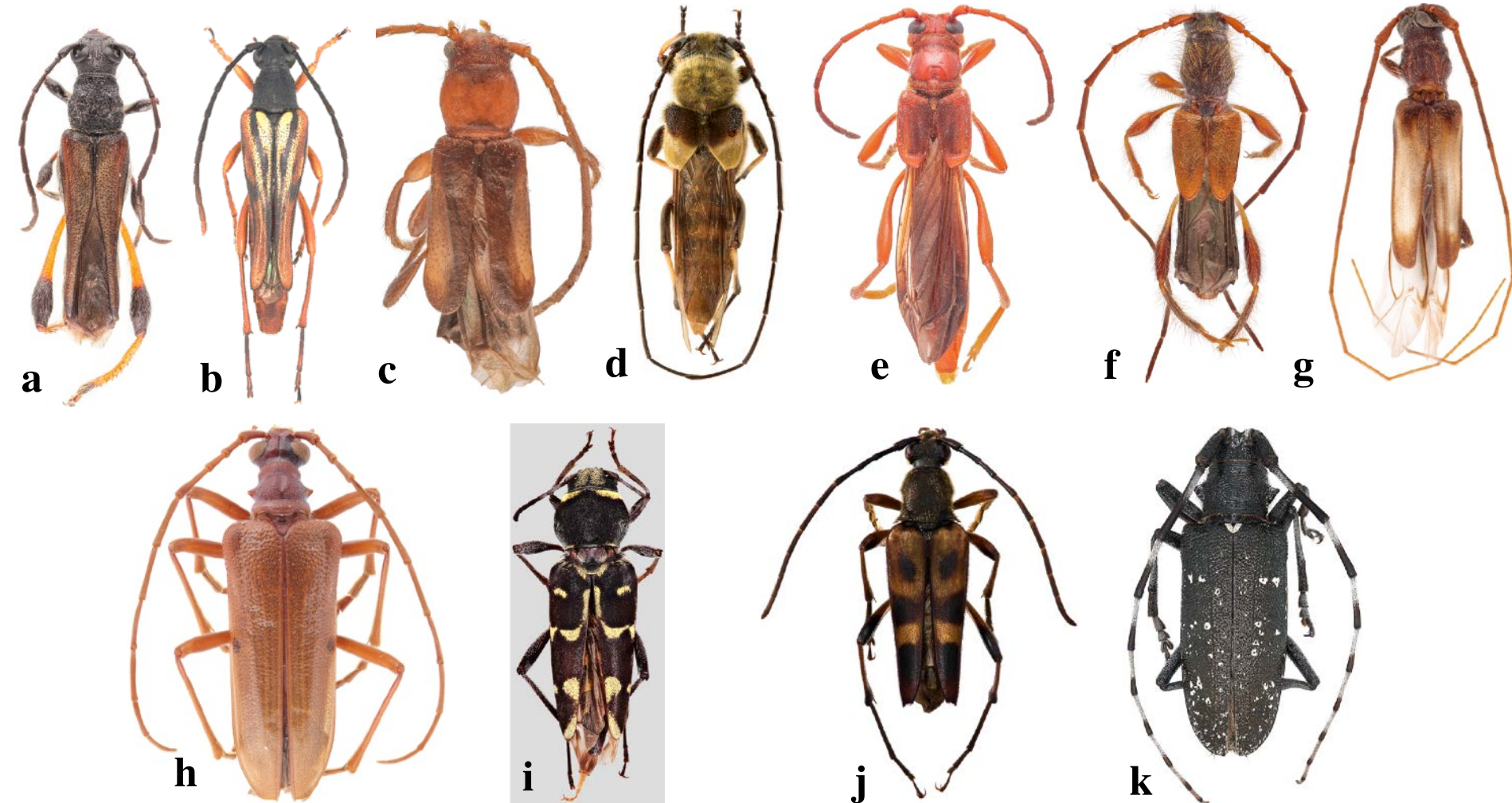
Lucanid antenna



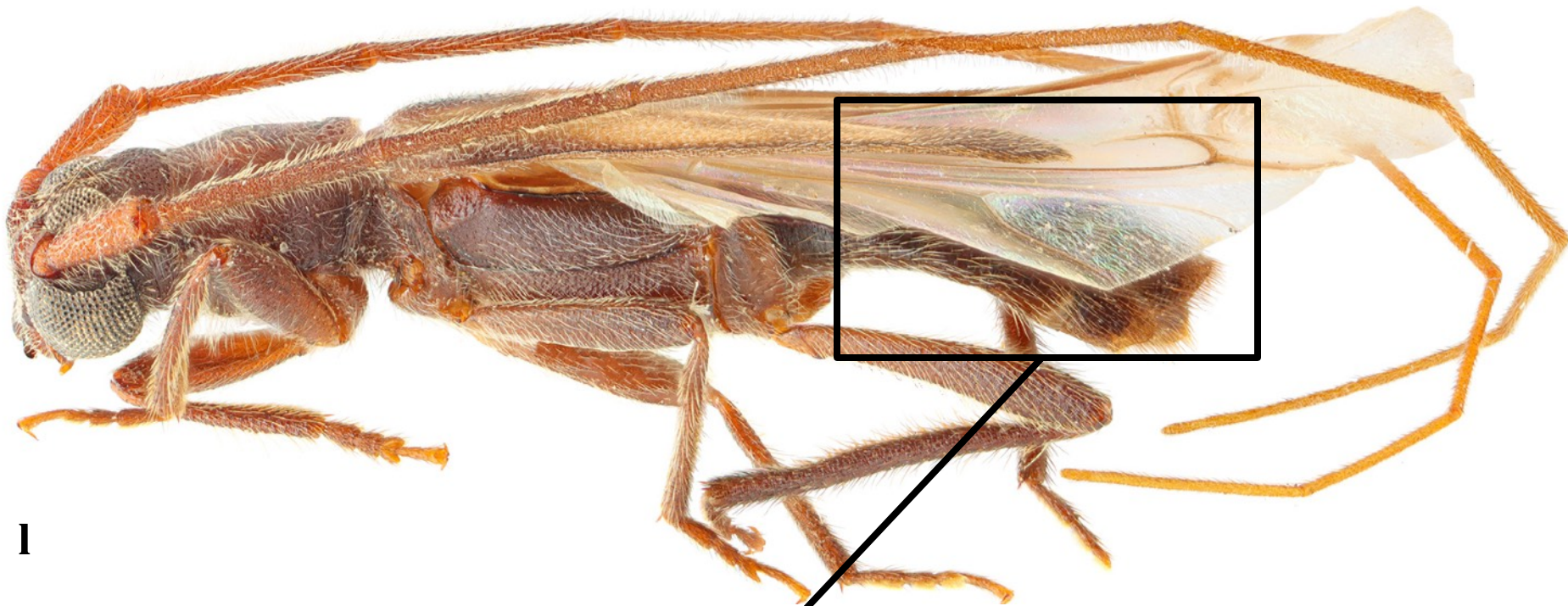
1 I

Elytra either elongate and attenuate (**a-b**) or truncate (exposing much of the abdomen (**c-f**), if abdomen sometimes obscured by flight wings (**g**), view laterally (**l-m**)2

Elytra not elongate and attenuate or truncate (**h-k**)8



1 II



I



m

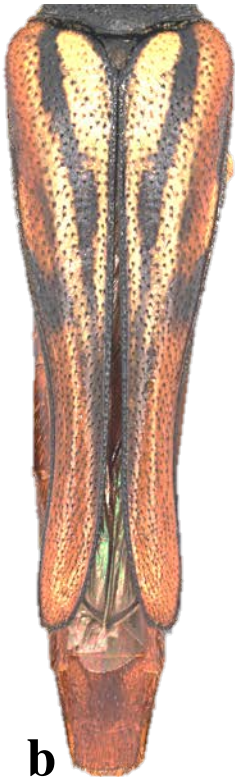
2 (1)

Elytra elongate and attenuate (**a-b**).....3

Elytra truncate, exposing much of the abdomen (**c-f**), if elongate, not strongly apically narrowed (**f**).....4



a



b



c



d



e

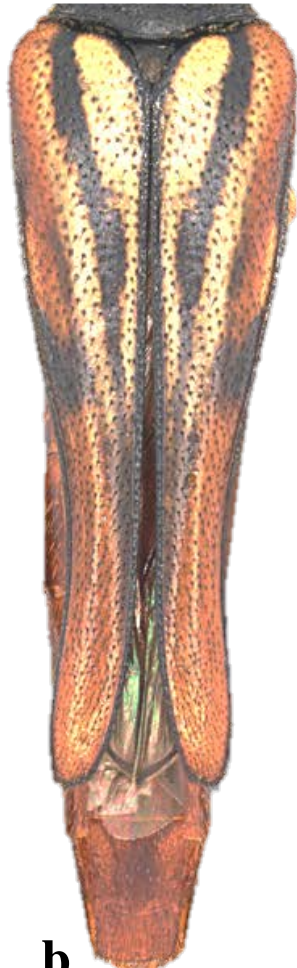


f

3 (2)

Elytra not striped and with apices very narrow and pointed (**a**); legs boldly banded (**c**).....*Callimoxys fuscipennis*

Elytra striped and with apices broader and rounded (**b**); legs not banded (**d**).....*Neobellamira delicata*

**a****b****c****d**



Callimoxys
fuscipennis
(LeConte)

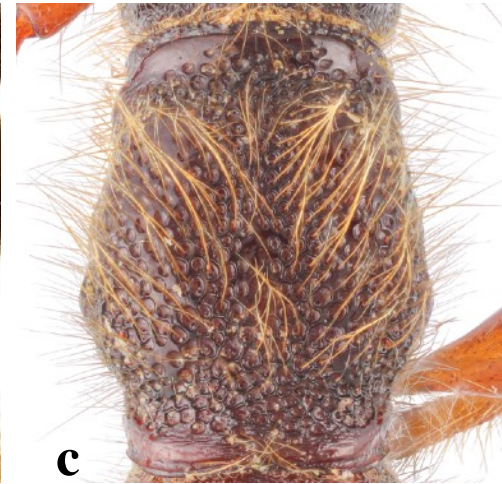


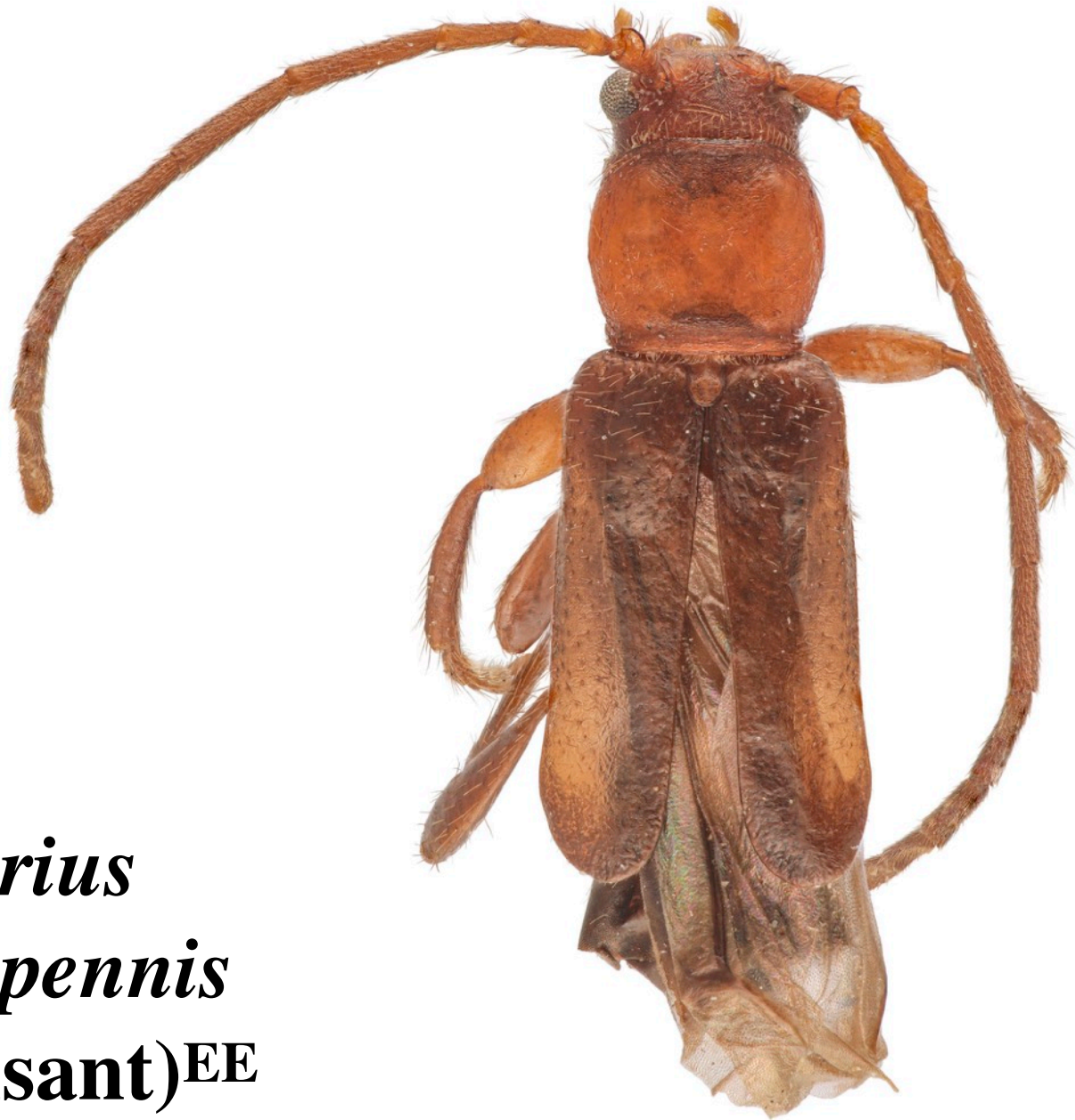
Neobellamira
delicata
(LeConte)

4 (2)

Pronotum at most sparsely punctate with short sparse pubescence
 (a).....*Nathrius brevipennis* ^{EE}

Pronotum with at least some areas of dense punctures (these may
 be very fine) and much longer and denser pubescence (b-e).....5 



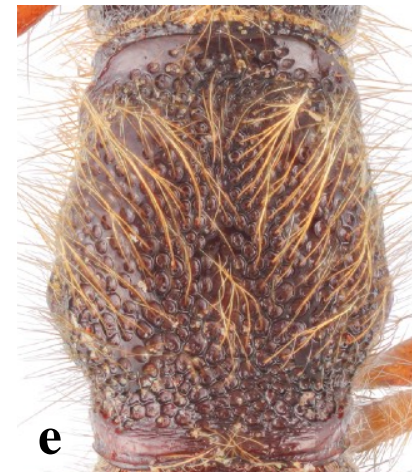


Nathrius
brevipennis
(Mulsant)^{EE}

5 (4) I

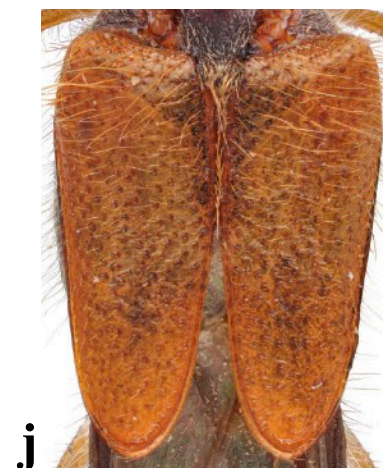
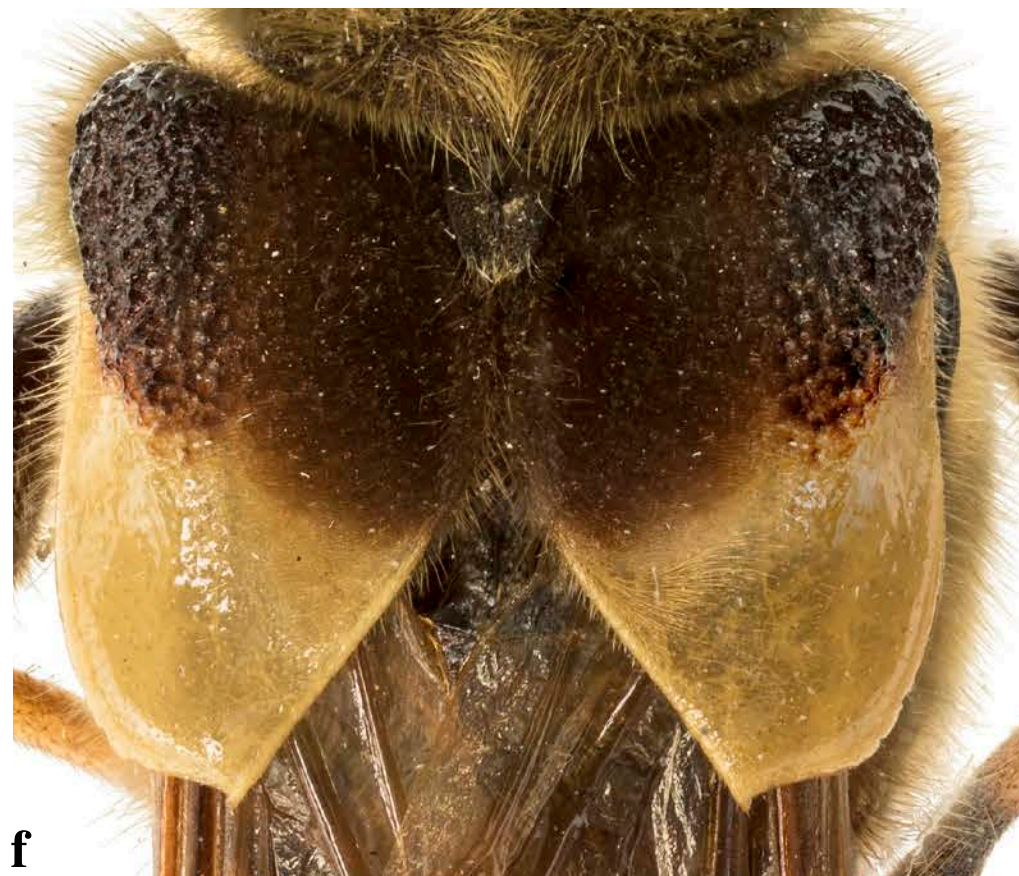
Pronotum round, with dense pubescence throughout (a); elytra boldly bicolored (f): reminiscent of a bumblebee.....*Ulochaetes leoninus*

Pronotum ovate, with pubescence sparser or more restricted in distribution (b-e); elytra at most less boldly bicolored (g-j).....6



5 (4) II

Begin key



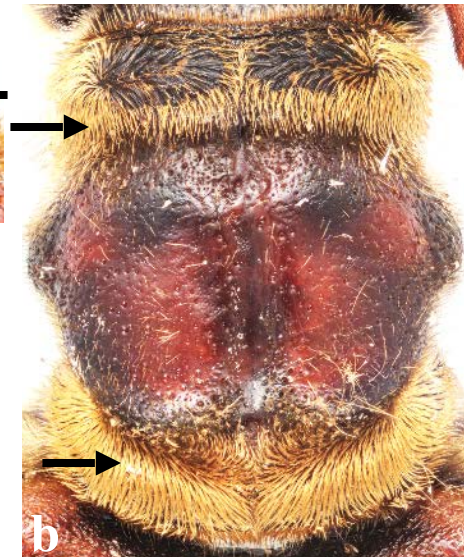
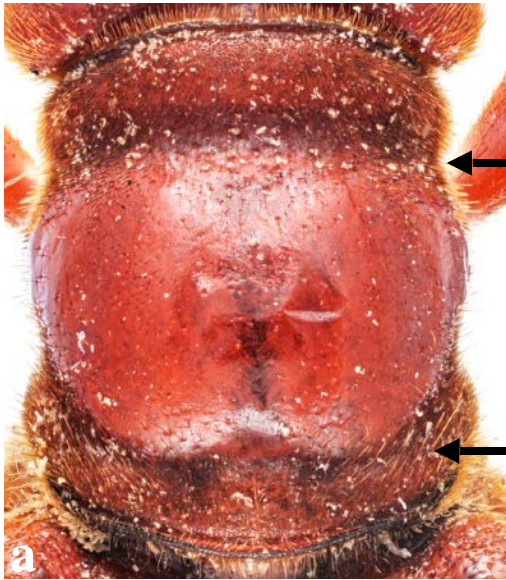
Ulochaetes
leoninus
LeConte



6 (5) I

Pronotum deeply horizontally sulcate anteriorly and posteriorly, with swollen sparsely punctate medial areas (**a-b**); elytra with apices sharply triangular (**e**): (6 species in WNA).....*Necydalis*

Pronotum more evenly convex, coarsely punctate throughout (**c-d**); elytral apices at most narrowly rounded (**f-g**).....7



6 (5) II



Necydalis



*Necydalis
cavipennis*
LeConte



*Necydalis
diversicollis*
Schaeffer

7 (6)

Pronotum as broad or broader than long (**a**); elytron narrow and essentially parallel (**c**): (~4 species in WNA).....*Methia*

Pronotum longer than broad (**b**); elytron broad and more-or-less triangular (**d**): (3 species in WNA).....*Molorchus*



a



b



c



d

Methia

Methia are variable in several ways:

1. Males have much longer antennae than females
2. Some species have variably-colored elytra
- *3. Most importantly for this key, some individuals may have elytra as long or longer than the abdomen. These will key to Couplet 48, with the Cerambycinae with lobed pronota.



male

*Methia
aestiva*
Fall

pale
elytron



male, dark elytra

*Methia
mormona*
Linell

Molorchus

Begin key



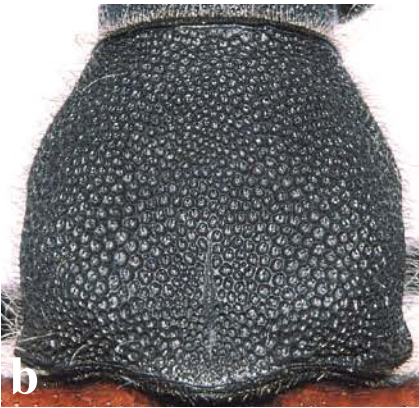
*Molorchus
longicollis*
LeConte

8 (1) I

Unique appearance! Pronotum white with a large central black dot (a); elytra with broad bands of black and white (e).....*Rosalia funebris*

This species is not common in traps but is often submitted for identification, particularly as a possible Asian longhorned beetle.

Pronotum **never** white with a large central central black dot (e.g., b-d); elytra without broad bands of black and white - may have white spots or patches on a black background (e.g., f-g)9 



8 (1) II



Elytra with broad bands of black and white.



Elytra without broad bands of black and white – may have white spots or patches on a black background.



Rosalia
funnebris
Motschulsky



9 (8)

Unique appearance! Large (up to 30 mm) and very convex (a) on cacti:
(3, perhaps 4, species in WNA).....*Moneilema*

If as large, very different in appearance and more-or-less dorsally flattened
(b-d) not on cacti.....10 



a



b



c



d

Moneilema
gigas
LeConte

Begin key



10 (9)

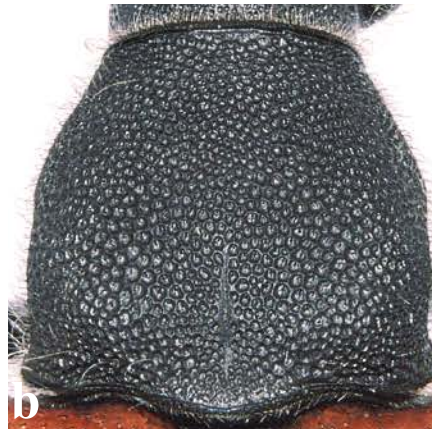
Pronotum with **complete** antemedian **and** median bands of yellow pubescence (a).....
*Megacyllene robiniae*^{EE}

**Megacyllene robiniae* is native to Eastern North America but not to the West. *Megacyllene* includes numerous species in eastern NA and southwestern U.S., several with distributions nearing WNA.

Pronotum lacking bands of pale pubescence (b); with bands of pale pubescence along anterior and/or posterior margins (c); with additional incomplete median band of pale pubescence (d); or with longitudinal or oblique markings (e).....11 



a



b



c

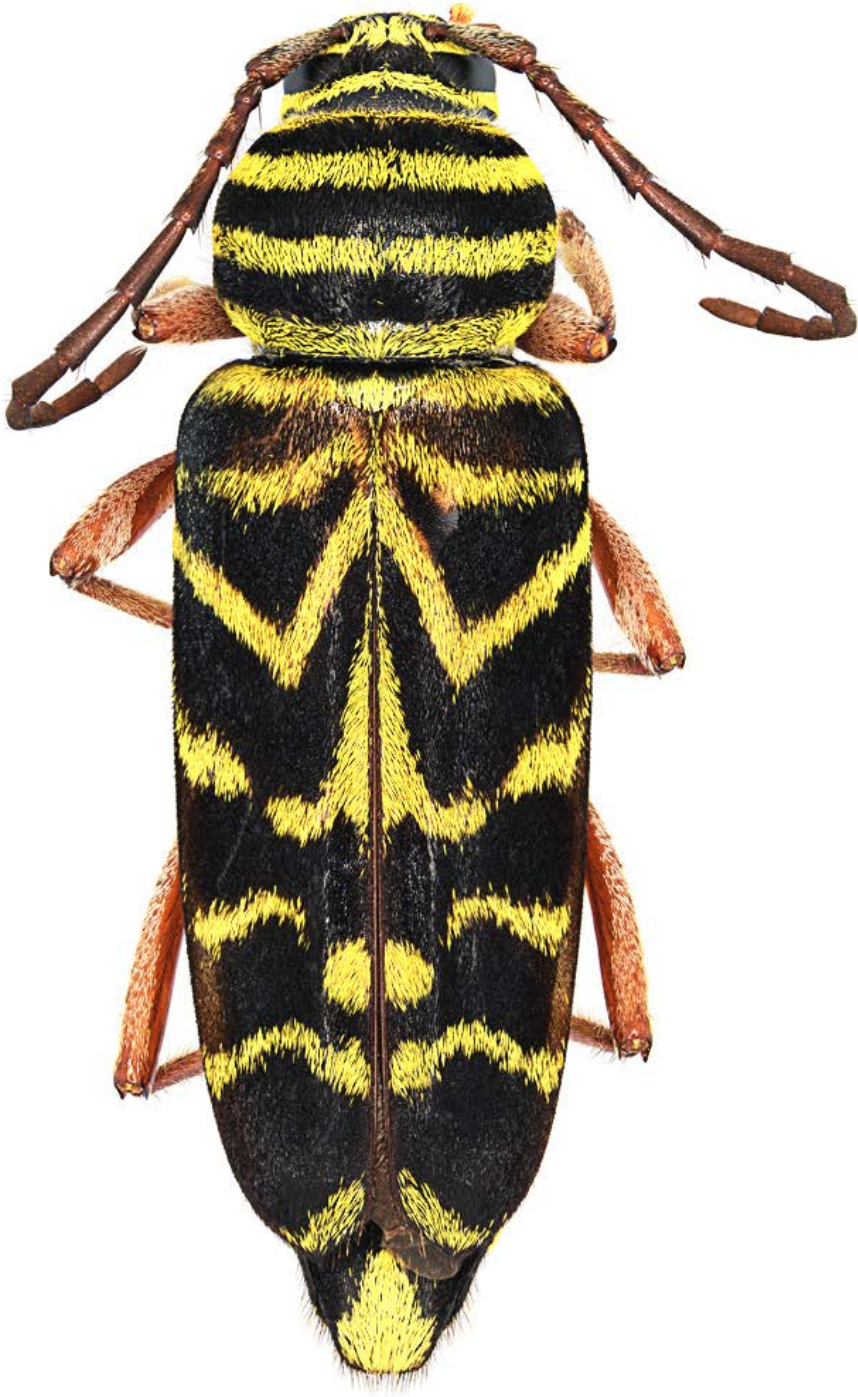


d



e

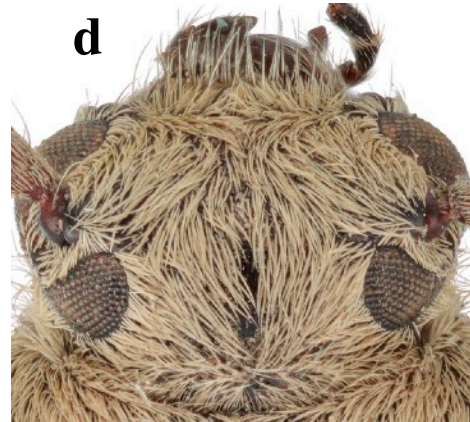
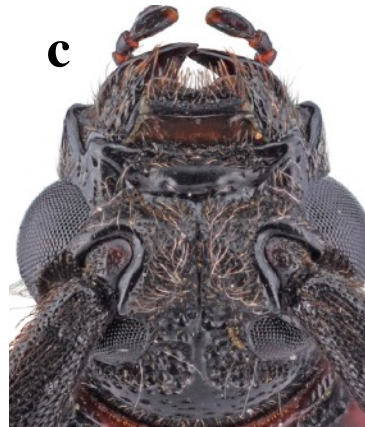
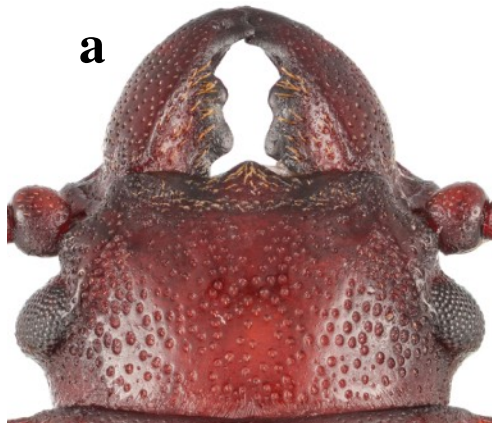
*Megacyllene
robiniae*
(Forster)



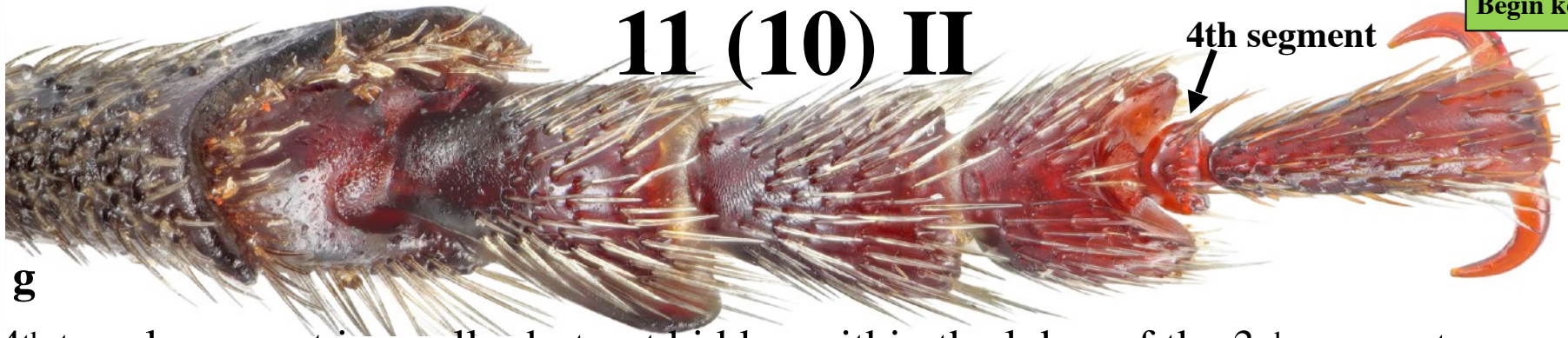
11 (10) I

Mandibles about as long or longer than head capsule (**a-b**); tarsi with five easily seen segments – the 4th segment is smaller but not hidden within the lobes of the 3rd segment (**g-h**).....12

Mandibles shorter than head capsule (**c-f**); tarsi with only four easily seen segments – the 4th segment is very small and hidden within the lobes of 3rd (**i**).....13

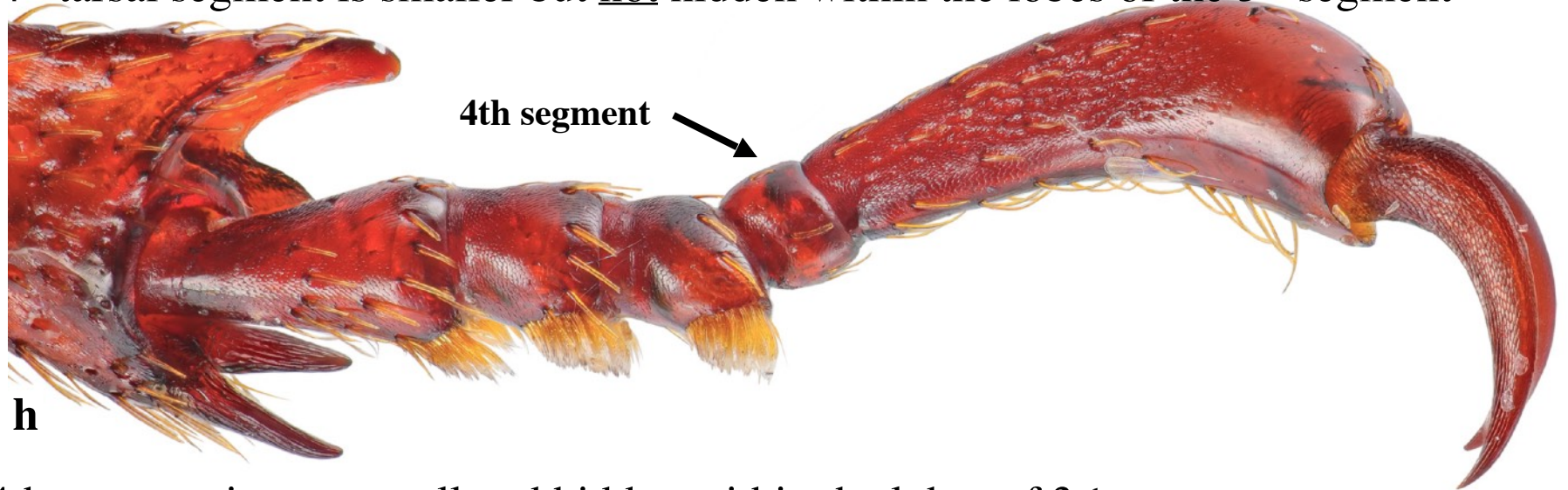


11 (10) II



g

4th tarsal segment is smaller but not hidden within the lobes of the 3rd segment



h

4th segment is very small and hidden within the lobes of 3rd

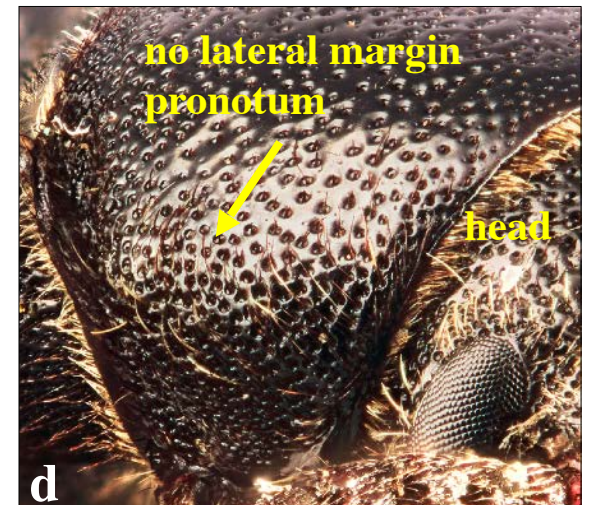
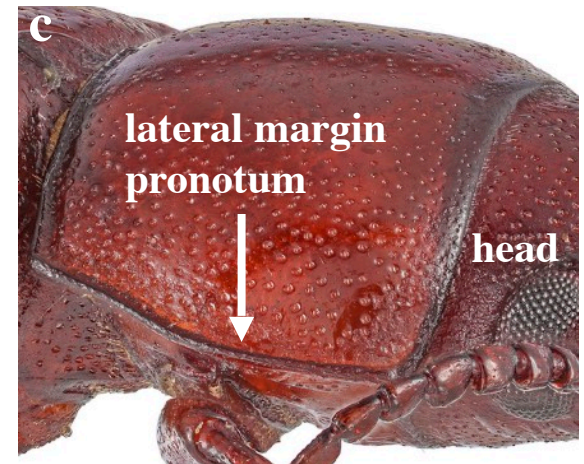


i

12 (11)

Upper surface smooth and elytra without carinae (a); pronotum with lateral ridges (c).....*Neandra brunnea*

Upper surface rough and elytra carinate (b); pronotum without lateral ridges (d).....*Neospondylis upiformis*



*Neandra
brunnea*
(Fabricius)



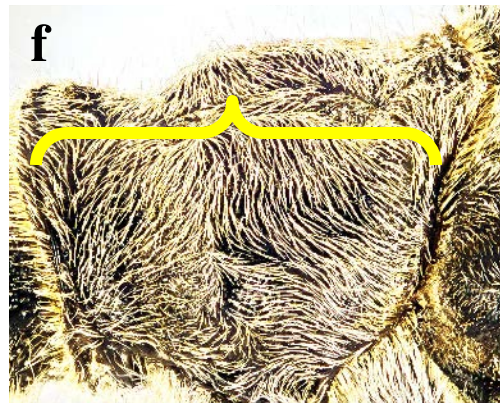
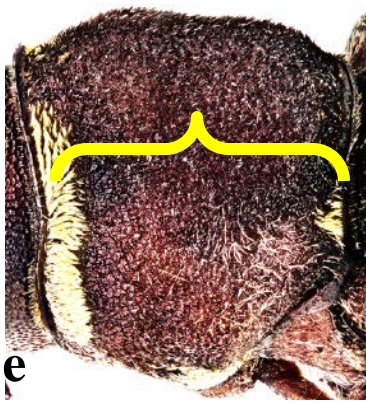
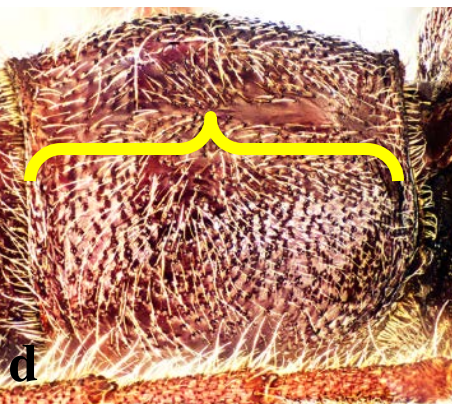
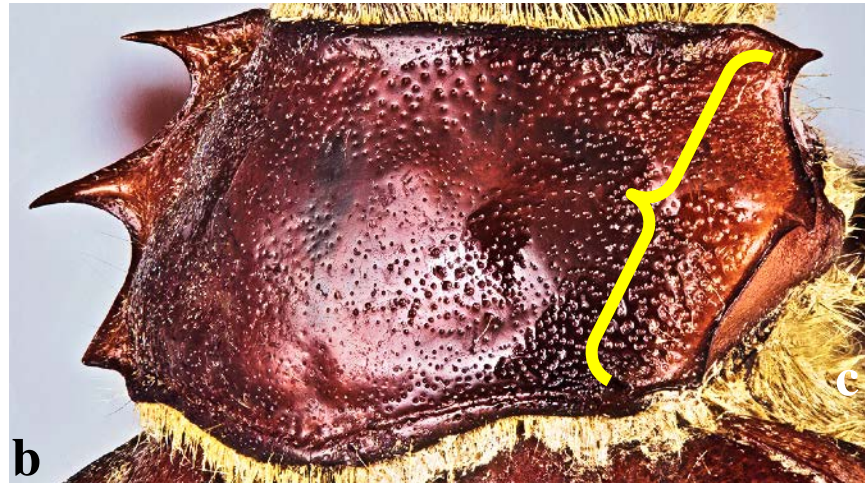
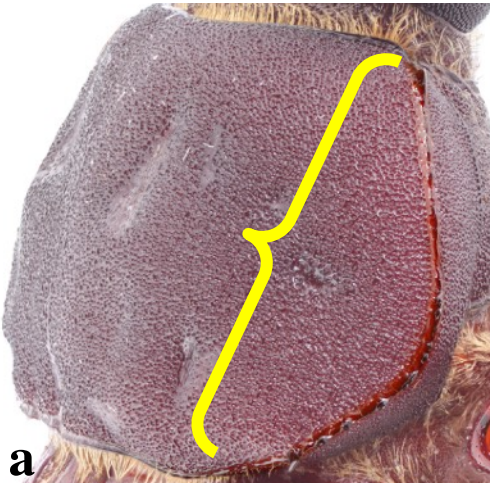
*Neospondylis
upiformis*
Mannerheim



13 (11)

Each lateral margin of pronotum with either a raised ridge over the entire length (a-b) or at least in the posterior half (c).....14

Lateral margins of pronotum without raised ridges (d-g).....16



14 (13)

Other than the scape, 2nd and last segments, all antennal segments triangular with angles on both sides of the apices (**a**) (4 species in WNA).....*Prionus* I

Other than segment 2, all antennal segments cylindrical with at most a small denticle on the outer side of a few basal segments (**b-c**).....15



Prionus I

Antennal segment surface shiny, with network of fine wrinkles - most obvious on outer segments and underneath (a).....*Prionus* II

Antennal segment surface dull with very small pores and no network of wrinkles - most obvious on outer segments and underneath (b).....other *Prionus* species

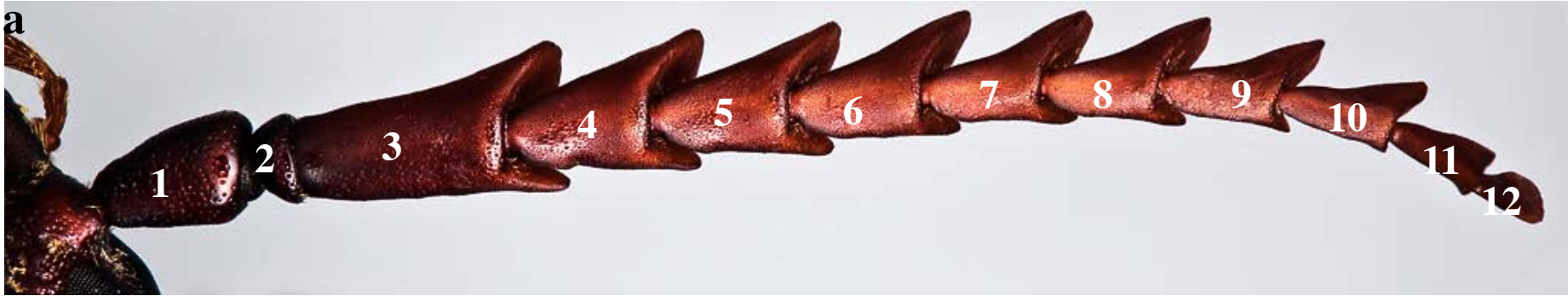


Prionus II

Antennae with twelve segments (a)..... *Prionus californicus*

*This species is not common in traps but is frequently submitted for identification.

Antennae with thirteen segments (b).....other *Prionus* species



Prionus
californicus
Motschulsky

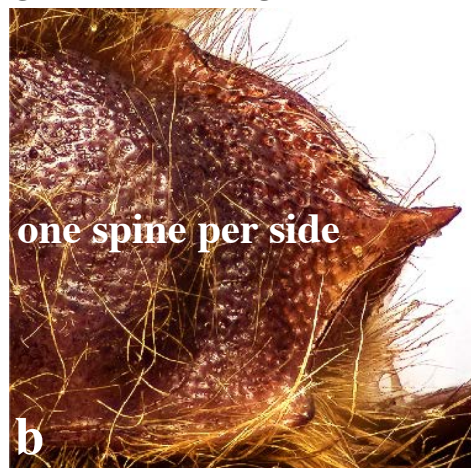
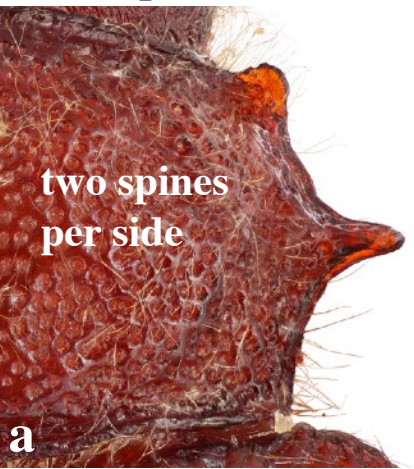


15 (14)

Each lateral margin of pronotum with no more than two large spines (**a-b**), some-times none (**c**), dorsum with long, often dense, pubescence (**d**): (2 species in NA)

.....*Tragosoma*

Each lateral margin of pronotum with many small spines, at most with sparse pubescence along lateral margins (**e-f**).....*Trichocnemis*





*Tragosoma
harrisii*
LeConte



*Tragosoma
soror*
Laplane

Trichocnemis spiculatus LeConte

Begin key



Female

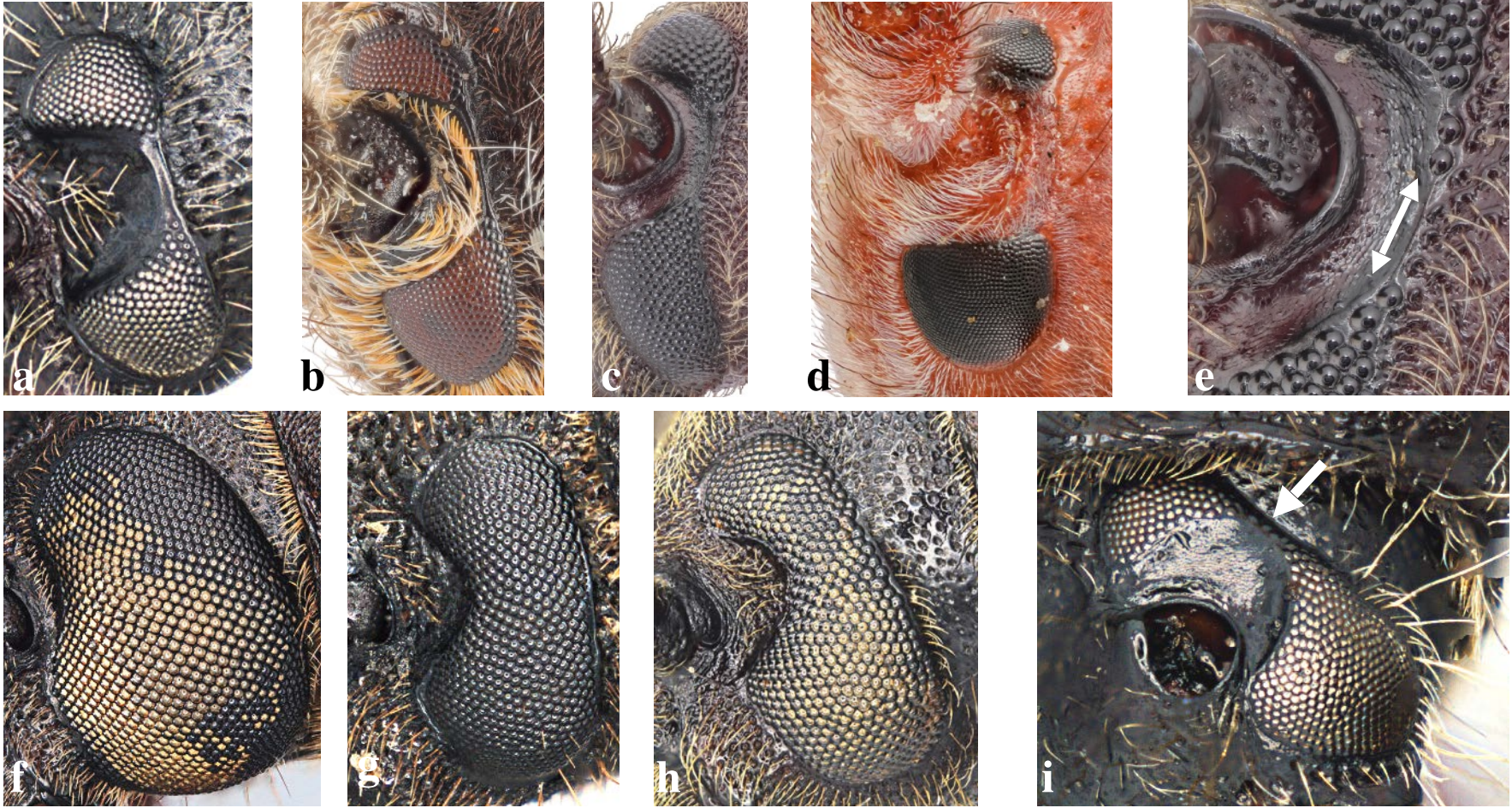


Male

16 (13)

Each eye completely divided into upper and lower lobes (**a-e**) – these may be connected by a thin carina without any facets on it (**a-c**) or rarely by a carina with an incomplete row of facets (**e**).....17

Each eye not divided into separate upper and lower lobes (**f-i**) – if there are distinct upper and lower lobes, these are connected by one or more complete rows of facets (**g**).....21



17 (16)

Pronotum with lateral spines (**a-b**).....18

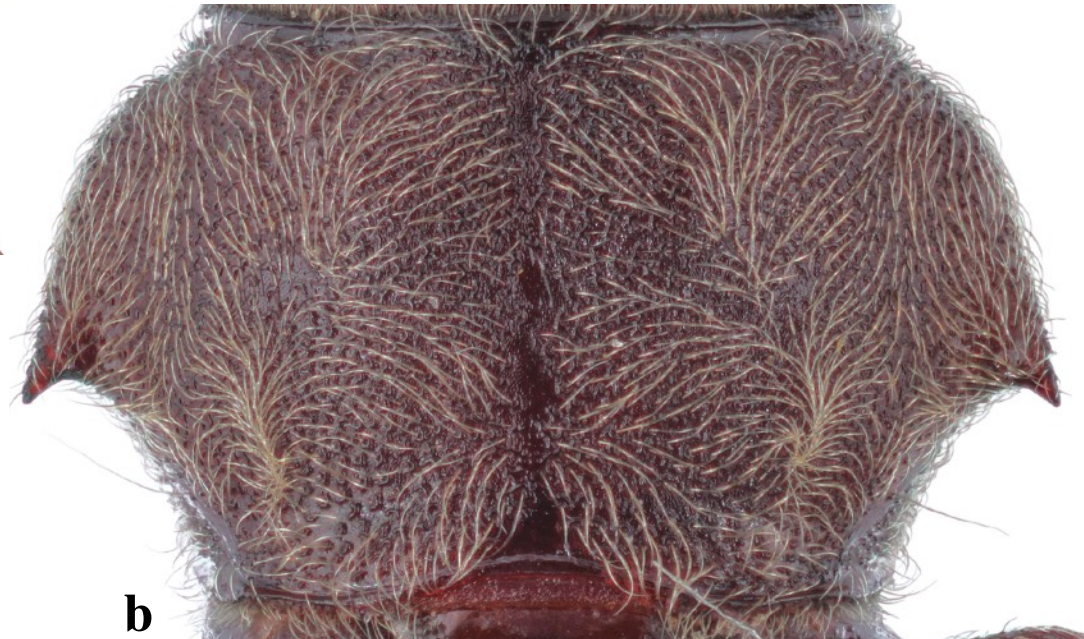
Pronotum without lateral spines (**c-f**), although blunt tubercles may be present (e-f).....19



18 (17)

Pronotum with two lateral spines on each side (a) 2 species in WNA and NA.....*Dicentrus*

Pronotum with one lateral spine on each side (b) 1 species in NA...*Ospimus quadrilineatus*

**a****b**

Dicentrus



Dicentrus
bidentatus
Champlain & Knull



Dicentrus
bluthneri
LeConte

Opsimus
quadrilineatus
Mannerheim

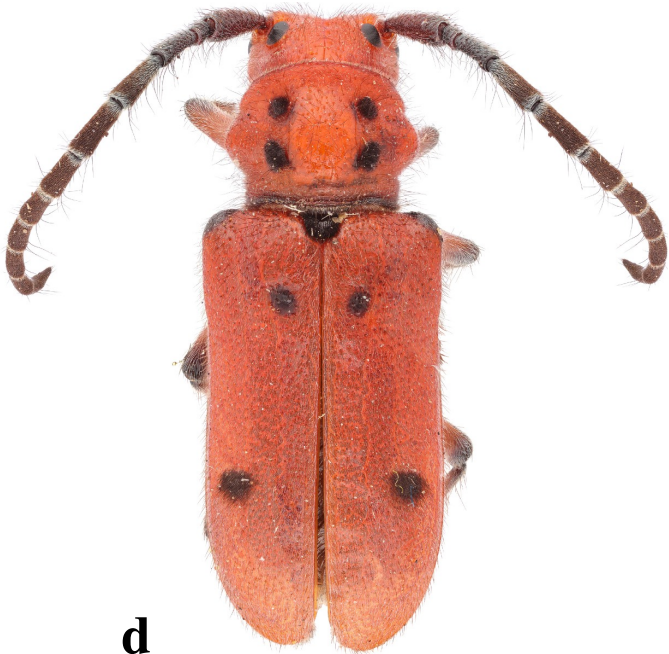
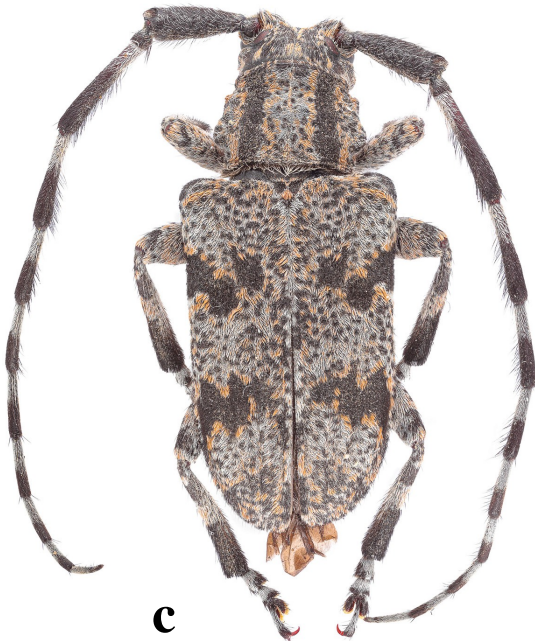


19 (17)

Body all brown in color (a-b).....*Tetropium I*

*This genus includes 4 indigenous WNA species, one exotic species established in SE Canada and several exotic target species not known to be established in NA.

Body colored otherwise (c-d).....20



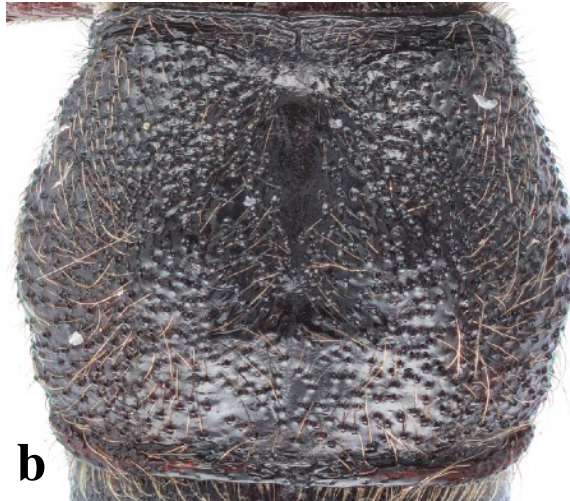
Tetropium I

Dorsum of pronotum finely, densely, more-or-less uniformly punctate, and with shorter pubescence (a).....*Tetropium velutinum*

Dorsum of pronotum with irregularly distributed punctures, often with shiny and smooth bare patches, and with longer pubescence (b-c).....*Tetropium II*



a



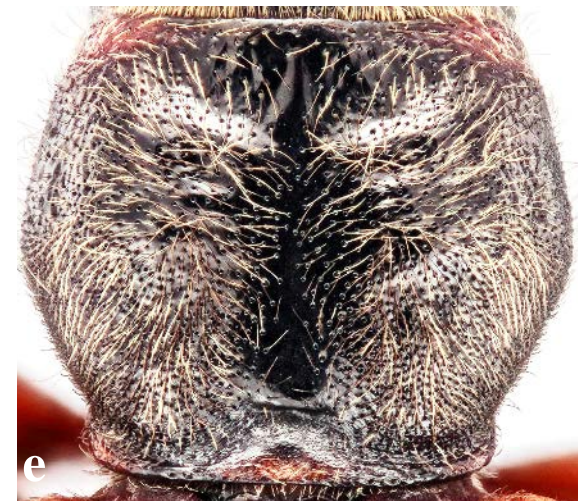
b



c



d



e

Tetropium
velutinum
LeConte



Tetropium II

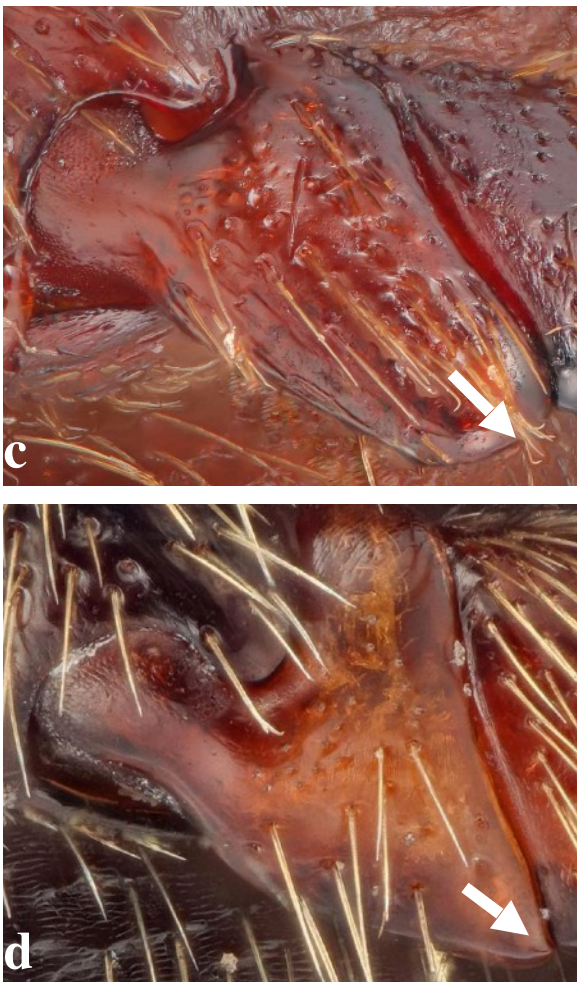
Antennomeres 3-11 elongate and narrow (a-b).....*Tetropium* III

Antennomeres 3-11 short and broad (c-d).....*Tetropium* IV 



Tetropium III

Dark and pale pubescence mingled throughout length of elytron, pubescence thin, not obscuring integument anywhere(a); metatrochanter rounded at apex (c).*Tetropium abietis*
Pale pubescence restricted to about anterior ¼ of elytra and sharply demarcated from dark pubescence over rest of elytra, pale pubescence dense enough to obscure integument (b); metatrochanter pointed at apex (d).....*Tetropium fuscum* ^{ET}





*Tetropium
abietis*
Fall

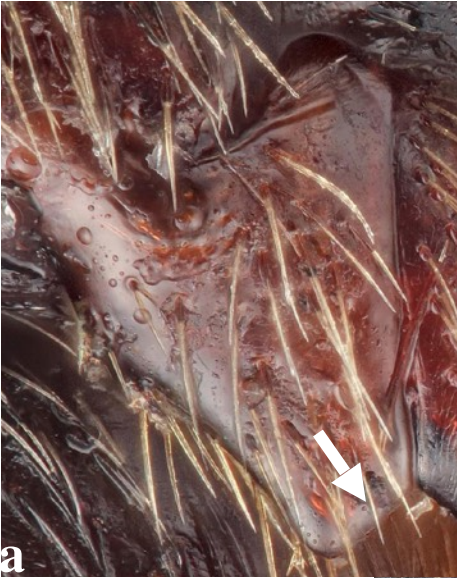


*Tetropium
fuscum*
(Fabricius) ET

Tetropium IV

Metatrochanters truncate (females) (a) or spinose (males) (b) at apices...*Tetropium parallelum*

Metatrochanters broadly (c) or narrowly (d) rounded at apices.....*Tetropium V*



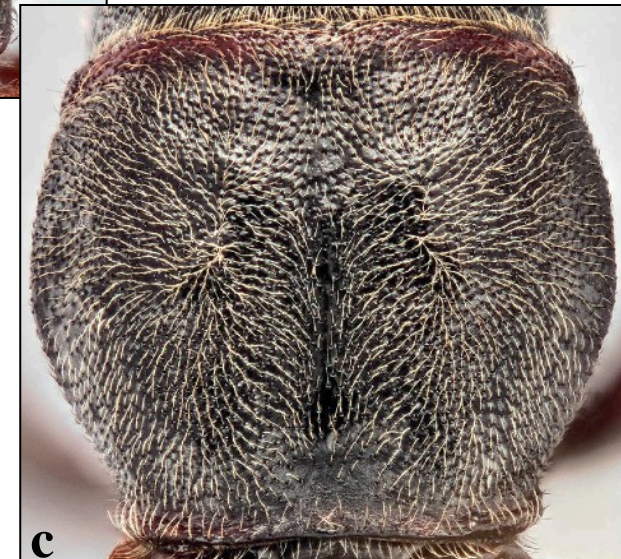
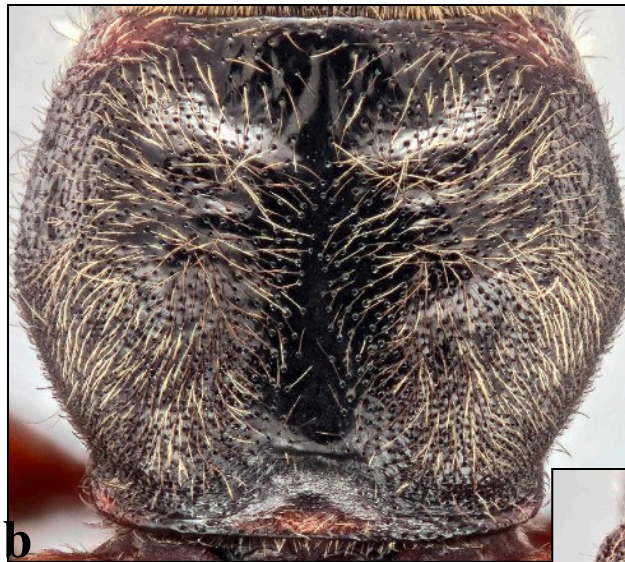
Tetropium
parallelum
Casey



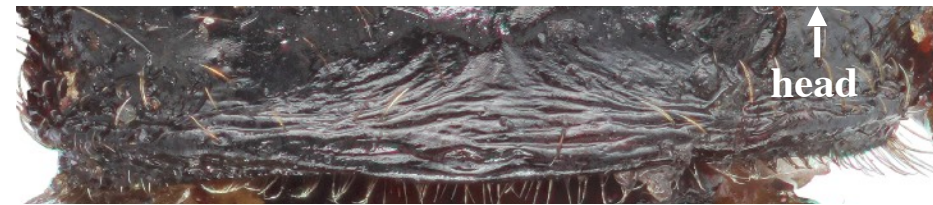
Tetropium V1

Pronotum with extensive smooth, shining, sparsely punctate areas and much shorter and sparse pubescence (**a**), posterior medially impressed area with horizontal ridges (**d**); head between and behind eyes sparsely punctate and sparsely pubescent, surface smooth between punctures (**f**).....*Tetropium castaneum* ^{ET}

Pronotum with smooth, shining, sparsely punctate areas restricted to cross-shaped section at middle, with much longer and denser pubescence (**b-c**), posterior medially impressed area finely roughened (**e**); head between and behind eyes densely punctate and densely pubescent, surface finely roughened between punctures (**g**).....*Tetropium cinnamopterum*



Tetropium V2



d. Posterior medially impressed area of pronotum with horizontal ridges



e. Posterior medially impressed area of pronotum finely roughened



f. Head between and behind eyes sparsely punctate and sparsely pubescent, surface smooth between punctures



g. Head between and behind eyes densely punctate and densely pubescent, surface finely roughened between punctures



Tetropium
castaneum
(Linnaeus) ET



Tetropium
cinnamopterum
(Kirby)

20 (19)

Body mostly grey, with dark bands and stripes; antennae longer than body

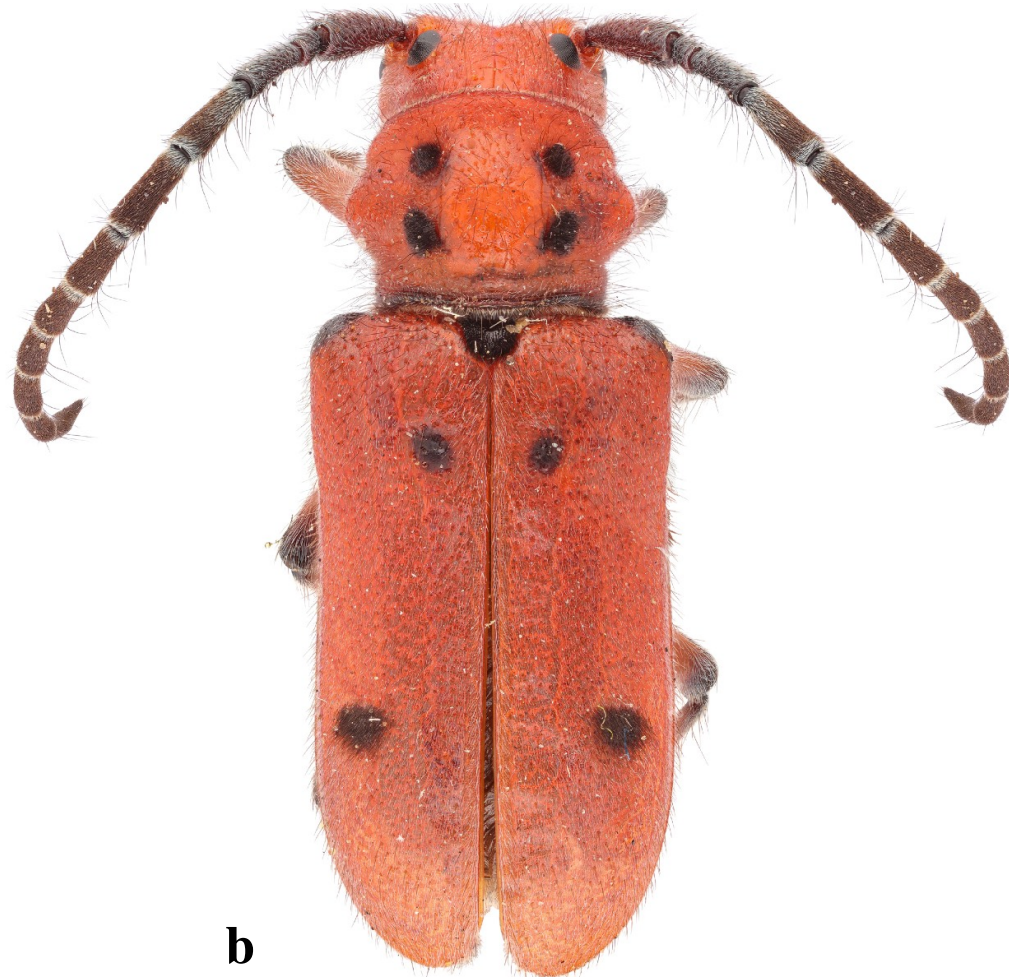
(a) 1 species in NA.....*Synaphaeta guexi* LeConte

Body reddish with dark spots; antennae shorter than body; (b) 4 species

in WNA.....*Tetraopes*



a

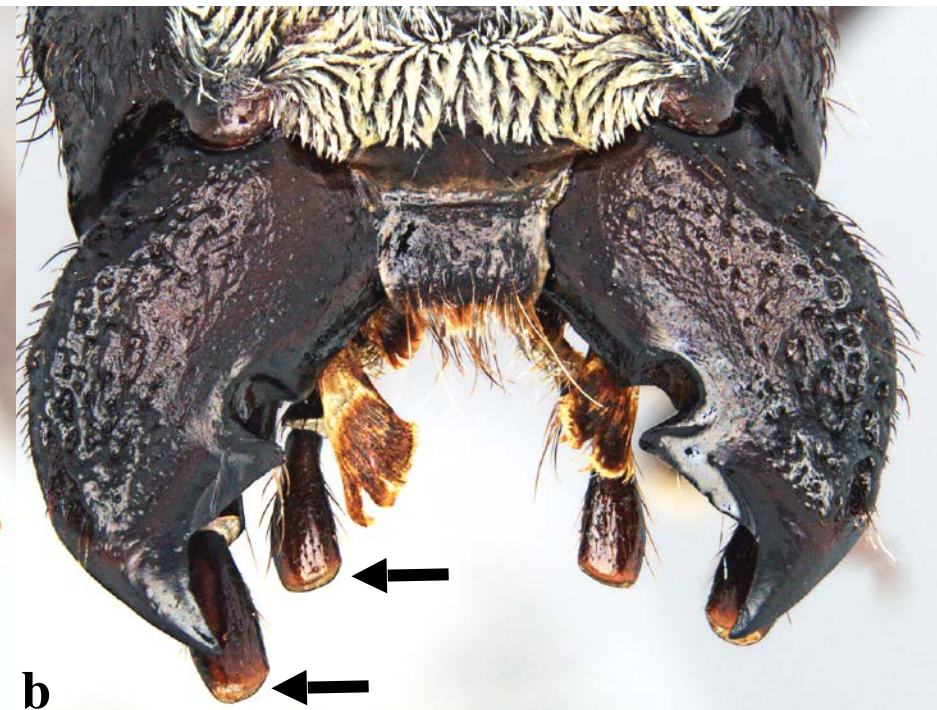
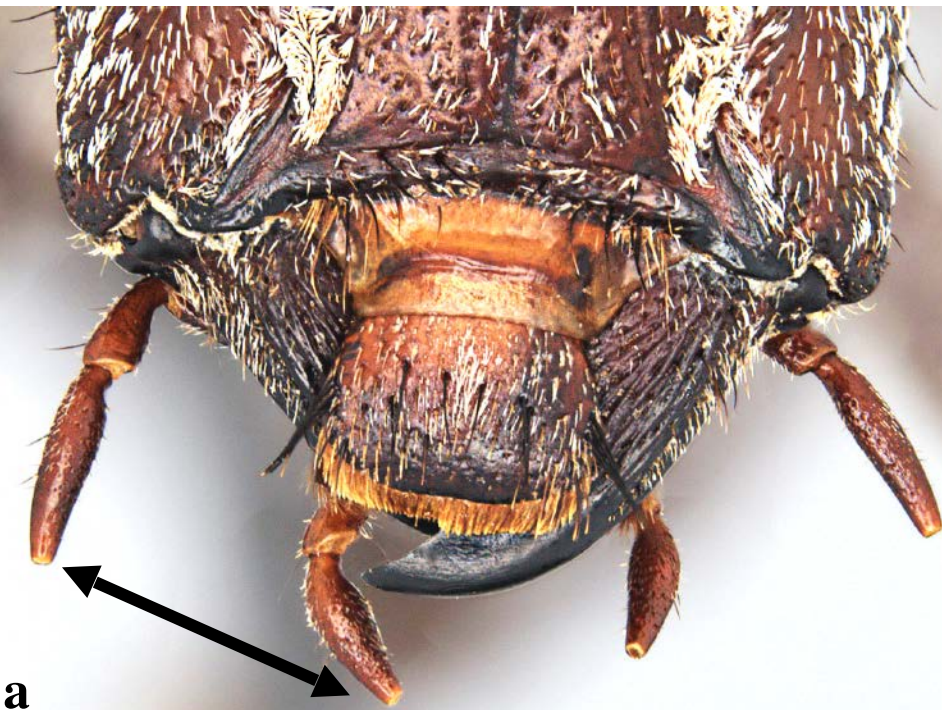


b

21 (16) I

Terminal segments of palpi tapering to narrow apices, awl-shaped (**a**);
front of head in profile ~vertical to posteriorly directed and long (**c**)...**22** 

Terminal segments of palpi slightly to broadly expanded and with broadly rounded or blunt apices (**b**); front of head in profile slightly to strongly oblique (**d+**) – if vertical, area below eyes very short.....**36** 



21 (16): II

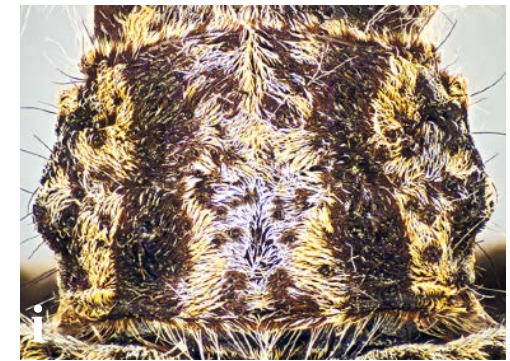
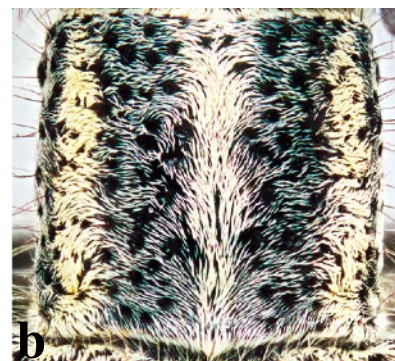
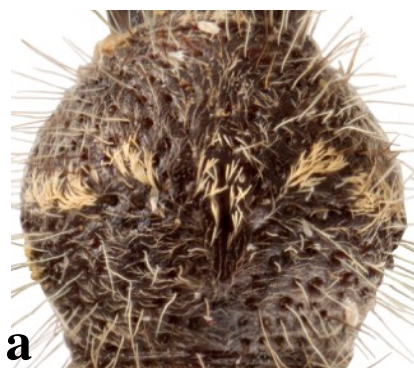
d. front oblique



22 (21)

Pronotum without lateral spines or tubercles (**a-d**).....23

Pronotum with lateral spines or tubercles (**e-h**).....27



23 (22)

Body covered with long pubescence; pronotum globose; elytra ovate (a): southern California.....*Ipochus fasciatus*

Pubescence on body shorter; pronotum quadrate; elytra with sides parallel (b-c).....24



a



b



c

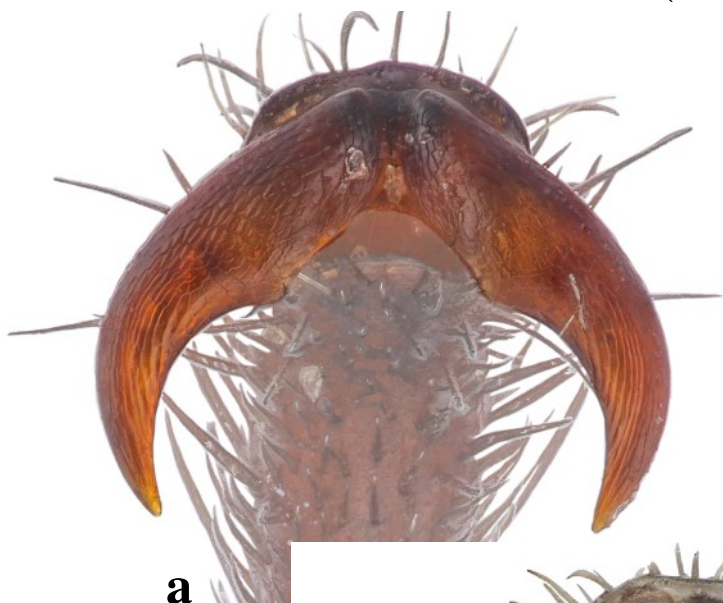
*Ipochus
fasciatus*
LeConte



24 (23)

Tarsal claws simple (**a-b**).....25

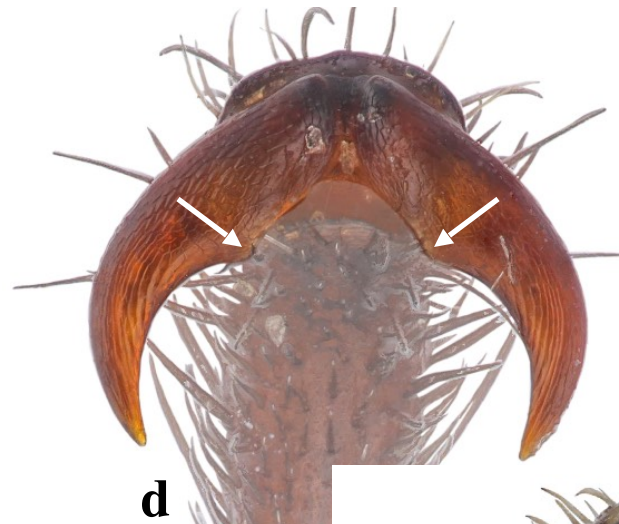
Tarsal claws bifid (**c-d**).....26



25 (24)

Elytron with a humeral and an elongate basal callus (**a**); tarsal claws each with a short basal ventral angle or denticle (**d**) 1 sp. in NA.....*Lypsimena fuscata*

Elytron without humeral or basal calluses (**b-c**); tarsal claws without ventral angle or denticle (**e**) 5 species in WNA.....*Saperda*



Lypsimena
fuscata
Haldeman

Begin key



Saperda



*Saperda
calcarata*
Say



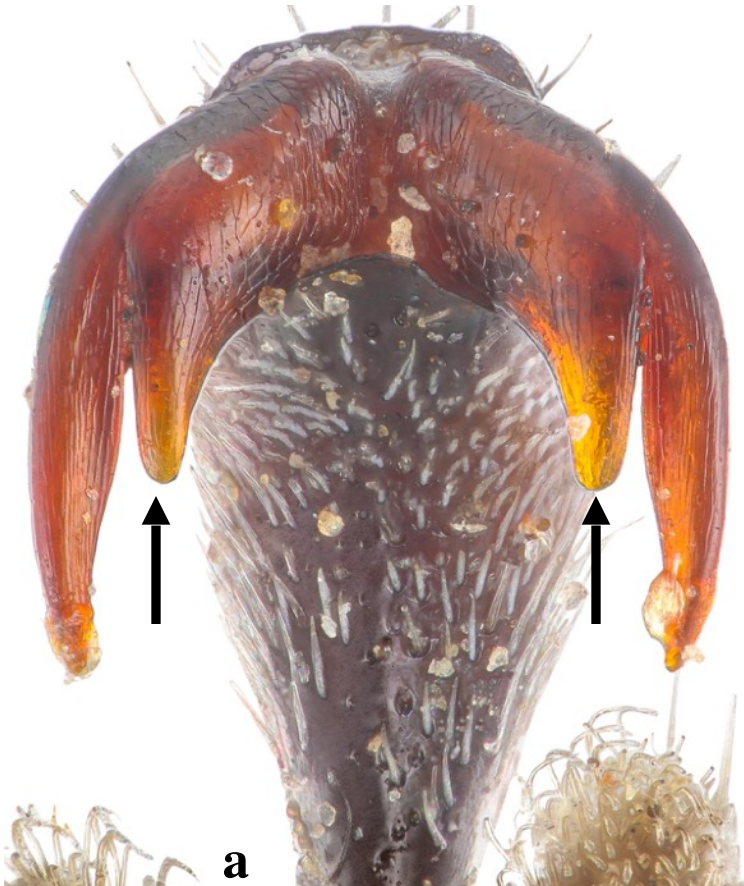
*Saperda
horni*
Joutel

26 (24)

Tarsal claws with basal tooth slender, sharply pointed (**a**): 2 species in WNA.....*Mecas*

Tarsal claws with basal tooth broad, blunt (**b**): 3 species in WNA...
.....*Oberea* ^{EE}

A European species, *O. erythrocephala* (Schrank), has been introduced for weed biocontrol of leafy spurge.



Mecas

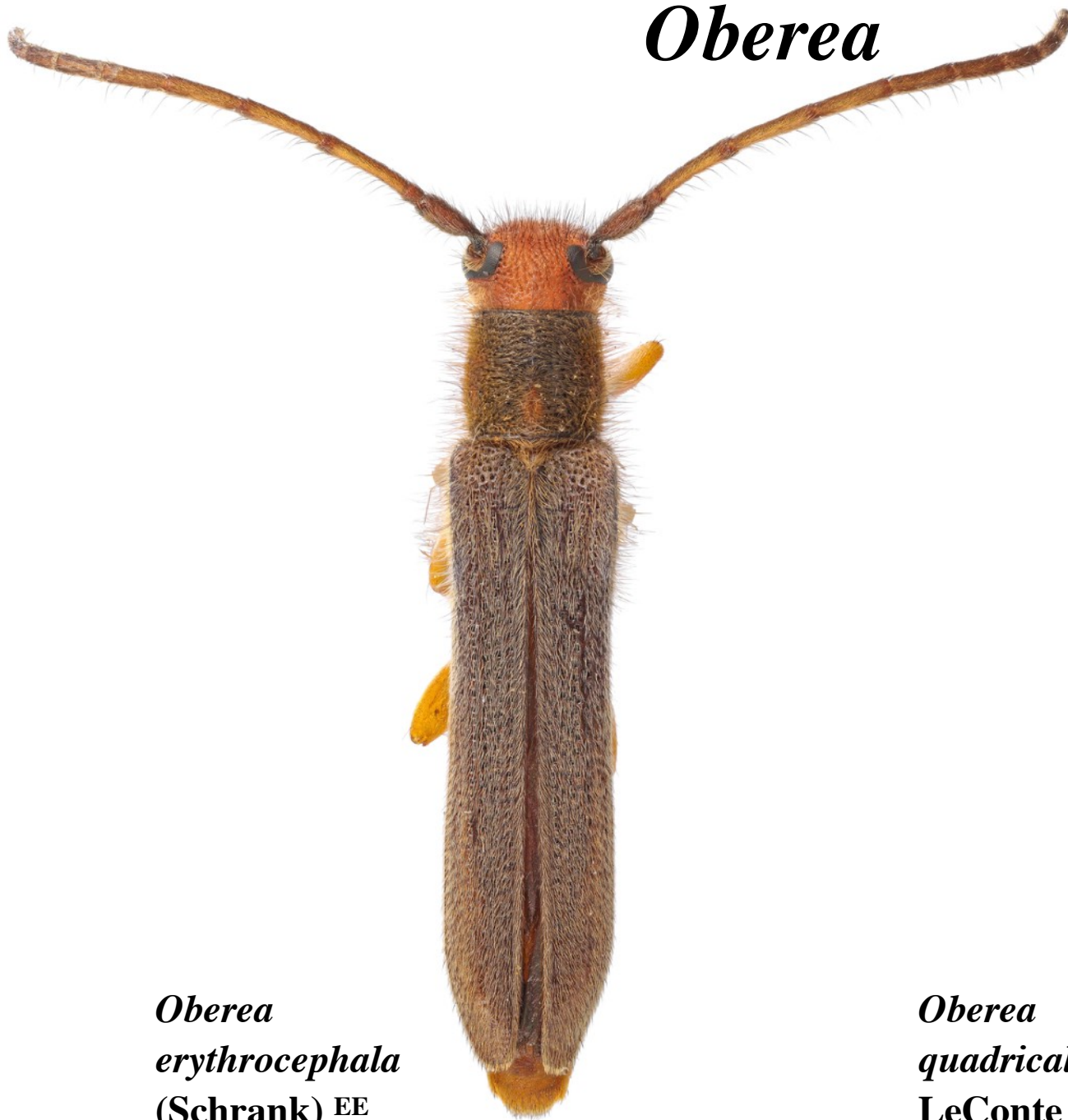
Begin key



Mecas
bicallosa
Martin

Oberea

*Oberea
erythrocephala*
(Schrank) ^{EE}



*Oberea
quadricallosa*
LeConte



27 (22)

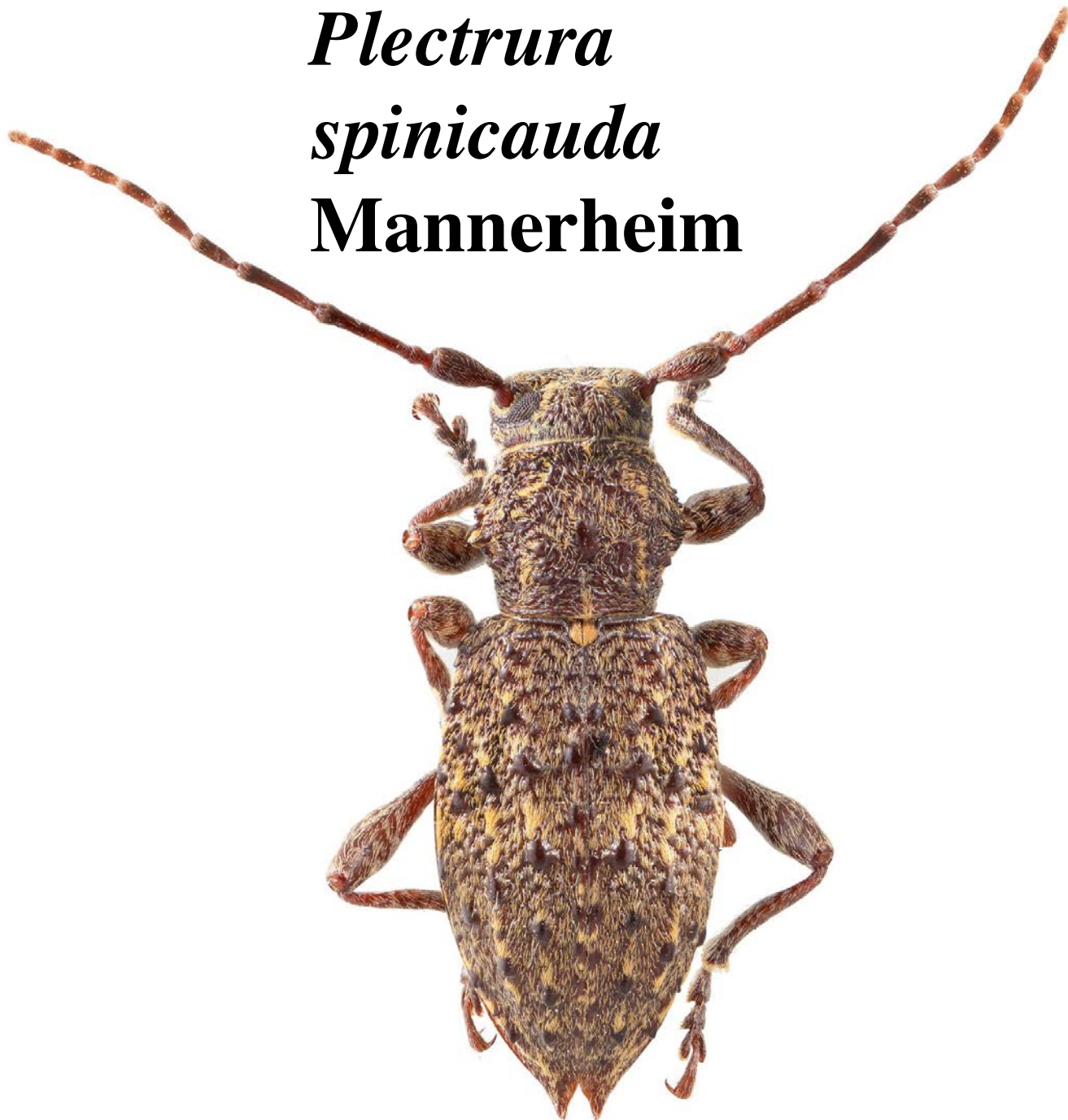
Elytra with raised, isolated, shiny tubercles, humeral angles very obtuse (a)

1 species in NA.....*Plectrura spinicauda*

Elytra without raised, isolated, shiny tubercles, humeral angles rectangular (b-e)...28 



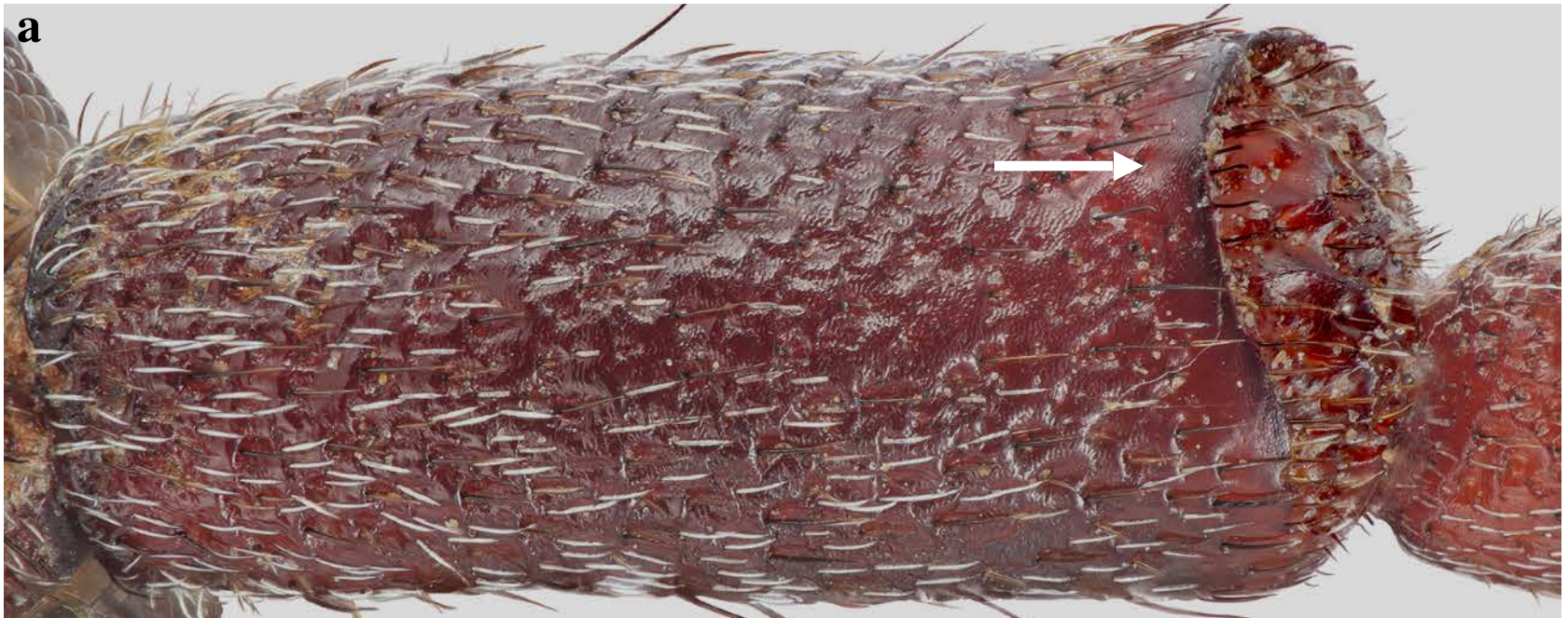
Plectrura
spinicauda
Mannerheim



28 (27)

Horizontal welt on scape (a).....29

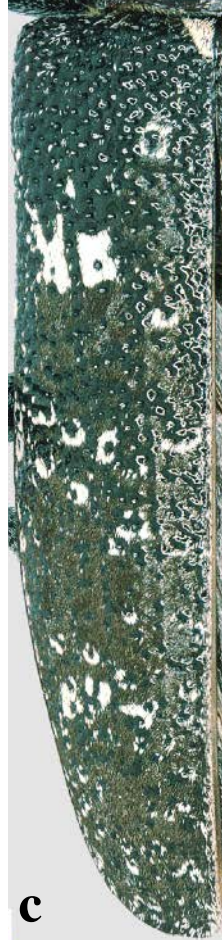
No horizontal welt on scape (b).....30



29 (28)

Elytra either entirely smooth (a) or granulate only in anterior third (b);
scutellum may lack pubescence (d) 2 exotic targets.....*Anoplophora* ^{ET I}

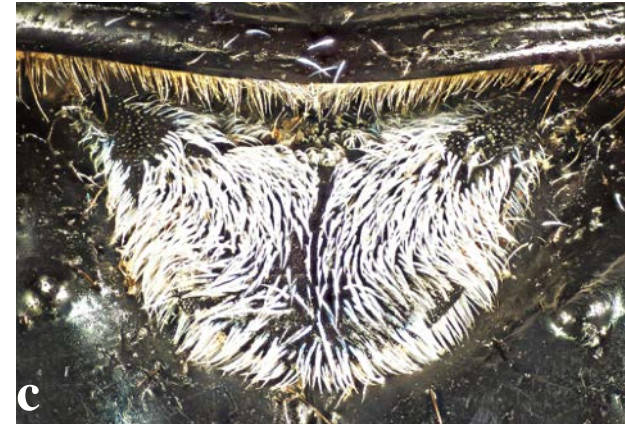
Elytra rugose throughout length (c); scutellum usually with at least some pale pubescence (e-f) 3 native WNA spp & several targets.....*Monochamus* ^{ET I}



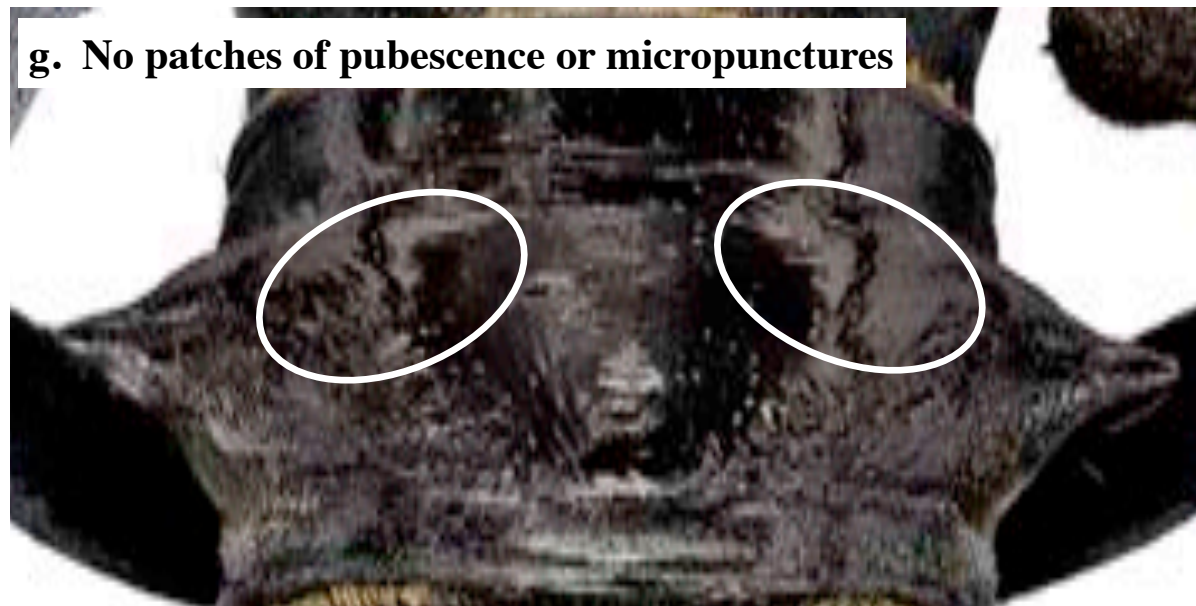
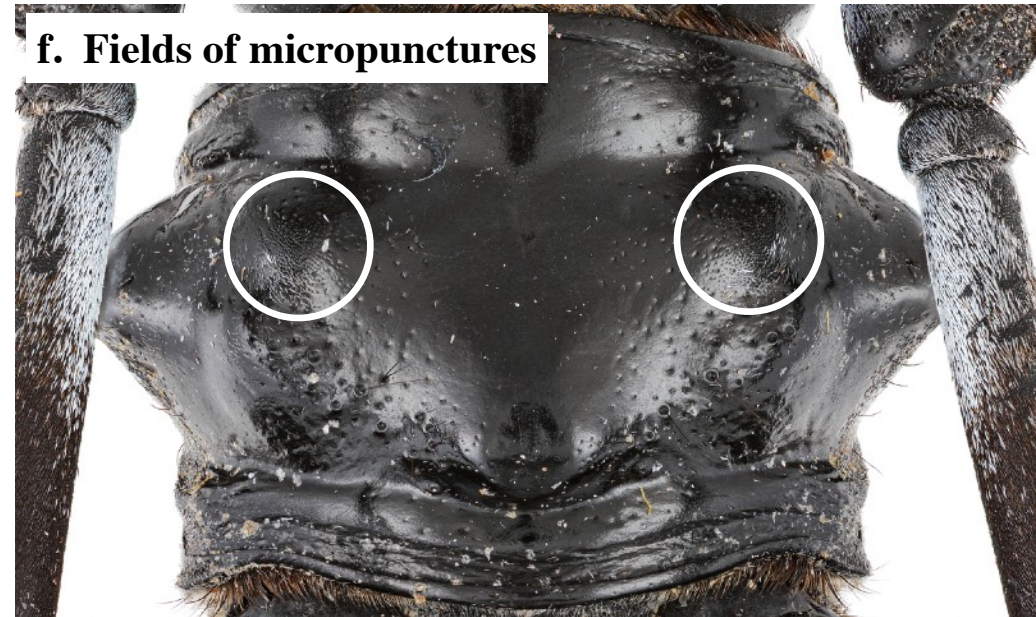
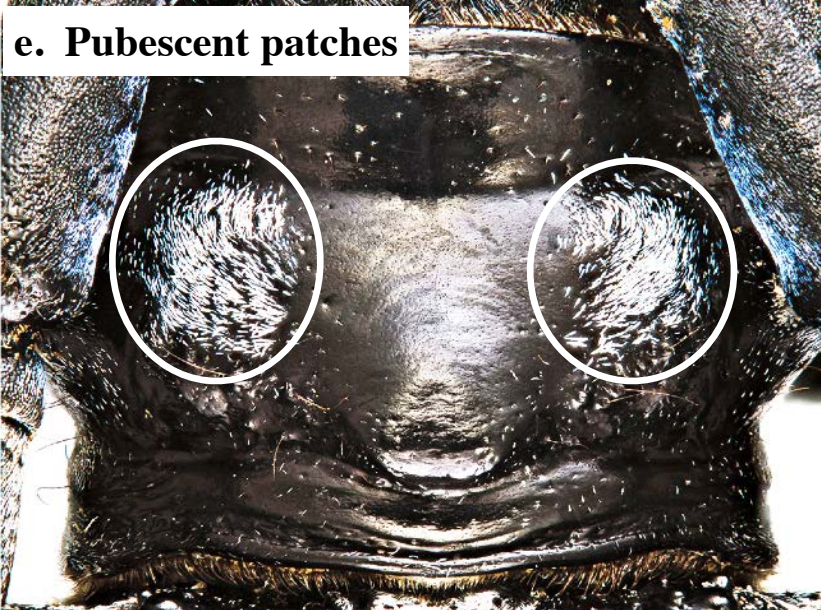
Anoplophora I1 (29)

Elytra with granules in anterior third (a); scutellum with dense pubescence (c); pronotum with a patch of pale pubescence (e) or a field of tiny punctures on either side of middle (f);*Anoplophora chinensis* (Citrus longhorned beetle) ^{ET}

Elytra entirely smooth (b); scutellum without pubescence (d); pronotum without patches of pale pubescence or fields of tiny punctures (g).....*Anoplophora glabripennis* (Asian longhorned beetle) ^{ET}



Anoplophora I2 (29)



Anoplophora chinensis
Forster ET



Male



Female

Anoplophora glabripennis (Motschulsky) ET

***Important note:** The number and size of spots on the elytra can vary. Also, a yellow-spotted variety exists in Asia, although it is not known from North America.



Female



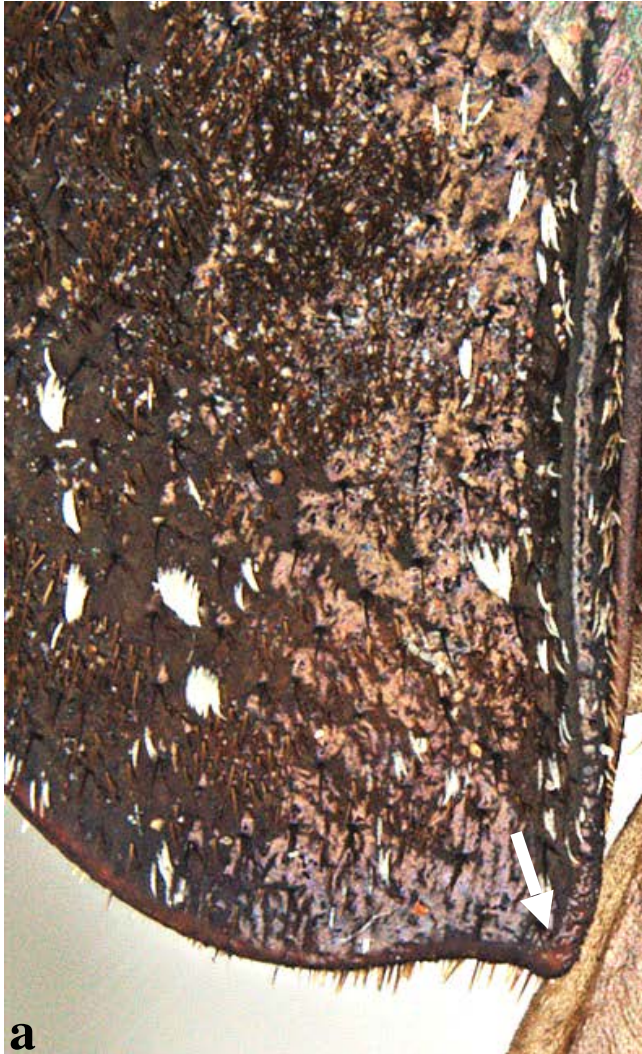
Male

Monochamus I1 (29)

Begin key

Elytral apices with small projections at suture (a).....*Monochamus clamator*

Elytral apices broadly rounded to suture (b) or slightly truncate (c)...*Monochamus* II



Monochamus
clamator
(LeConte)



Female



Male

*The base color of some species of *Monochamus* can be variable. If uncertain, try both halves of this couplet.

Monochamus II

Base color of elytra reddish brown (**a-b**)...*Monochamus* III

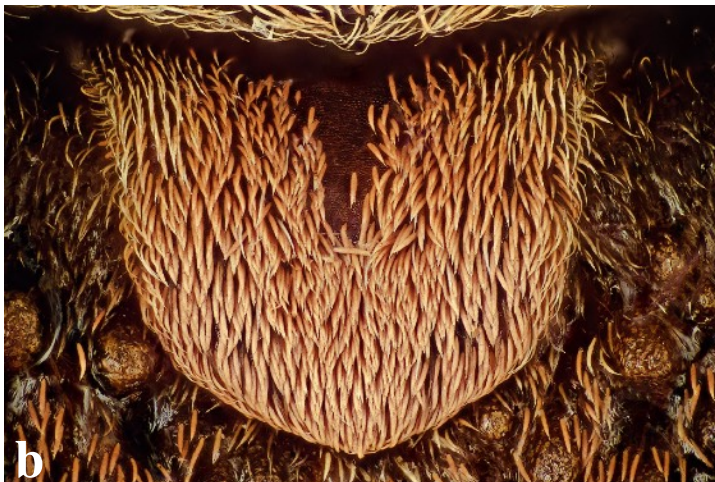
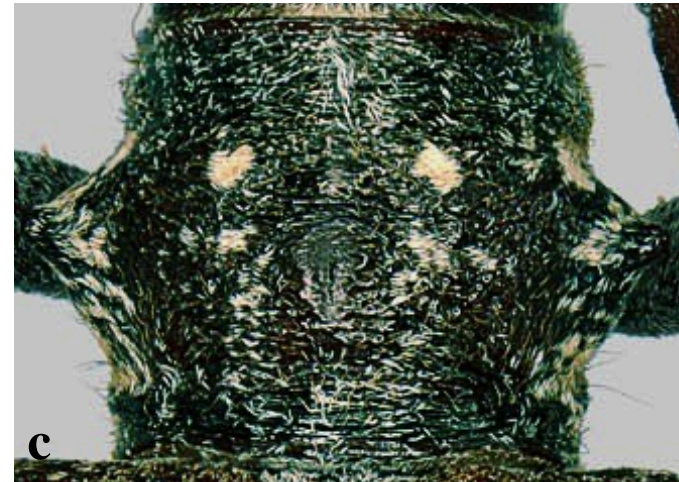
Base color of elytra black (**c-d**).....*Monochamus* V 



Monochamus III

Scutellum mostly bare of pubescence (a); pronotum with creamy or yellowish pubescence (c).....*Monochamus obtusus*

Scutellum densely and completely covered by pubescence except sometimes a bare median anterior spot ((b)); pronotum with orange pubescence (d)....*Monochamus* IV



Monochamus
obtusus
Casey
female



Monochamus
obtusus

Casey male



Monochamus IV

Elytra with interrupted stripes of black and white pubescence alternating with orange pubescent stripes, making a checked pattern (a).....*Monochamus alternatus* ^{ET}

Elytra with interrupted bands of pubescence that is only brown and white – the definition of the bands is variable (b-c).....*Monochamus galloprovincialis* ^{ET}

Ground color of this species frequently varies between black and brown, so it is also treated in *Monochamus* VIII.



Monochamus
alternatus
Hope ET



Monochamus
gallopro-
vincialis
(Olivier) ET



Female

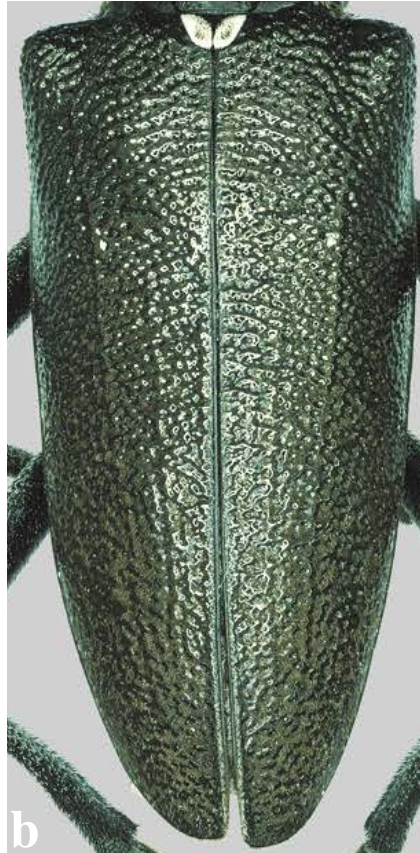


Male

Monochamus V



Posterior quarter of each elytron with even coat of dense, fine pubescence (a); scutellum densely and completely covered by pubescence (d) (*M. sartor*, once treated as a separate species, is now a synonym of *M. urussovii*, based on a 2004 molecular study).....*Monochamus urussovii* (*urussovii* form) ET
Elytra without evenly dense, fine pubescence (b-c), although there may be patches of dense pubescence (c); scutellum may be densely and completely covered by pubescence or with a bare anterior spot (e) or narrow bare median line (f).....*Monochamus* VI



Monochamus urussovii (Fischer) ET

“*urussovii*” form:
posterior $\frac{1}{4}$ of elytra
with dense pubescence



Female

L.G. Bezark specimen



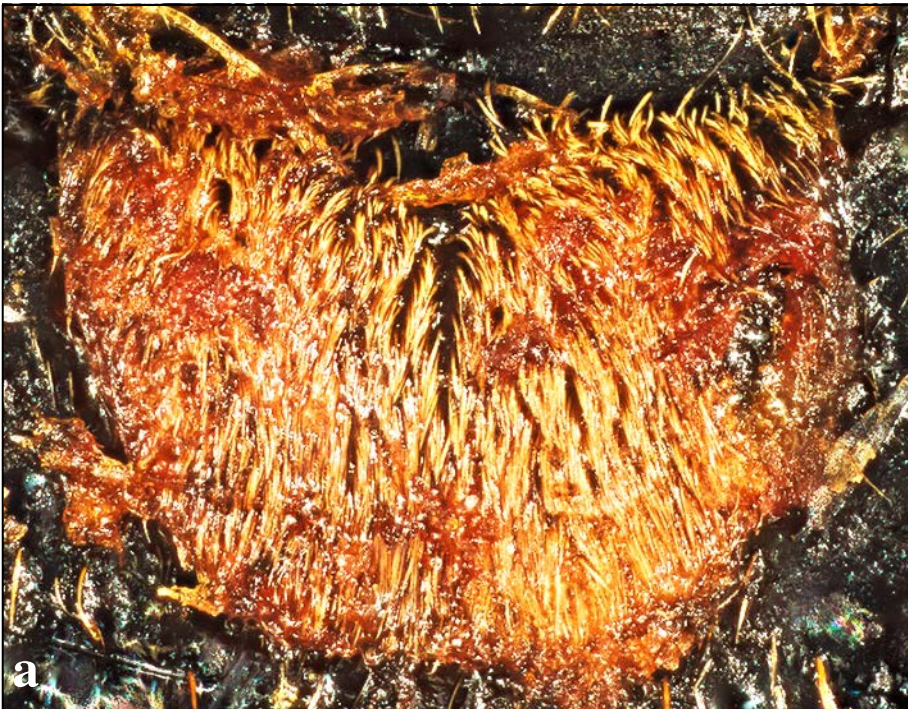
Male

L.G. Bezark specimen

Monochamus VI1

Scutellum completely covered by dense pubescence (a); elytra with more evenly distributed, sparse, semi-erect, relatively long, curved pubescence (easily seen along lateral margins) (d) (*M. sartor*, once treated as a separate species, is now a synonym of *M. urussovii*, based on a 2004 molecular study).....*Monochamus urussovii sartor* form ^{ET}

Scutellum with a bare anterior spot (b) or a narrow bare median line (c); elytra with unevenly distributed, prostrate, short pubescence (e-f).....*Monochamus* VII 



Monochamus VI2



Monochamus urussovii (Fischer) ET

“sartor” morph: without
dense pubescence on elytron

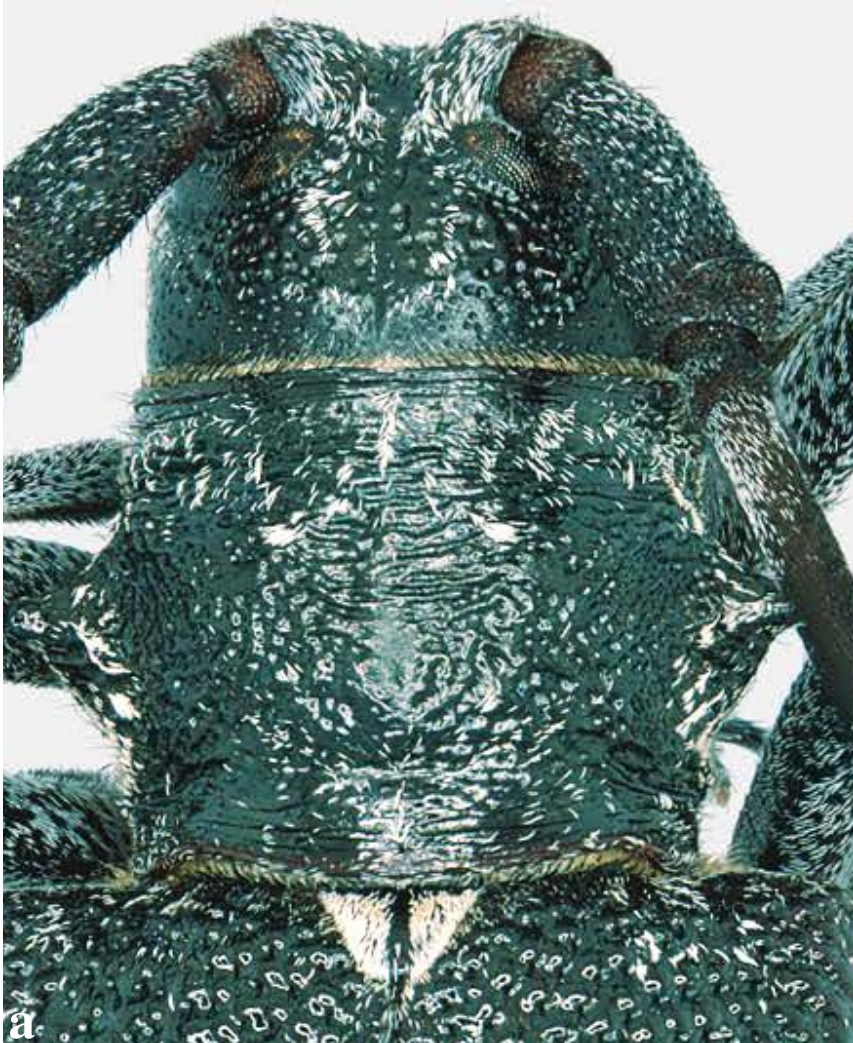


Male

Monochamus VII

Head, pronotum, and scutellum with white pubescence (a).....*Monochamus scutellatus oregonensis*

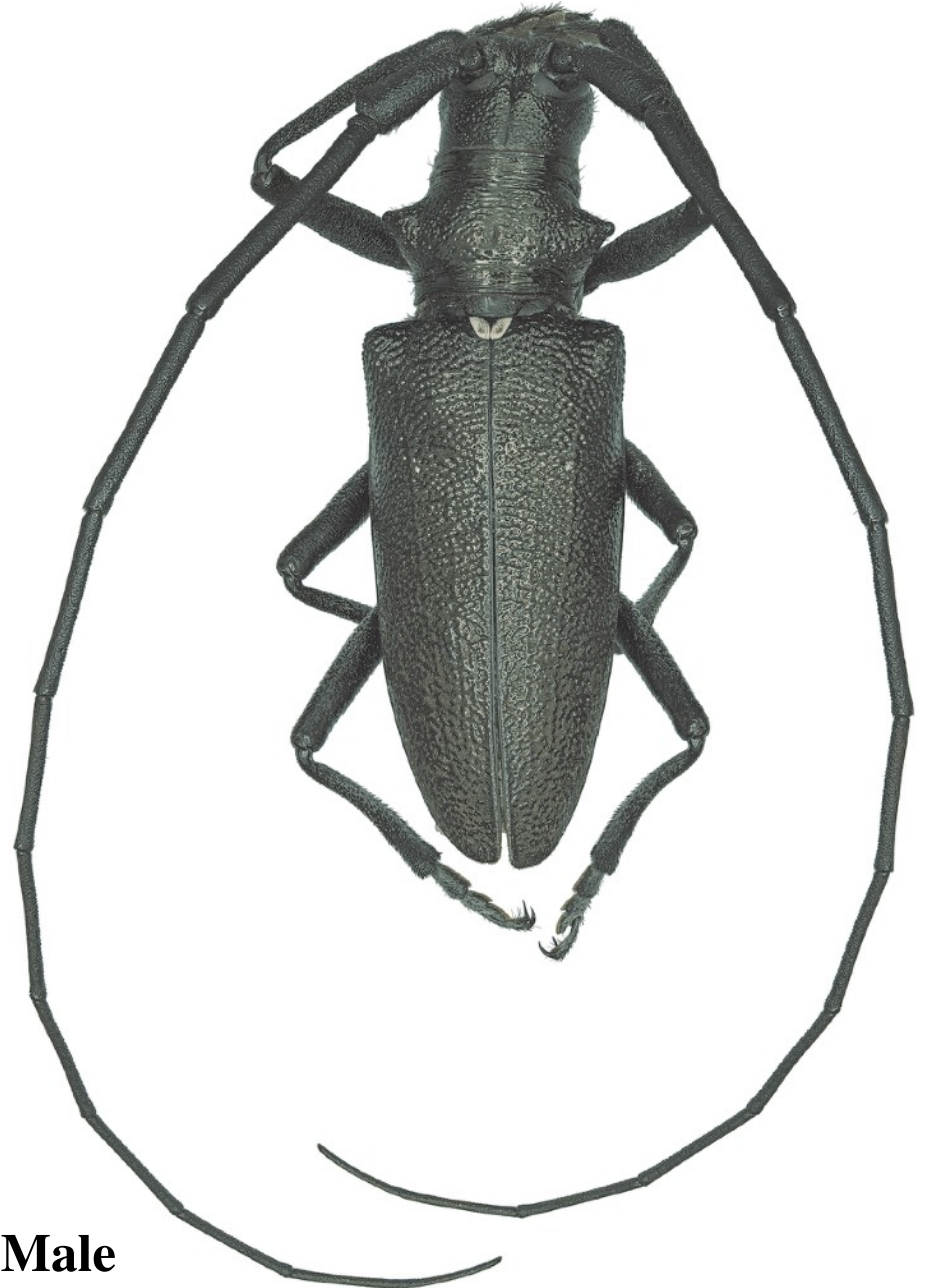
Head, pronotum, and scutellum with orange pubescence (b).....*Monochamus* VIII 



Monochamus scutellatus oregonensis LeConte



Female



Male

Monochamus VIII



Scutellum with anterior median bare spot (a).....*Monochamus galloprovincialis* ^{ET}
Ground color of this species frequently varies between black and brown, so it is also treated in *Monochamus* IV.

Scutellum with bare median stripe throughout length (b).....*Monochamus* IX



Monochamus
gallopro-
vincialis
(Olivier) ET



Female



Male

Monochamus IX



Elytra with large punctures separated by shiny ridges restricted to about anterior quarter, punctures thereafter small and not separated by raised ridges (a).... *Monochamus salturarius* ET

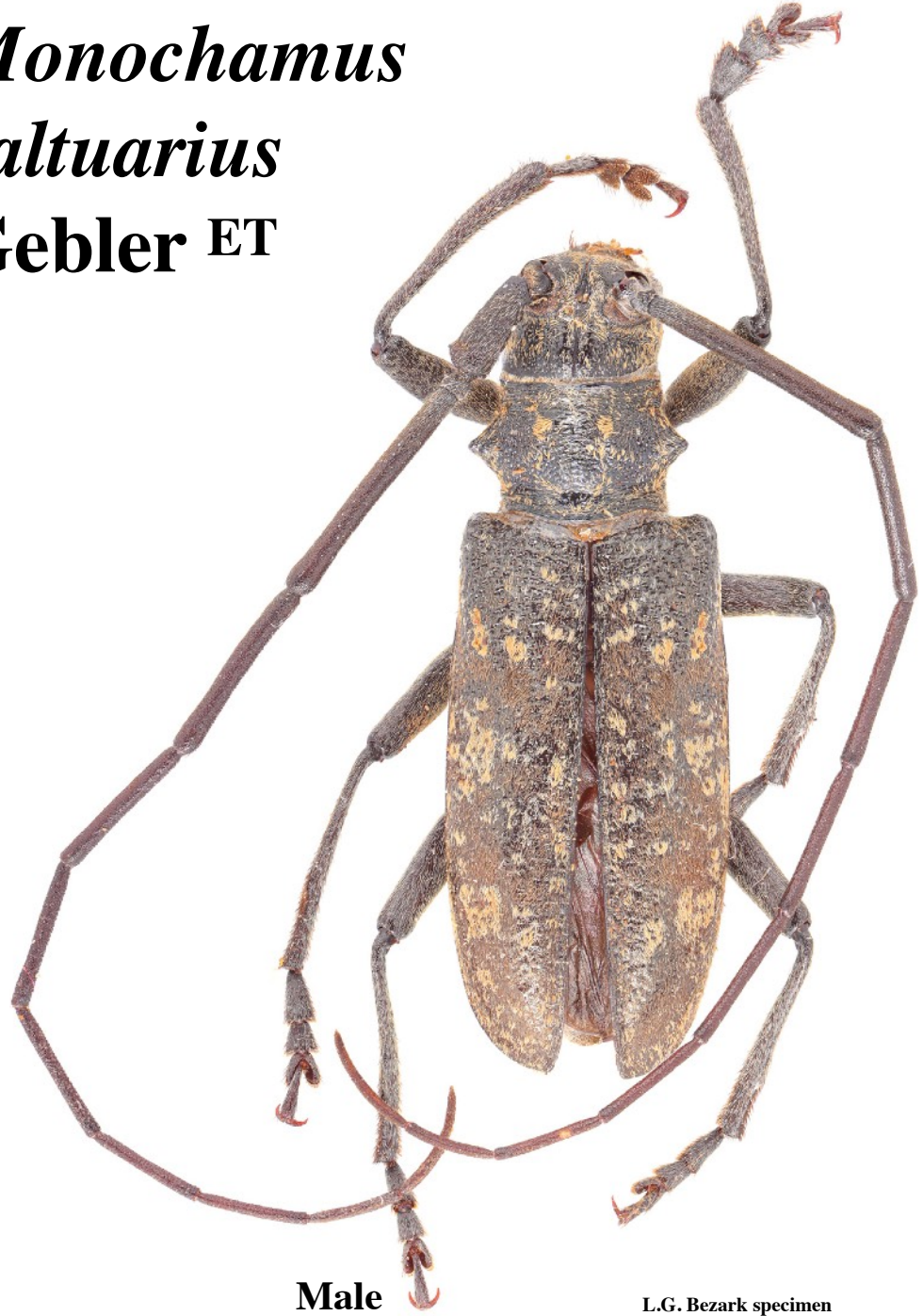
Elytra with large punctures separated by shiny ridges extending at least half the length of the elytra (b), punctures all about the same size, least near suture..... *Monochamus sutor* ET



Monochamus
saltuarius
Gebler ET



cerambyc.uochb.cz



Male

L.G. Bezark specimen

Monochamus
sutor
(Linnaeus) ET



Female

L.G. Bezark specimen

Monochamus sutor (Linnaeus) ET

Begin key

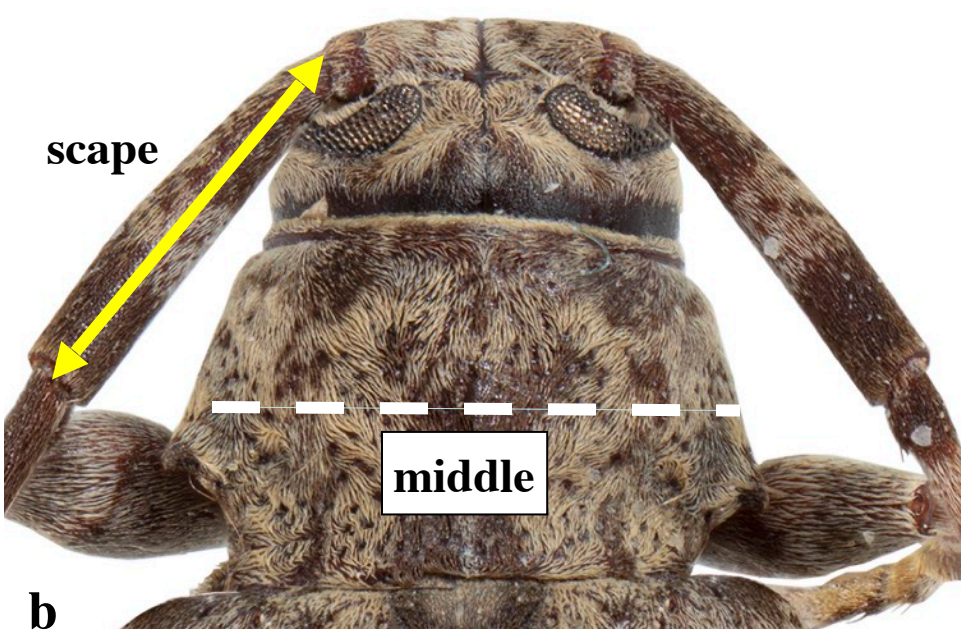
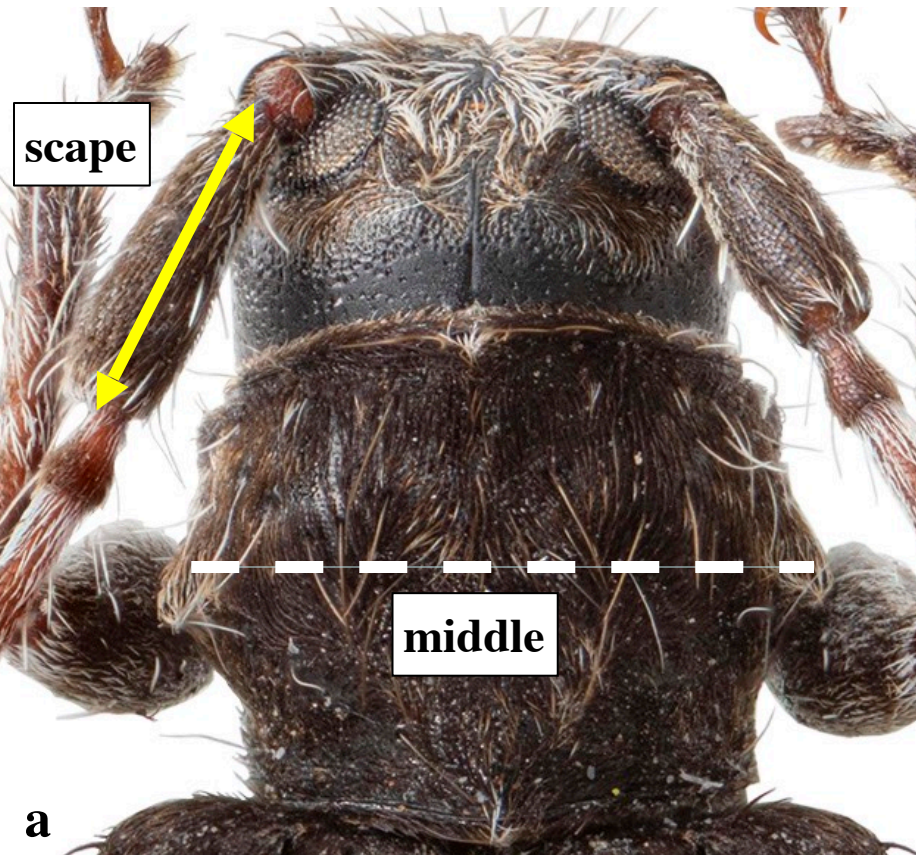


Male

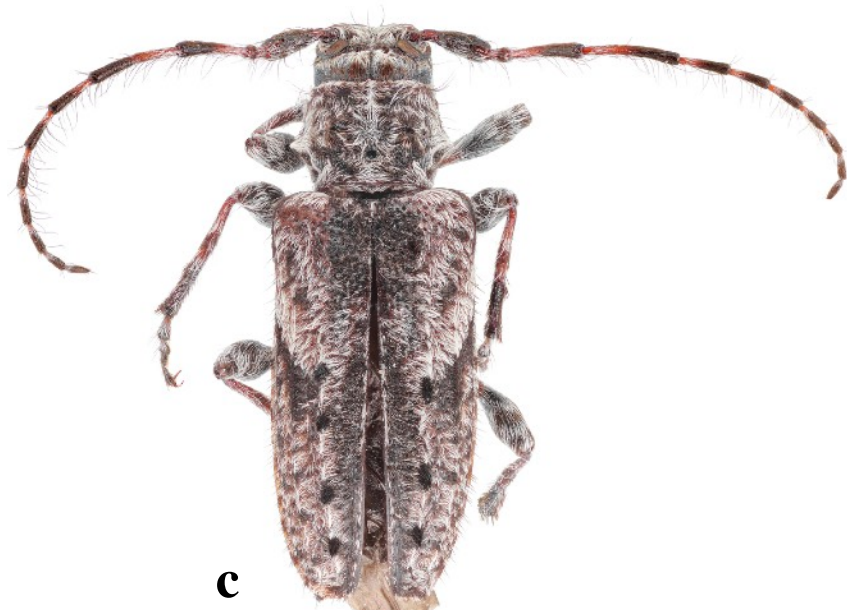
30 (28) I

When retracted, scape doesn't reach the middle of the pronotum (a); body with long, erect setae (c-e).....**31**

When retracted, scape reaches the middle of the pronotum (b); body without long, erect setae (f-i).....**33**



30 (28) II



31 (30)

Elytron with four rows (sometimes poorly defined) of tufts of raised black pubescence, apices rounded or very faintly truncate (**a-b**): 4 species in WNA...*Poliaenus*

Elytron with only one row of (**c-e**) or no tufts (**f**) of raised black pubescence, apices truncate (**c**) or emarginate-spinose (**d-f**).....**32**



Poliaenus obscurus
(Fall)

Poliaenus

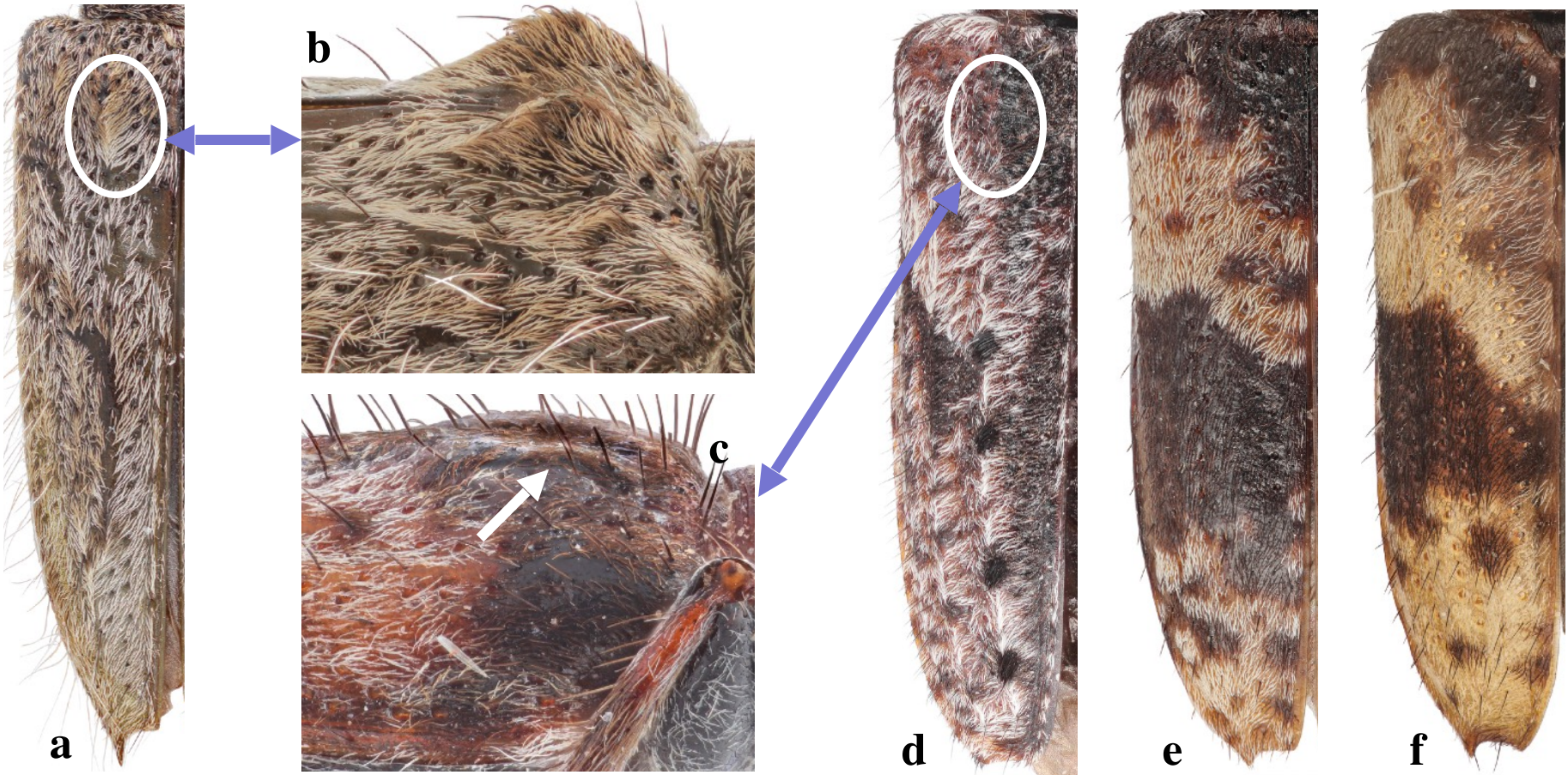


Poliaenus oregonus
LeConte

32 (31)

Elytron without contrasting dark and pale patches or bands, apex with outer angle long and spinose (**a**), with a large median crest in basal ¼ (**b**): 1 species in NA....
.....*Lophopogonius crinitis*

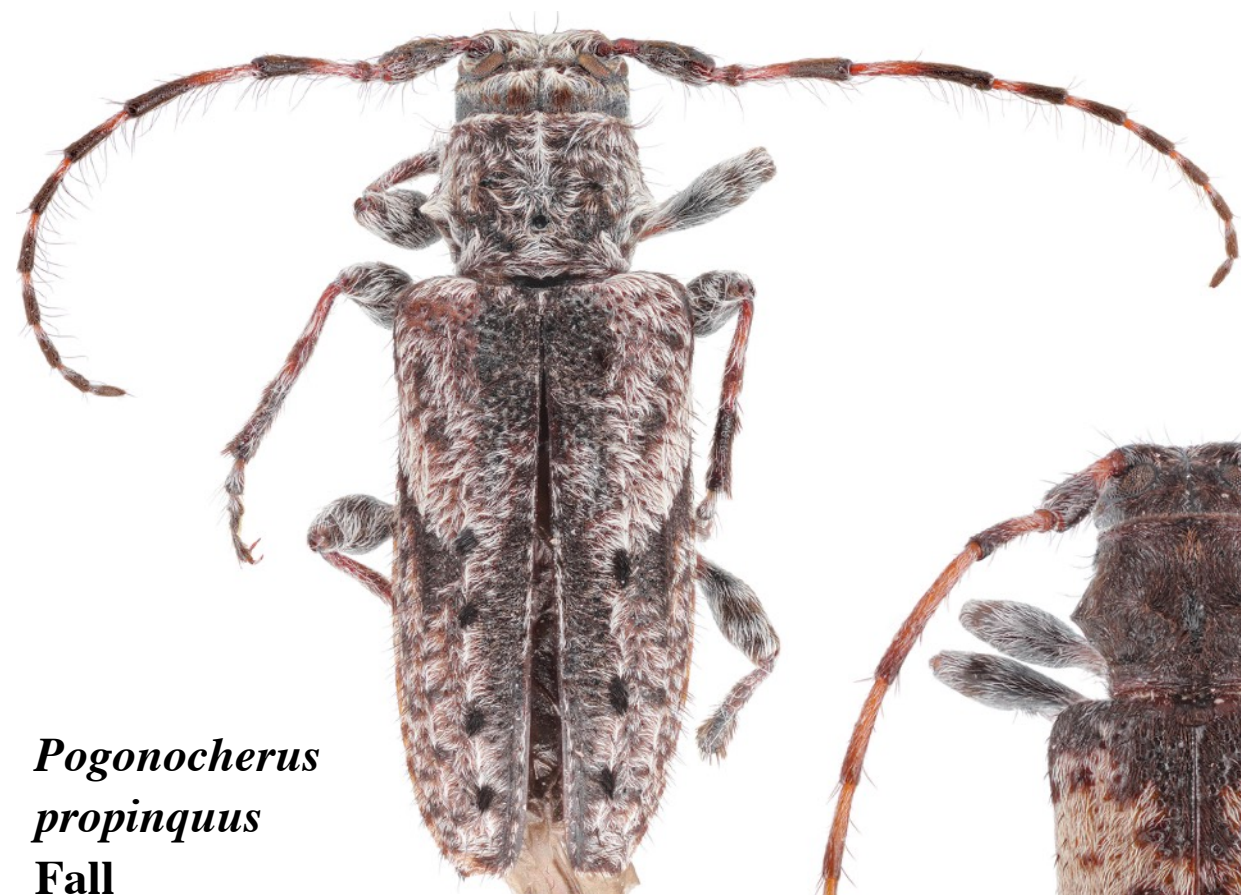
Elytron with contrasting dark and pale patches or bands, apex with outer angle at most produced into a short, triangular spine (**d-f**), at most with a very small median crest in basal ¼ (**c**): 4 species in WNA.....*Pogonocherus*



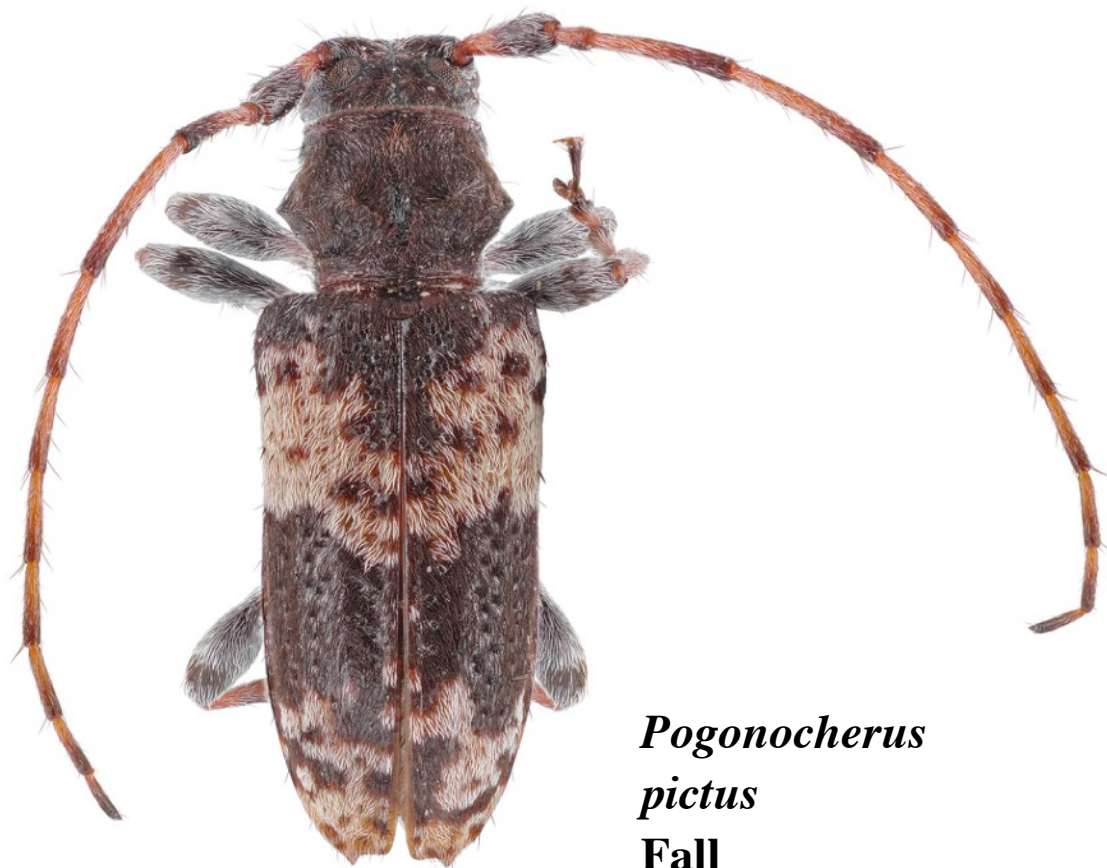
Lophopogonius
crinitis
(LeConte)



Pogonocherus



*Pogonocherus
propinquus*
Fall

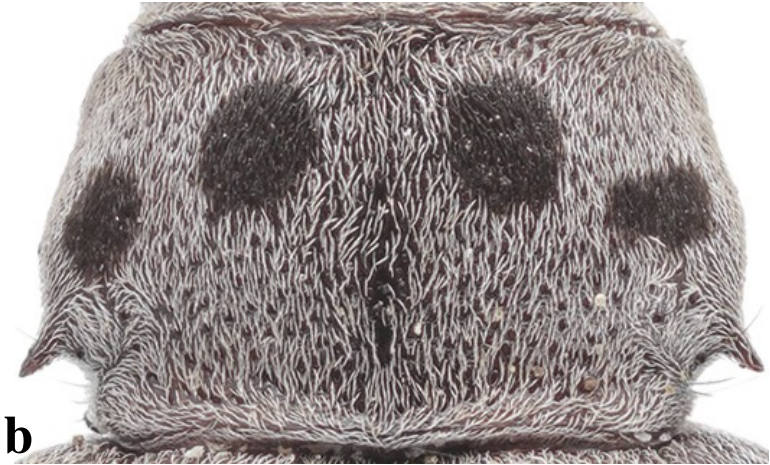


*Pogonocherus
pictus*
Fall

33 (30) I

Pronotum with lateral spines blunt (a)....*Pseudastylopsis nebulosus*

Pronotum with lateral spines sharp (b-c).....34



e

Pseudastylopsis
nebulosus
(Horn)



34 (33)

Pronotum and elytra with black pubescent dots on a field of pale pubescence; antennae at most vaguely banded brown and black (a):
2 species in WNA.....*Hyperplatys*

Pronotum and elytra variegated with glabrous patches and black, white, and sometimes brown pubescence); antennae sharply banded black and white (b-c).....35



Hyperplatys



Hyperplatys
aspersa
(Say)

35 (34)

Antennae much longer than body (**a**); female with last abdominal segment protruding (**a, d**): 4 species in WNA.....*Acanthocinus*

Antennae only slightly longer than body (**c**); female with last abdominal segment not protruding (**e**): 1 species in NA.....*Astyleiopus variegatus*



Acanthocinus

*Acanthocinus
obliquus*
(LeConte)



Female



Male

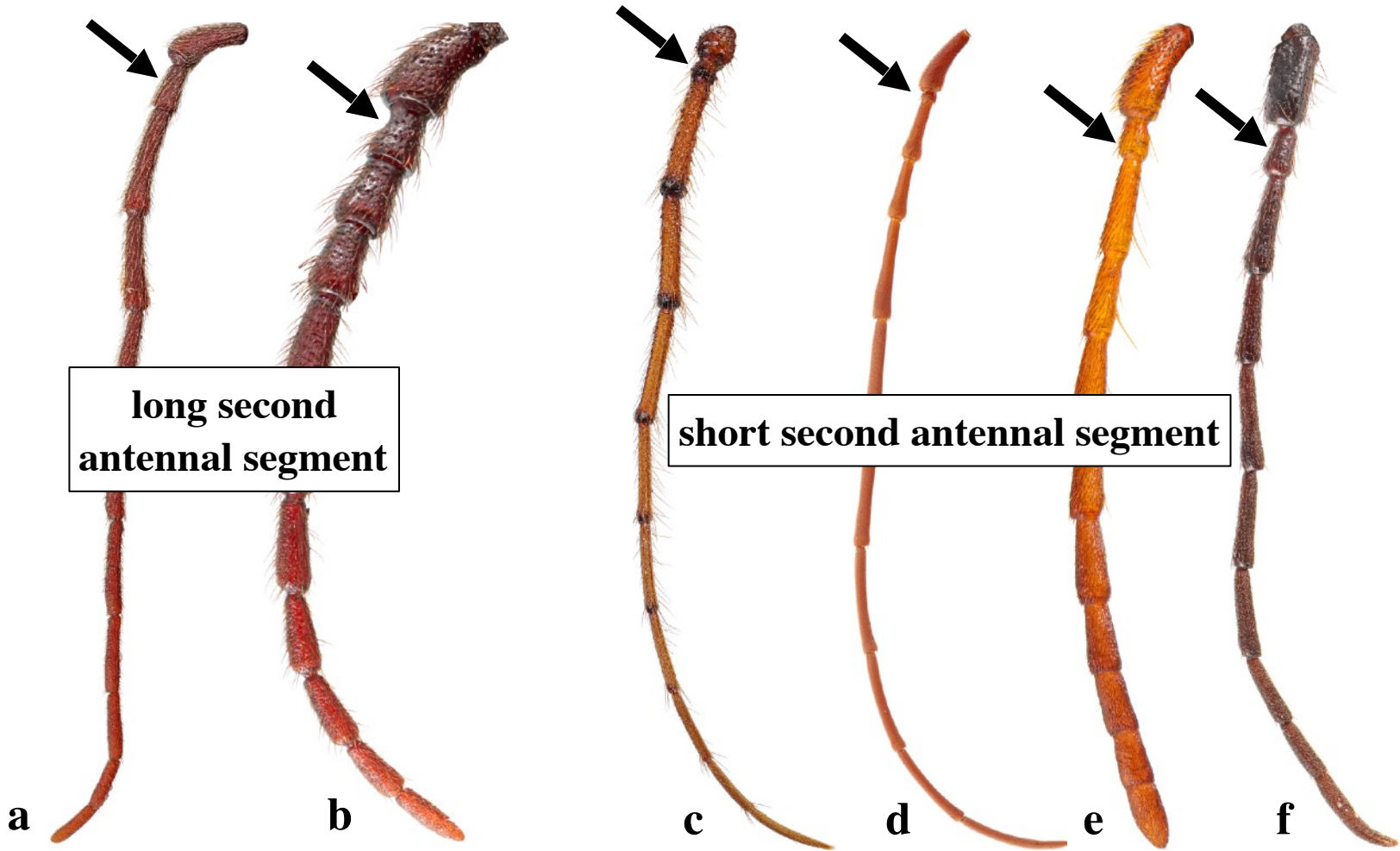
Astyleiopus
variegatus
(Haldeman)



36 (21)

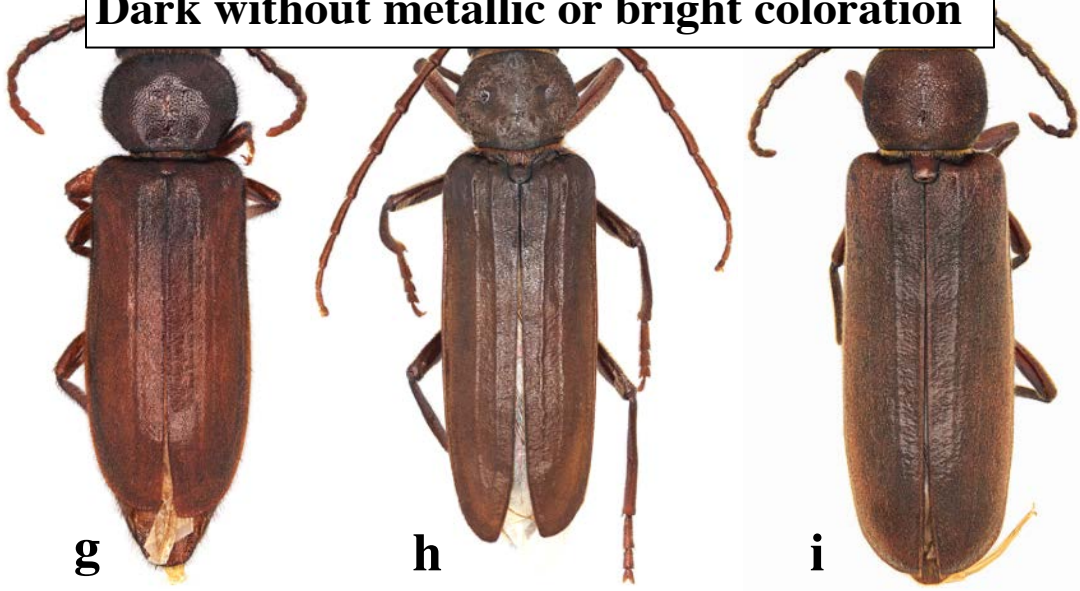
Second antennal segment almost half as long as scape or longer (**a-b**); brown or black beetles (**g-j**), body never with colorful or metallic coloration.....**37**

Second antennal segment much less than half as long as scape (**c-e**), occasionally longer (**f**); body often colorful (**l-p**).....**39**

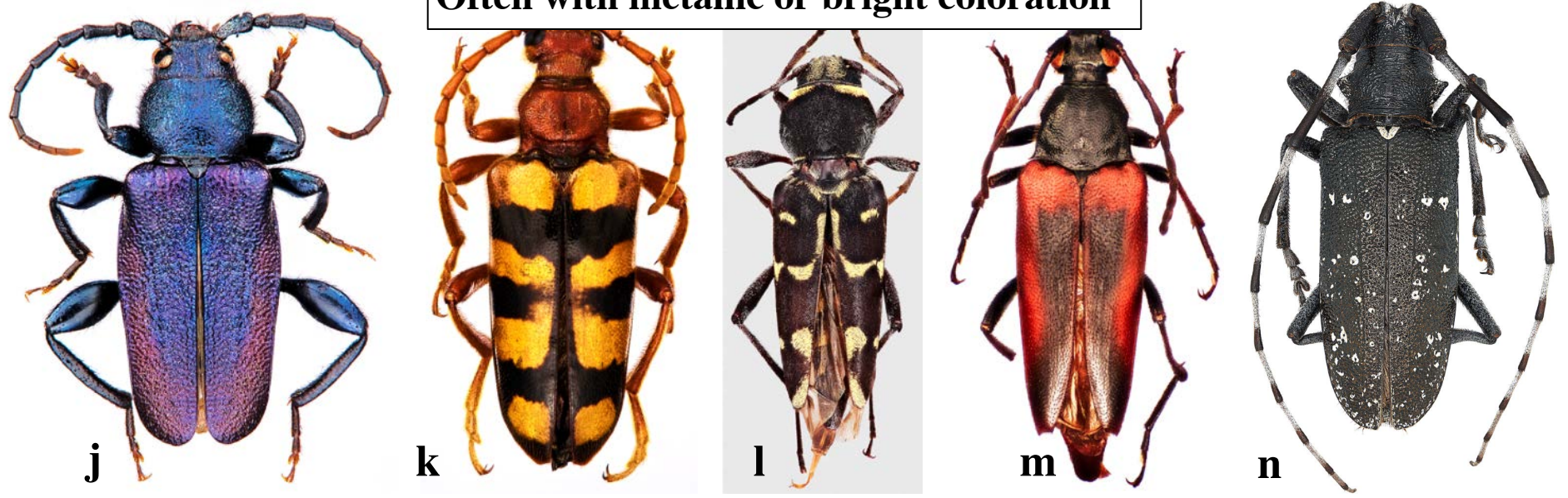


36 (21) II

Dark without metallic or bright coloration



Often with metallic or bright coloration



37 (36) I

Antennomere 3 much longer than scape (**a**); pronotum with a pair of median impressions (**d-e**): 5 species in WNA.....*Arhopalus* I

Antennomere 3 about as long as scape (**b-c**); pronotum with a single median impression (**f-g**).....38



37 (36) II



d



f



e

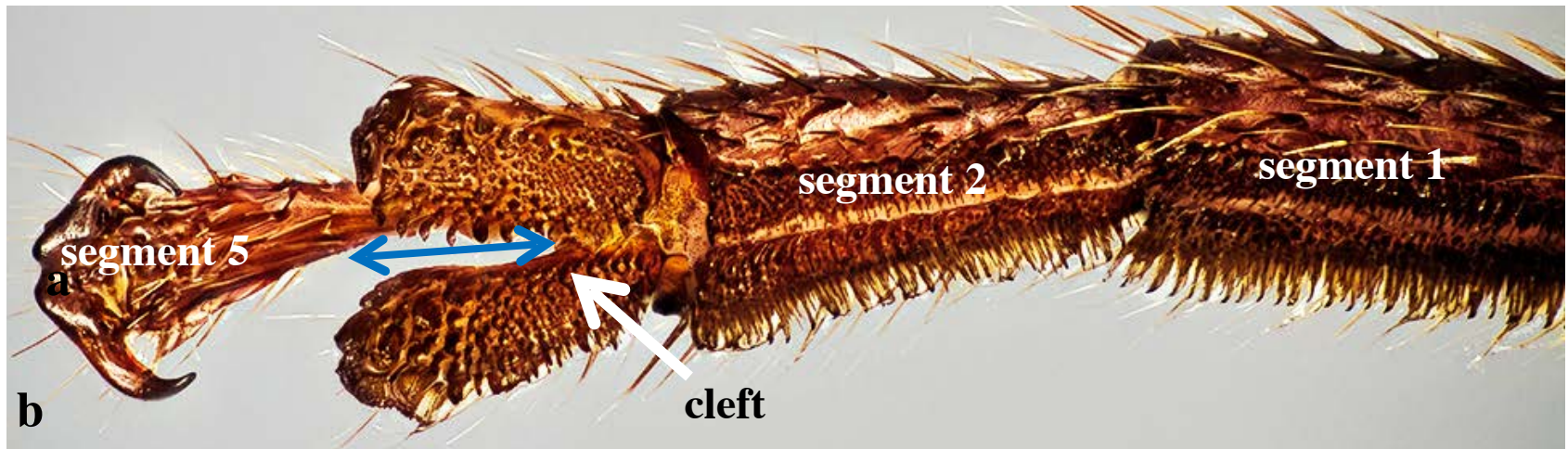


g

Arhopalus I (37)

Third segment of metatarsus cleft for no more than about half its length (best seen from a ventral position) (a).....*Arhopalus* II

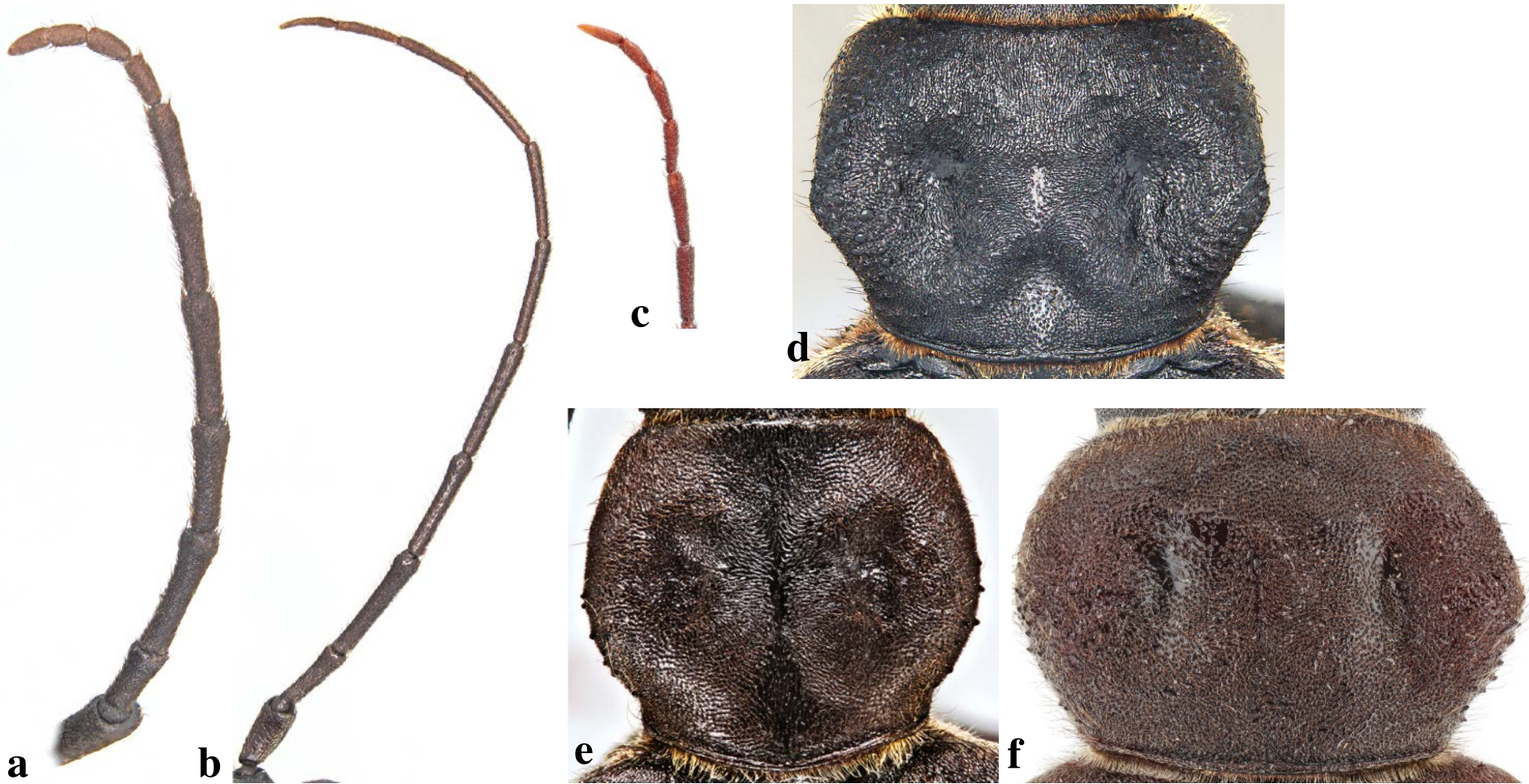
Third segment of metatarsus cleft almost its entire length (b)...*Arhopalus* IV



Arhopalus II

Last four segments of antennae short and broad (a); pronotum with angulate sides (d).....*Arhopalus asperatus*

Last four segments of antennae longer and narrower (b-c); pronotum normally with rounded sides (e), rarely somewhat angulate (f).....*Arhopalus* III



Arhopalus
asperatus
(LeConte)



Arhopalus III

Pronotum broad, occasionally with angulate sides (**a**); median frontal furrow linear (**c**); body broader (**portrait**).....*Arhopalus foveicollis*

Pronotum narrow, with rounded sides (**a**); median frontal furrow cross-shaped (**d**); body narrower (**portrait**).....*Arhopalus productus*



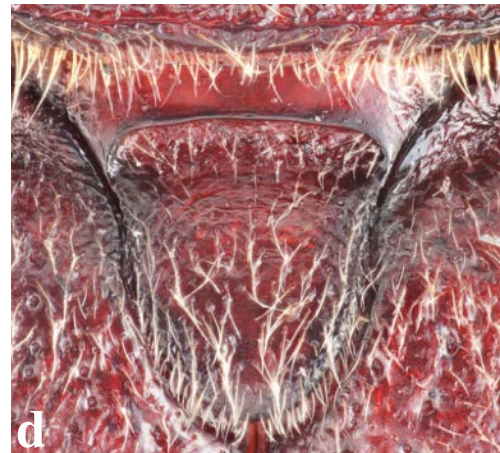
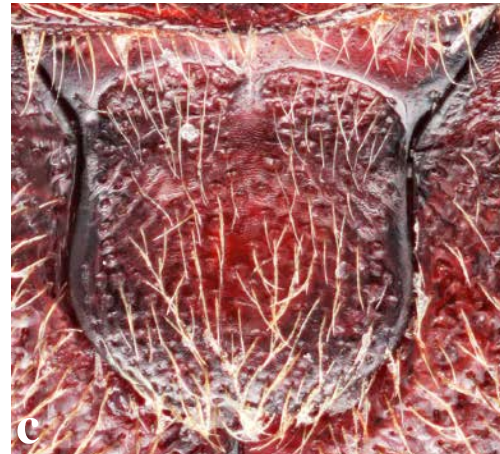
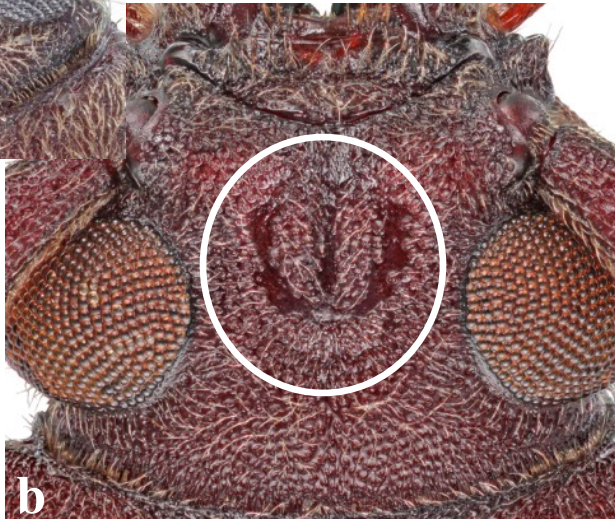
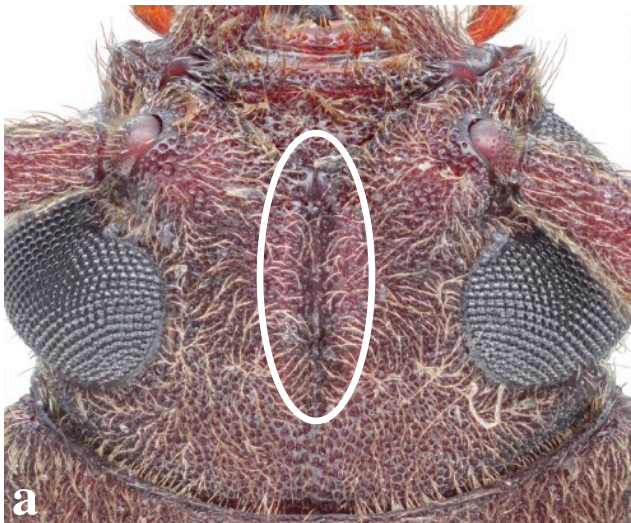
*Arhopalus
foveicollis*
(Haldeman)



*Arhopalus
productus*
(LeConte)

Arhopalus IV1

Frons narrowly, almost linearly, impressed between eyes (a); sides of scutellum parallel before apex (c); punctures of elytra between costae indistinct, close (e) *Arhopalus montanus*
Frons broadly impressed between eyes (b); sides of scutellum convergent (d); punctures of elytra between costae distinct, widely separated (f).... *Arhopalus syriacus*^{EE}
European species established in California and possibly Oregon.



Arhopalus IV2

e. Punctures of elytra between first two costae close; surface roughened.



f. Punctures of elytra between first two costae widely separated; surface smoother.

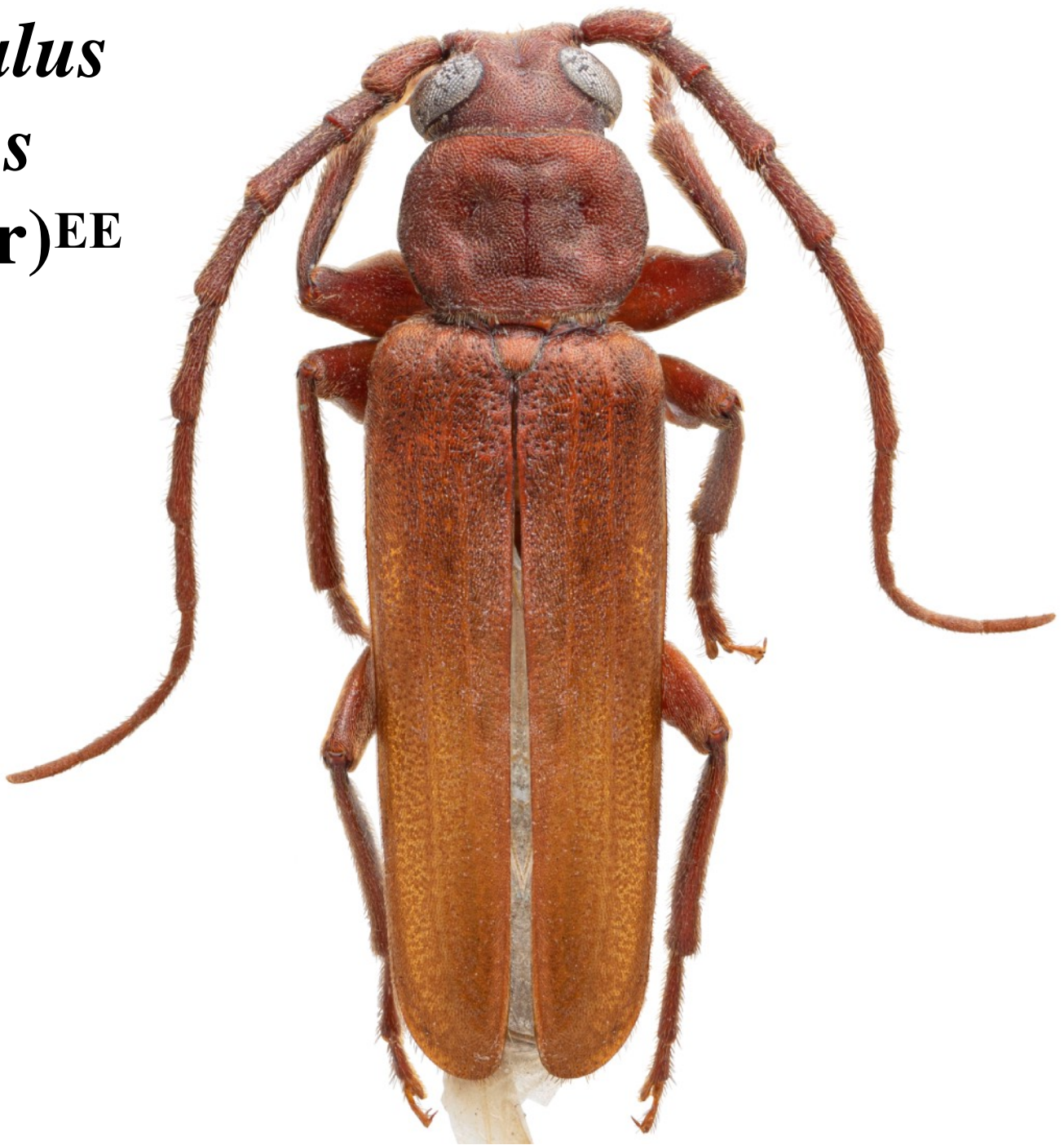


Arhopalus
montanus
(LeConte)



Begin key

Arhopalus
syriacus
(Reitter)^{EE}



38 (37)

Pronotum coarsely asperate laterally (a).....*Megasemum asperum*

Pronotum not asperate (b) or at most finely asperate over entire surface (c): 3 species in WNA.....*Asemum* I

a



b



c



Megasemum
asperum
(LeConte)



Asemum I (38)

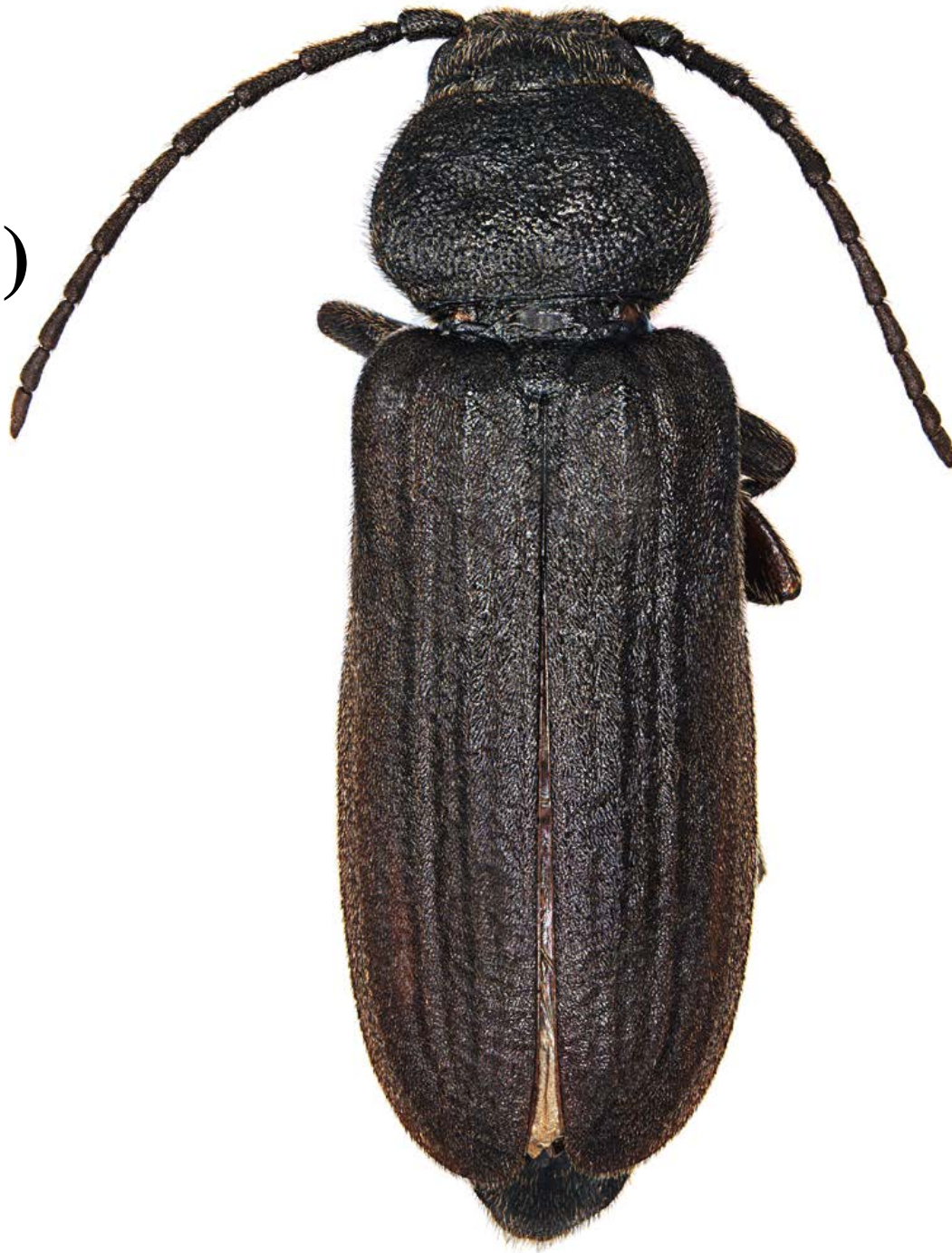


Pronotum contiguously, asperately punctate (a).....*Asemum striatum*

Pronotal punctures simple, often separated (especially on disc) (b-c)....*Asemum* II



Asemum
striatum
(Linnaeus)



Asemum III1



Pubescence pale, short, and appressed (**a**); basal antennal segments at most slightly broader than those following, antennae overall narrow and cylindrical throughout their length (**c**).....*Asemum caseyi*

Pubescence dark, longer, and erect (**b**); basal antennal segments broad, rest becoming narrower toward the apex (**d**).....*Asemum nitidum*



Asemum II2



c. Basal antennal segments at most slightly broader than those following, antennae narrow overall.



d. Basal antennal segments broad, rest becoming narrower toward the apex.



Asemum
caseyi
Linsley

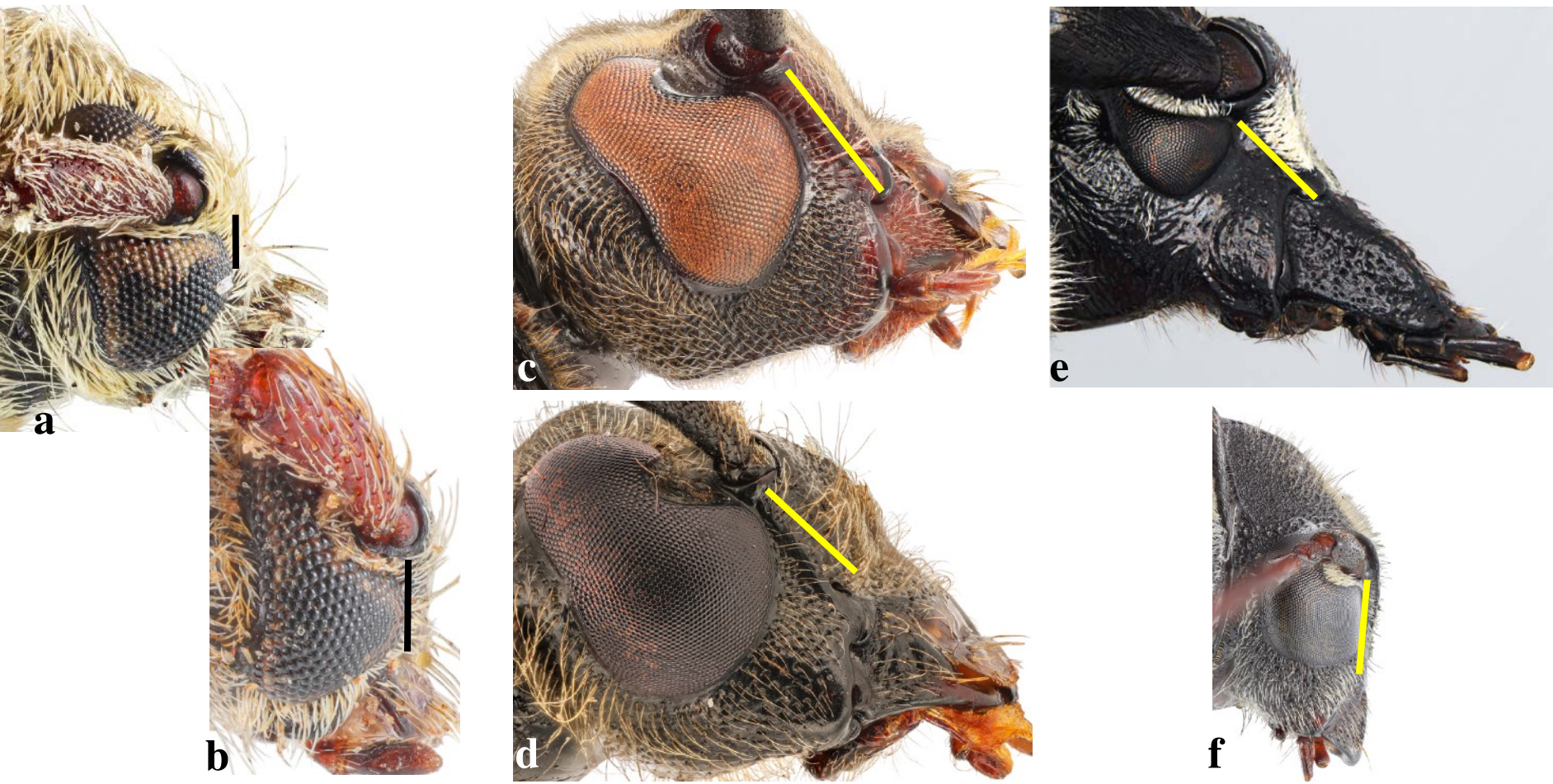


Asemum
nitidum
LeConte

39 (36) I

Front of head vertical in profile, very short (antennal insertion to mandibular base) (**a-b**) - can be difficult to assess because the frons is very pubescent in these genera; antennae always long (**g-h**).....**40**

Front slightly to strongly oblique in profile, generally much longer (**c-e**) – if apparently vertical due to angle of view (**f**), antennae short (**i-j**).....**41**



39 (36) II

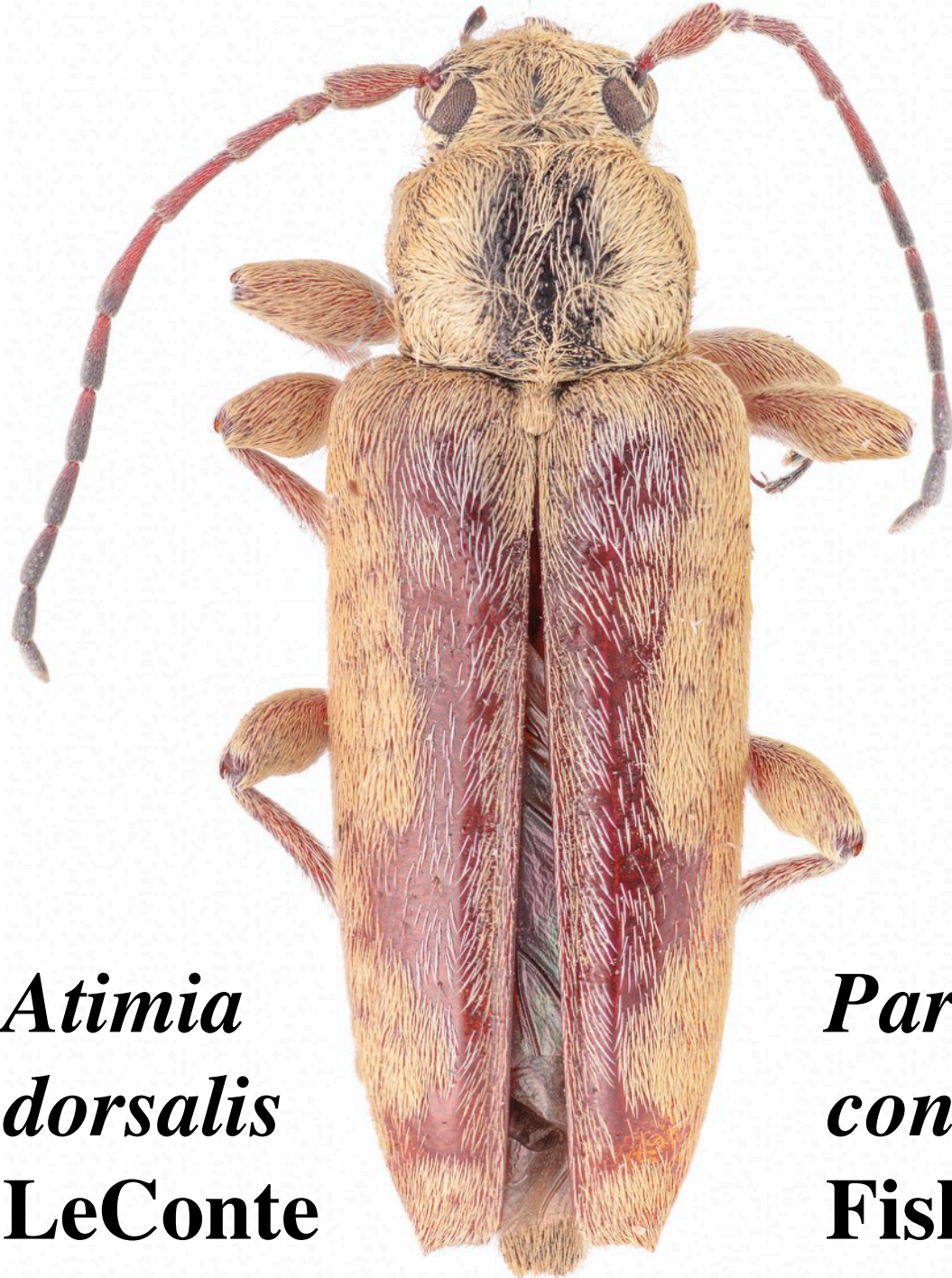


40 (39)

Pubescence in very dense patches on the elytra, elytral apices concave with pointed angles (a): 2 species in WNA and NA.....*Atimia*

Pubescence evenly distributed on the elytra, elytral apices rounded (b).....*Paratimia conicola*





Atimia
dorsalis
LeConte



Paratimia
conicola
Fisher

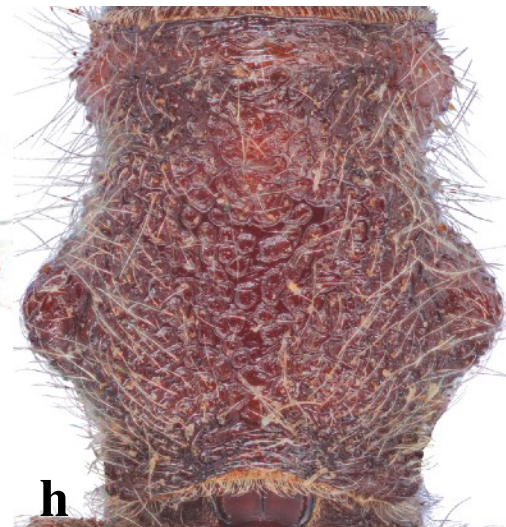
41 (39) I

Head anterior of eyes short (a) and broad (c); anterior of pronotum not narrowed in **most** species (f-k); if not sure, center of mesonotum not divided (only visible with pronotum strongly deflexed!) (r): **subfamily Cerambycinae**.....42

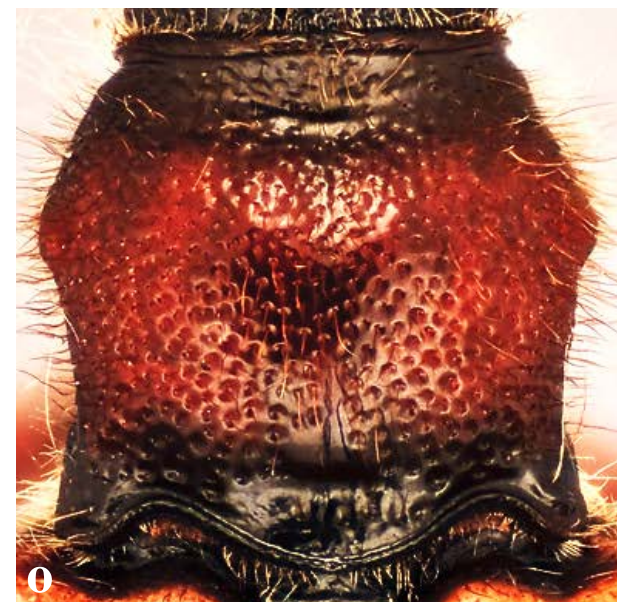
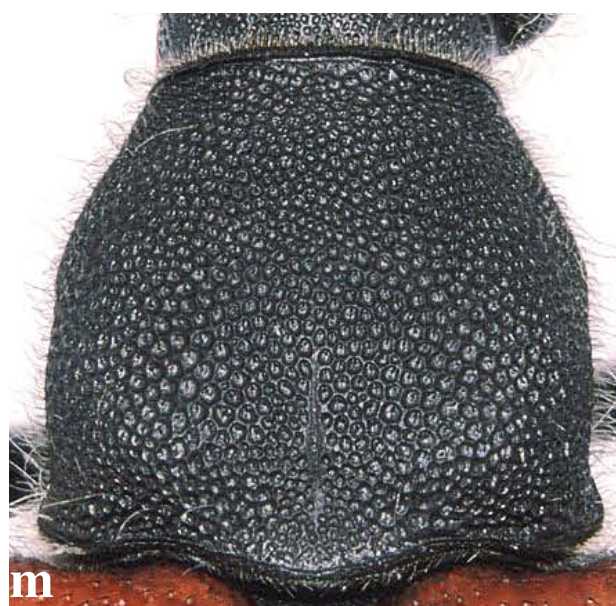
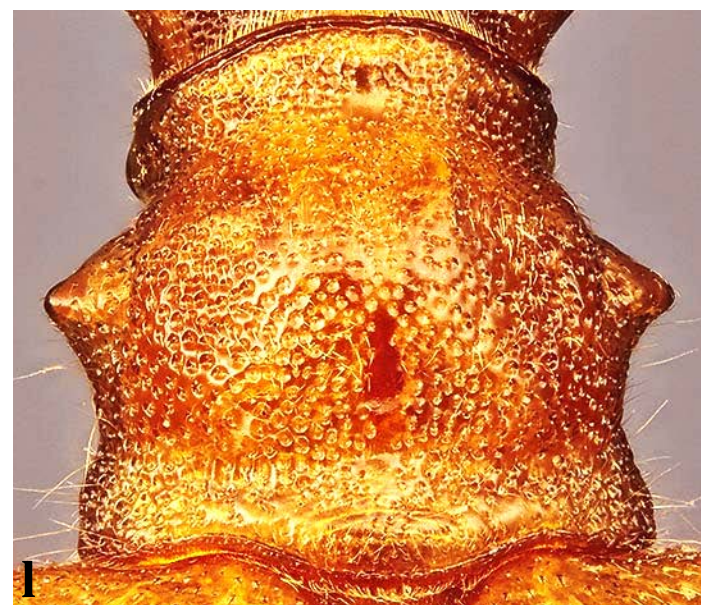
Head anterior of eyes **most often** elongate (b) and narrower (d), **sometimes** shorter and broader (e); anterior margin of pronotum narrower than posterior margin in **most** species (l-p), sometimes not or little narrowed anteriorly (q); if not sure, center of mesonotum divided (s): ***Desmocerus* & subfamily Lepturinae**.....94



41 (26) II

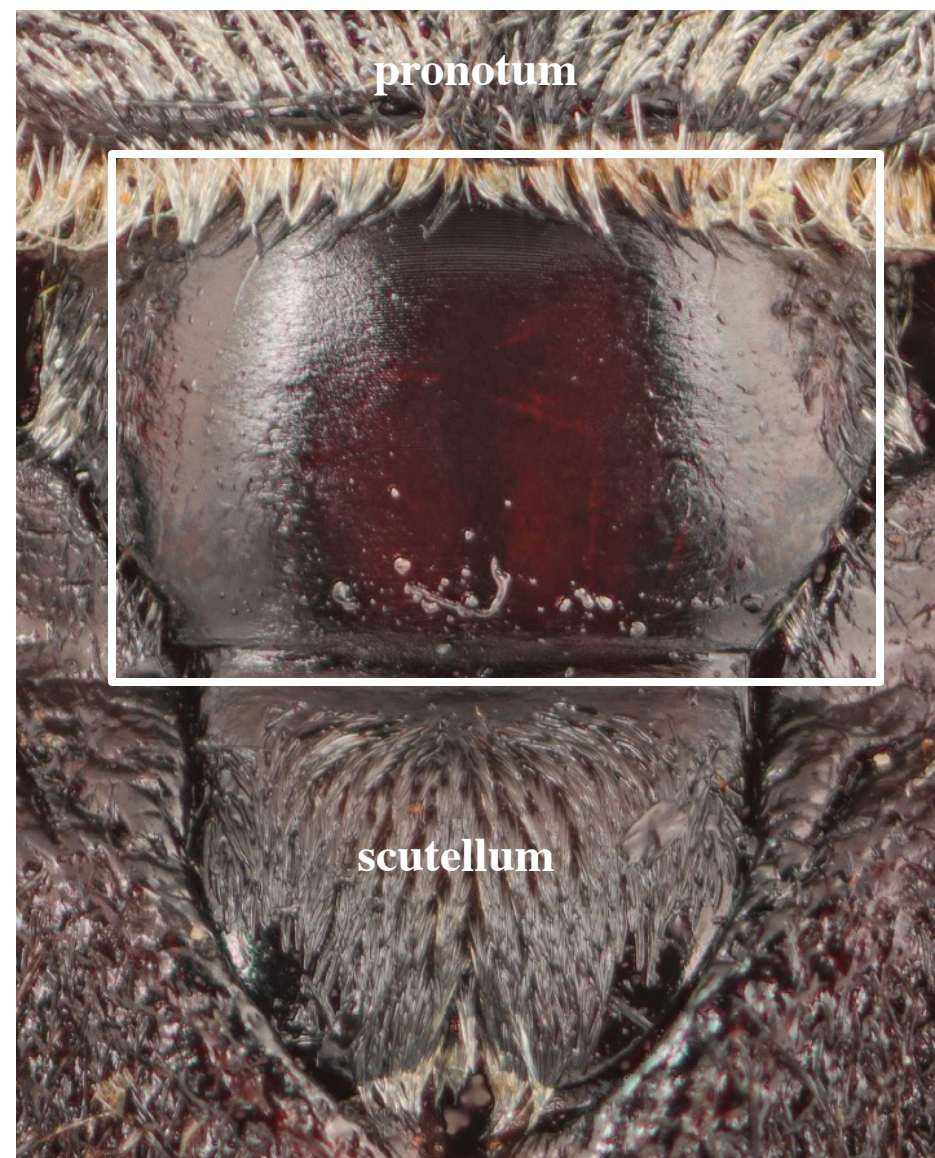


41 (26) III



41 (26) IV

r. Undivided mesonotum of Cerambycinae



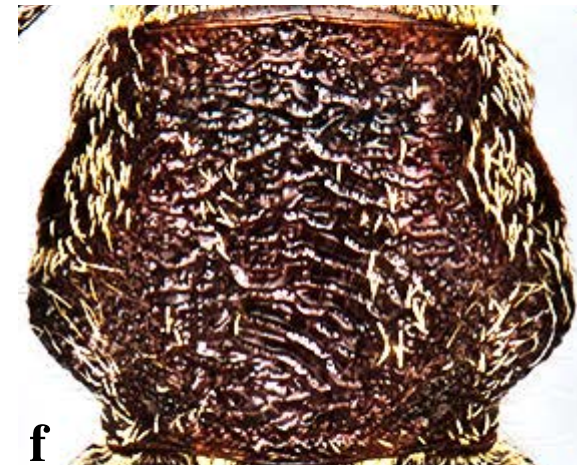
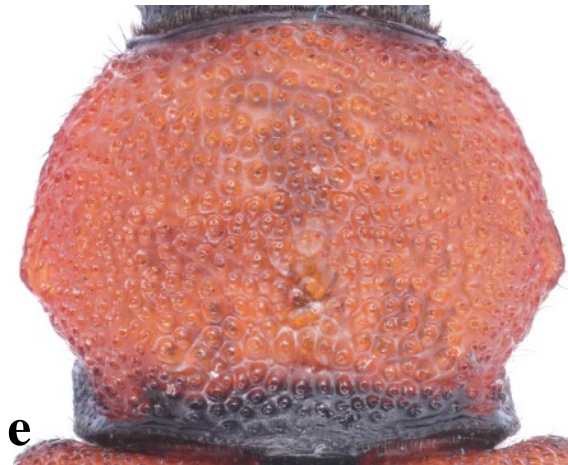
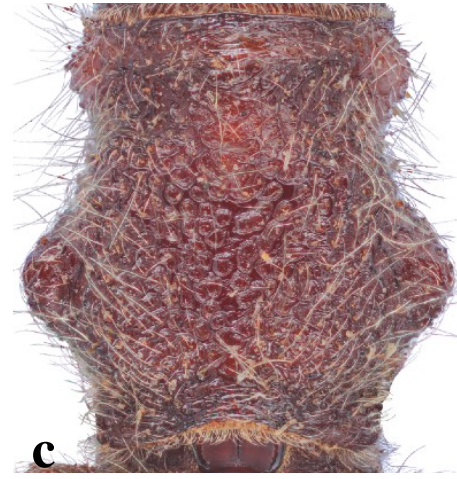
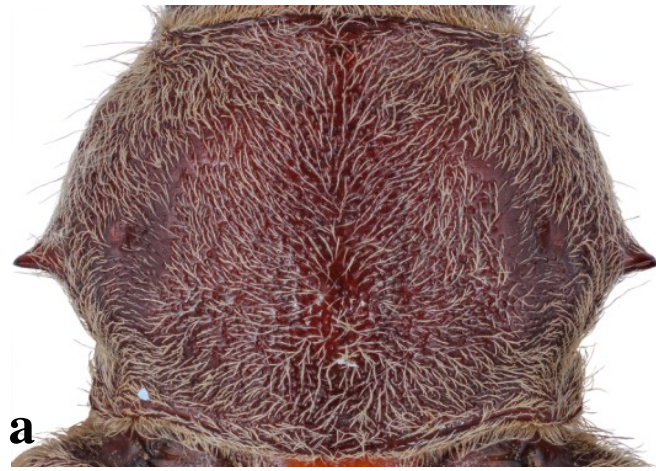
s. Divided mesonotum of Lepturinae



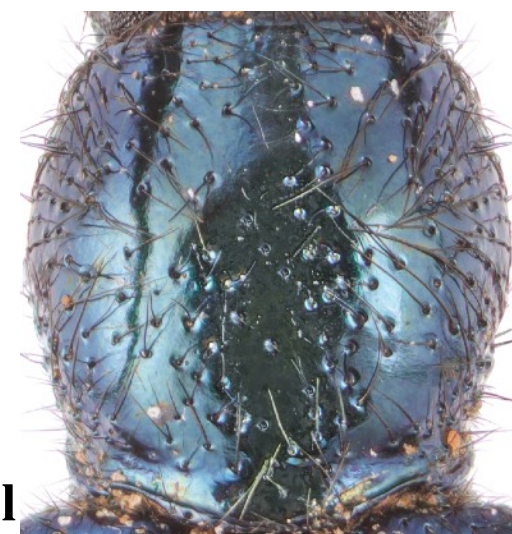
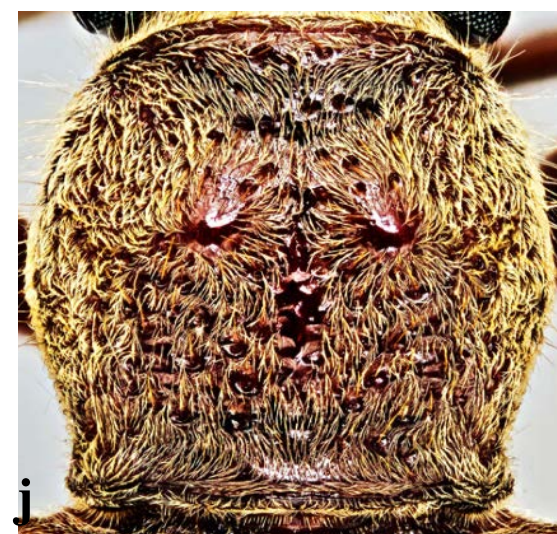
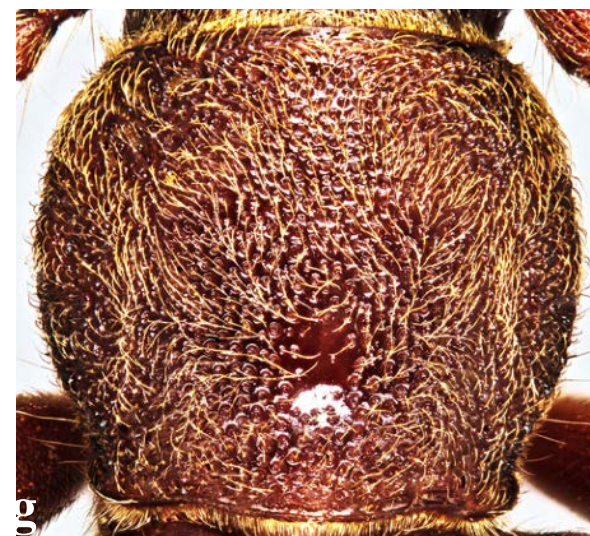
42 (41) I

Each side of pronotum with lateral spines, tubercles (can be very small and especially hard to see in very pubescent species) or lobes (a-f).....43

Each side of pronotum more-or-less evenly convex (g-l).....66



42 (41) II



“Spine” vs “tubercle” is an artificial dichotomy along a continuum of protuberances – if in doubt, try both couplets 44 and 47.

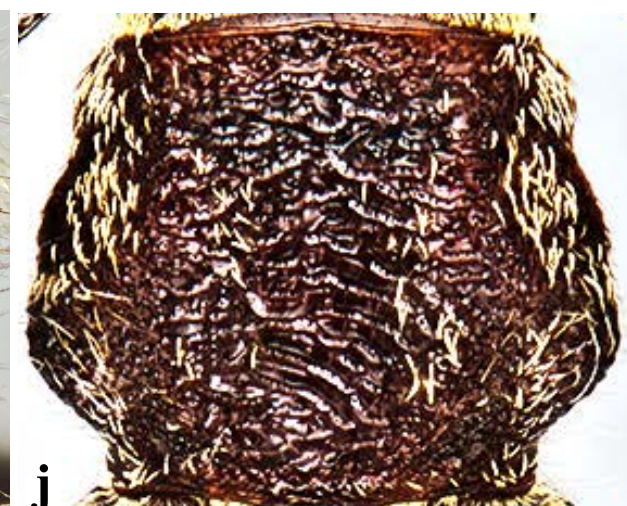
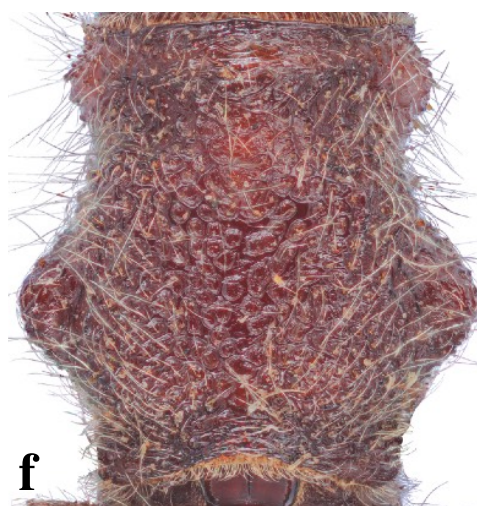
43 (42) I

Each side of pronotum with a lateral spine* (a narrow protuberance coming to an acute point) (**a-d**).....44 

Each side of pronotum with a tubercle* (a broad protuberance with an an obtuse point or rounded apex) (**e-h**) or is lobed (**i-j**).....47 



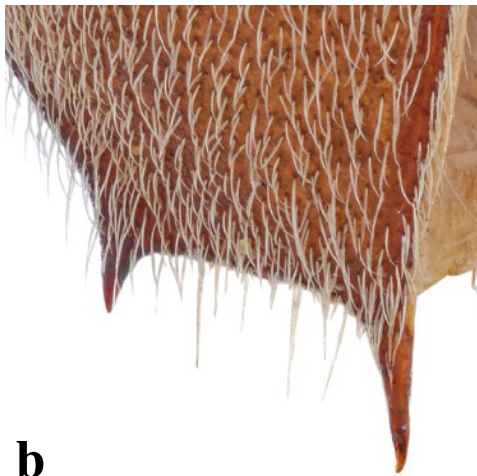
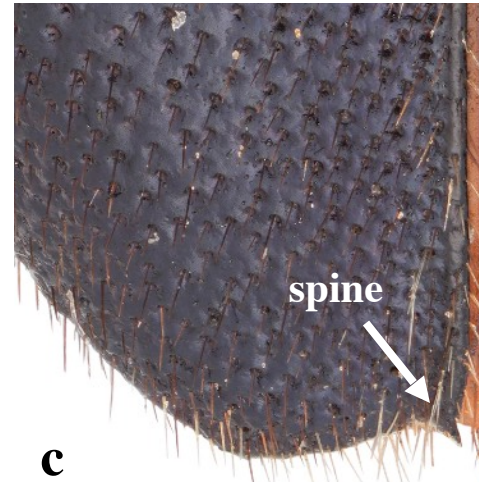
43 (42) II



44 (43)

Elytral apices each with a pair of spines (**a-b**); most antennal segments with a spine (see *Knulliana* and *Phorocantha* portraits).....**45**

Elytral apices each with only a sutural spine (**c**) or without spines (**d**); antennal segments without spines (although sharp outer angles in *Tragidion*).....**46**



45 (44)

Dull surface, brown, often with small single pale mark on each elytron, and finely punctate throughout (a): 1 species in NA.....*Knolliana cincta*

Shining surface, elytron with large pale and dark areas, coarsely punctate on pronotum and anterior half of elytra (b): 2 species in NA...*Phorocantha* ^{EE}



a



b

Knulliana *cincta* (Drury)



Note:

The pale marks on
the elytra are
variable and some-
times absent.

Phorocantha (45)

Begin key

Each elytron with a single small median dot anterior to the post-median dark band (a).....*Phorocantha recurva* ^{EE}

Each elytron with a band anterior to the post-median dark band, which may be an oblique bar (b) or a sinuate band reaching the suture (c).....
.....*Phorocantha semipunctata* ^{EE}

Note: there are many species of cerambycids that have spines on the antennae and with a pair of spines on the apex of the elytra. However, most of these are in the eastern and southwestern United States and none closely resemble these two species of *Phorocantha*.



Phoracantha
recurva
Newman EE

Begin key

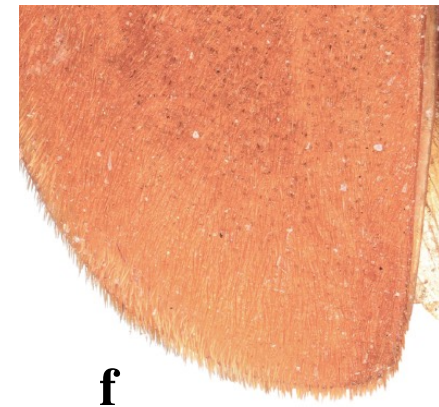
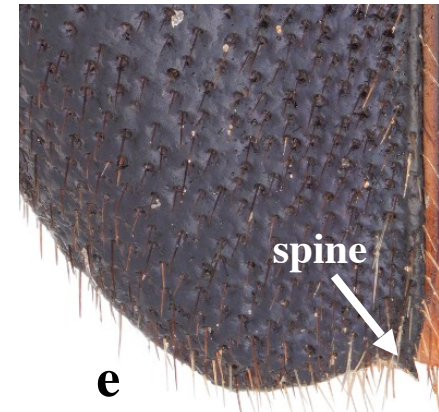


Phoracantha
semipunctata
(Fabricius) EE



Pronotum with surface visible through coating of pubescence (a); antennae not banded (c); elytral apex with sutural spine (e): 4 species in NA, 2 species in WNA.....***Crossidius* with spined pronota**

Pronotum with surface largely hidden by dense pubescence (b); antennae banded (d); elytral apex without spines (f): 7 species in NA, 2 species in WNA
.....***Tragidion***



Crossidius with spinose pronota

Crossidius also key to
Couplets 63 and 75.



Crossidius
coralinus
(LeConte)

Tragidion

Begin key

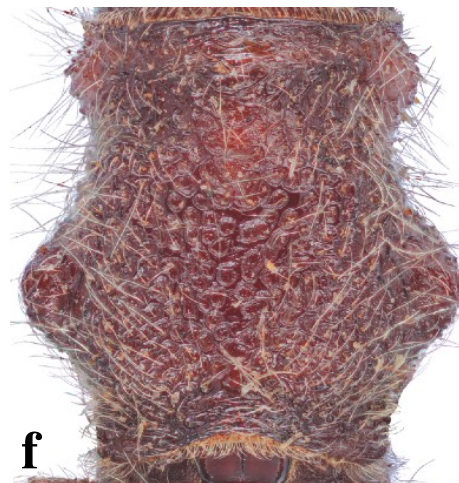
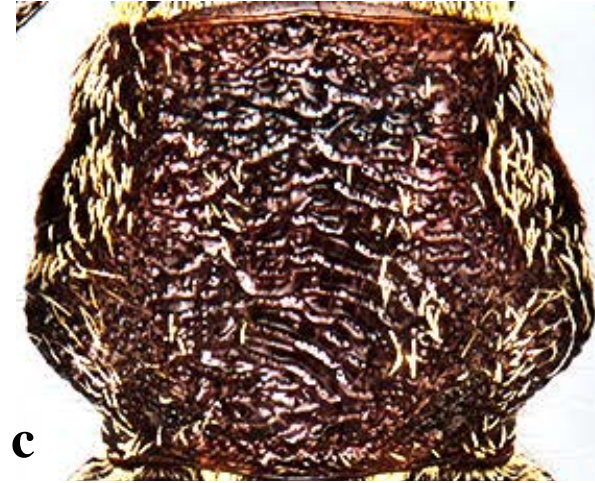
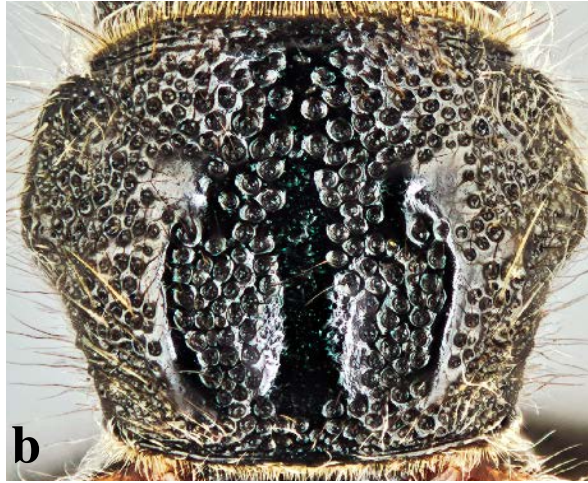
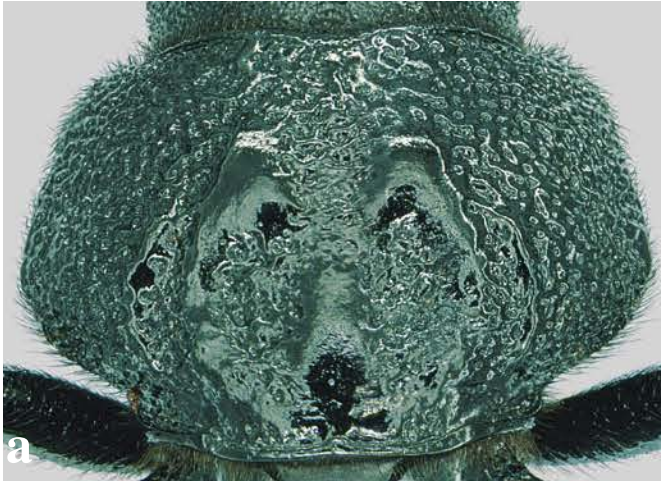


*Tragidion
annulatum*
LeConte

47 (43)

Each side of pronotum with lobes (**a-c**).....48

Each side of pronotum with tubercles (**d-f**).....54 



48 (47) I

Pronotum horizontally wrinkled but not punctate (a); body normally very large, 30-60 mm long (slide 48 II).....*Neocerambyx raddei* ET

Pronotum at least sparsely punctate (b), generally with at least some areas densely punctate (c-e); body much smaller, no more than 30 mm long, generally smaller (slide 48 II).....49



Neocerambyx
raddei

48 (47) II

Relative size of *Neocerambyx raddei*
versus some other cerambycids



Neocerambyx
raddei
Blessig & Solsky



lobed lateral margin of
Neocerambyx pronotum

49 (48)

Begin key

Antennae with spines on segments 3-5 (a): 2 species in NA/WNA.....*Oeme*

Antennae without spines on segments 3-5 (b).....50 



Oeme

Begin key



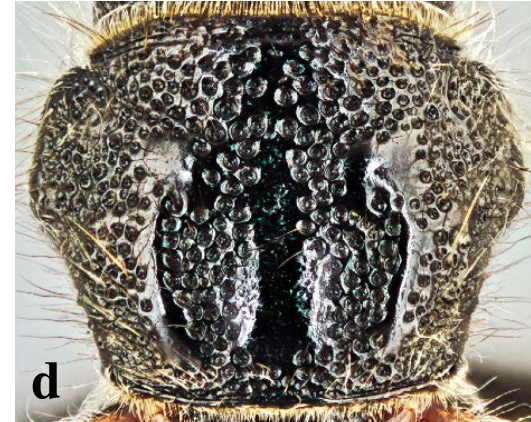
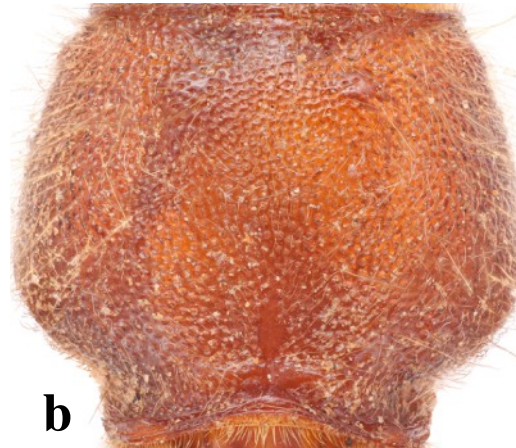
Oeme
costata
LeConte

50 (49) I

Pronotum longer than broad, sparsely punctate (a): 10 species in NA and 2? species in WNA.....*Obrium*

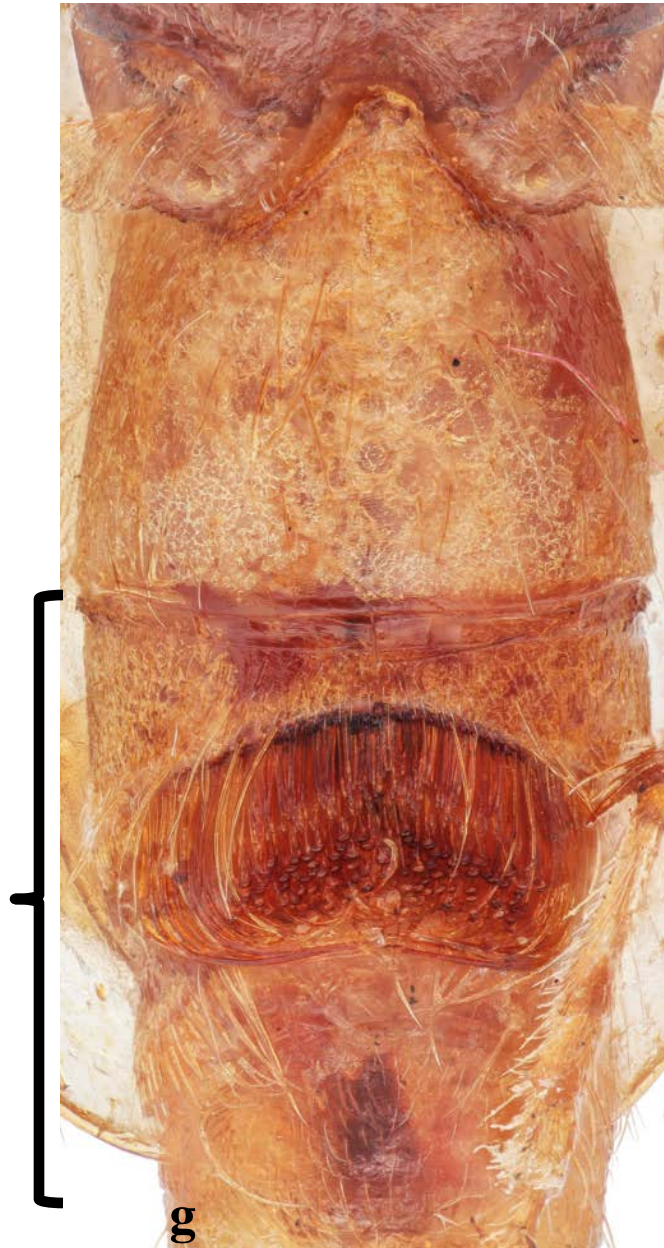
*The ventral abdomens of female *Obrium*, especially the second segments, are uniquely modified (g); however, those of males are not modified (h) and are similar to those of other genera.

Pronotum at least as broad as long, at least in part densely punctate (b-e).....51 

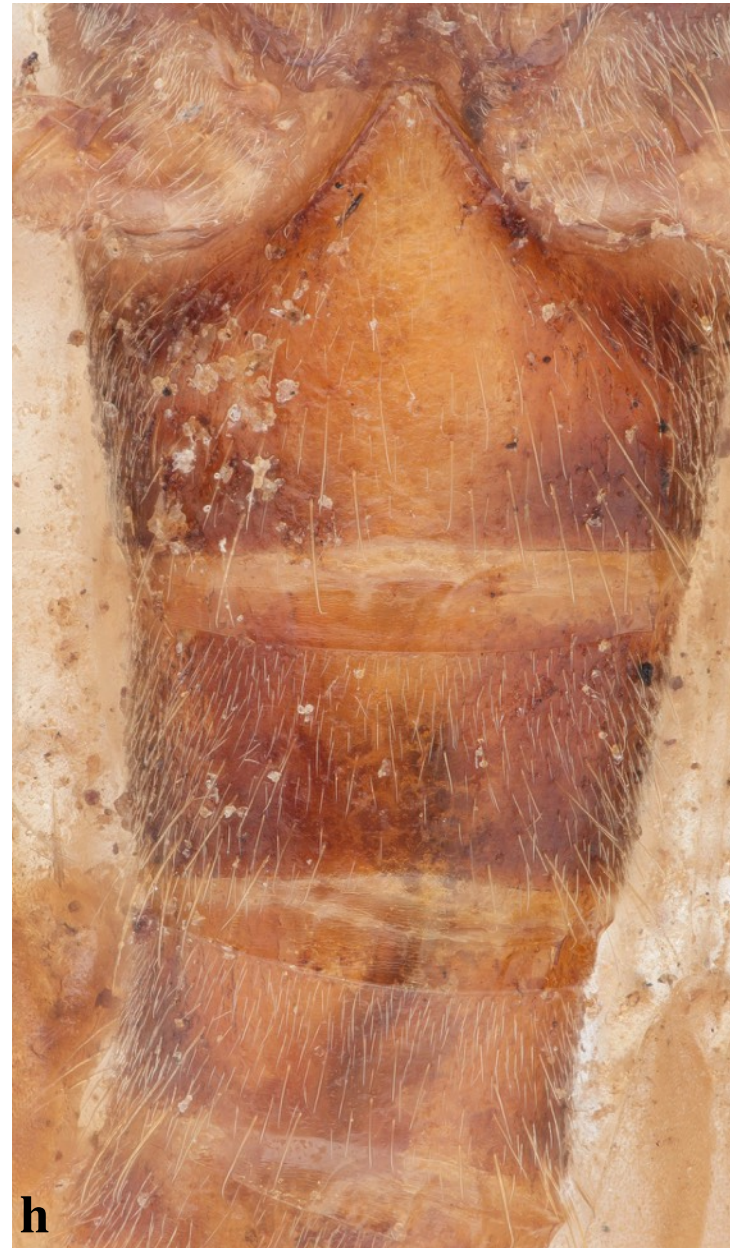


50 (49) II

Ventral abdomen of female *Obrium*



Ventral abdomen of male *Obrium*



Obrium



Obrium
californicum
Van Dyke

51 (50) I

Begin key

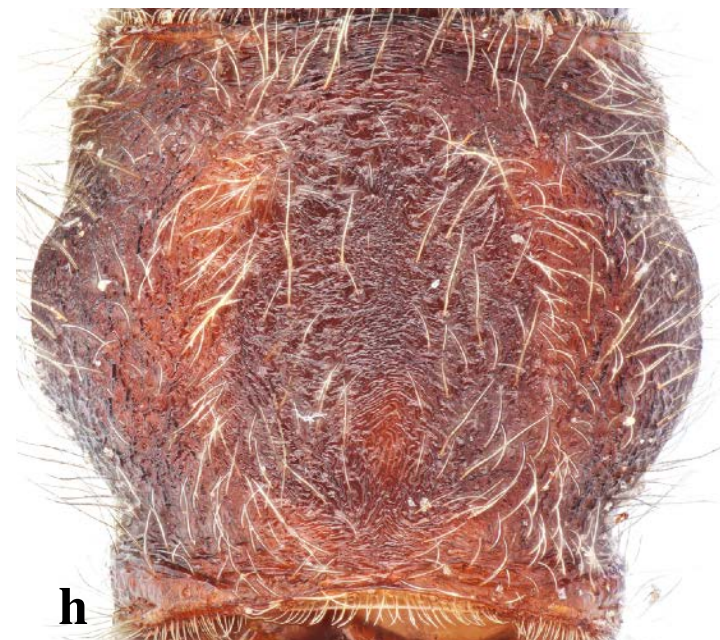
Elytra brown with vague darker markings (**a-c**) or all brown (**d**); pronotum more-or-less evenly punctate (**h-i**).....**52** 

Elytra all bright metallic purple (**e**), sharply bicolored (**f**), or dark with narrow undulating pale bands (**g**); pronotum unevenly punctate, with large impunctate raised areas (**j-k**) or narrow ridges (**l**).....**53** 



51 (50) II

Begin key

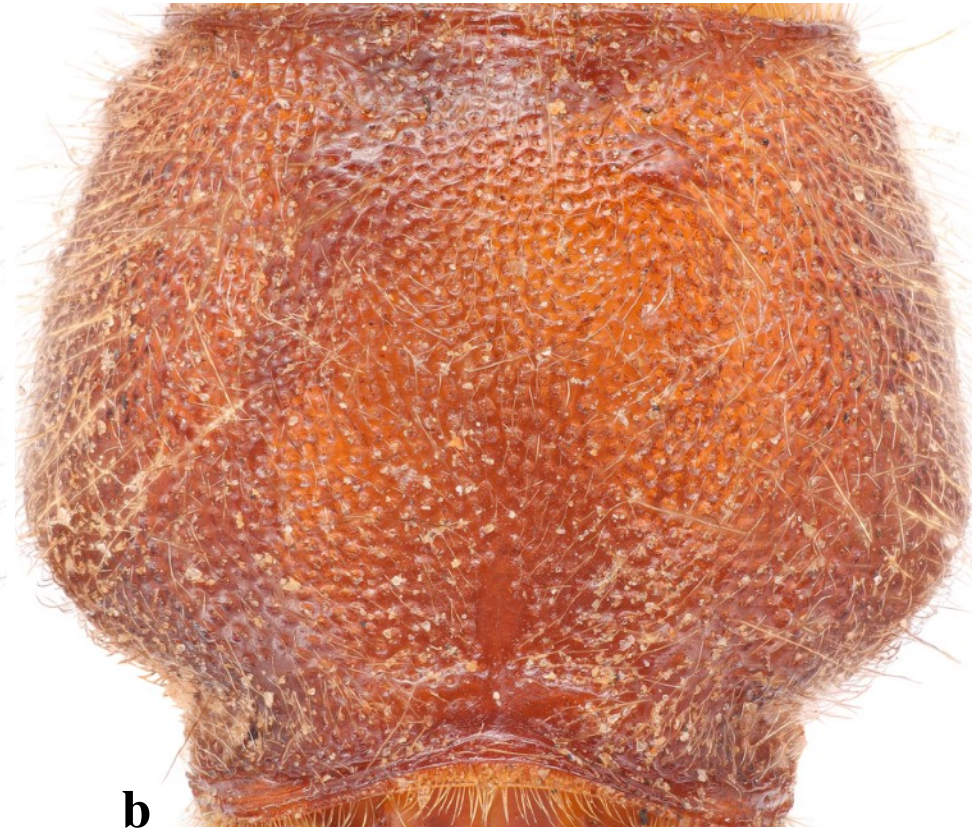
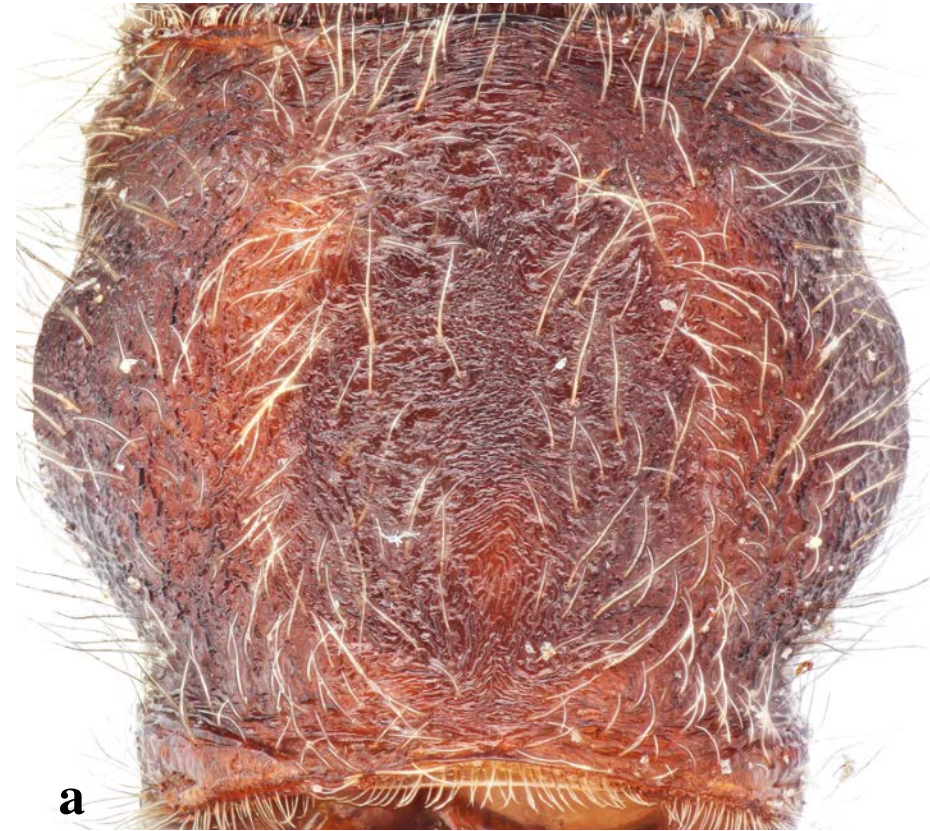


52 (51) I

Begin key

Pronotum more sparsely punctate with wrinkles between punctures (a); elytra with vague dark markings (c-e): (~4 species in WNA).....*Methia*

Pronotum densely punctate, punctures contiguous (b); elytra all brown (f): 1 species NA and WNA (2 subspecies – pronotum less lobed in *P. gracile gracile*).....*Paranoplium gracile*



52 (51) II

Begin key



Methia

Methia are variable in several ways:

1. Males have much longer antennae than females
2. Some species have variably-colored elytra
- *3. Most importantly for this key, most individuals have elytra shorter than the abdomen. These will key to Couplet 7, with the Cerambycidae with short elytra.



male

*Methia
aestiva*
Fall

pale
elytron



male, dark elytra

*Methia
mormona*
Linell

Paranoplium
gracile
(LeConte)



male

Paranoplium
gracile
gracile
(LeConte)



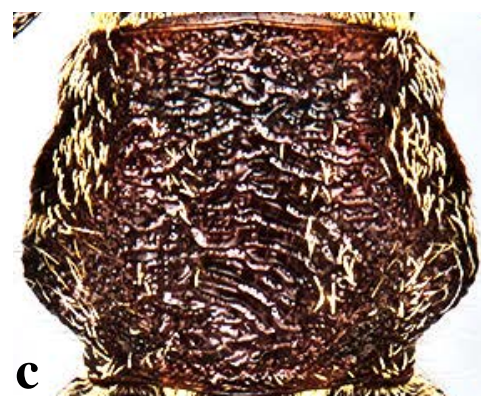
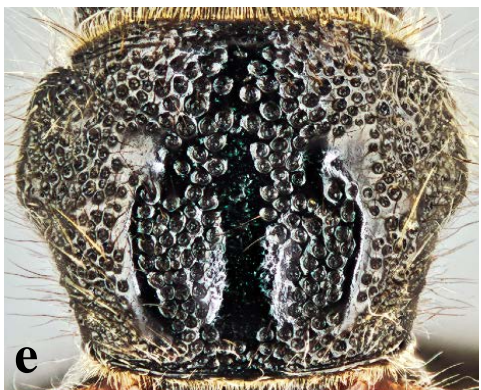
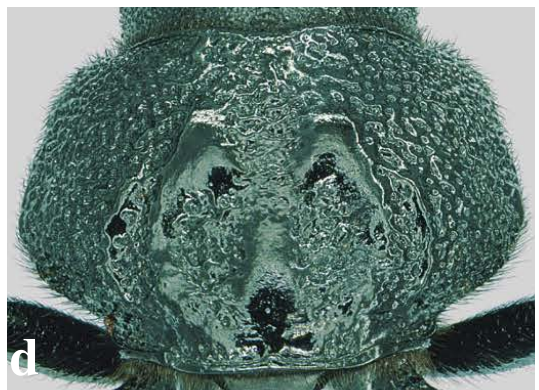
female

Paranoplium
gracile
laticolle
Linsley

53 (51)

Elytra uniformly bright metallic purple (a) or sharply bicolored (b): pronotum punctate with large, raised shiny areas (d-e): 6 species in WNA.....*Semanotus*

Elytra with narrow, undulating bands of pale pubescence (c); pronotum strongly rugose (f): single species with lobed pronotum in WNA – 9 others in genus in WNA without pronotal lobes.....*Xylotrechus nauticus*

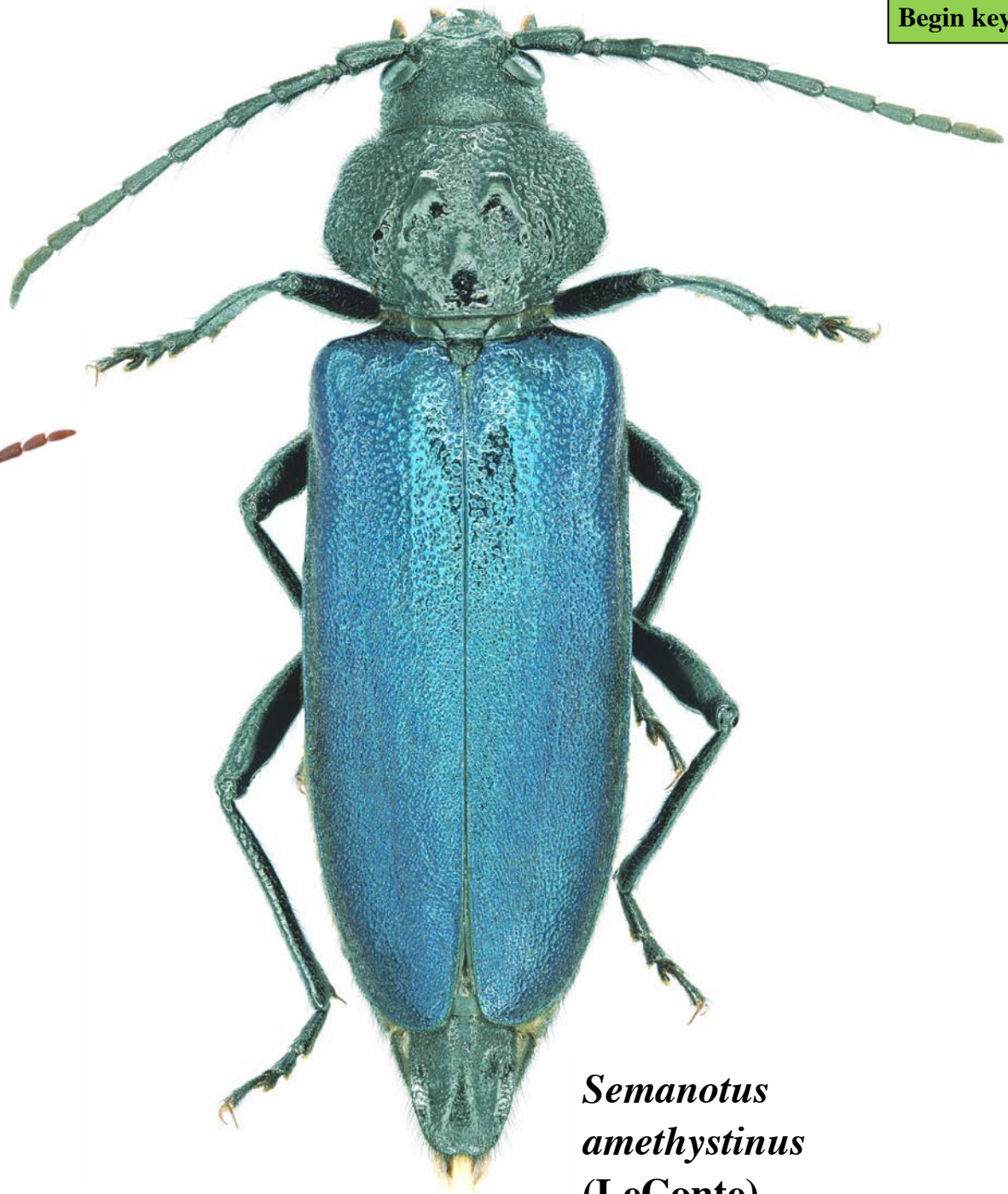


Semanotus

Begin key

images not
to scale

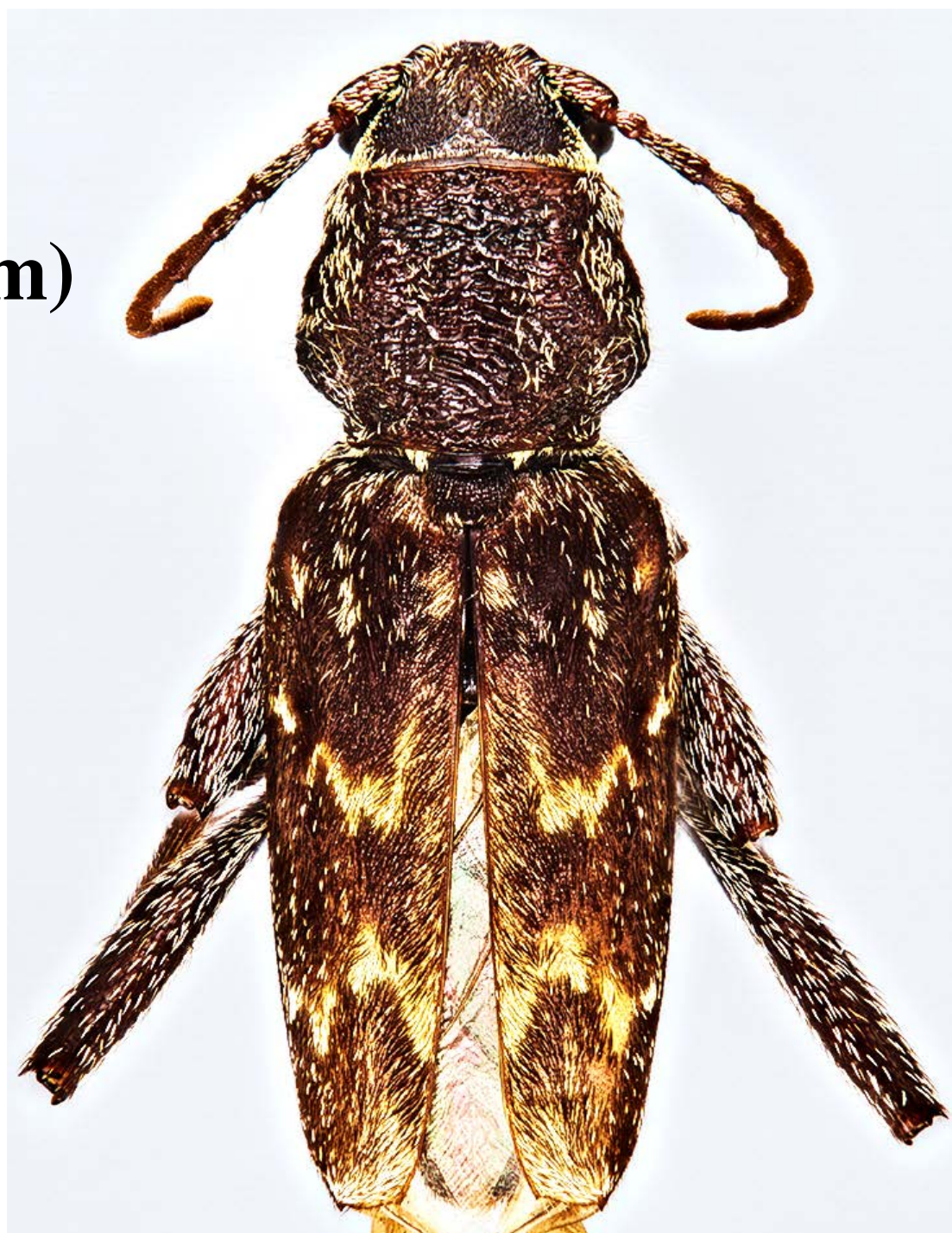
*Semanotus
litigiosus*
(Casey)



*Semanotus
amethystinus*
(LeConte)

Xylotrechus
nauticus
(Mannerheim)

Also keys to
Xylotrechus I



54 (47)

Elytral apices each with a pair of spines (a-b).....55

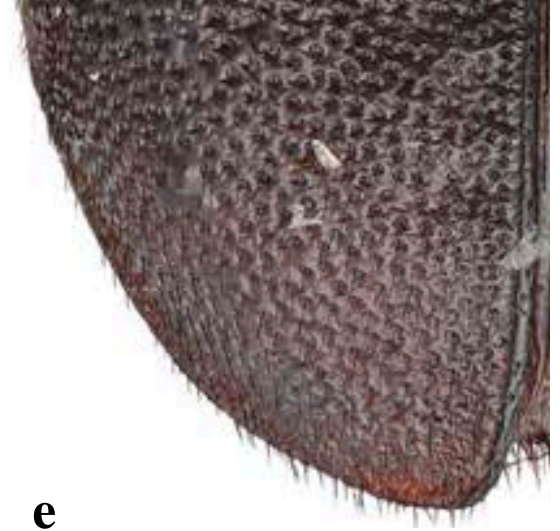
Elytral apices without spines (c-f)56 



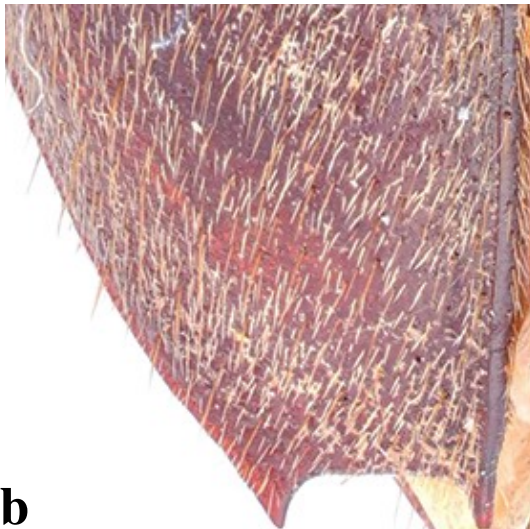
a



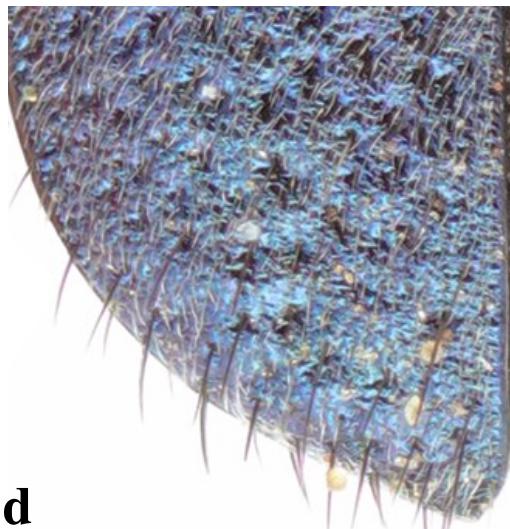
c



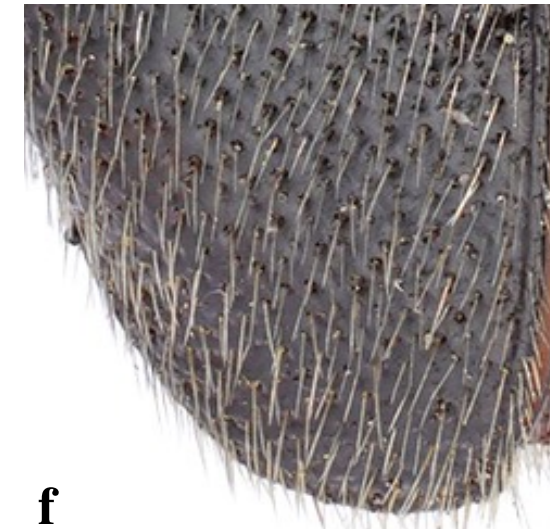
e



b



d



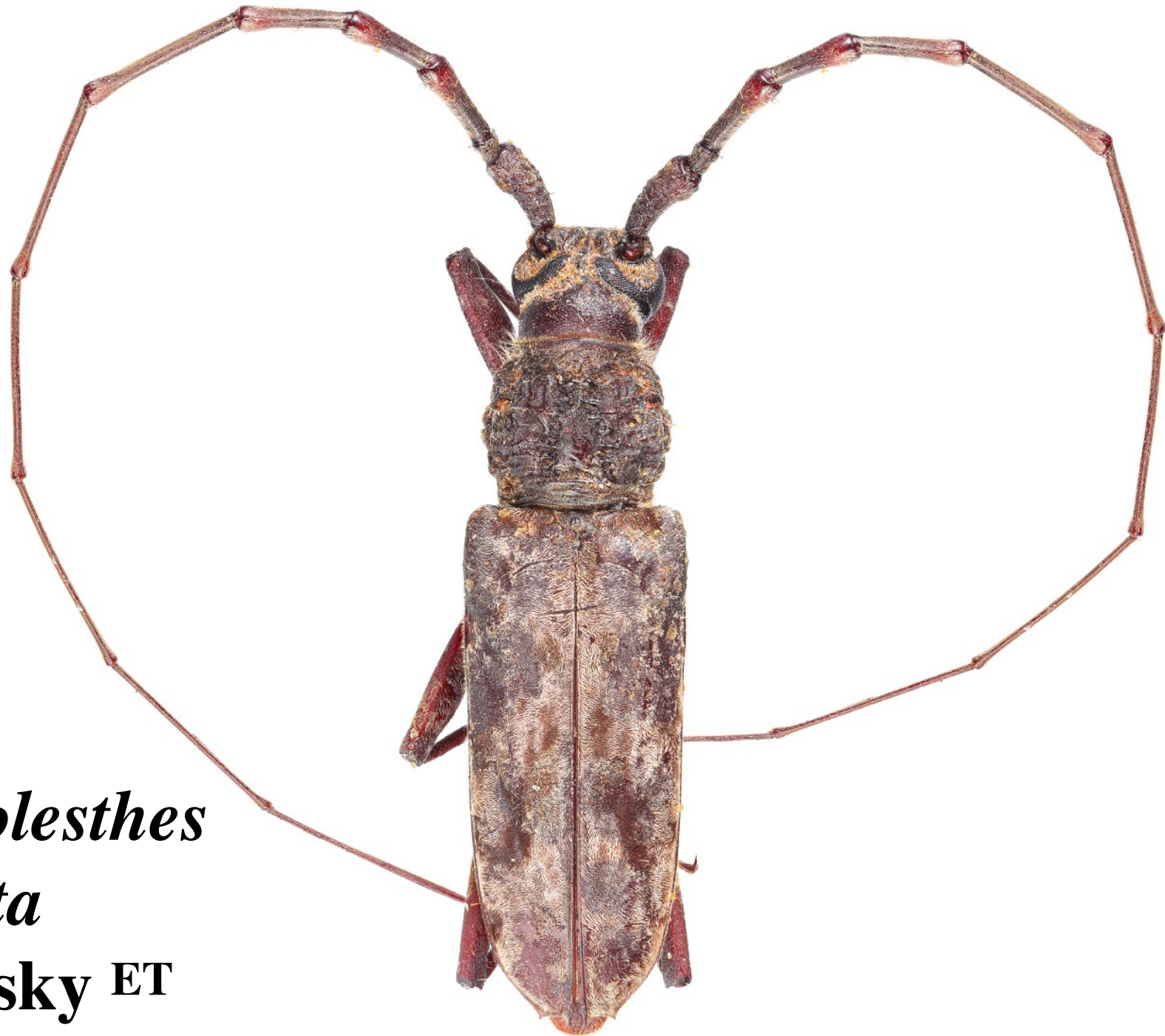
f

55 (54)

Pronotum strongly horizontally rugose (**a**); antennomeres without apical spines (see portrait).....*Aeolesthes sarta* ^{ET}

Pronotum punctate, not rugose (**b**); most antennomeres with apical spines (see portrait): 8 species in NA, 1 species in WNA...*Enaphalodes hispicornis*





Aeolesthes
sarta
Solsky ET

Enaphalodes
hispicornis
(Linnaeus)



56 (54)

Begin key

Pronotum with tubercles pointed (a); elytra with very small punctures, otherwise smooth, almost glabrous (d).....red necked longhorn beetle, *Aromia bungii* ET

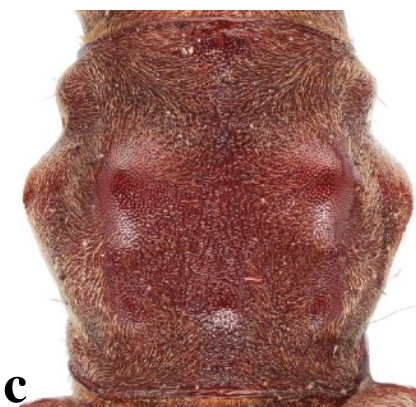
Pronotal tubercles blunt (b-c); elytra coarsely punctate, with distinct pubescence (e-g).....57



a



b



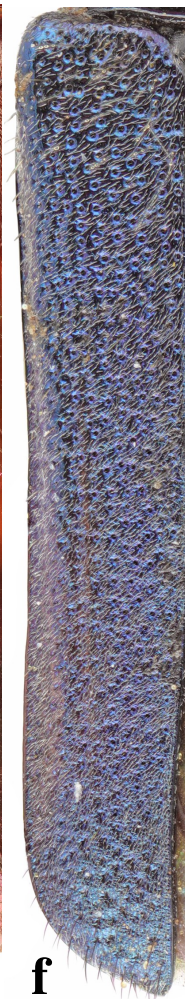
c



d



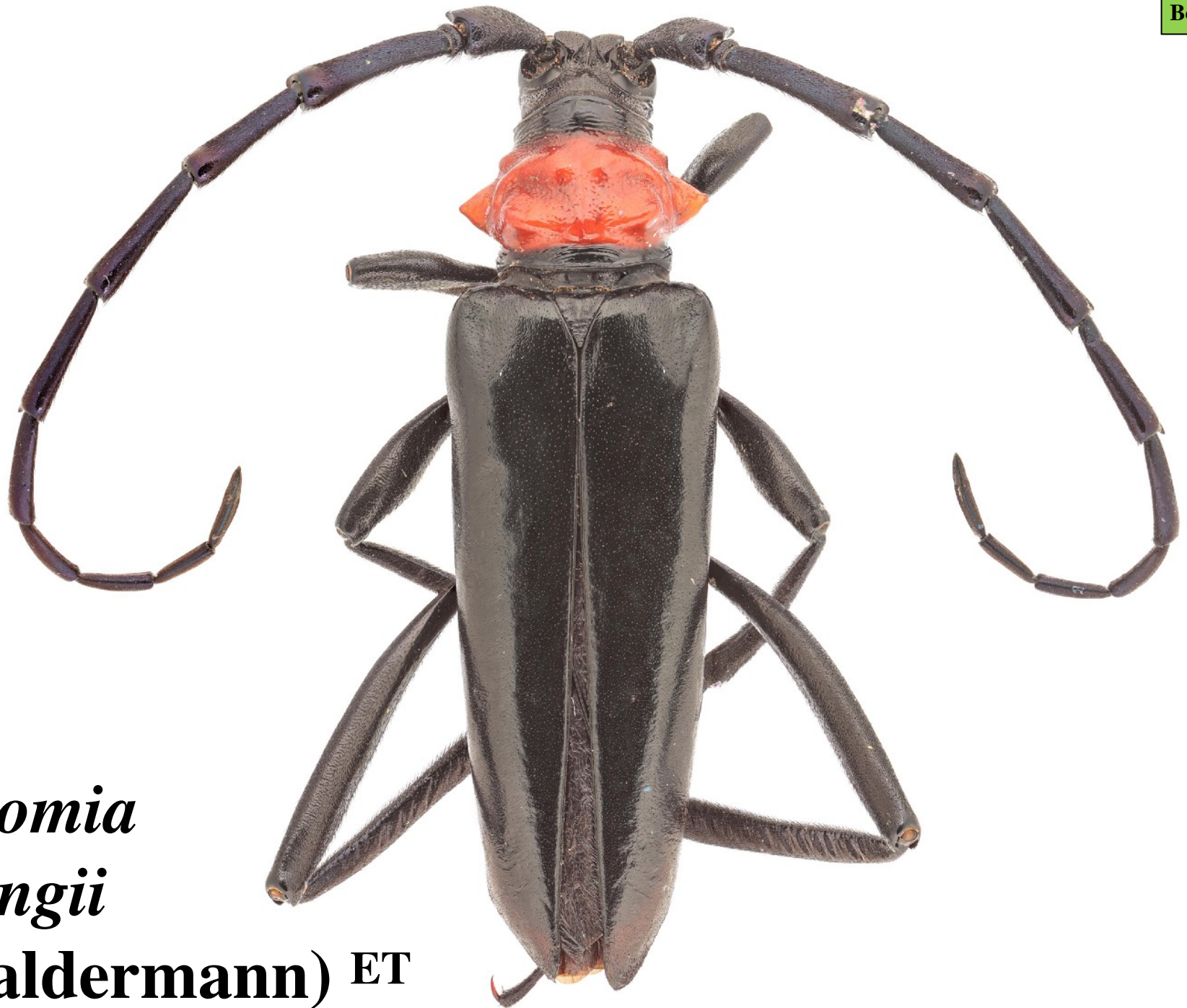
e



f



g

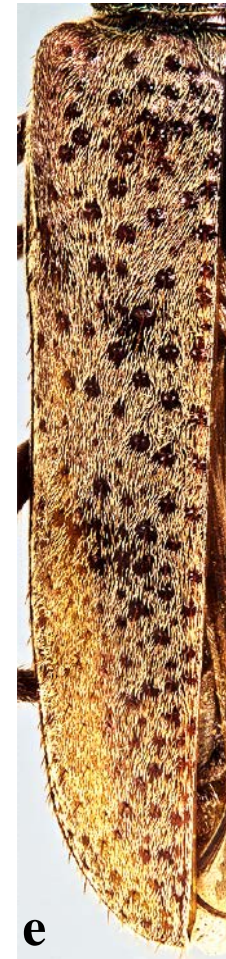
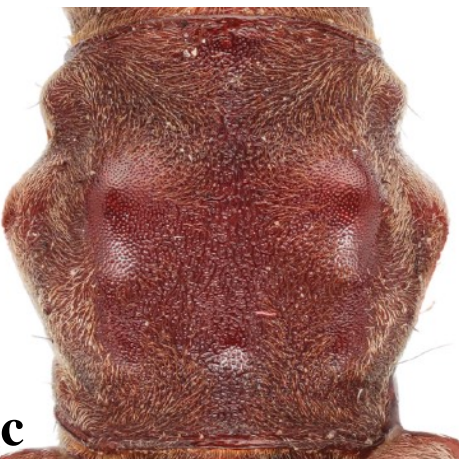


*Aromia
bungii*
(Faldermann) ET

57 (56)

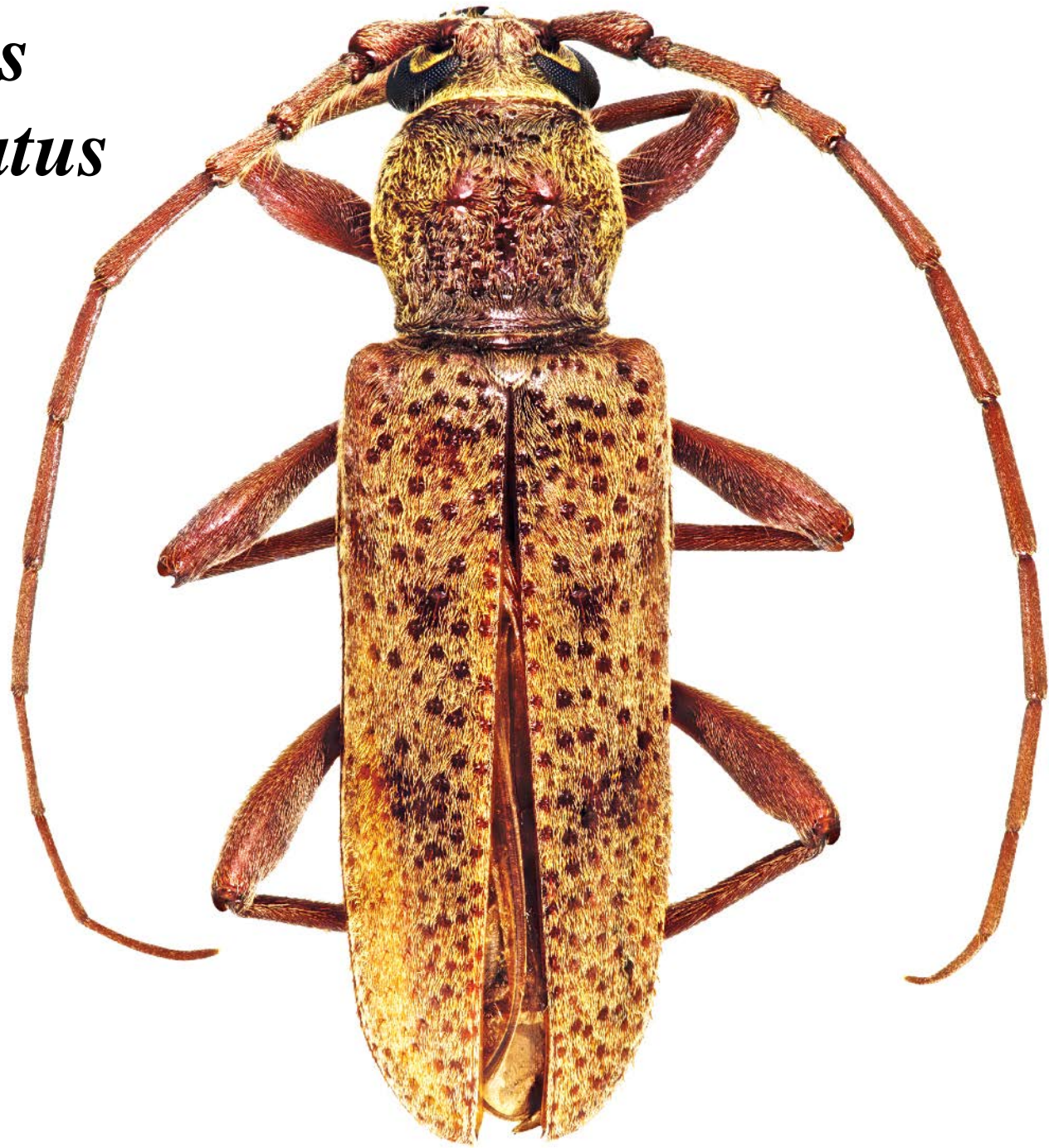
Pronotum (a) and elytra (e) with numerous denuded spots: This species (1 of 2 in NA) sometimes has tubercles on the pronotum...*Brothylus gemmulatus*

Pronotum (b-d) and elytra (f-g) without numerous denuded spots.....58 



Brothylus
gemmulatus
LeConte

This species
also keys to
Couplet 88



58 (57)

Elytra (**a**) with distinctive pattern of pale pubescence: 2 species in WNA & NA...*Hybodera*

If elytra pubescent, pubescence more evenly distributed (**b-e**).....**59**



Hybodera

Begin key

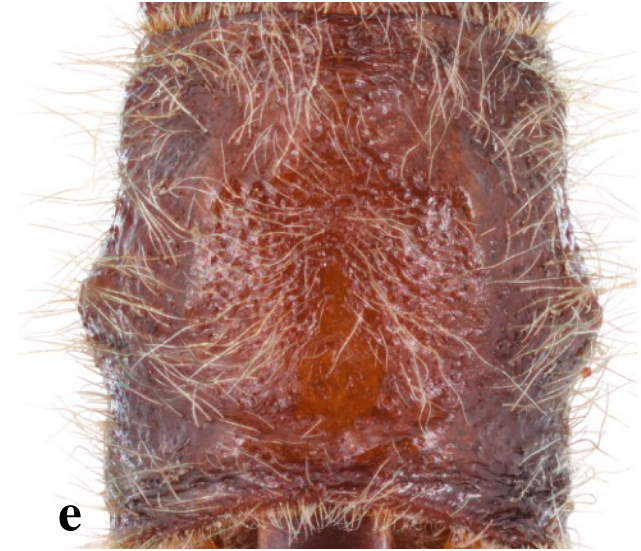
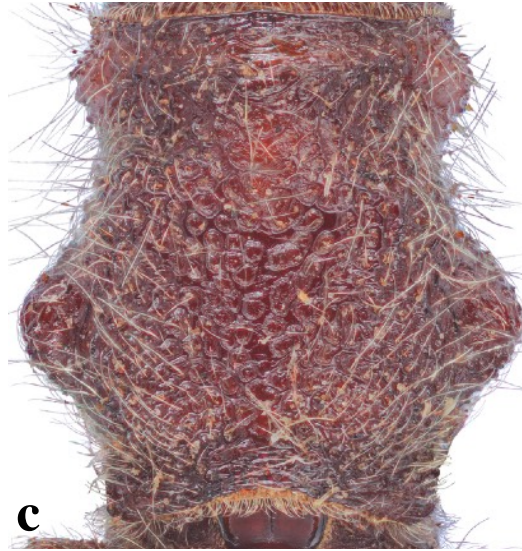


*Hybodera
tuberculata*
LeConte

59 (58)

Pronotum smooth, shining, with relatively few punctures (**a-b**).....60

At most, only a few small areas of the pronotum smooth & shining, most of the surface punctate (**c-f**).....62 



60 (59)

Femora gradually becoming broadest near middle (a).....*Pronocera collaris*

Femora very narrow in basal half and abruptly swollen in apical half (b).....61



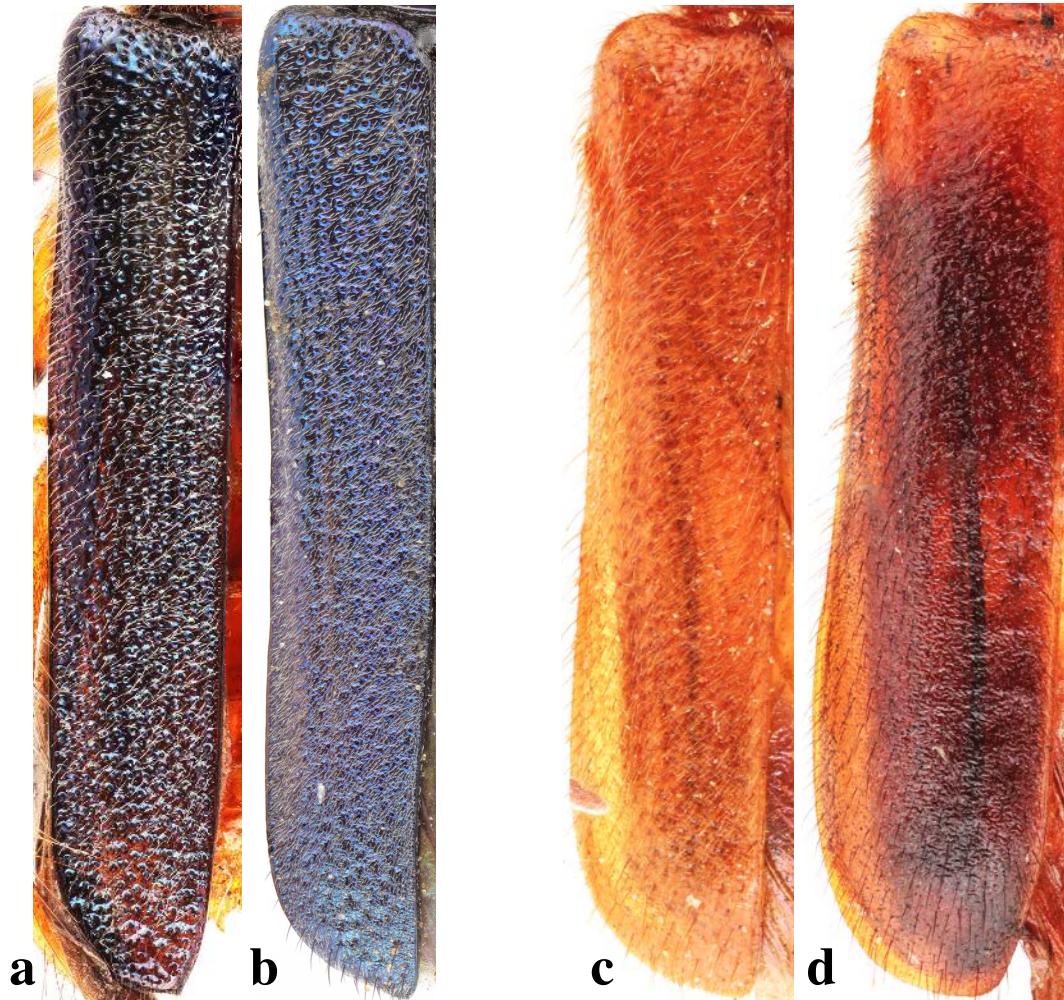
Pronocera
collaris
(Kirby)



61 (60)

Elytra are black, blue, or greenish and coarsely punctate (**a-b**): 2 species in WNA & NA (*The pronota are sexually dichromatic in *C. cyanipennis*, making the sexes look quite different.).....*Callimus*

Elytra at least partially pale brown and finely punctate (**c-d**): 1 species in NA (known only from California).....*Pseudopilema hoppingi*



Callimus



male
C. cyanipennis
pronotum

Female

Callimus
cyanipennis
(LeConte)



Callimus
ruficollis
(LeConte)

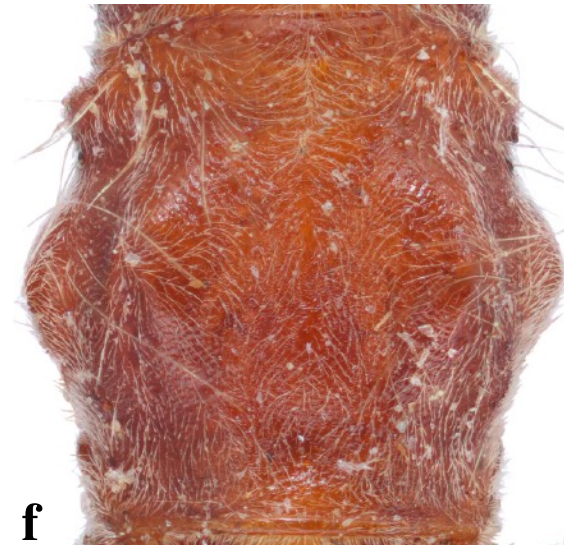
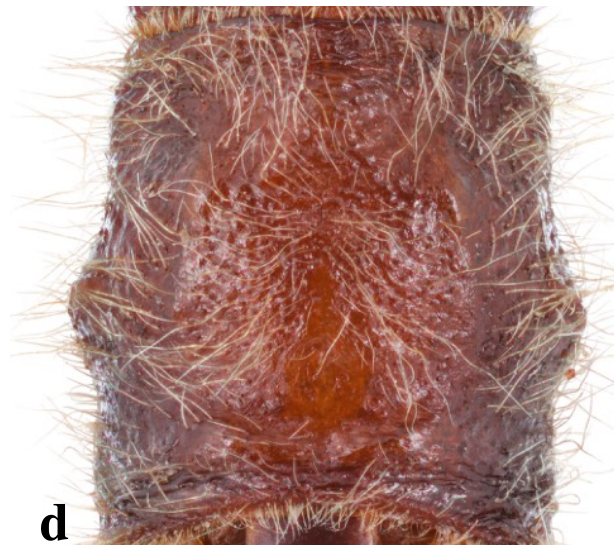
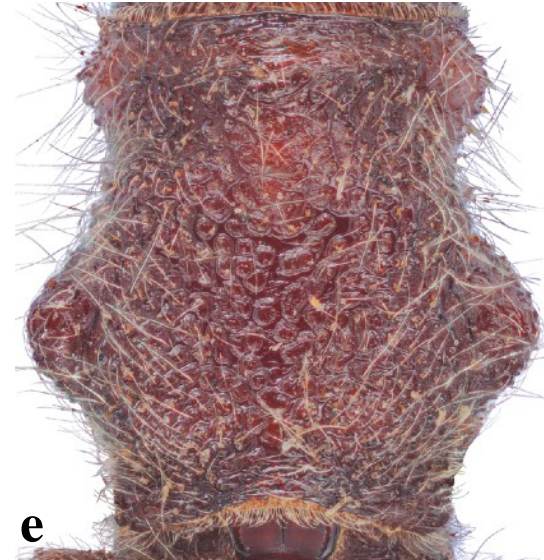
Pseudopilema hoppingi (Van Dyke)



62 (59) 

Pronotum rounded (**a-c**).....**63**

Pronotum elongate (**d-f**).....**64** 



63 (62) I

Mandibles truncate at apices (**a**); dorsum and venter often covered with long, erect pubescence (**c-d**) (not always - **e**); most antennal segments cylindrical (**i**) Pronotal tubercles often variable and hard to see in pubescent species – 15 species in NA, ~6 species in WNA..... *Crossidius*

Mandibles pointed at apices (**b**); dorsum and venter never with long, erect pubescence (**f-h**); most antennal segments broader at apices than at bases (**j-k**) 5 species in NA, 1 species in WNA, 1 exotic target species..... *Purpuricen*



63 (62) II

Begin key

Crossidius species



c



d



e

Purpuricenus
species



f



g



h

63 (62) III

Begin key



Crossidius

Crossidius also key to
Couplets 46 & 75

Crossidius coralinus (LeConte)



Crossidius hirtipes
LeConte



Purpuricen (63)

Begin key

Elytra either all black (a) or black and red (b), elytral costae at most indistinct (b)..... *Purpuricen dimidiatus*

Elytra all red and elytral costae distinct (c)... *Purpuricen temminckii* ^{ET}



Purpuricenus dimidiatus LeConte

Female



Male



Purpuricenus
temminickii Guerin-
Meneville ET



Each elytron with a median oblique or transverse pale marking, elytra markedly broadened toward apex (**a**): 1 species in NA (only known from California).....*Megobrium edwardsii*

Each elytron solid brown, elytral lateral margins essentially parallel (**b-c**)...65 

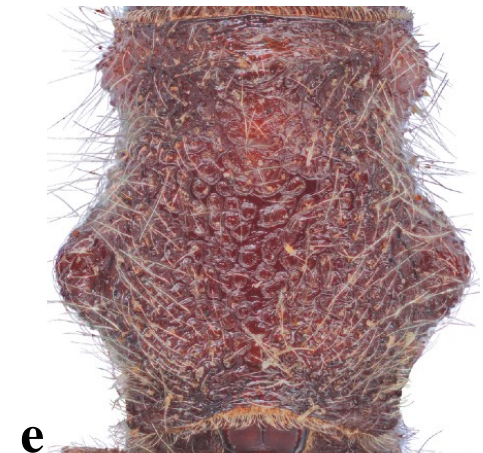
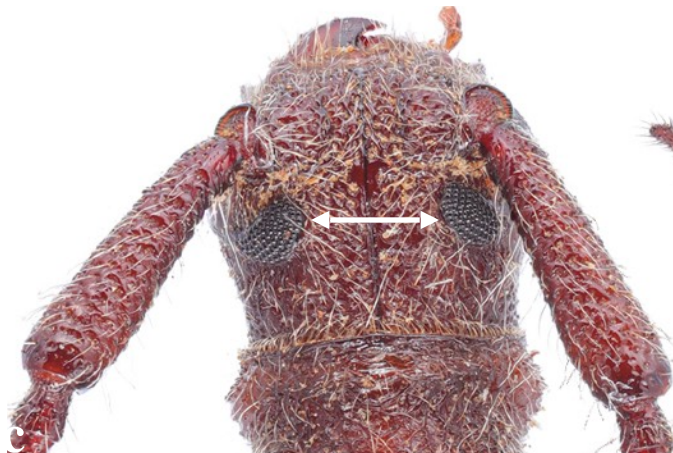
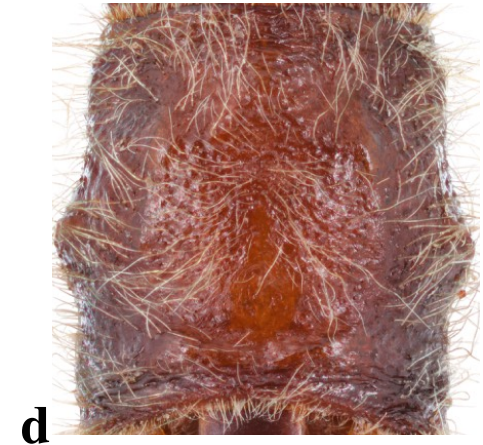
**a****b****c**

Megobrium
edwardsii
LeConte



Eyes almost touching dorsally (**a**); scape with apical tooth (**a-b**); dorsum finely punctate, especially pronotum (**d**): 2 species in WNA & NA.....*Styloxus*

Eyes far apart dorsally; scape without apical tooth (**c**); dorsum coarsely punctate, especially pronotum (**e**): 1 species in NA (only known from California).....*Vandykea tuberculata*



Styloxus

Begin key



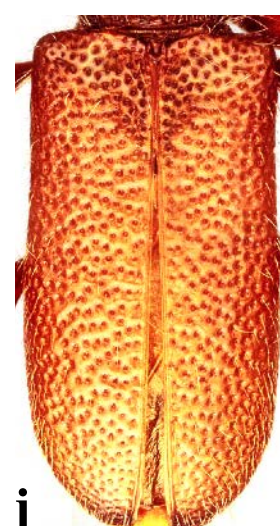
*Styloxus
fulleri*
(Horn)

Vandykea
tuberculata
Linsley

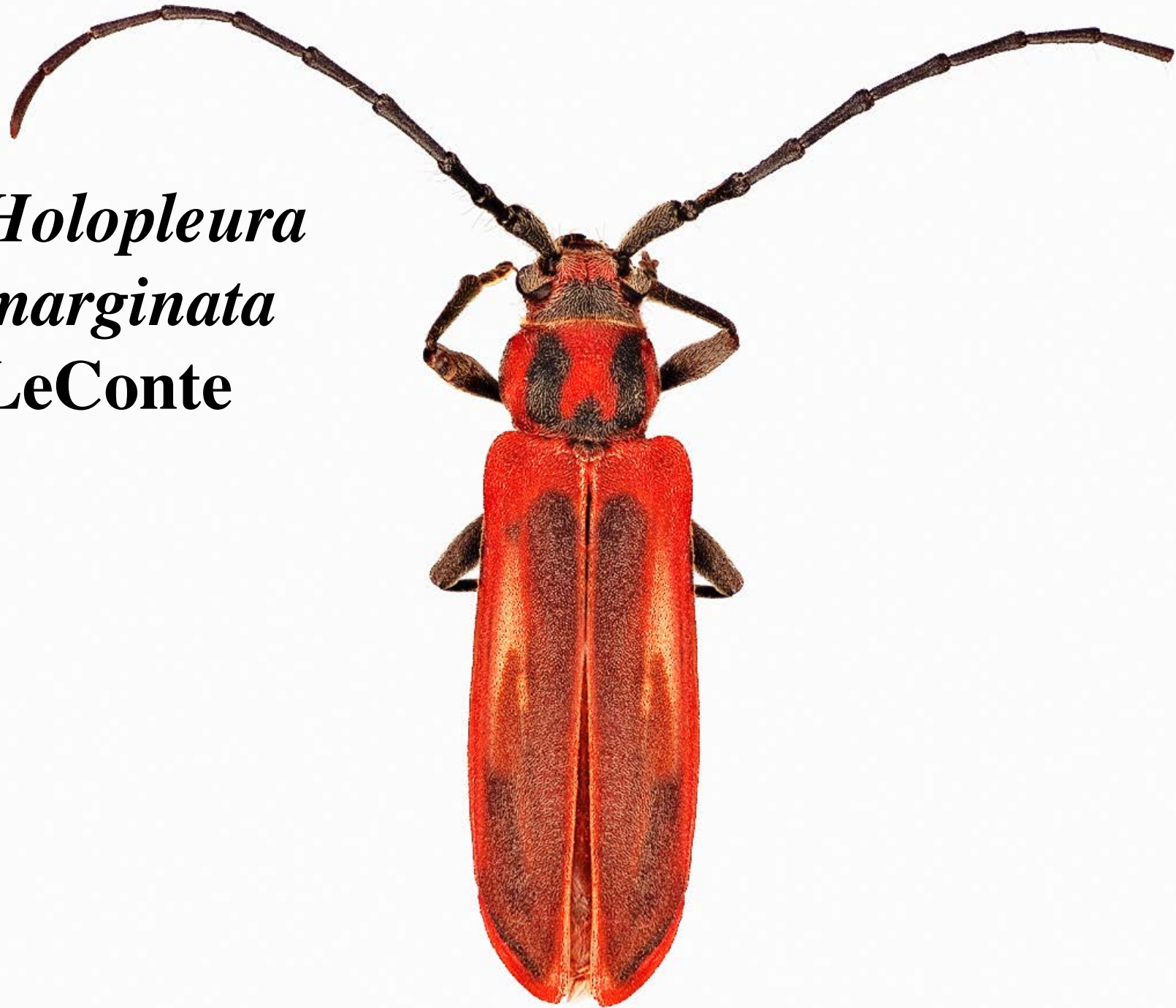


Elytra black with reddish-orange margins (a).....*Holopleura marginata*

Elytral color otherwise (b-j).....67 



Holopleura
marginata
LeConte



At least antennal segments 3-6 with an apical, internal spine (a-b).....68

One species of *Anelaphus* found in WNA may only have an inconspicuous spine on segment 3.

Antennal segments without apical, internal spines (c).....71 



68 (67)

Elytra with dark and pale bands, antennae short (a)...*Megacheuma brevipennis*

Elytra unbanded, antennae long (b-e).....68a



Images b-e are not to scale vs image a



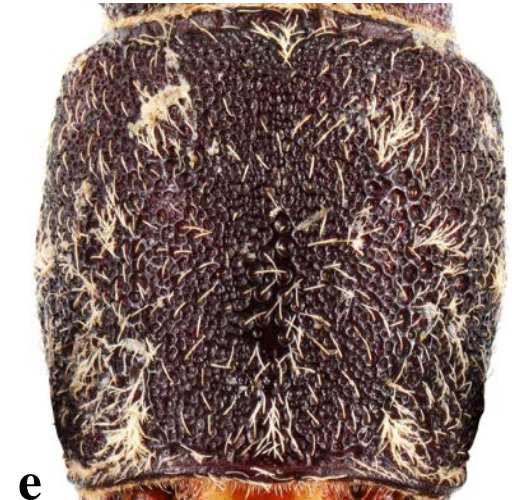
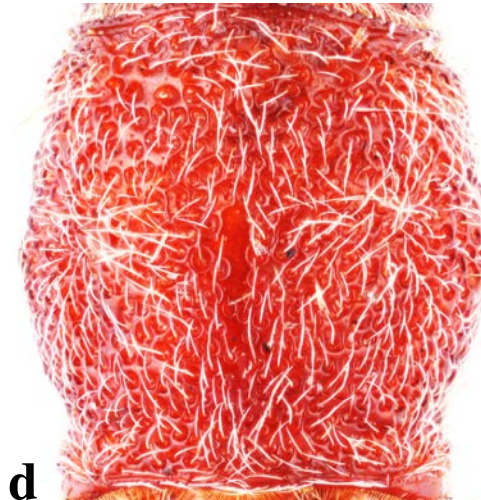
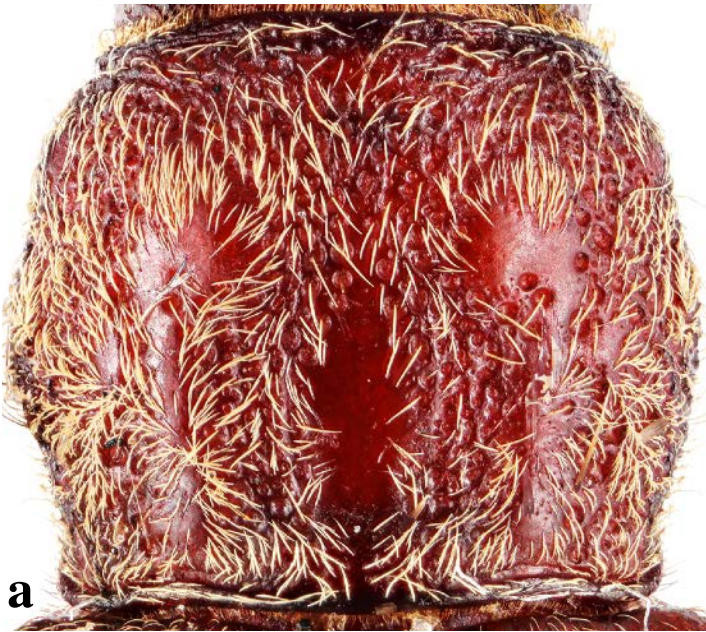
*Megacheuma
brevipennis*
(LeConte)



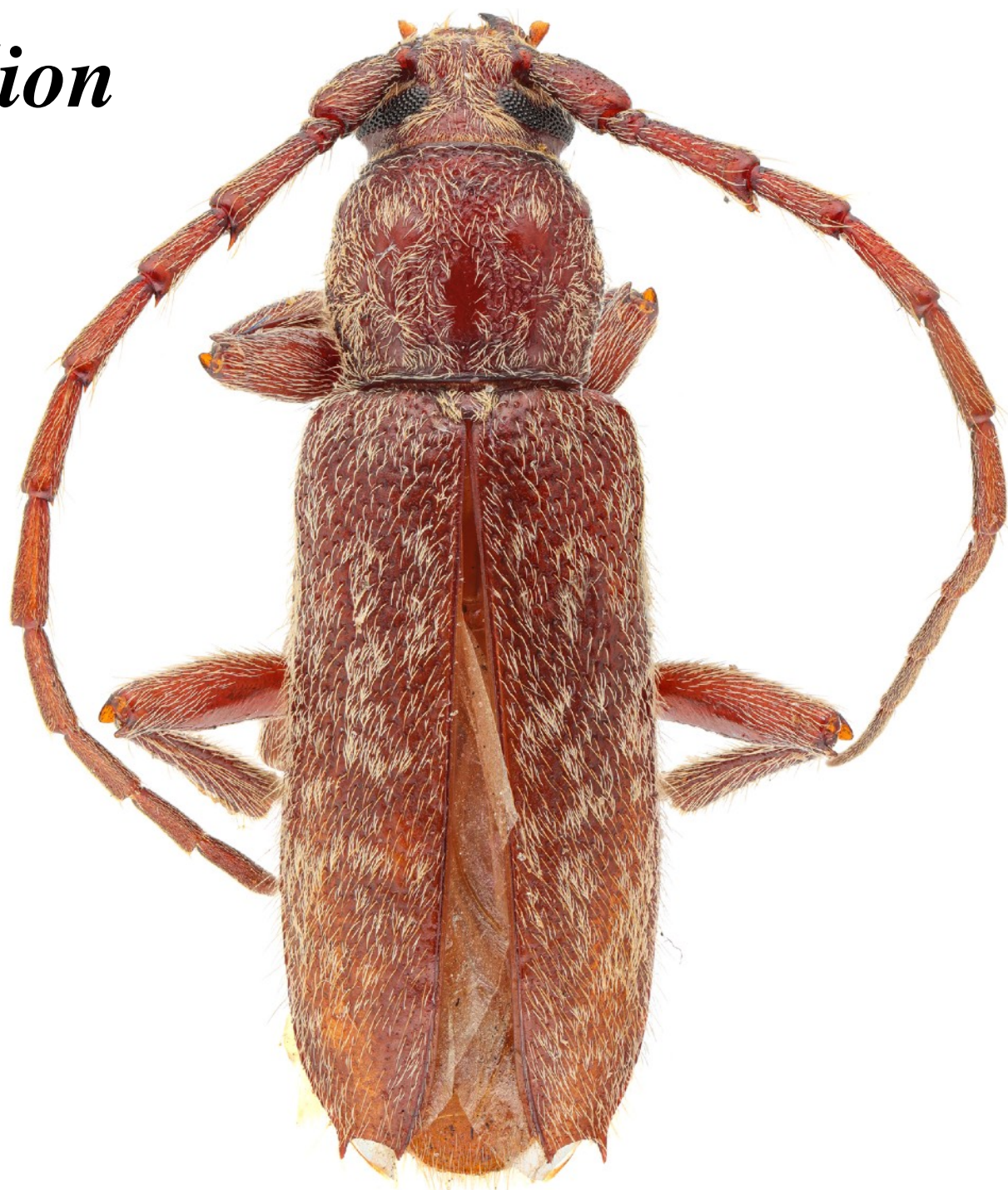
68a (68)

Median and lateral raised impunctate areas on pronotum (a)...*Parelaphidion incertum*

Pronotum without raised impunctate areas (there may be a small median impunctate area, but it is much smaller than in *Parelaphidion*) (b-e).....69 



Parelaphidion
incertum
(Newman)



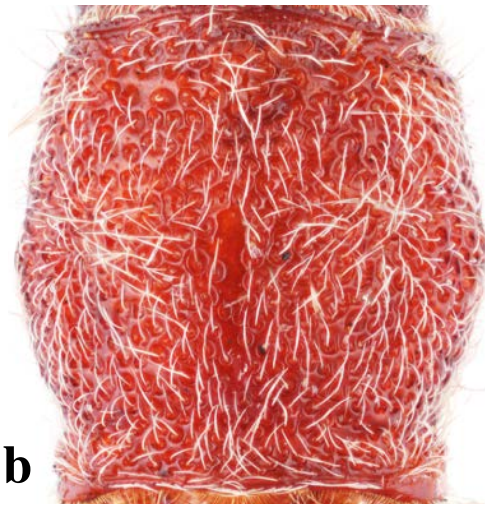
69 (68a)

Pronotum finely, sparsely punctate (a): 2 or 3 species in WNA....*Stenosphenus*

Pronotum coarsely, densely punctate (b-d).....70



a



b



c



d

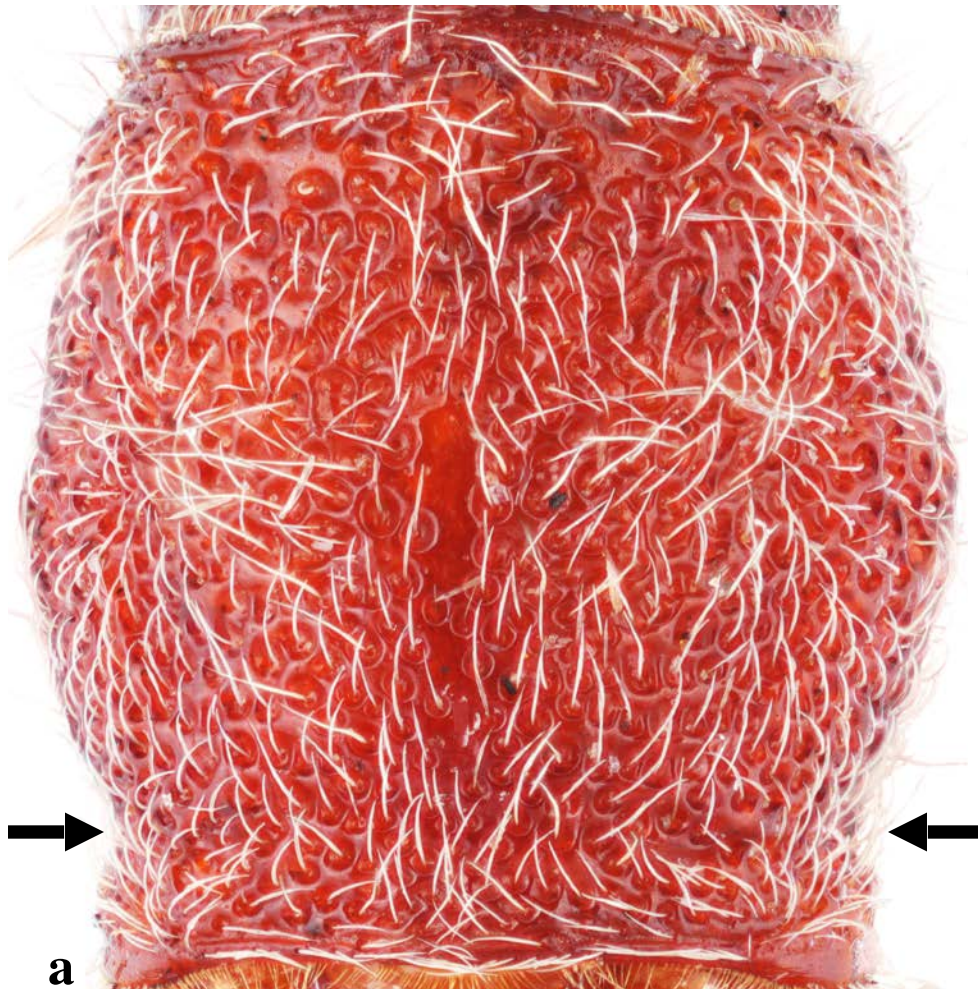
Stenosphenus



*Stenosphenus
debilis*
Horn

70 (69)

Pronotum constricted before posterior margin (**a**): 2 species in WNA..*Aneflomorpha*
Pronotum not constricted before posterior margin (**b-c**): 22 species NA, at least 3 spp.
in WNA.....*Anelaphus*



Aneflomorpha



Aneflomorpha
lineare
(LeConte)

Anelaphus



Anelaphus
moestus
(LeConte)

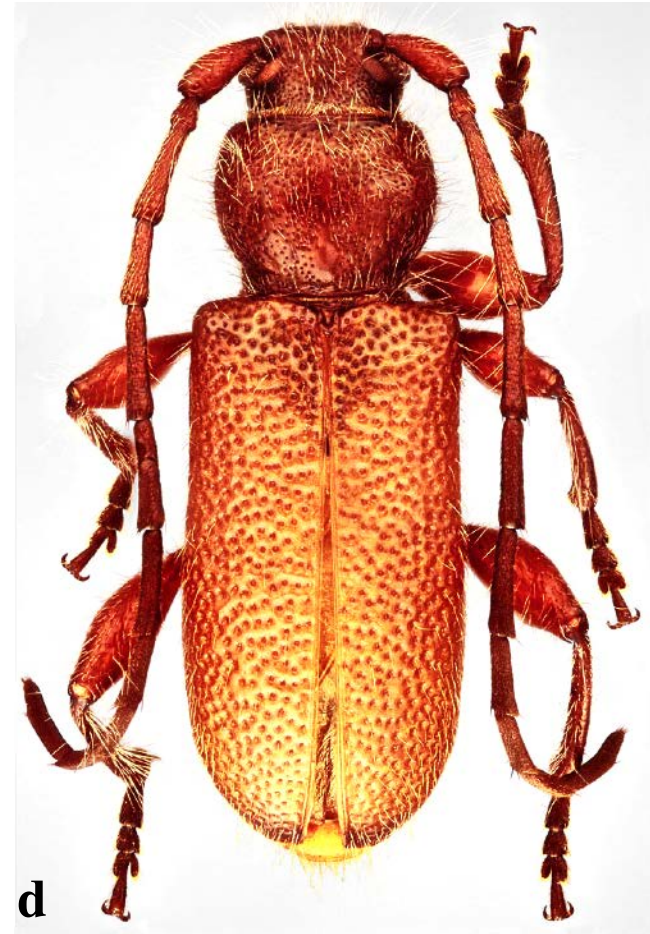
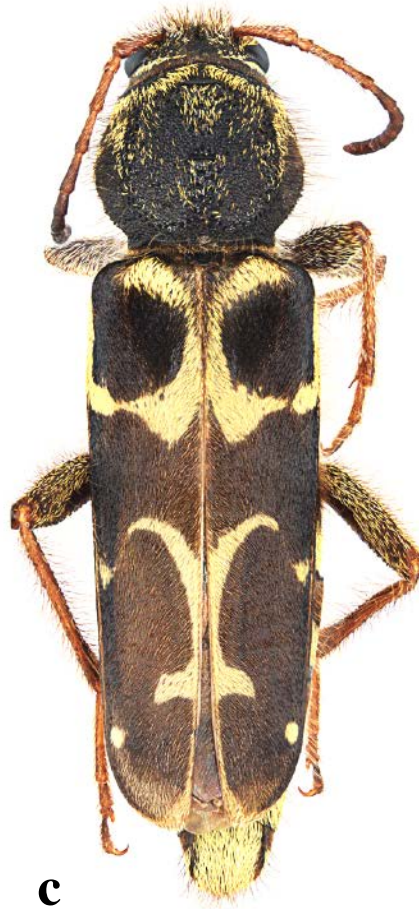
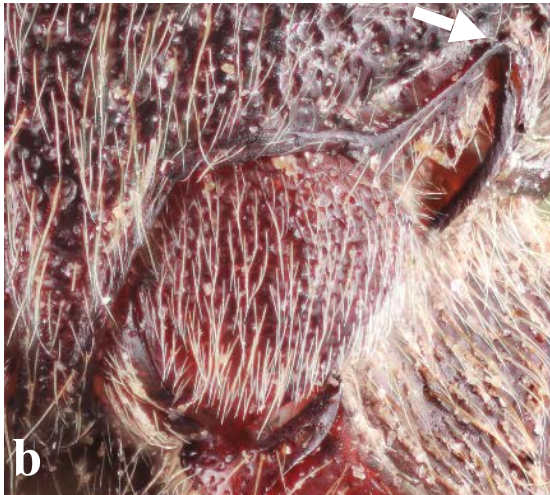


Anelaphus
villosus
(Fabricius)

71 (67)

Lateral procoxal cavities rounded (**a**); antennae often, but not always, short, barely reaching elytral humeri (**c**).....72

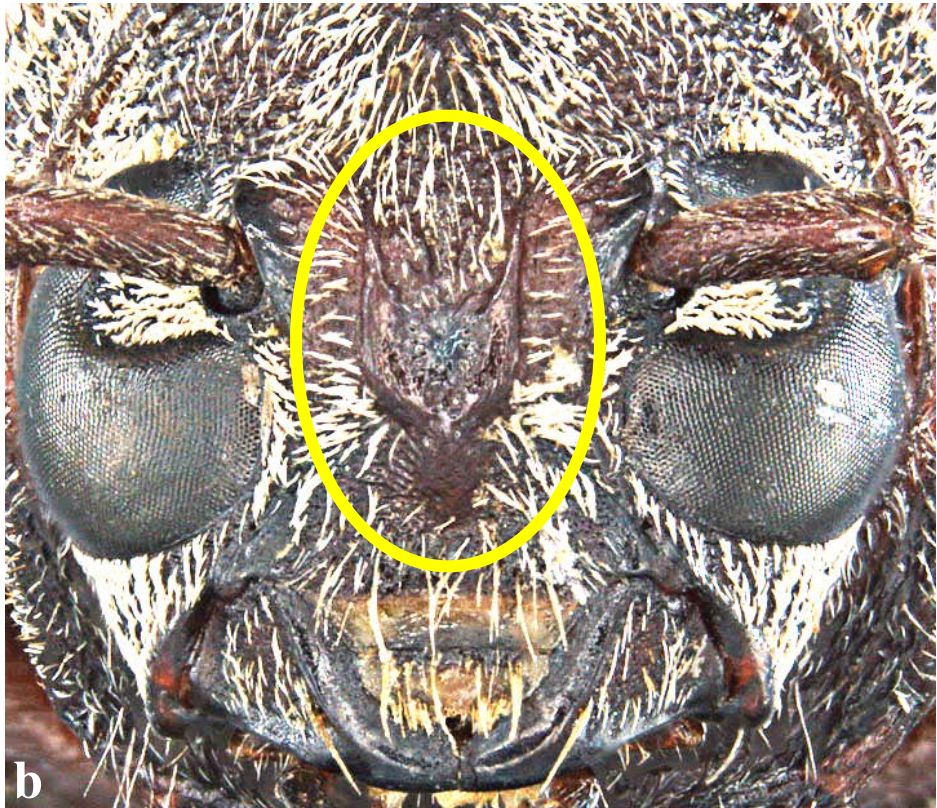
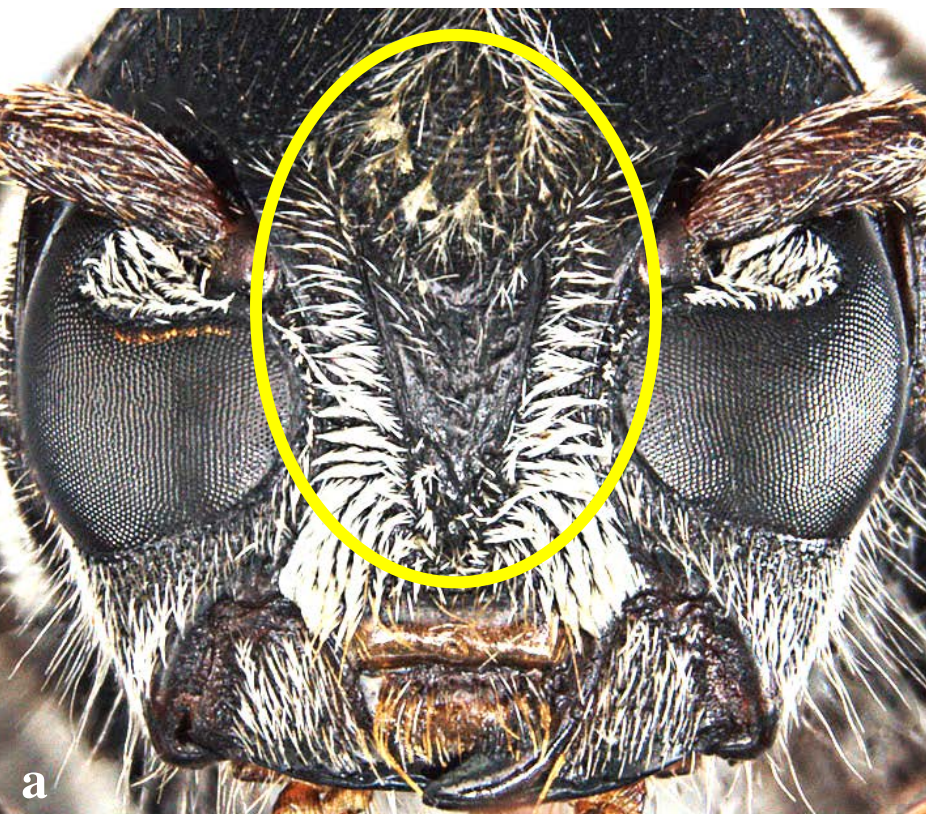
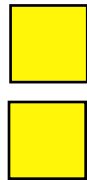
Lateral procoxal cavities angulate (**b**); antennae always long, extending well past elytral humeri (**d**)79



72 (71) I

Frons with a “V”- (b) or “Y”-shaped (c) median carina: ~ 10 species in WNA.....*Xylotrechus* I

Frons without a median carina (c-g).....73



72 (71) II



Frons without a "V" or "Y" shaped carina



Xylotrechus I (72)

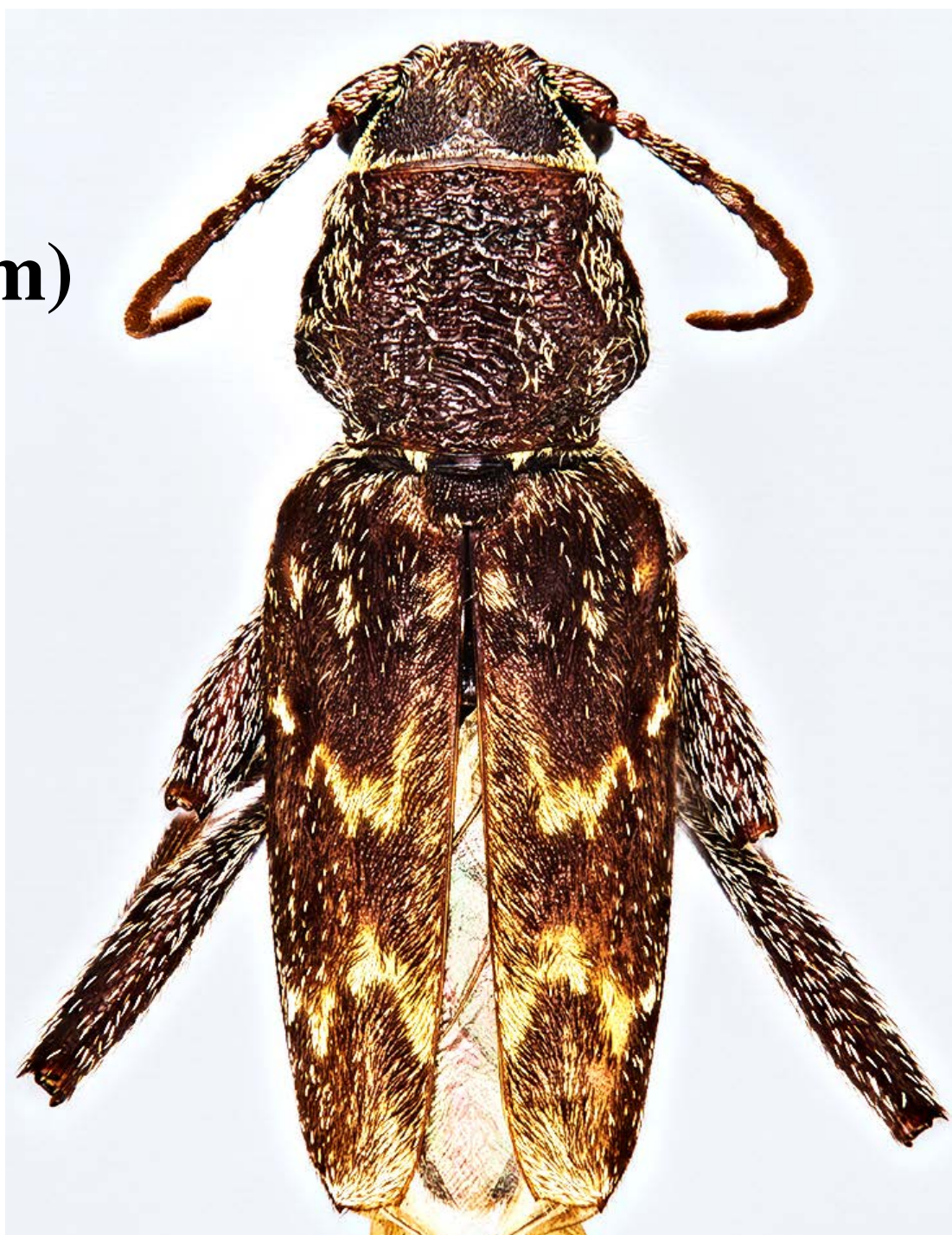
Elytral apex with a distinct, sharp, spine at either angle (**a**)...*Xylotrechus nauticus*
Sometimes placed in the genus *Rusticoclytus* but in the two most recent NA cerambycid treatments, it is within *Xylotrechus*.

Elytral apex obliquely truncate (**b**) or rounded (**c**), without spines at angles (although there may be a blunt denticle at the outer angle (**c**)).....*Xylotrechus* II 



Xylotrechus
nauticus
(Mannerheim)

Also keys to
Couplet 48



Xylotrechus II

Elytral apices rounded (a).....*Xylotrechus* III

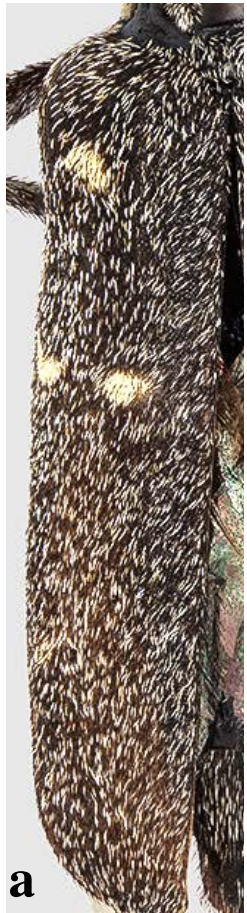
Elytral apices obliquely truncate (b-c).....*Xylotrechus* IV 



Xylotrechus III

All the pale markings on elytra are in the form of dots, not bands (**a-b**); pronotum never with pale anterior and posterior marginal markings (**f**).. *Xylotrechus mormonus*

At least some of the pale elytral markings are in the form of bands (**c-e**) – sometimes these are very faint (**e**); pronotum sometimes with pale markings (**g**).....other WNA *Xylotrechus* species with rounded elytral apices (*X. annosus*, *insignis*, *nunemacheri*)



Xylotrechus mormonus (LeConte)



Female



Male

Xylotrechus IVa

Pronotum with distinct, sharply defined, pale pubescent markings at both anterior and posterior margins and without abundant pale pubescence scattered through dark medial area (a); dark areas on elytra without abundant scattered pale pubescence (c)

.....*Xylotrechus undulatus* (Say)

Formerly, specimens from west of the Rocky Mountains were normally assigned to *X. longitarsis* Casey and specimens from Alaska and east of the Rockies are normally assigned to *X. undulatus* (Say). Bousquet et al. 2017 synonymized *X. longitarsis* with *X. undulatus*.

Pronotum without distinct, sharply defined, pale lateral pubescent markings at both anterior and posterior margins and with abundant pale pubescence scattered throughout the dark medial area (b); dark areas on elytra with abundant scattered pale pubescence (d).....other WNA *Xylotrechus* with truncate elytral apices (*X. albonotatus*, *bowditchi*, and *lengi*).



Xylotrechus IVb



dark areas on elytra without abundant scattered pale pubescence



dark areas on elytra with abundant scattered pale pubescence

Xylotrechus undulatus (Say)

form with both yellow pubescence and normal elytral markings



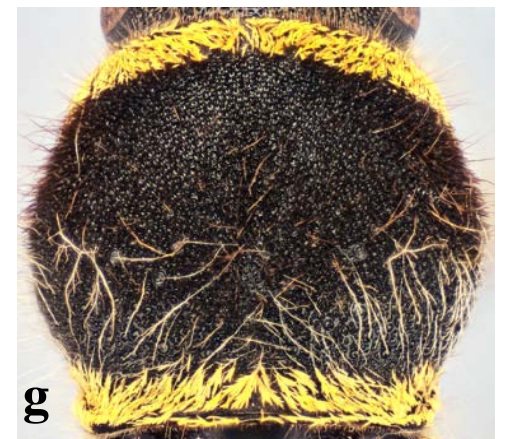
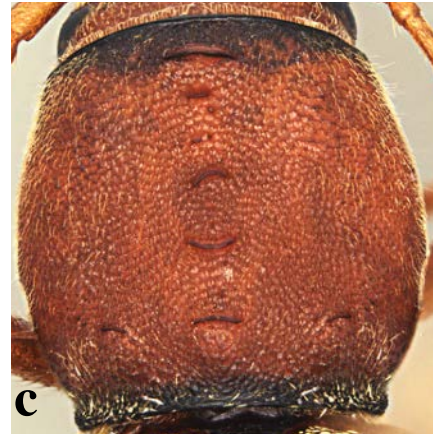
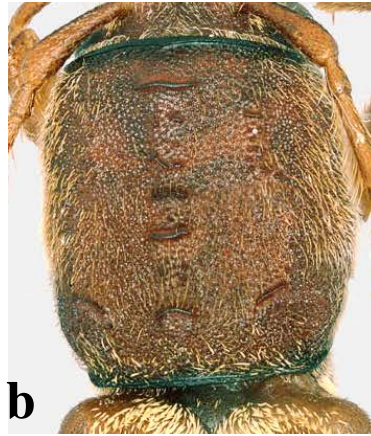
Begin key

elytron of form with both white pubescence and reduced markings

73 (72)

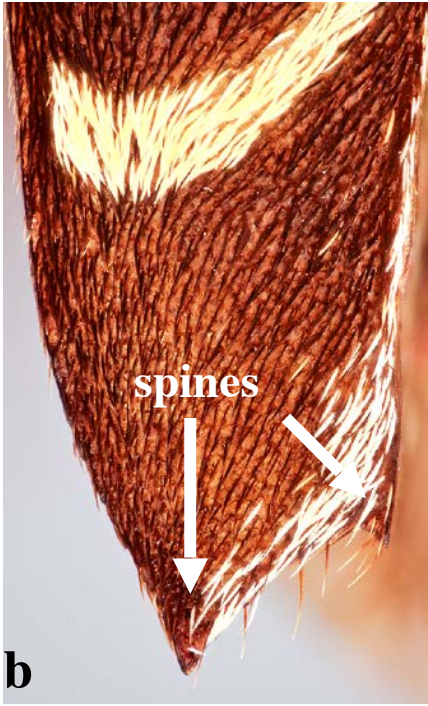
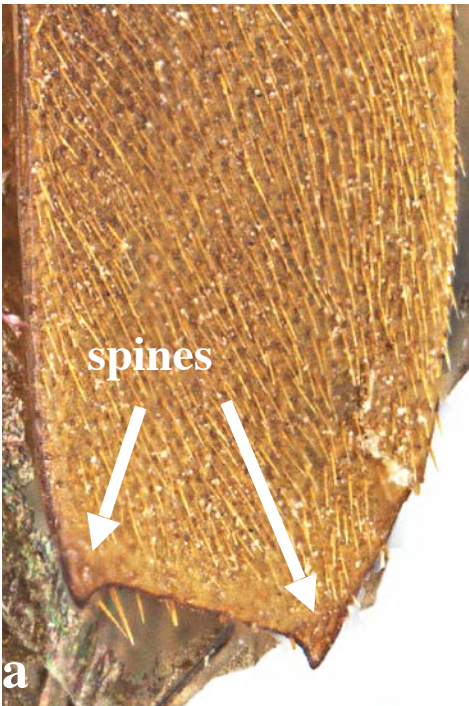
Pronotum with median row of transverse carinae (a-d) 9 spp. in WNA...*Neoclytus*

Pronotum without median row of transverse carinae (e-g).....74



Neoclytus I (73)

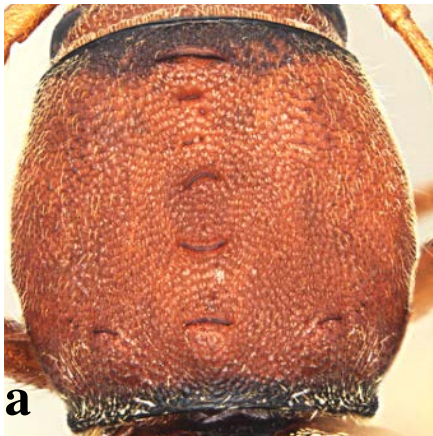
Sharp spines on at least outer angle of elytral apices (a-b)...*Neoclytus* II
Outer angle of elytral apices without sharp spine, obliquely truncate (c)
or rounded (d).....*Neoclytus* III



Neoclytus II

Pronotum without pale, pubescent patches (**a**); scutellum at most with thin pubescence (**e**); overall body color reddish brown, median and posterior elytral bands straight (**portrait**) Native to ENA, exotic to WNA...*Neoclytus acuminatus* ^{EE}

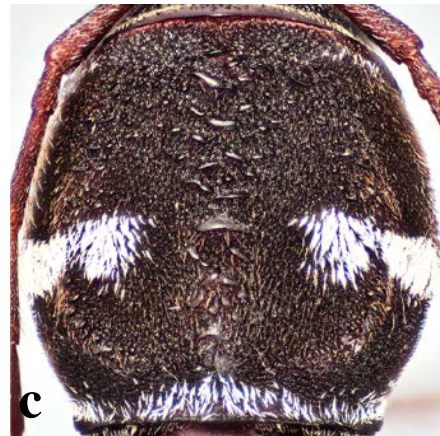
Pronotum with pale, pubescent patches (**b-c**) - these may be small (**d**); scutellum covered with dense, white pubescence (**f**); overall body color dark brown, all elytral bands arcuate (**portraits**).....*Neoclytus modestus zebratus*



a



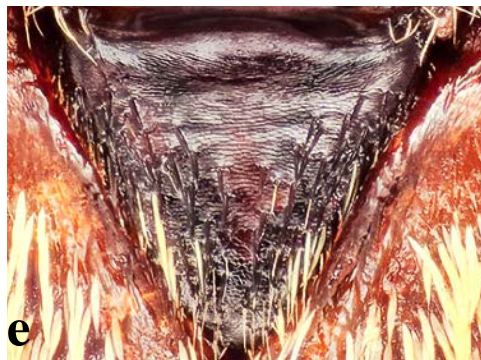
b



c



d



e



f

Neoclytus
acuminatus
(Fabricius) EE

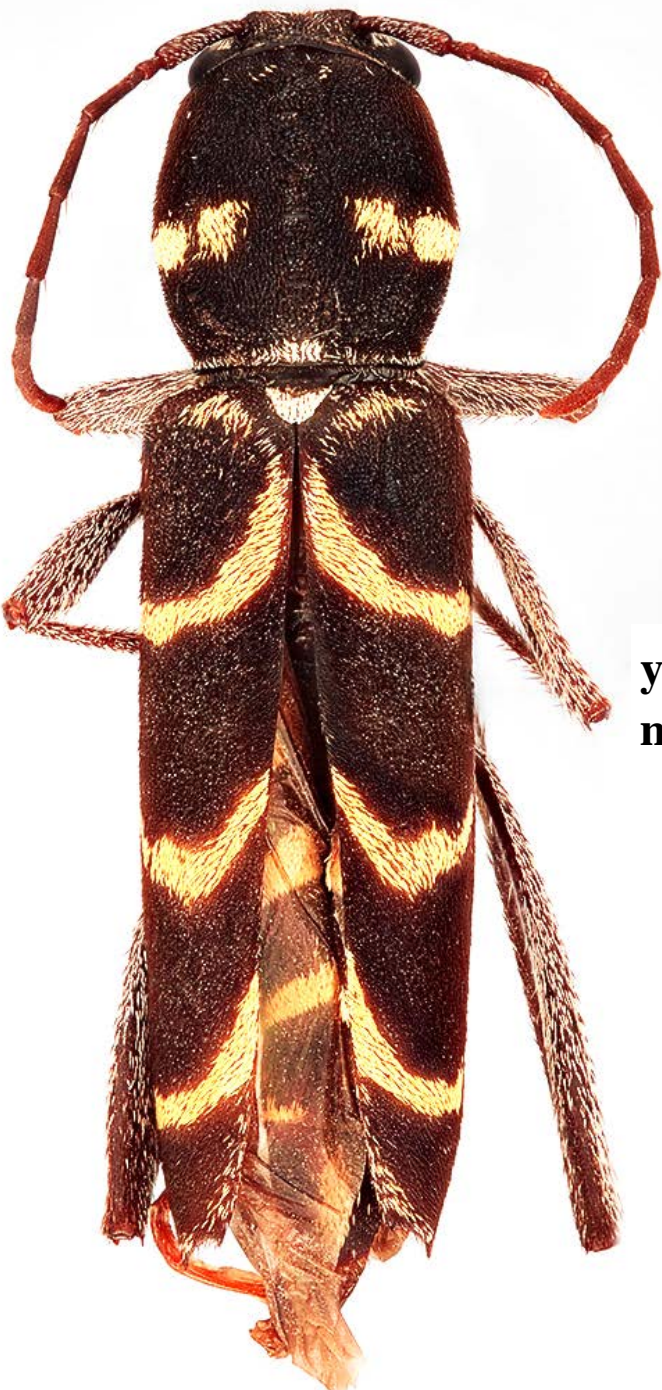


Neoclytus
modestus
zebratus
Van Dyke

white
morph



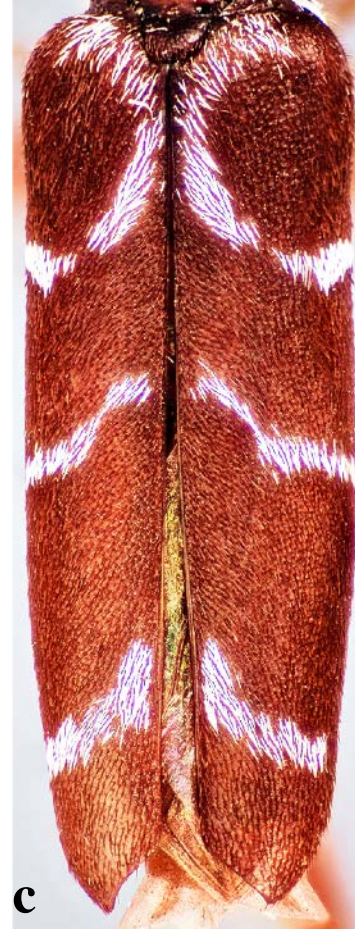
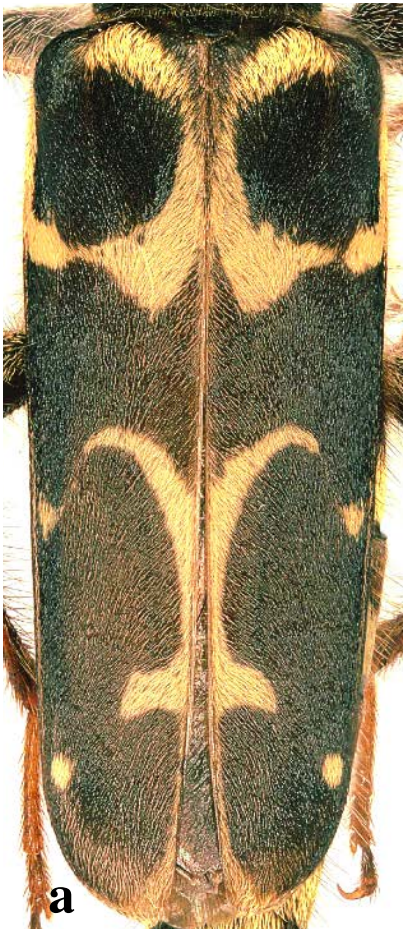
yellow
morph



Neoclytus III

Elytra with at least anterior pair of pale bands connected along the suture (**a-c**).....*Neoclytus* IV

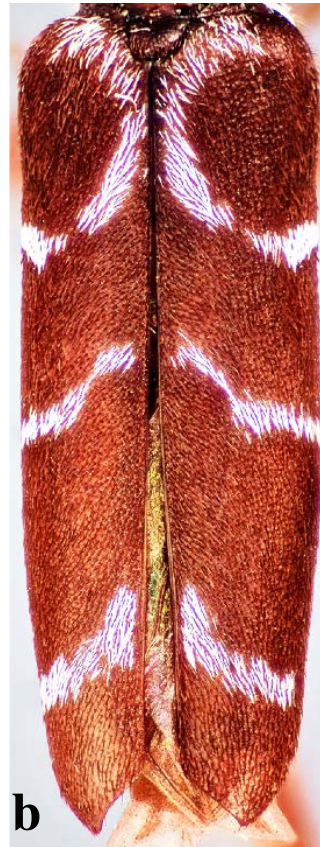
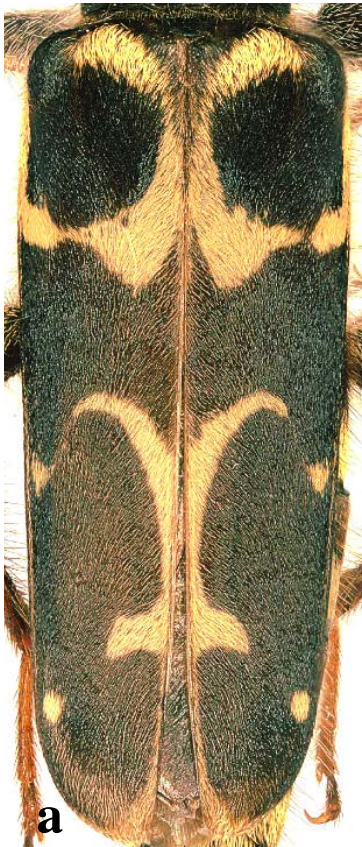
Elytra with none of the pale bands connected along the suture (**d**)...
...other WNA *Neoclytus* (e.g., *N. balteatus*, *provoanus*, *resplendens*)



Neoclytus IVa

Normally both the anterior and posterior pairs of pale elytral bands connected along the suture (**a**); pronotum with distinct pale markings and abundant long setae (**d**); elytral apices rounded (**f**).....*Neoclytus conjunctus*

Only anterior pair of pale elytral bands connected along the suture (**b-c**); pronotum without distinct pale markings and without long setae (**e**) elytral apices obliquely truncate or broadly pointed (**e**).....*Neoclytus muricatus*



Neoclytus IVb

pronotum with
pale markings
& many long
setae



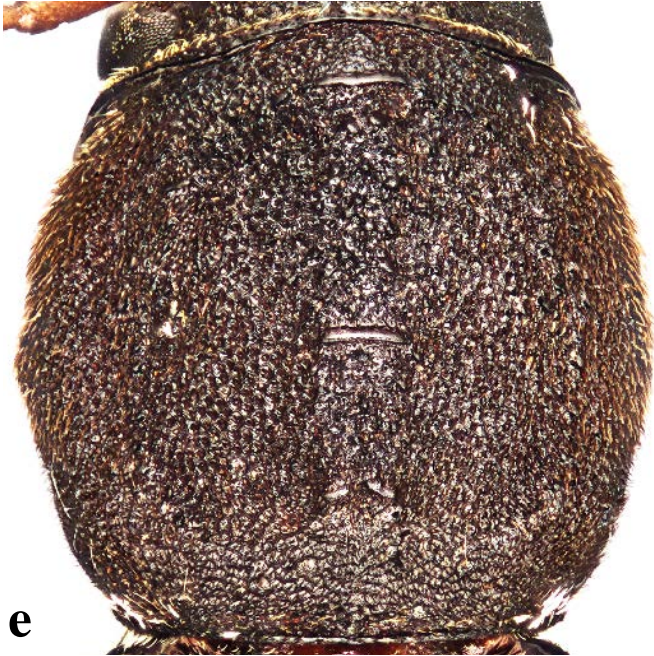
d

elytral apices rounded



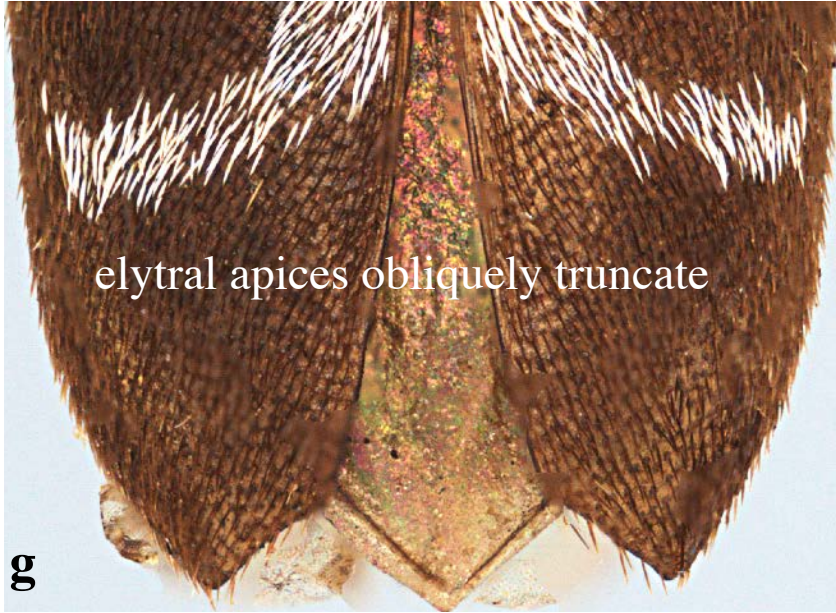
f

pronotum
without pale
markings &
without
many long
setae



e

elytral apices obliquely truncate



g

Neoclytus
conjunctus
(LeConte)

white
morph

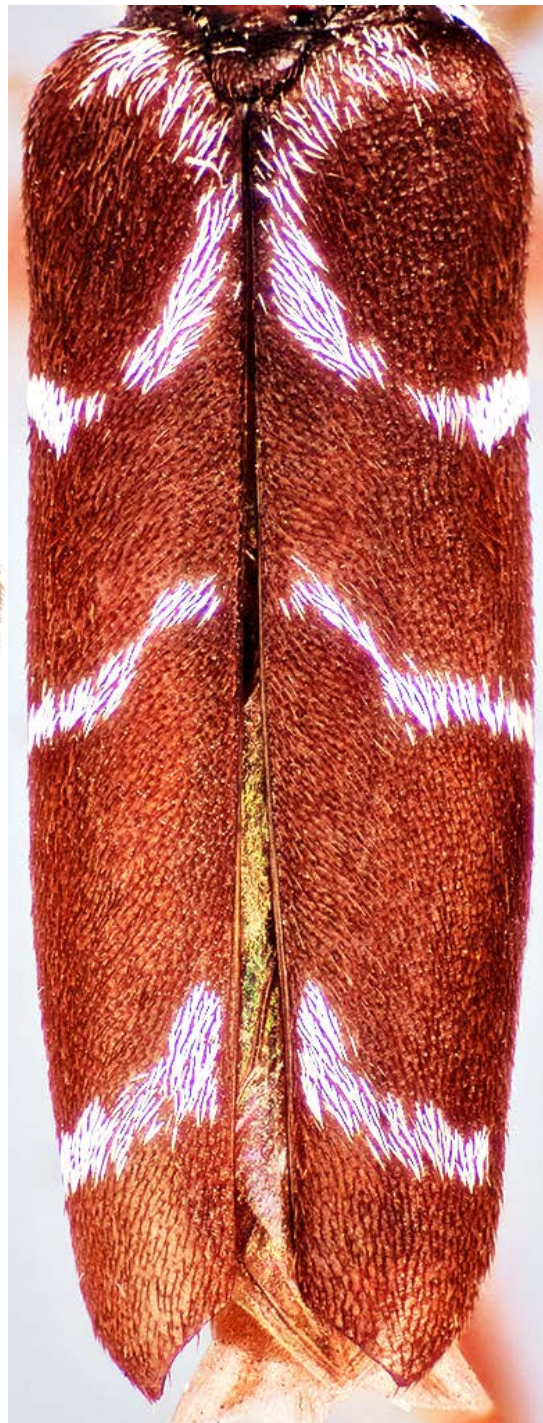


yellow
morph



Neoclytus
muricatus
Kirby

reduced pale
elytral markings

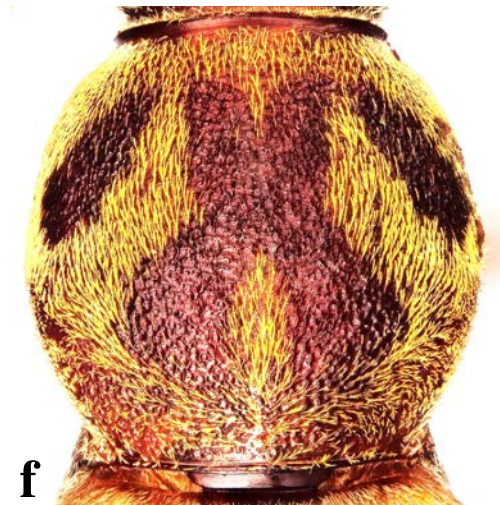
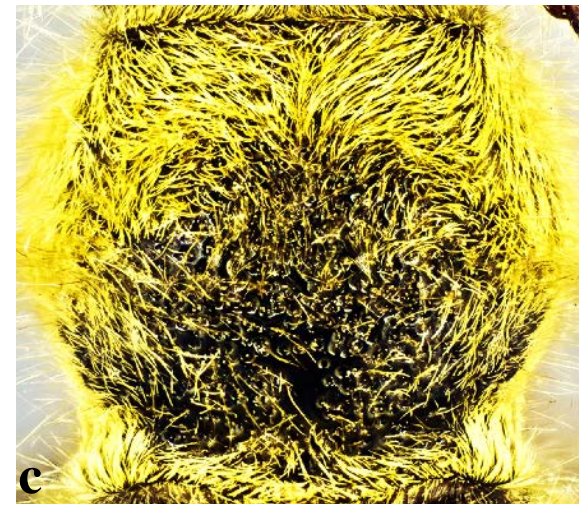


well-
developed
pale
elytral
markings

74 (73)

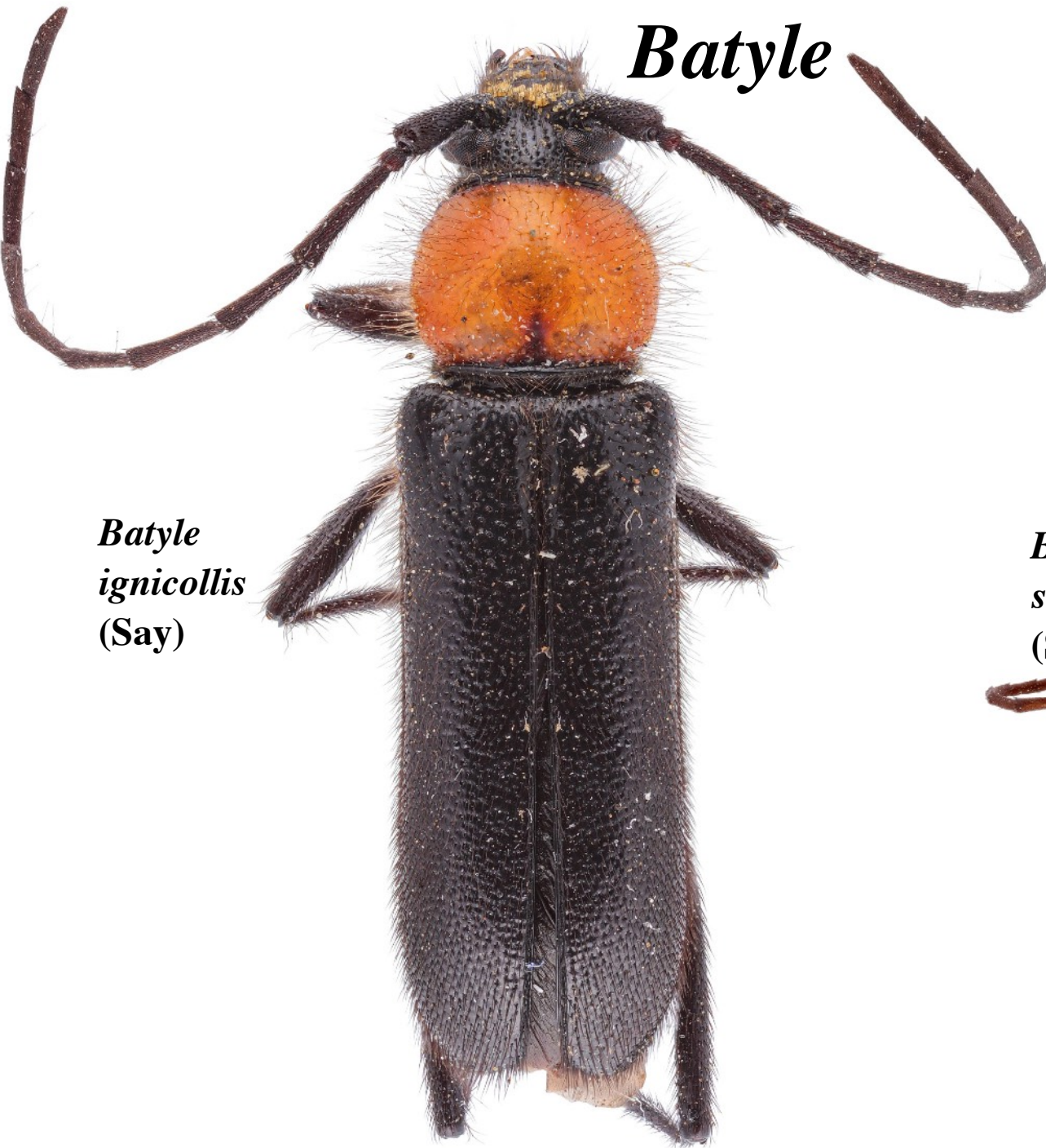
Pronotum smooth, sparsely punctate & pubescent (a): 2 species in WNA.....*Batyle*

Pronotum densely punctate, often densely pubescent (b-f).....75 



Batyle

*Batyle
ignicollis*
(Say)

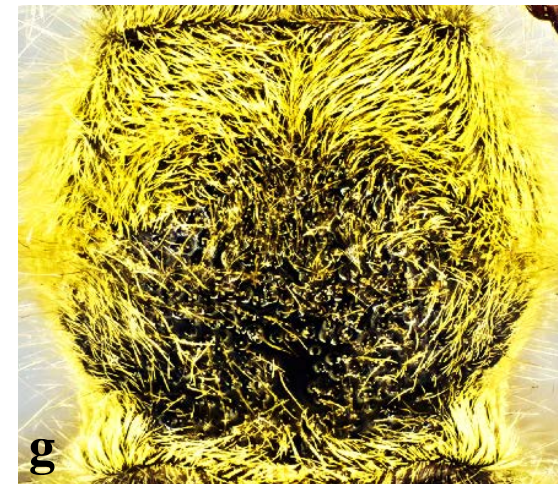


*Batyle
suturalis*
(Say)



Pronotum without pale pubescence (**a**), although sometimes a pale band is along the posterior margin of the head (**b**): 2 species in NA...*Calloides*

Pronotum either with pale bands of pubescence (**c-e**) or with pale pubescence scattered more widely over the dorsum (**f-g**).....76



Calloides



*Calloides
lorquini*
(Buquet)



*Calloides
nobilis*
Harris

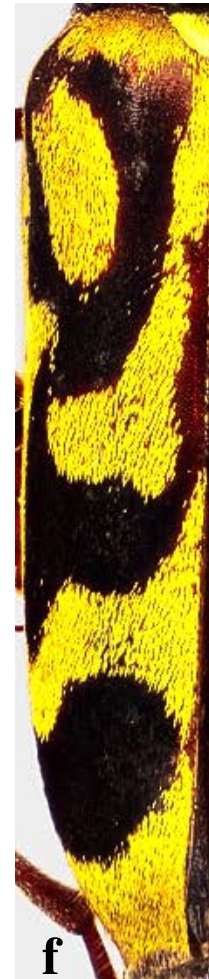
76 (75)

Begin key

Elytra without pale bands (**a-b**), although these may have variable pale areas (**c**): 15 species in NA, ~6 species in WNA.....*Crossidius*

*Many species are variable with regard to pronotal tubercles and may also key to Couplet 49.

Elytra with pale bands (**d-g**).....77 



Crossidius

Crossidius also key to
Couplets 46 & 63

Begin key



Crossidius
ater LeConte



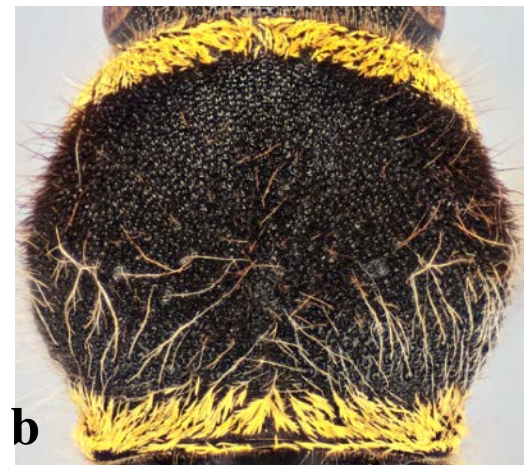
Crossidius
hirtipes LeConte



77 (76)

Pale pubescence on pronotum not sharply defined but more generally distributed (a); median pale band on each elytron horizontal (e) 1 species in NA.....*Triodoclytus lanifer*

Pronotum with sharp, well-defined pale markings (b-d); at least median pale band on each elytron bending toward anterior (f-g).....78



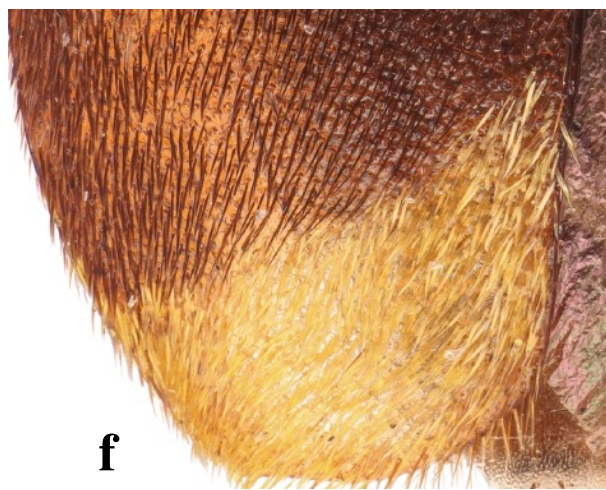
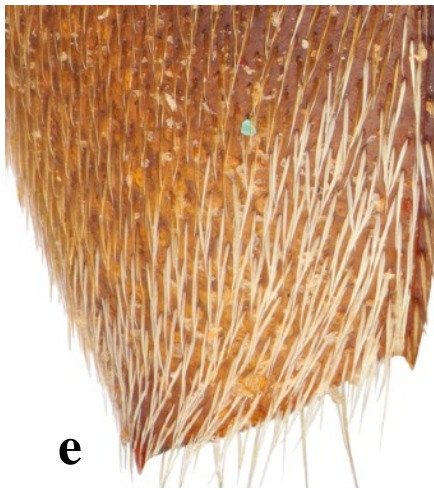
Triodoclytus
lanifer
(LeConte)



78 (77)

Pronotum with dark median area surrounded by paler, arcuate bands (a-b); elytral apices each with two spines (d-e): 2 exotic target species.....*Chlorophorus* ET

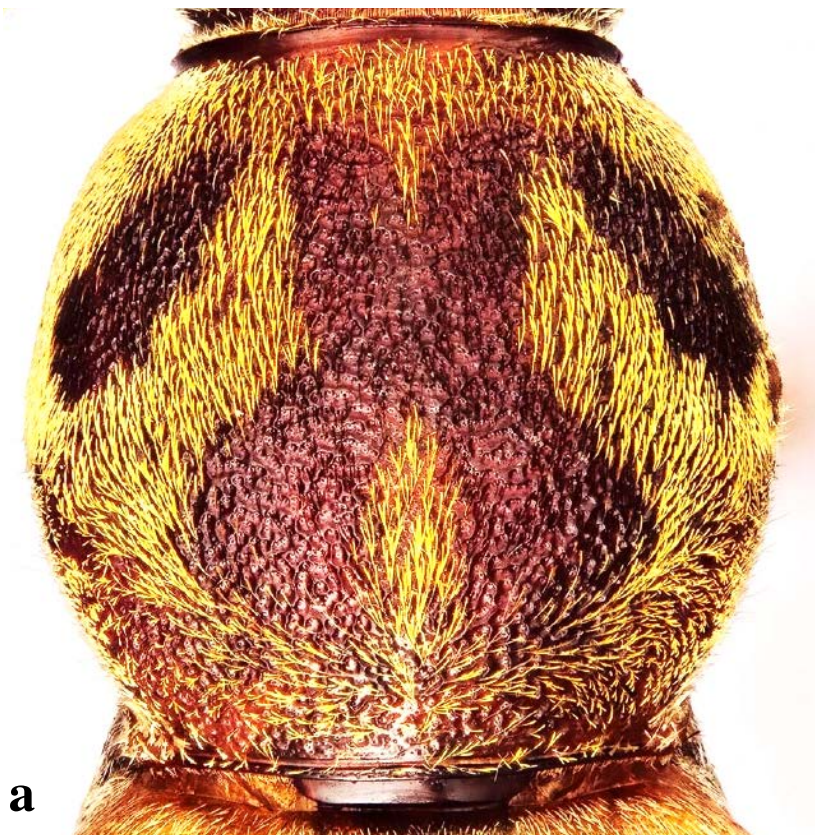
Pale pubescence on pronotum mostly in form of bands at anterior and posterior margins (c); elytral apices rounded (f): 5 species in WNA.....*Clytus*



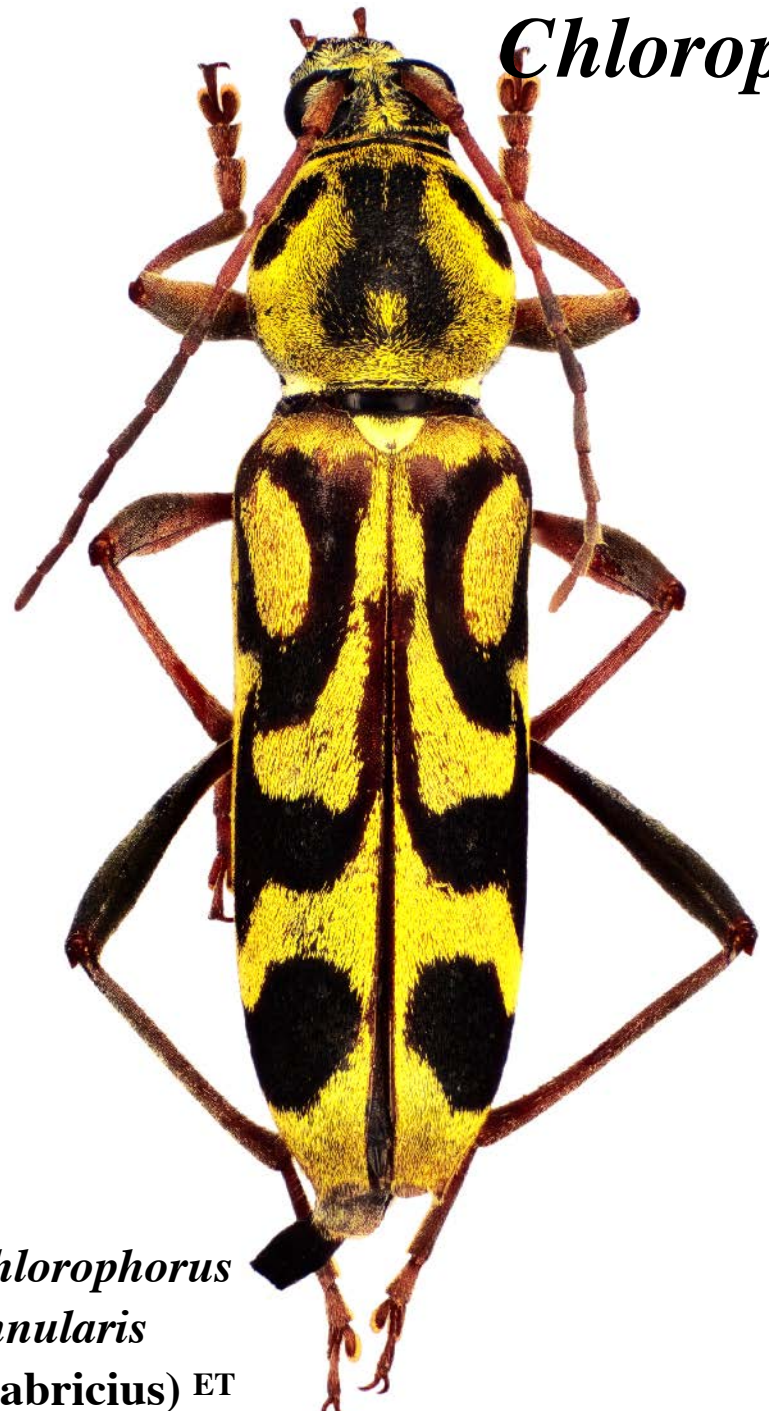
Chlorophorus (78)

Pronotum with an interrupted median pale pubescent stripe and an arcuate lateral pale pubescent stripe on either side(a); pale pubescence golden (portrait)*Chlorophorus annularis* ET

Pronotum with dark central area surrounded by pale pubescence (b); pale pubescence gray (portrait).....*Chlorophorus strobilicola* ET



Chlorophorus



*Chlorophorus
annularis*
(Fabricius) ET



*Chlorophorus
strobilicola*
Champion ET

Clytus



Begin key

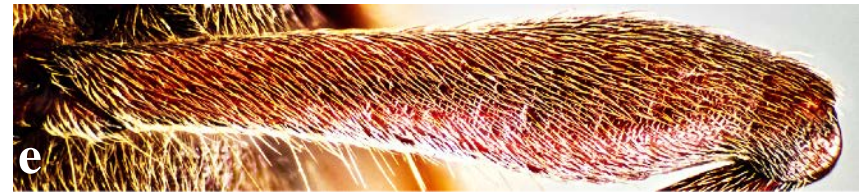
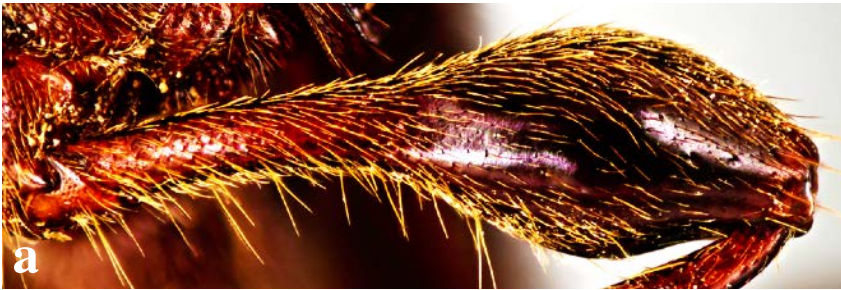


Clytus
planifrons
(LeConte)

79 (71)

At least meso- and meta-femora strongly club-shaped, very narrow and cylindrical in basal third to half and abruptly much broader in the apical half to two-thirds (**a-c**)...**80**

Femora not strongly clubbed, slightly broadened around apical third to half but not narrowly cylindrical at base (**d-f**).....**88**



*This can be a tricky couplet. Angle of view may be misleading and there may be more variability in this character than documented. Also, the process

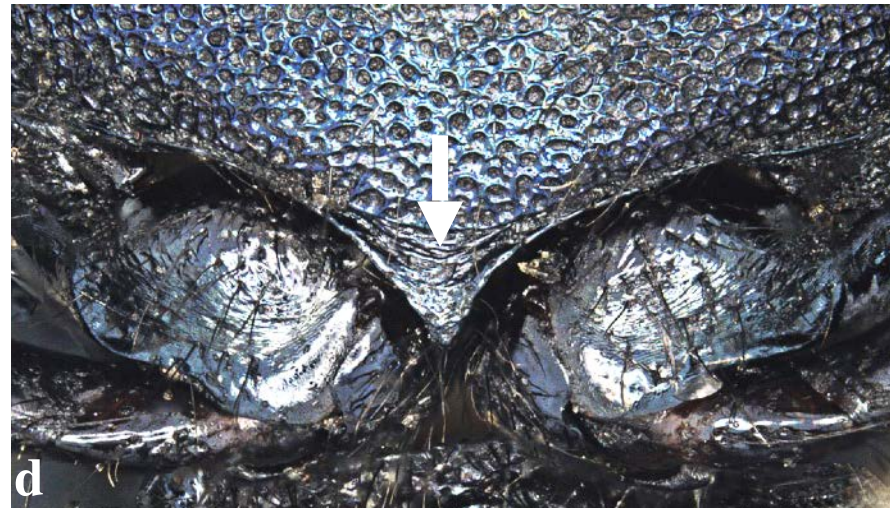
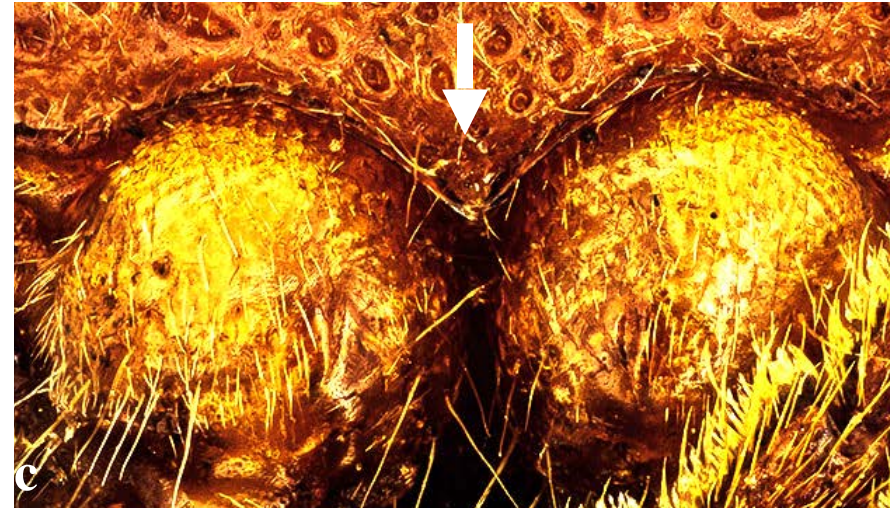
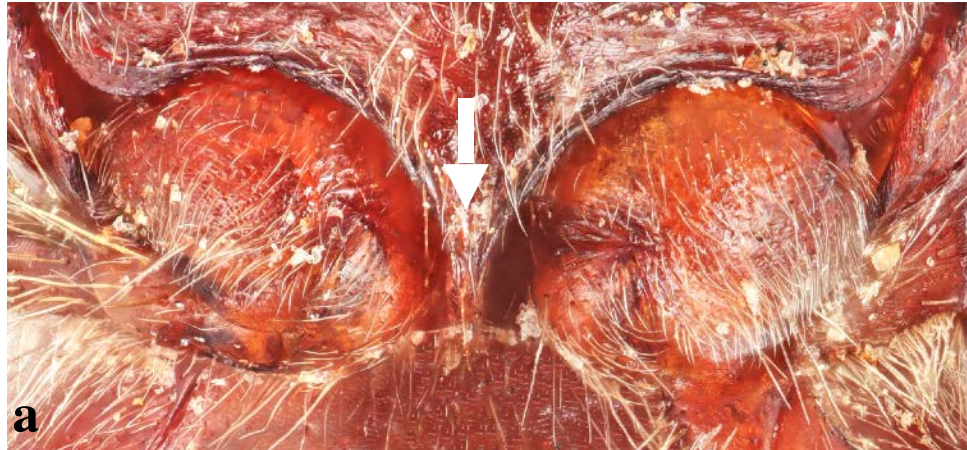
80 (79)

is frequently hidden by the protarsi. When in doubt, try both couplet halves.

Begin key

Process separating procoxae extends the entire (a) or almost (b) their entire length...81

Procoxae are in contact or the procoxal process extends no farther than half the length of the procoxae (c-d).....84



81 (80)

Pronotum long and slender (a): Established in ENA, this European species has not yet been recorded from the West....*Gracilia minuta*^{ET}

Pronotum rounded (b-e).....82



Gracilia minuta (Fabricius) ET

Begin key



82 (81)

Elytron with large, distinct pale pubescent markings and pronotum more slender (a).....*Eumicthus oedipus*

Elytron with only small, indistinct pale pubescent markings (b) or lacking pale pubescent markings (c-d); pronotum broader (b-d).....83



Eumicthus
oedipus
LeConte

Begin key



83 (82)

Pronotum more-or-less evenly punctate and pubescent (a-b) 1 NA indigenous species, 2 exotic target species.....*Callidiellum* ^{ET}

Pronotum with smooth calluses either side of middle and densely punctate and setose laterally (c) 1 species NA.....*Hylotrupes bajulus* ^{EE}

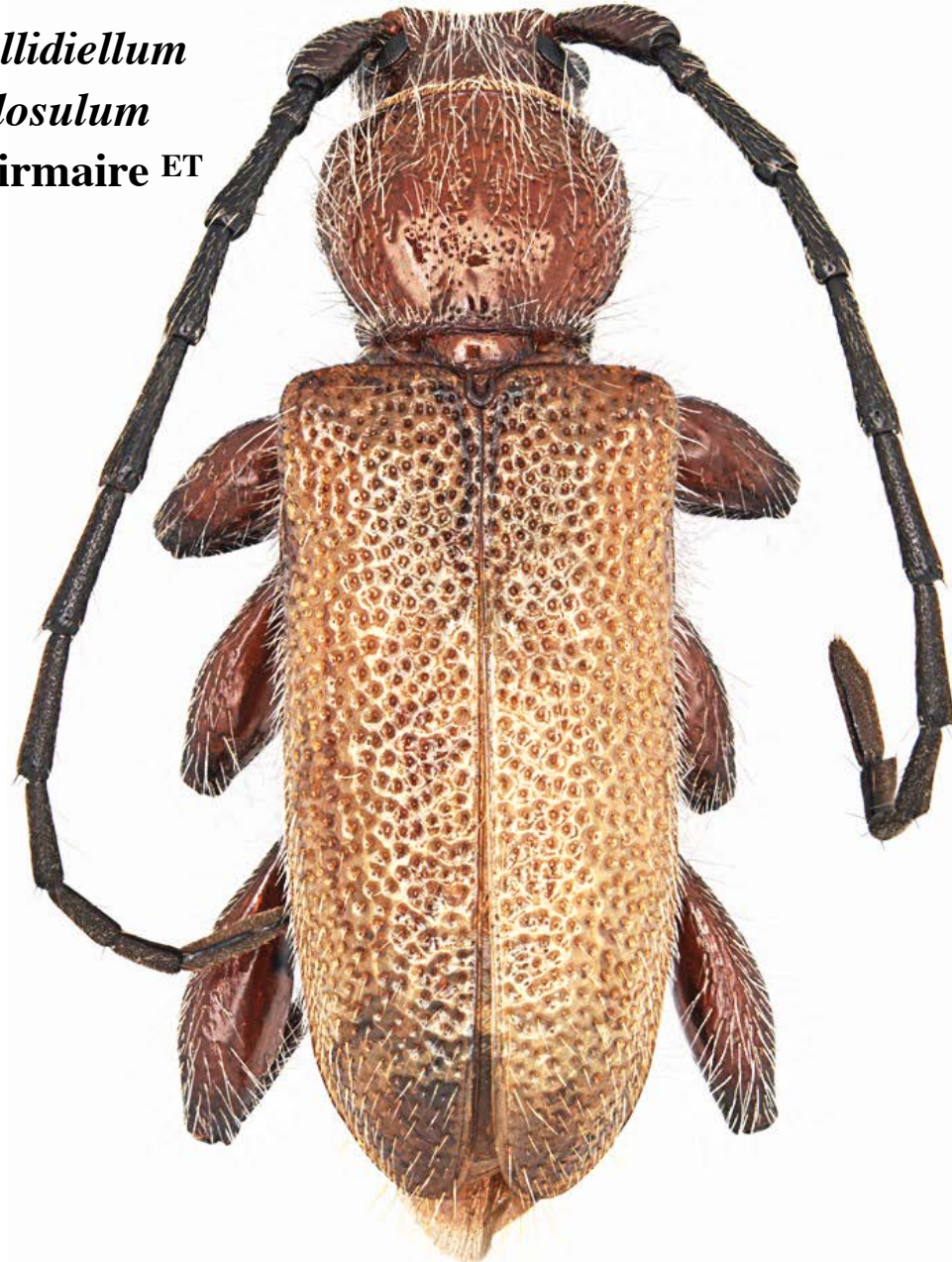


Callidiellum ET

Callidiellum
villosulum
Fairmaire ET



Callidiellum
rufipenne
(Motschulsky) ET



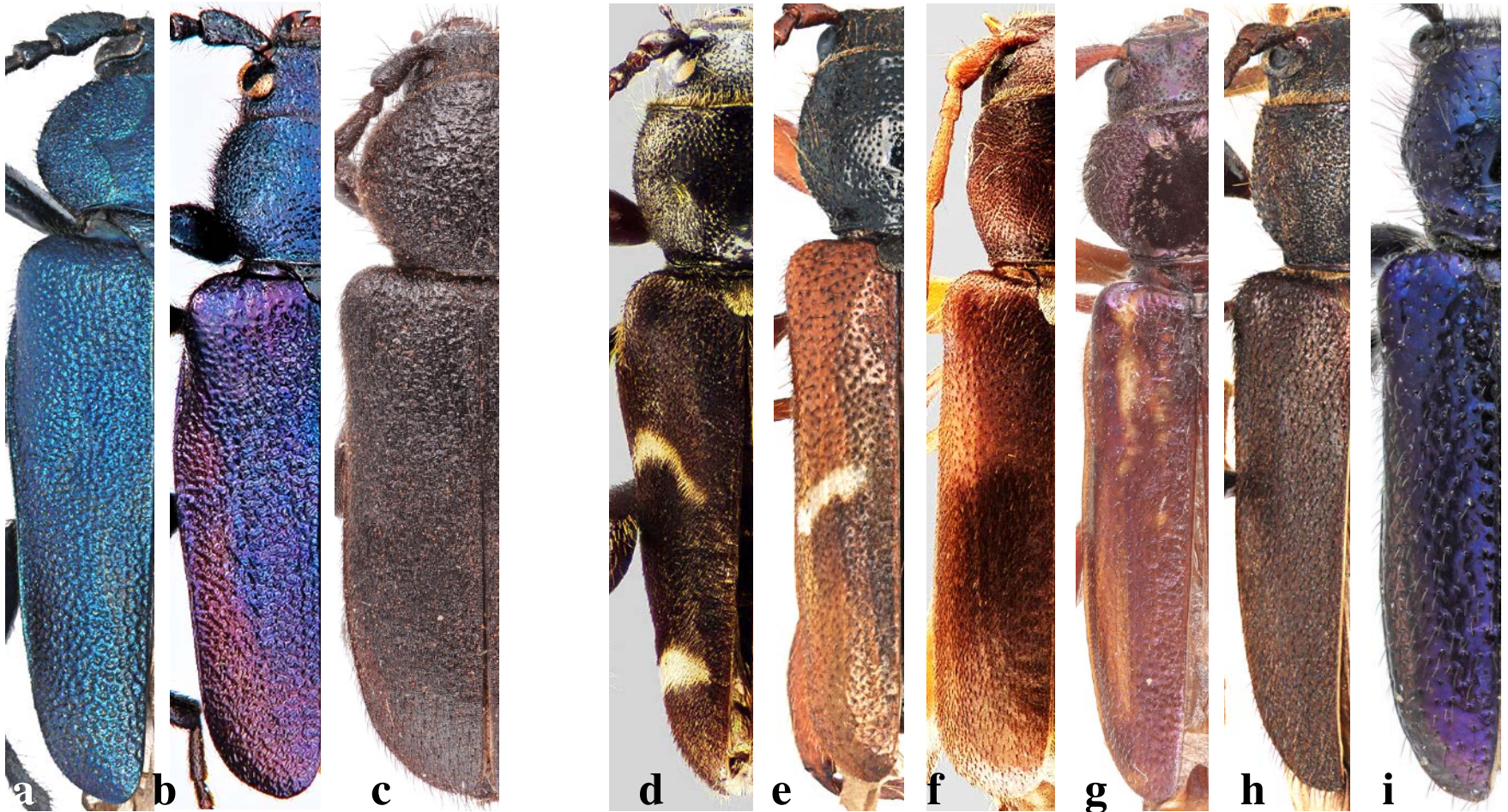
Hylotrupes
bajulus
(Linnaeus) EE



84 (80)

Pronotum and elytra coarsely, contiguously punctate over entire surface; elytra never with distinct pale markings (**a-c**).....**85**

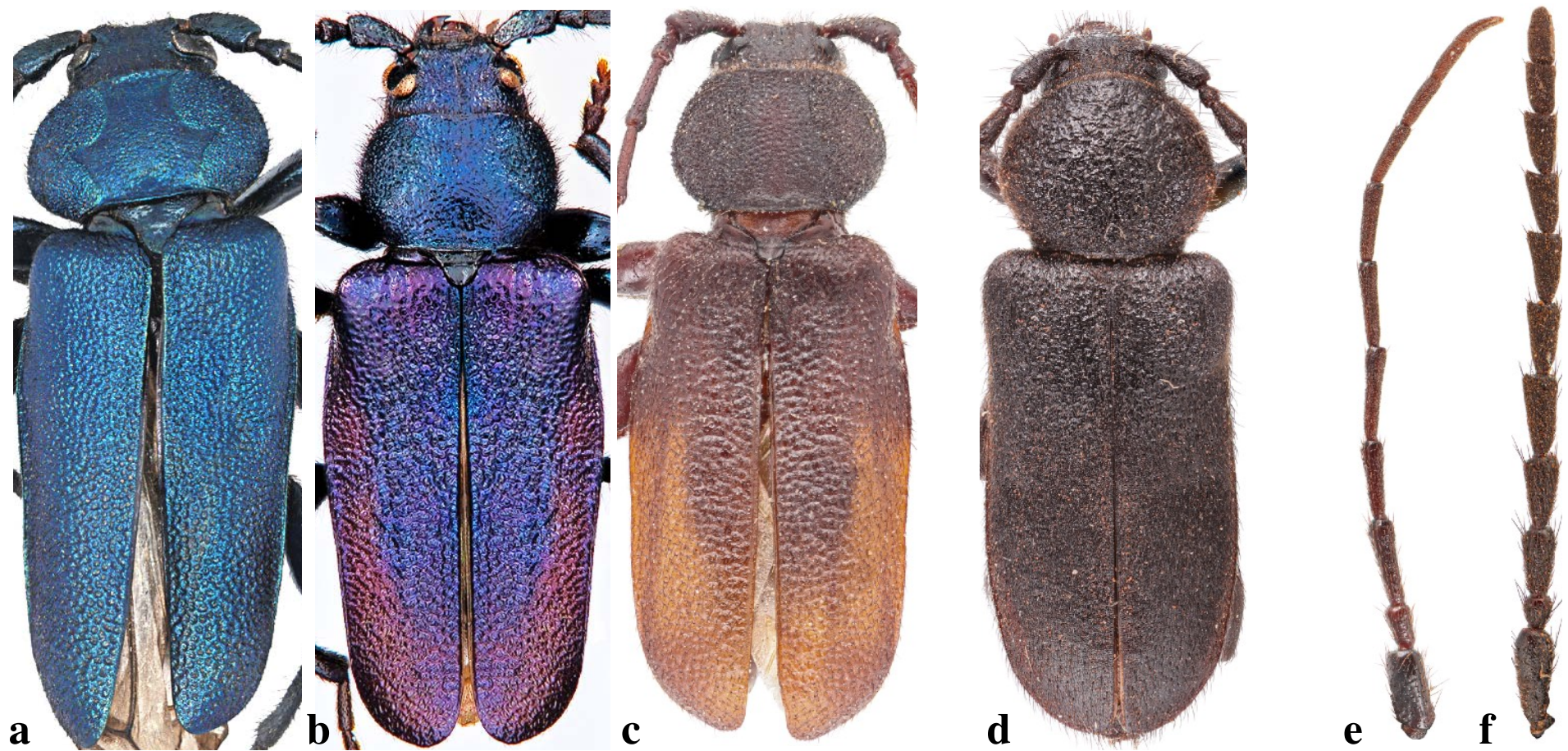
Pronotum and elytra more finely and sparsely punctate; elytra often with pale bands or extensive pale markings (**d-g**), but not always (**h-i**).....**86**



85 (84)

Color often metallic blue, green, or violet (**a-b**) but sometimes black or brown (**c**); antennomeres beyond first few narrow and ~ cylindrical (**e**): ~12 species in WNA.....*Callidium*

Color black (**d**); all antennomeres short and broad (f): 2 species in NA*Xylocrius*



Callidium



*Callidium
cicatricosum*
Mannerheim

Xylocrius



Xylocrius
agassizi
(LeConte)



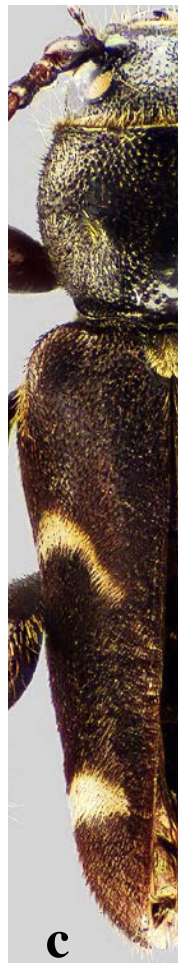
Xylocrius
cribratus
LeConte

86 (84)

Entire body black, greenish, or blue, with metallic reflections (a).....

.....*Poecilobrium chalybeum*

Elytra often with pale markings (b-e), otherwise overall unmetallic brown or black (f-g) - if brassy or dark metallic, pronotum much broader (h)...87



Poecilobrium
chalybeum
(LeConte)

Begin key



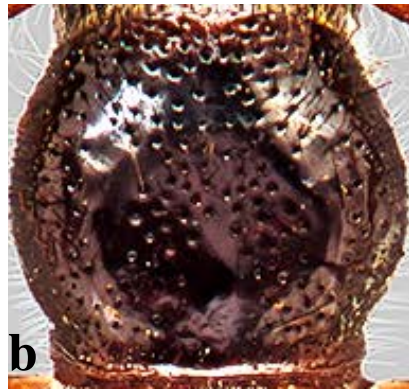
87 (86)

Pronotum impunctate centrally, densely punctate at sides (**a**); elytra with more-or-less broken pale stripes (**e**): 1 species in NA.....*Meriellum proteus*

Pronotum more-or-less evenly punctate, including in center (**b-d**); if elytra have pale markings, these are bands or blotches (**f-h**): ~18 indigenous species in WNA, 1 established exotic species.....*Phymatodes* 



a



b

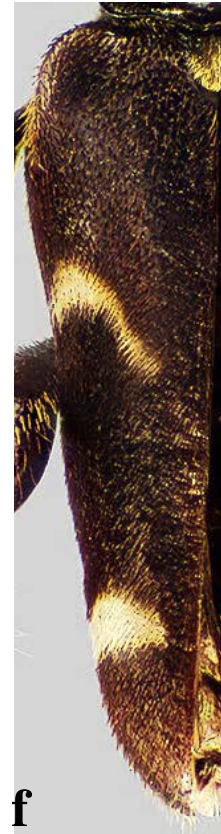


c



d

e



f



g



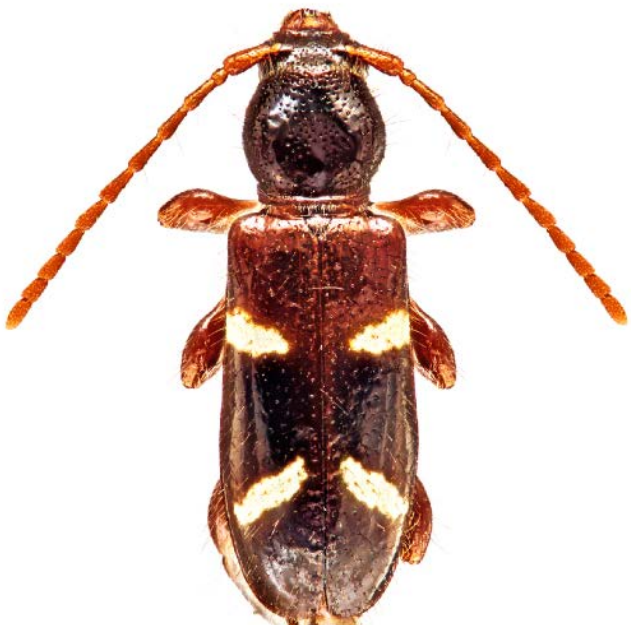
h

Meriellum
proteus
(Kirby)

Begin key



Phymatodes



Phymatodes I (87)

Elytra with pale bands (**a-b**) or extensive pale markings (**c**)...*Phymatodes* II

Elytra without pale bands or extensive pale markings (**d-f**)...*Phymatodes* V 



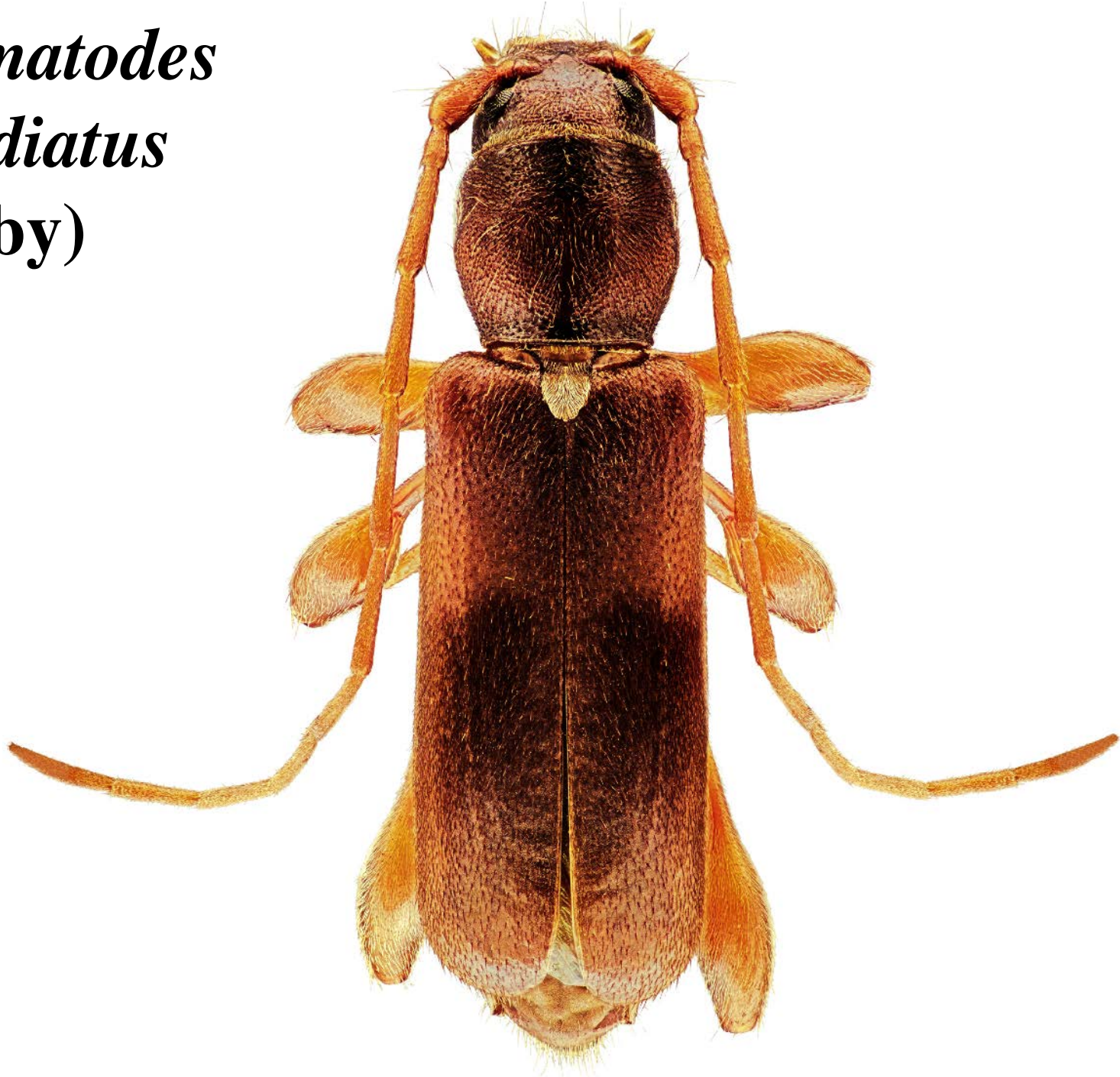
Phymatodes II

Elytra with extensive pale markings but without pale bands (a).....*Phymatodes dimidiatus*

Elytra only with pale bands (b-d).....*Phymatodes* III



Phymatodes
dimidiatus
(Kirby)

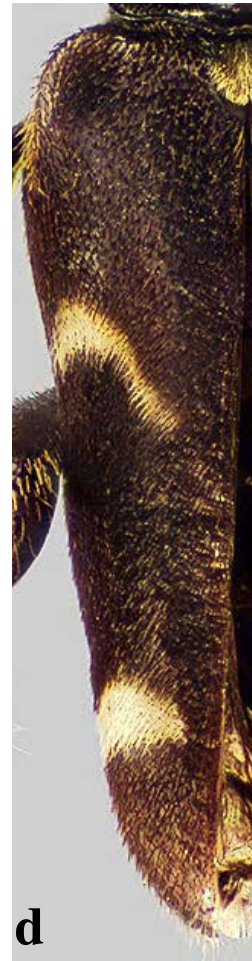


Phymatodes III

Each elytron with one pale band, elytra varying in color (**a-c**)...*Phymatodes nigrescens*

Note: Another western species, *P. vulneratus* (LeConte), will key here. The characters distinguishing these two species are very subtle. Individuals keying to *P. nigrescens* are much more common in the samples we've seen.

Each elytron with two pairs of pale bands (**d-e**).....*Phymatodes* IV 



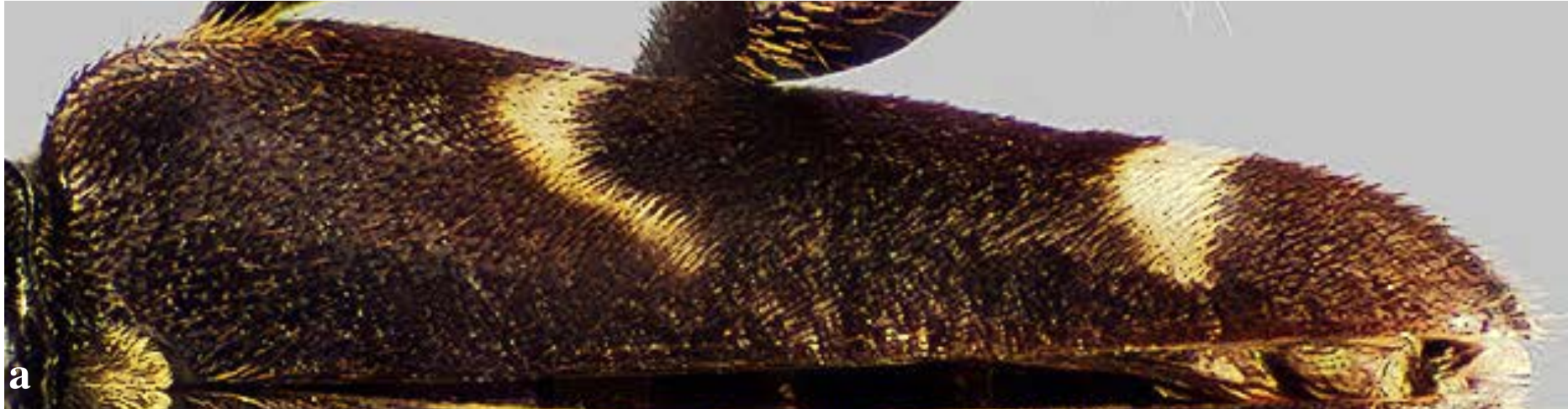
Phymatodes
nigrescens
Hardy &
Preece



Phymatodes IV

Elytra dull, with dense pubescence (a).....*Phymatodes decussatus*

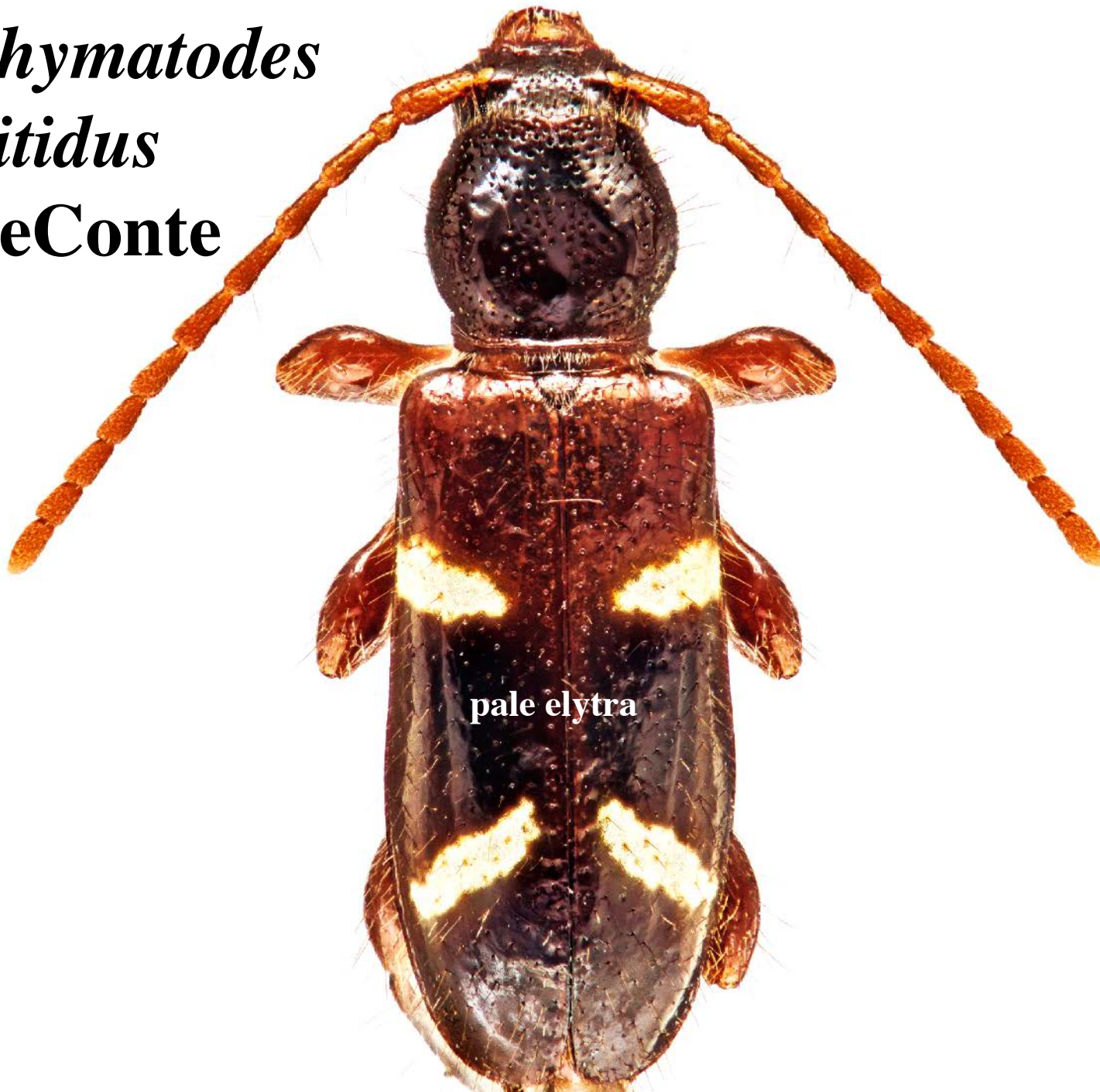
Elytra glossy, with sparse pubescence (b).....*Phymatodes nitidus*



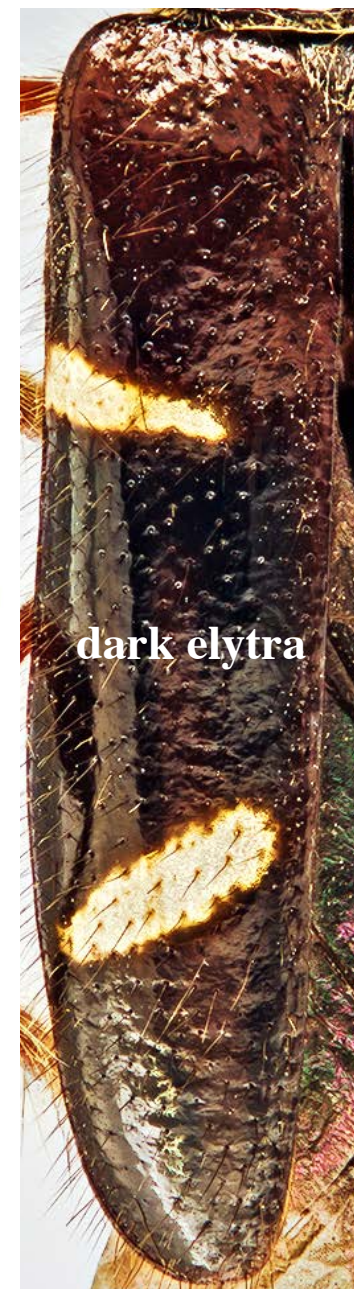
Phymatodes
decussatus
(LeConte)



Phymatodes
nitidus
LeConte



pale elytra



dark elytra

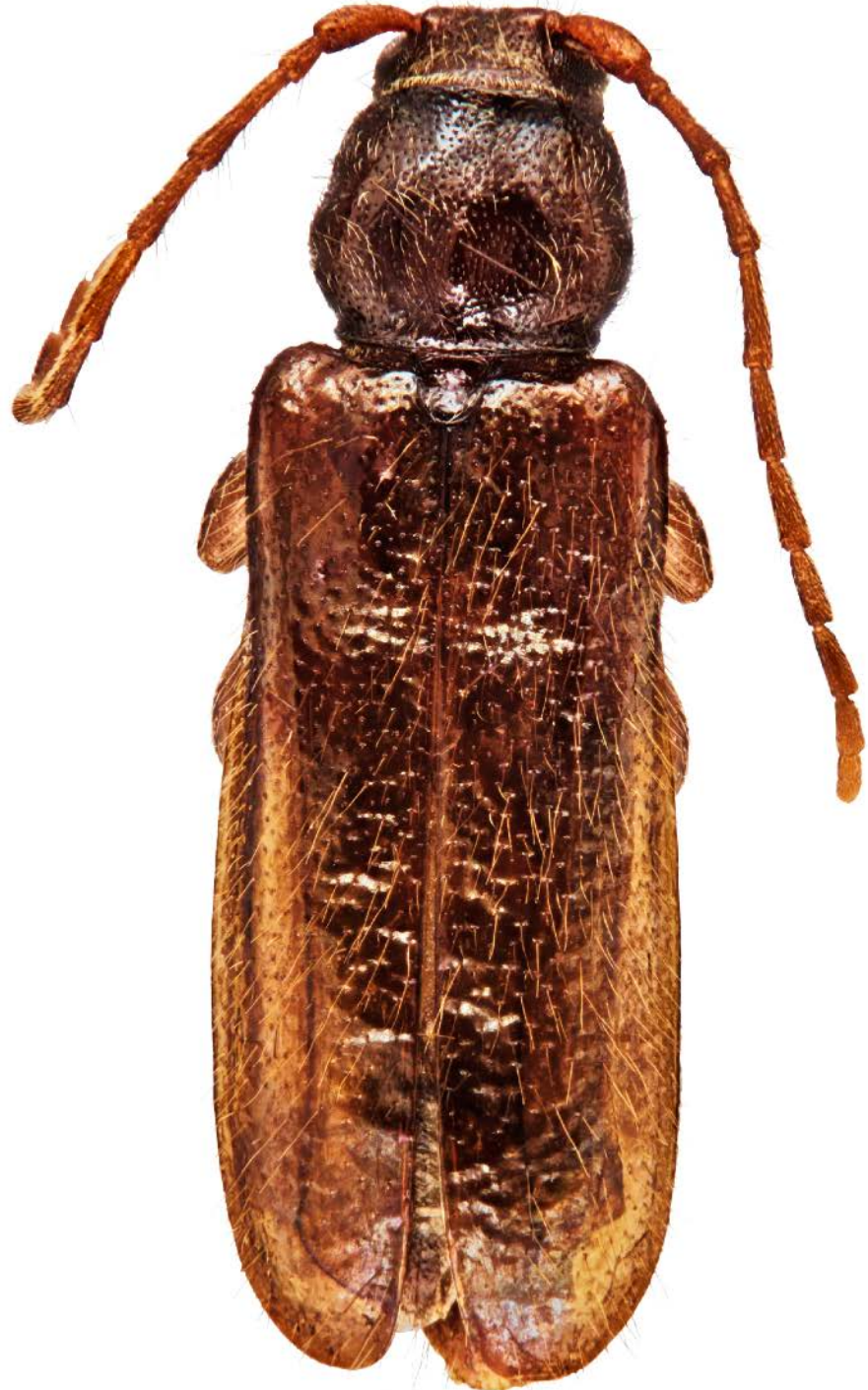
Phymatodes V

Elytra brassy and shiny with long, sparse pubescence (a)...*Phymatodes aeneus*

Elytra with dense, short pubescence and often dull (b-c), if shiny, not brassy (d-e).....*Phymatodes* VI 



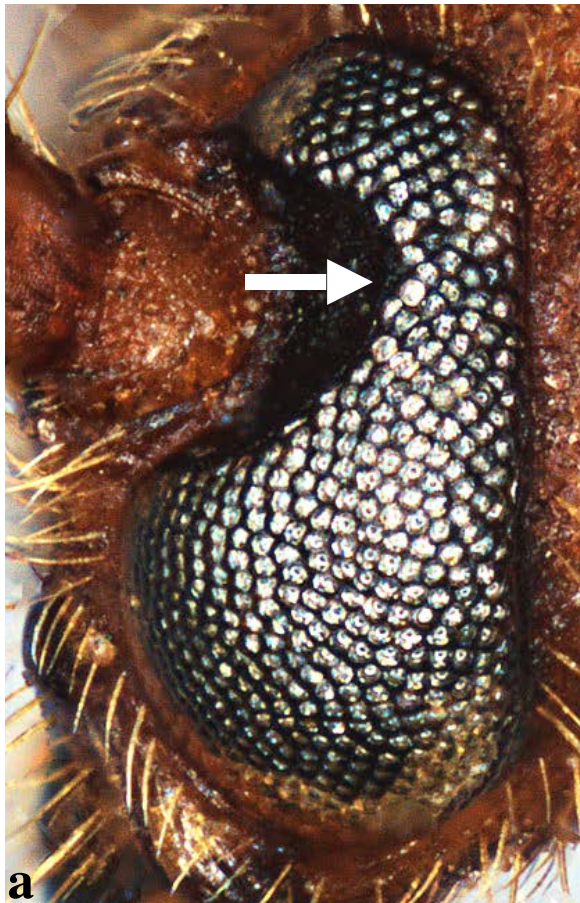
Phymatodes
aeneus
LeConte



Phymatodes VI

Eye incompletely separated into dorsal and ventral lobes, lobes connected by strip 3 or more facets wide (a).....*Phymatodes* VII

Dorsal and ventral lobes of eye almost completely separated, connected by strip no more than 2 facets wide (b).....other species of *Phymatodes* (*P. blandus* and *concolor*)



Phymatodes VII

Elytra dull (**a-b**) other species of *Phymatodes* will key here that are not treated in VIII, e.g. *P. hirtellus*, *infuscatus*, etc.).....*Phymatodes* VIII

Elytra shiny (**c-d**).....other species of *Phymatodes* (*P. fulgidus* and *rainieri*)



Phymatodes VIII

Dorsum of pronotum closely granulate-punctate (a); metatarsomere 1 shorter than metatarsomeres 2-5 (c); normally unicolorous....*Phymatodes grandis*

Dorsum of pronotum only with sparse punctures, granules absent (b); metatarsomere 1 as long or longer than metatarsomeres 2-5 (d); if the elytra are dark, then the pronotum is pale.....*Phymatodes testaceus* ^{EE}

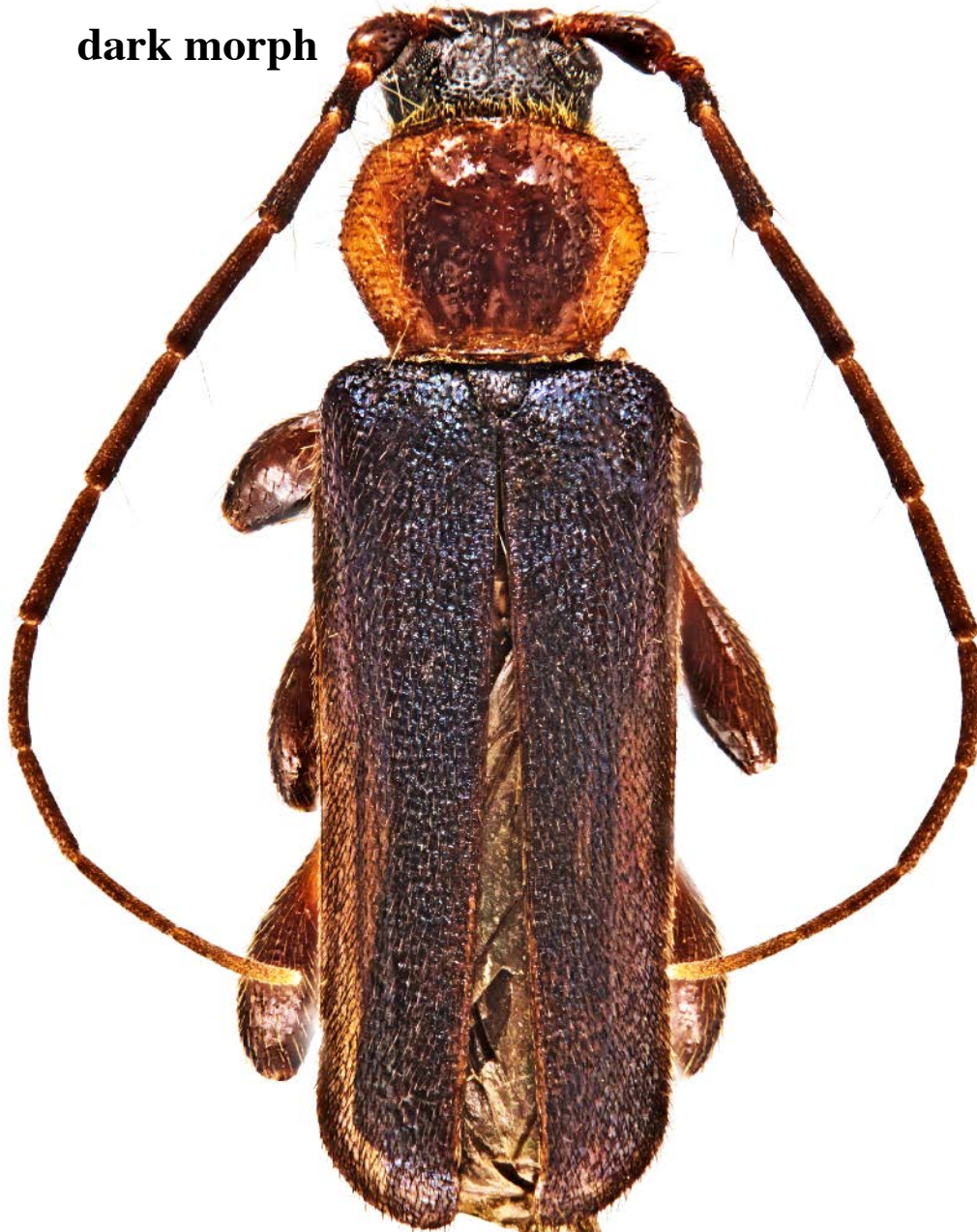


Phymatodes
grandis
Casey

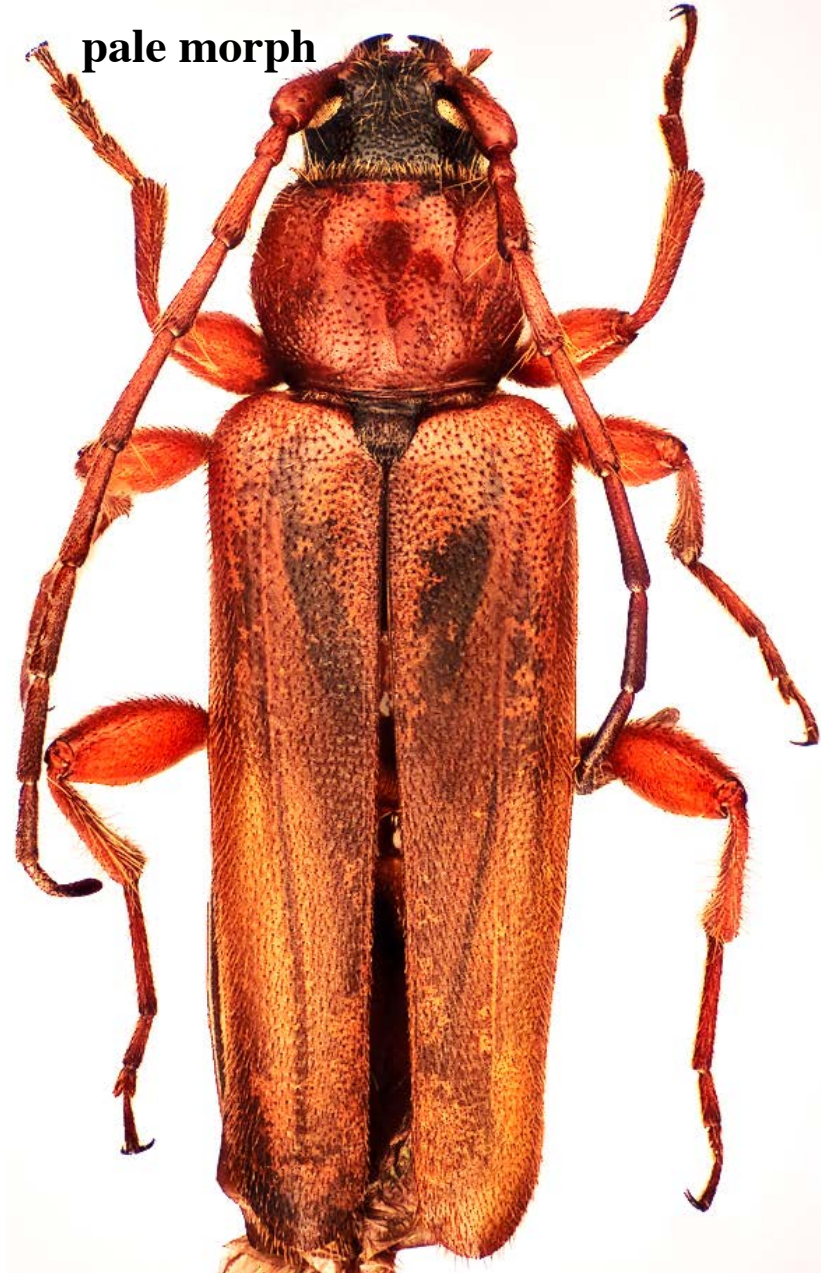


Phymatodes testaceus (Linnaeus) EE

dark morph



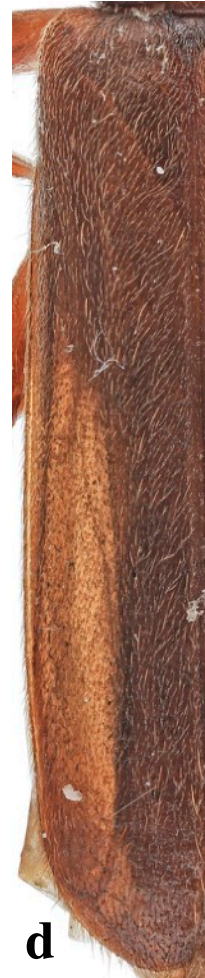
pale morph



88 (79)

Distribution of pubescence on elytra very irregular, either with many round bare spots (**a-b**) or with many patches of dense pubescence (**c**).....89

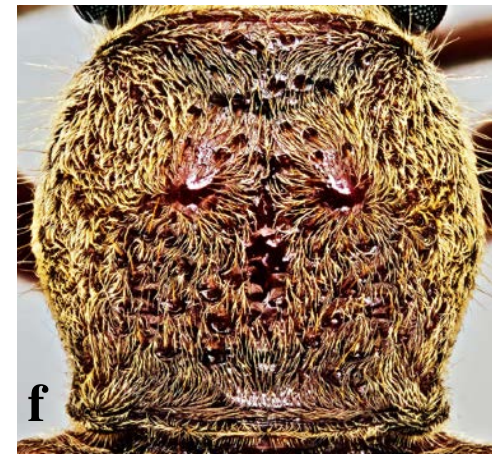
Elytra (**d-g**) with more-or-less even covering of pubescence.....90 



89 (88)

Elytra with many patches of denser pubescence (**a**); pronotum densely pubescent except for 3 longitudinal carinae (**d**): 1 species NA/WNA.....*Elatotrypes hoferi*

Elytra (**b-c**) and pronotum (**e-f**) with abundant denuded round spots: 2 species in NA.....*Brothylus*



Elatotrypes
hoferi
Fisher

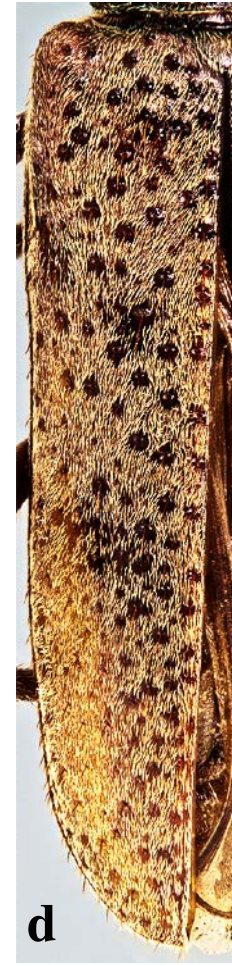
Begin key



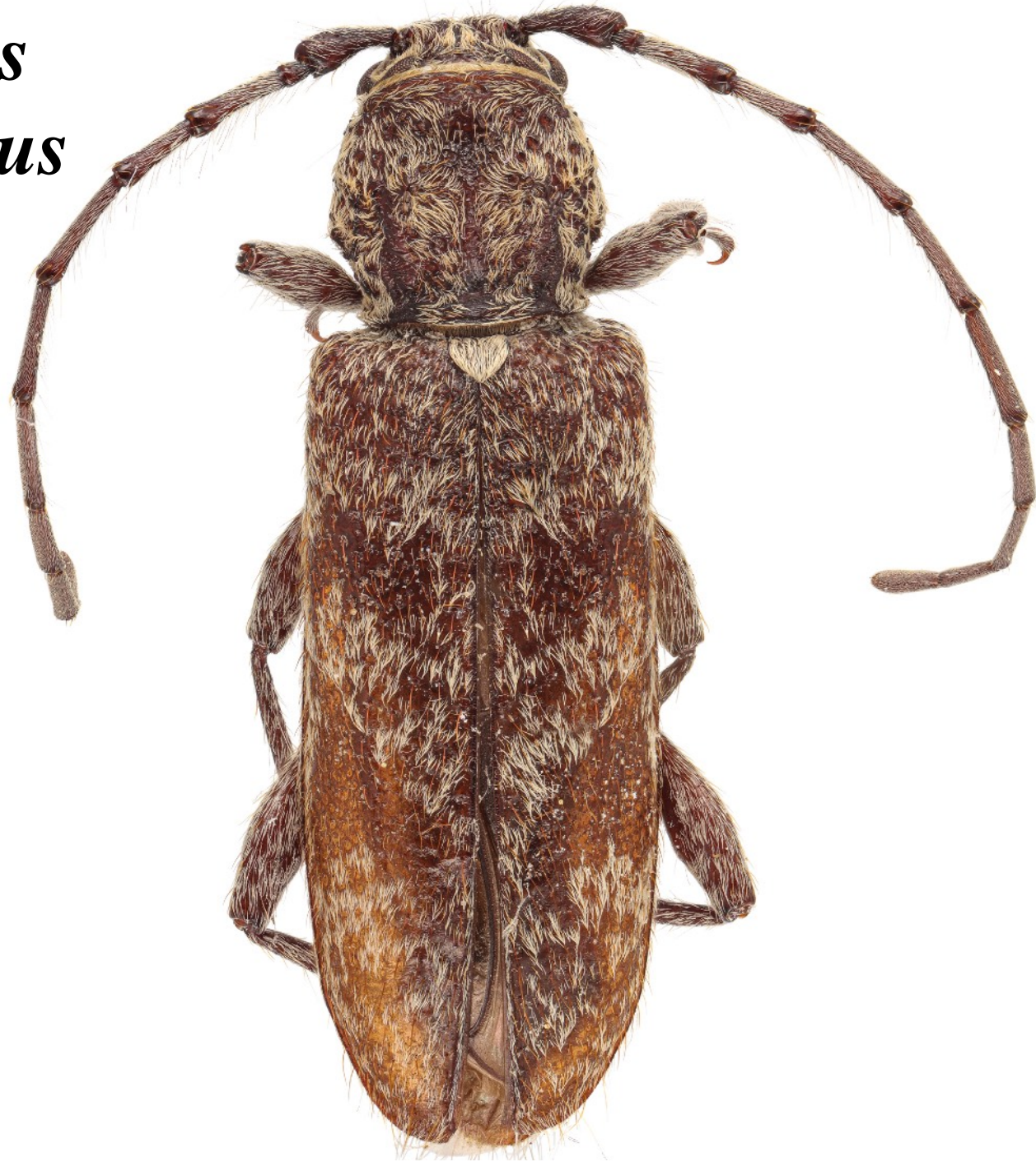
Brothylus

Pronotum (a) and elytra (c) with larger punctures and larger denuded round spots and with extensive denuded markings.....*Brothylus conspersus*

Pronotum (b) and elytra (d) with smaller punctures and smaller denuded round spots and without extensive denuded markings..*Brothylus gemmulatus*

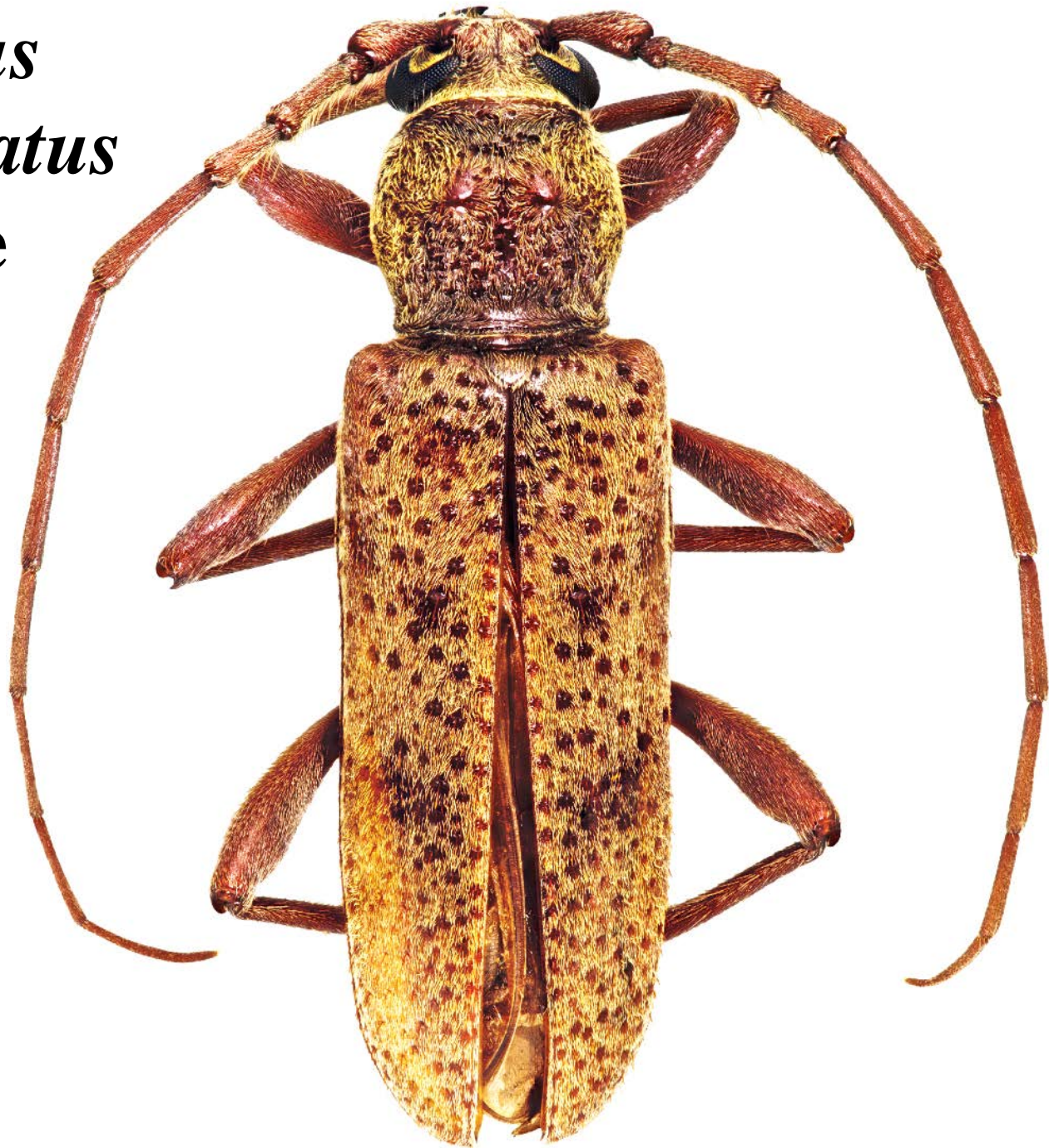


Brothylus
conspersus
LeConte



Brothylus gemmulatus LeConte

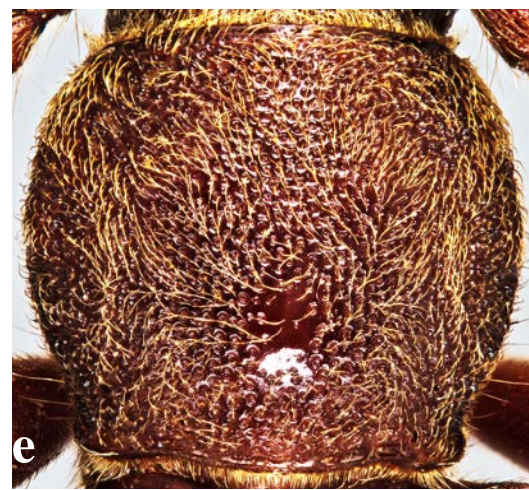
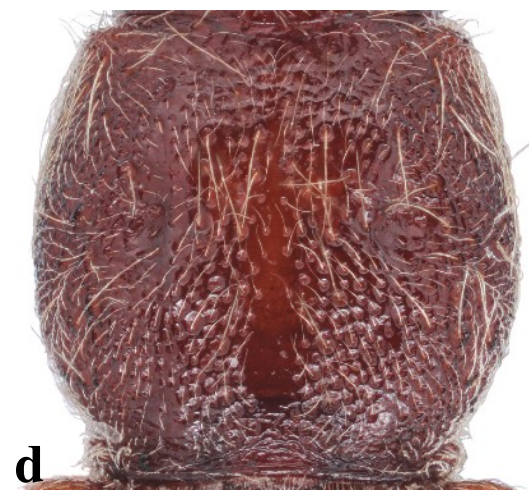
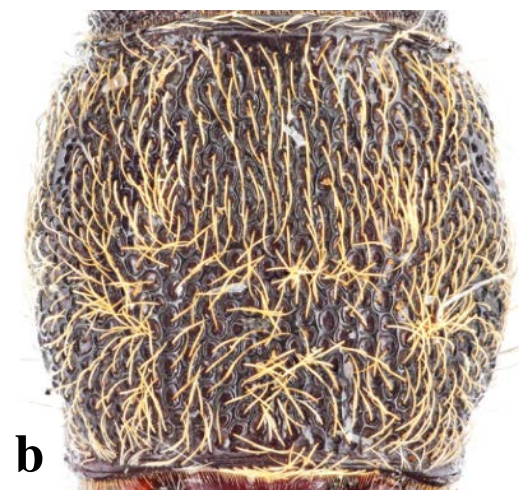
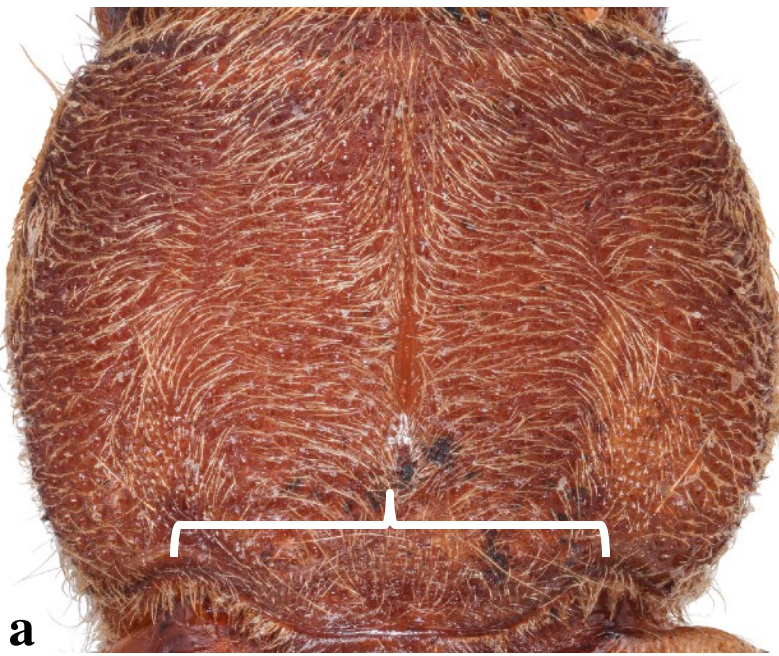
This species
also keys to
Couplet 57 of
Cerambycinae
with
“tuberculate
pronota”



90 (88) I

Pronotum with large posteromedial lobe (**a**); elytra each with three longitudinal carinae (**f**): 1 species in NA...*Malacopterus tenellus*

Posterior margin of pronotum straight (**b-d**) or slightly lobed (**e**); elytra without distinct longitudinal carinae (**g-j**).....**91**

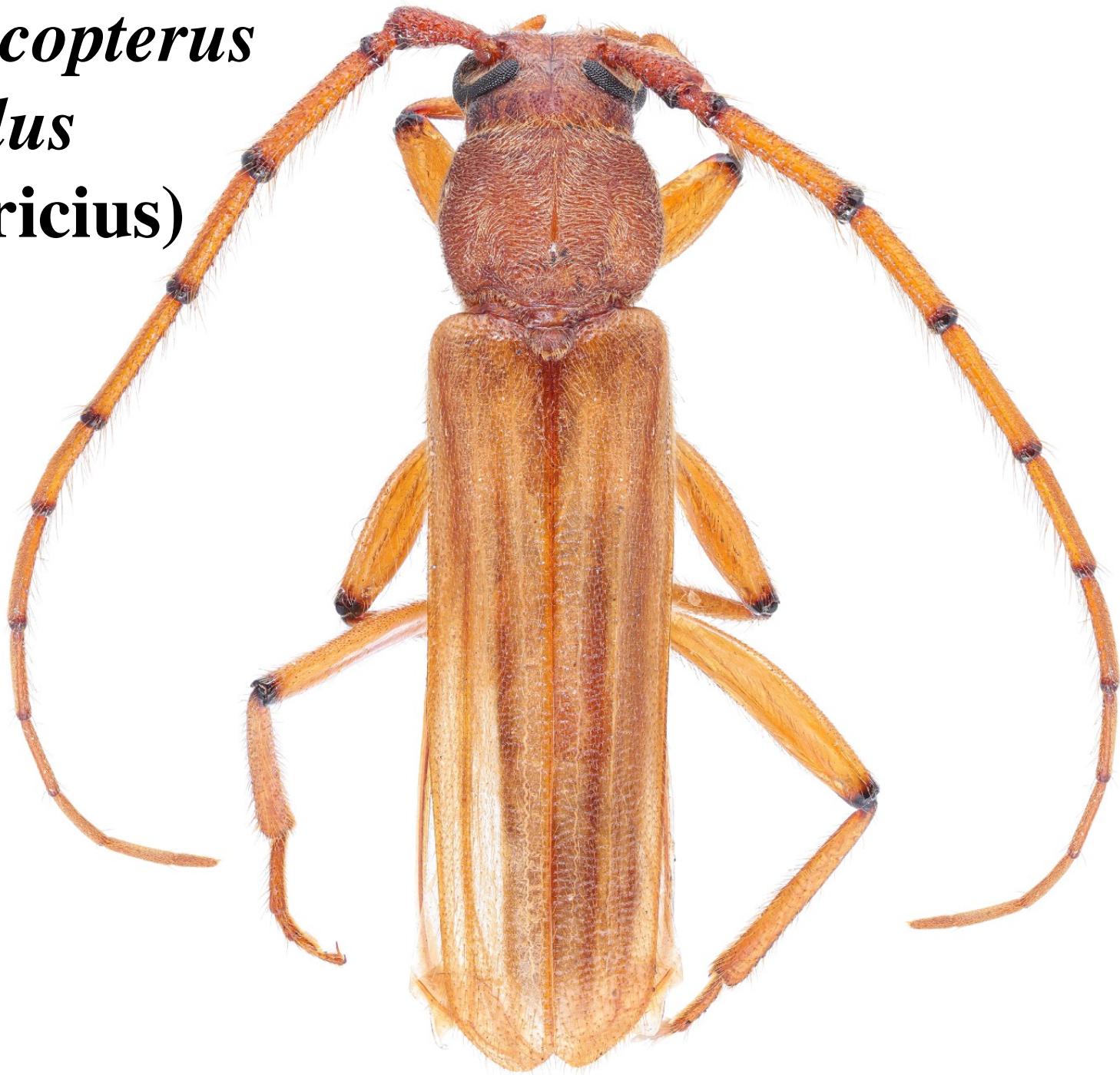


90 (88) II

Malacopterus



Malacopterus
tenellus
(Fabricius)



91 (90)

Elytra with dense but uneven pubescence (a).....*Trichoferus campestris* ^{ET}

Elytra with dense (b) or scant (c) evenly distributed pubescence.....**92**



Trichoferus
campestris
(Falderman) ET

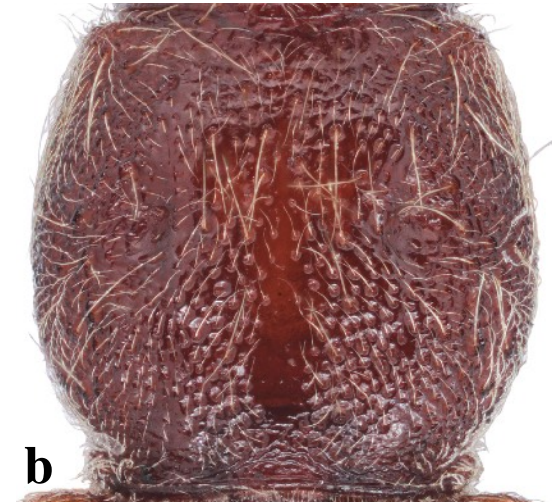


92 (91)



Pronotum with raised impunctate or less punctate areas on either side of the impunctate median line (**a**): 1 species, only known from California.....*Meganoplium imbelle*

Pronotum without such raised areas (**b-c**).....93



Meganoplum
imbelle
(LeConte)

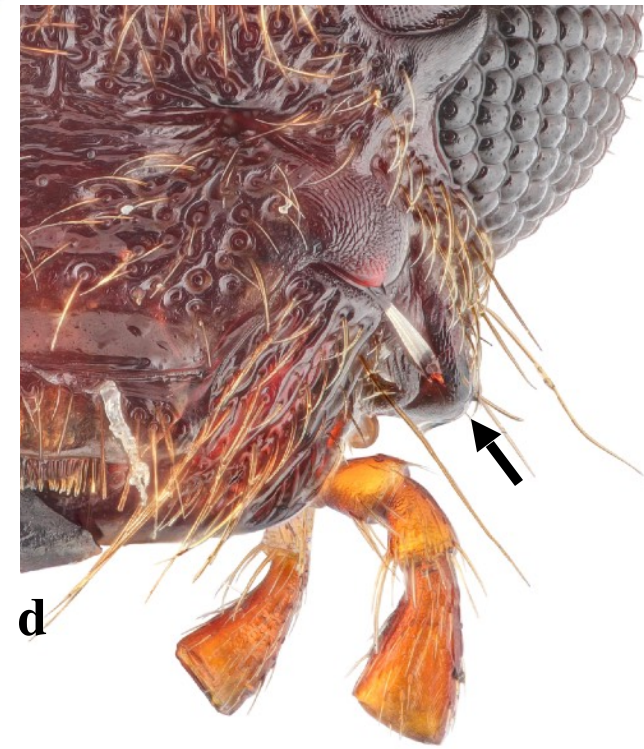
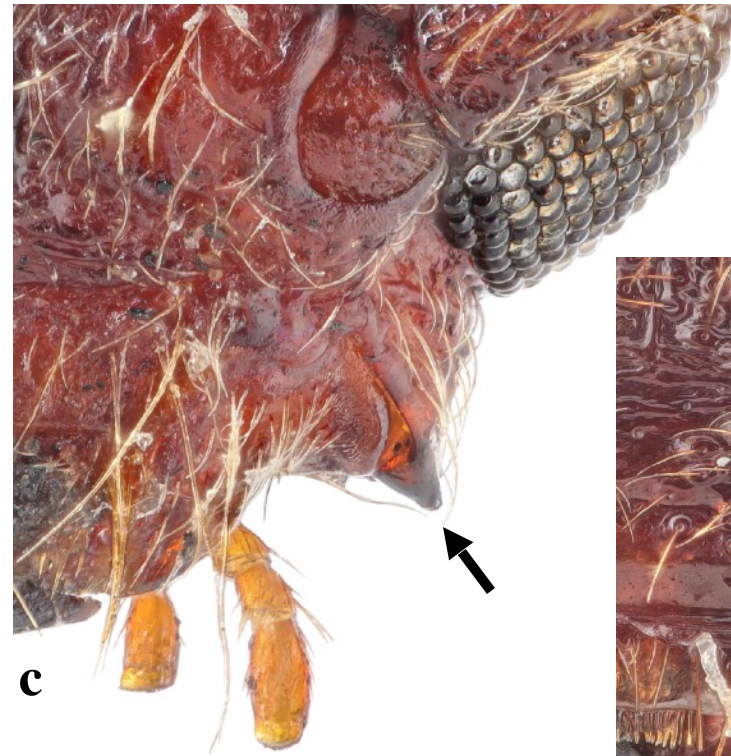
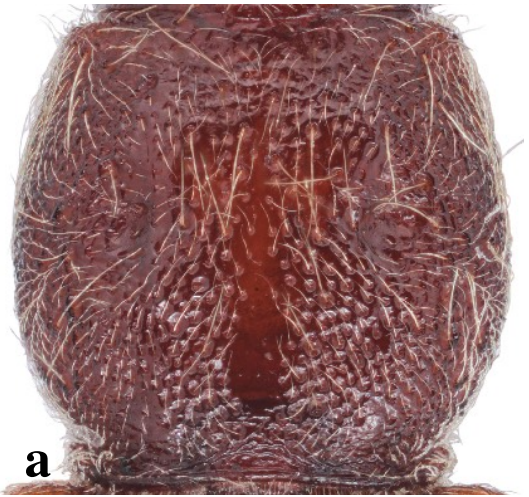
Begin key



93 (92)

Pronotum less evenly punctate with impunctate median line (a); projection anterior of eye pointed, terminal palpal segments rectangular (c): 1 species in WNA.....*Halipidus*

Pronotum evenly punctate with small impunctate median area (b); projection anterior of eye rounded, terminal palpal segments triangular (d): 2 species in NA....*Hesperanoplium*



Haliplidus

Begin key



Haliplidus
testaceus
LeConte

Hesperanoplum

Begin key

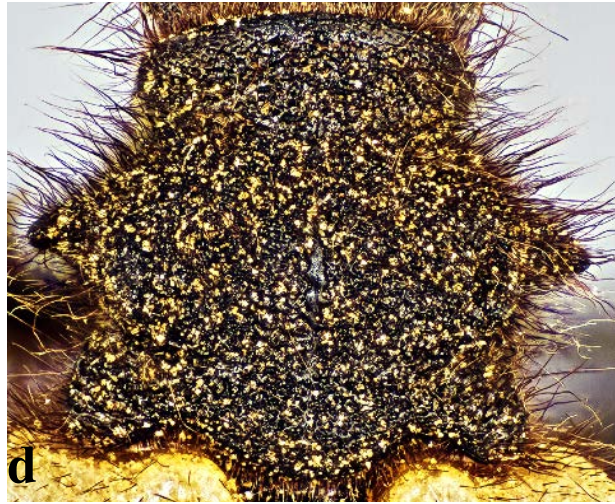
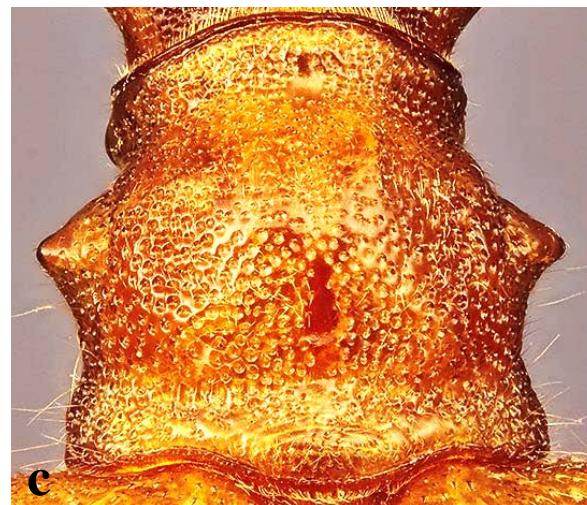


Hesperanoplum
antennatum
(Linsley)

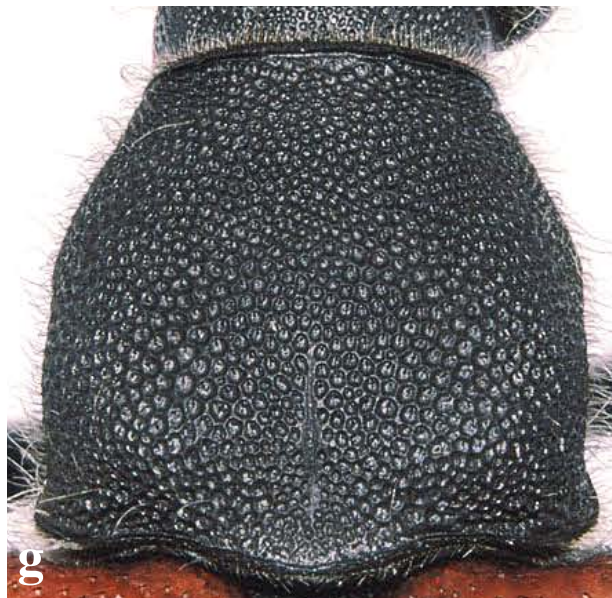
94 (41) I

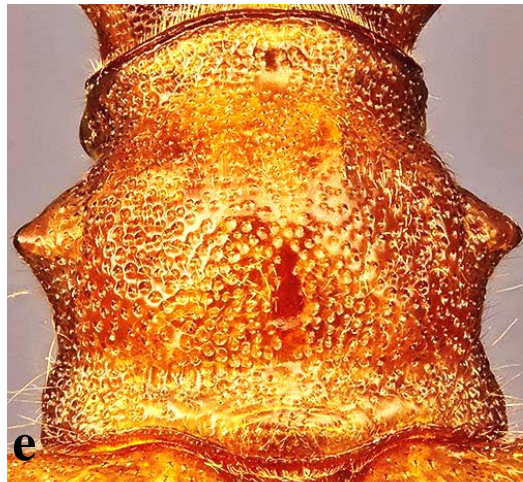
Each side of pronotum with distinct tubercles (a) or spines (b-e).....95

Each side of pronotum convex but without distinct tubercles or spines
(sides may be angulate (f-g) (f-j)).....106



94 (41) II

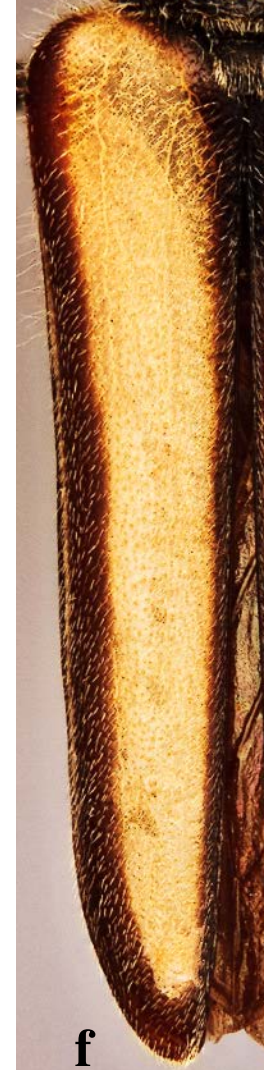


95 (94) Each side of pronotum with distinct tubercles (**a-c**).....96Each side of pronotum with spines (**d-f**).....100 

96 (95)

Elytra maculate (the exact pattern can vary) (a)...*Evodinus monticola*

Elytra not maculate (b-g), can be striped (f-g).....97



Evodinus
monticola
(Randall)



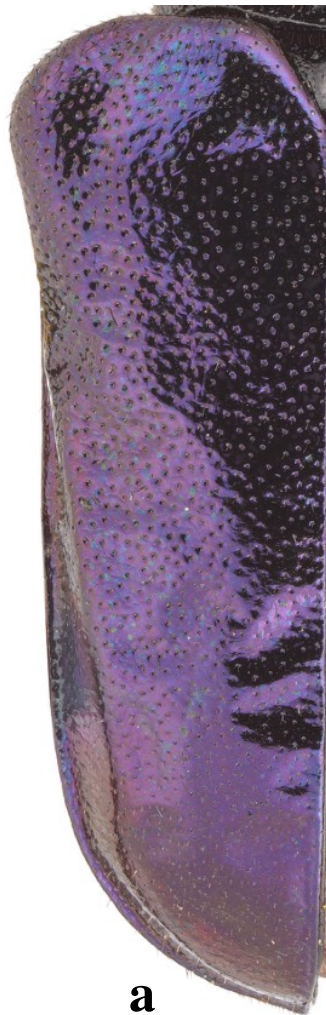
variations of
elytral maculae



97 (96)

Elytra bright metallic blue, green, or dark purple, and very broad (a).....*Pseudogaurotina cressoni* 

Elytra not bright metallic in color and much narrower (b-f)....98



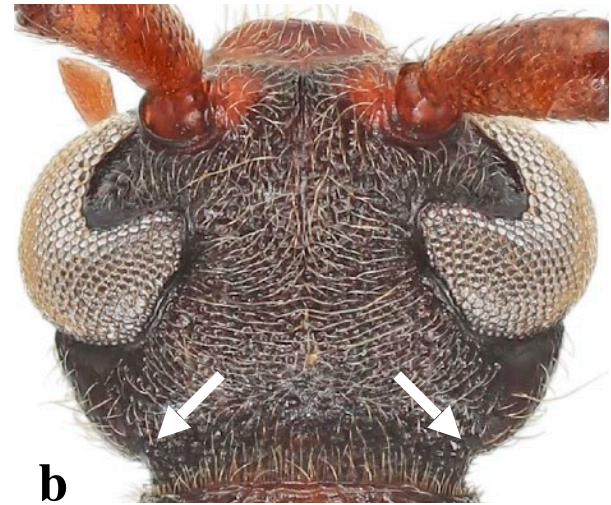
*Pseudogaurotina
cressoni*
(Bland)



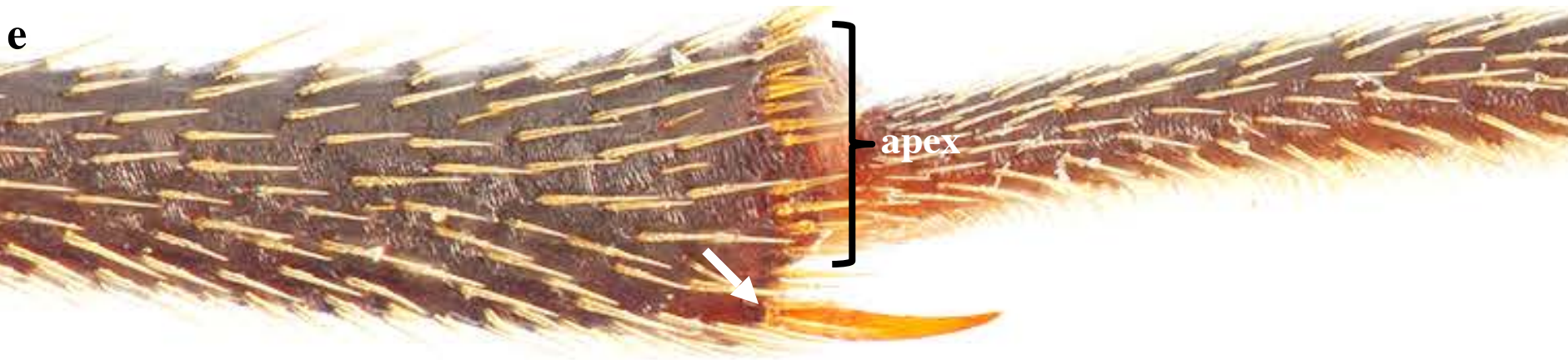
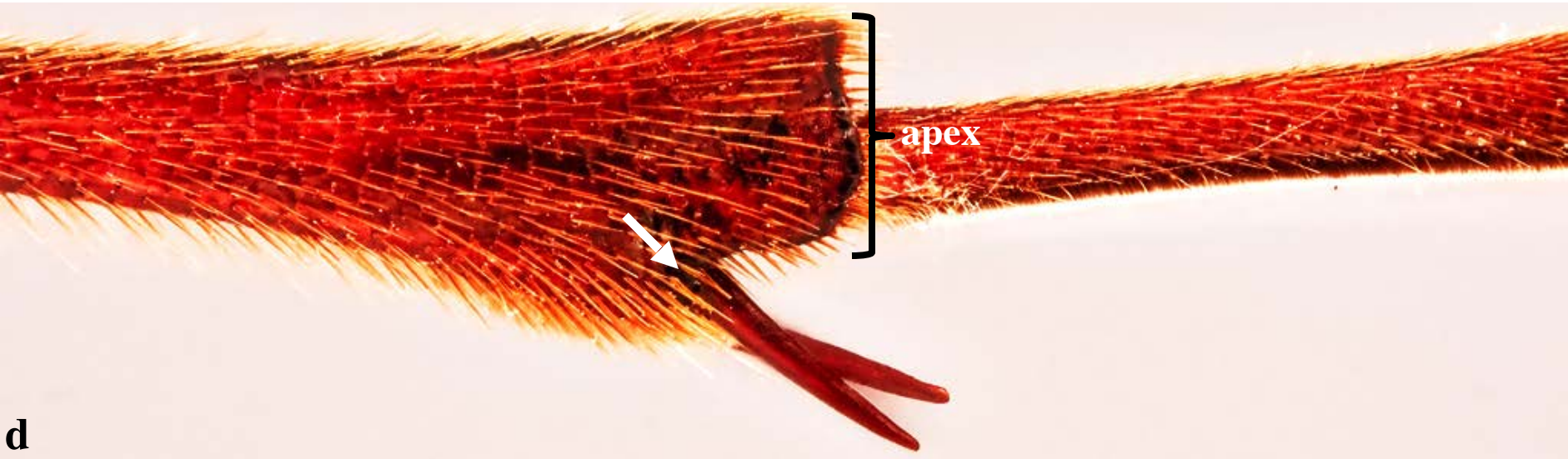
98 (97) I

Tempora gradually narrowed posteriorly (a); tibial spurs inserted well before apex (d):
~ 7 species in WNA.....*Stenocorus*

Tempora abruptly narrowed posteriorly (b-c); tibial spurs inserted near apex (e).....99



98 (97) II



Stenocorus I (98)

Elytra not striped (**a-b**).....*Stenocorus* II

Elytra striped (**c-d**): other species of *Stenocorus* (e.g., *S. flavolineatus* (LeConte) or *S. trivittatus* (Say))

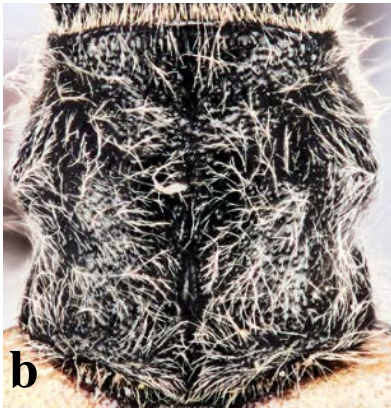


Stenocorus II

Pronotum with dense pubescence obscuring the surface (a); at least the inner half of the length of the elytron with dense, prostrate pubescence obscuring the surface (c-d).....

.....*Stenocorus* III

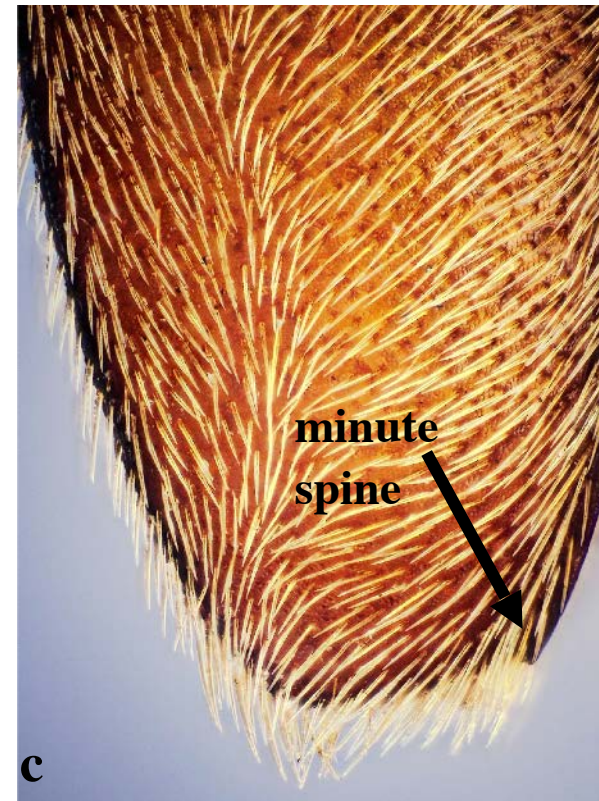
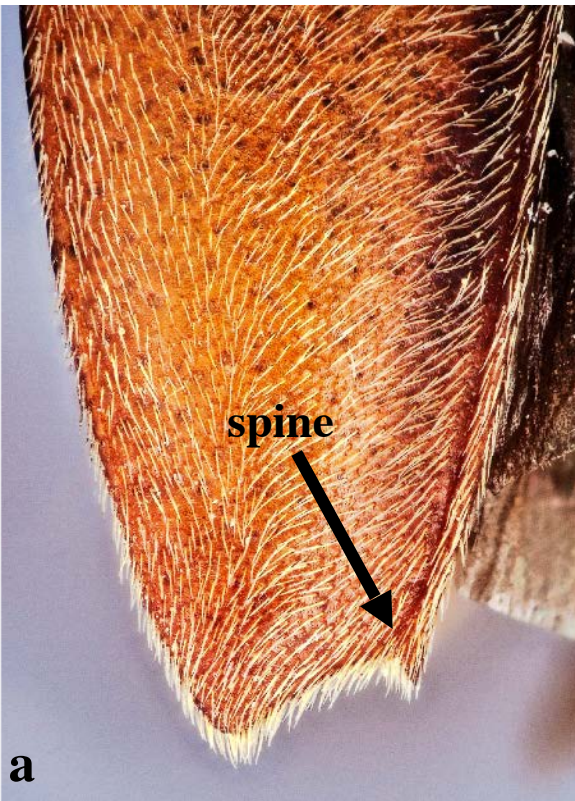
Pronotum with sparse pubescence not obscuring the surface (b); surface of elytron visible through uniformly sparse, short pubescence (the example shown is striped – no unstriped example was available) (e): other species of *Stenocorus* (e.g., *S. obtusus* (LeConte))



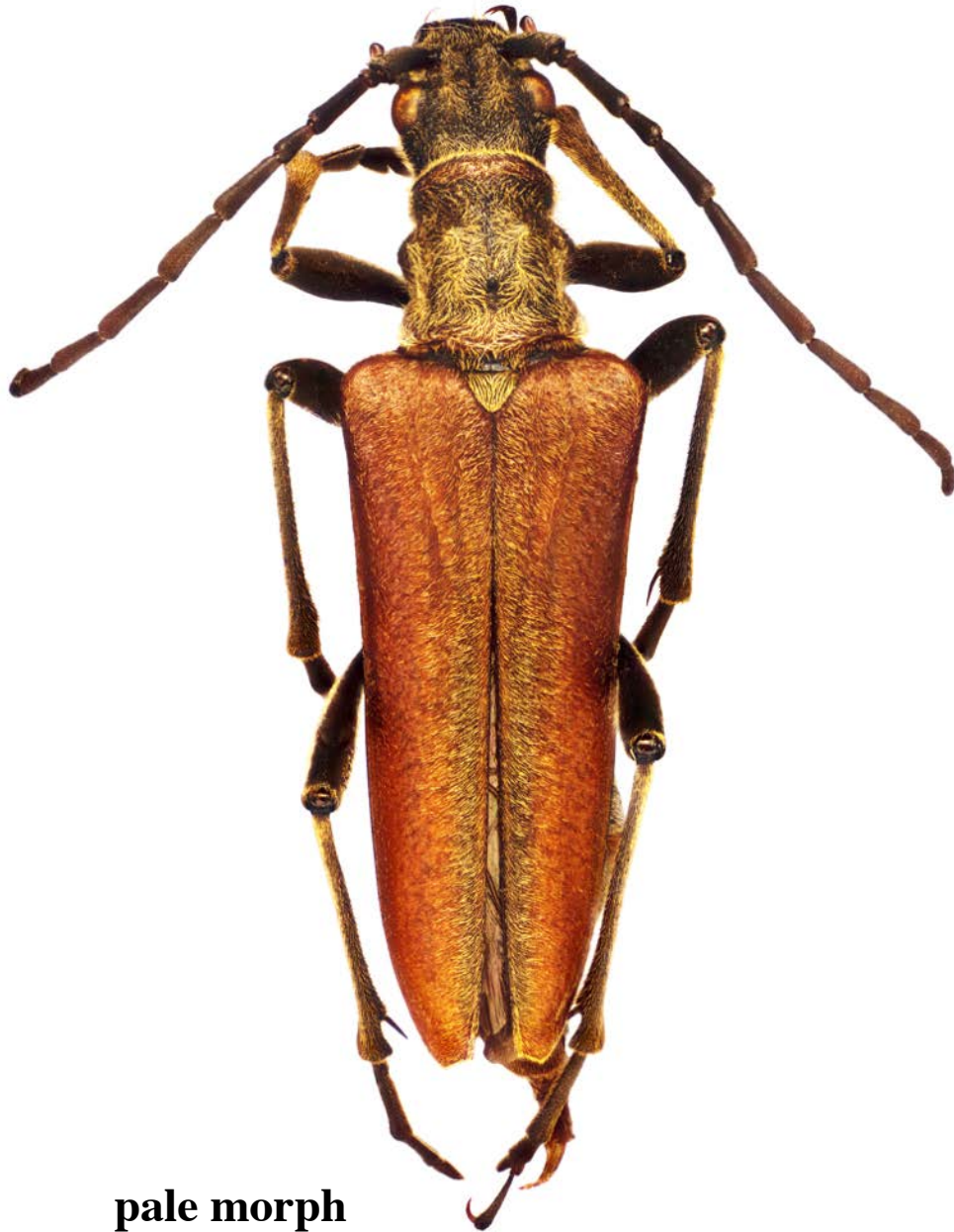
Stenocorus III

Apex of elytron obliquely truncate with a distinct spine at the end of the suture (a).....*Stenocorus nubifer*

Apex of elytron rounded (b) or very slightly truncate (c), with at most a very small and obscure spine at the end of the suture...*Stenocorus vestitus*



Stenocorus nubifer (LeConte)



pale morph



dark morph

Stenocorus vestitus (Haldeman)

pale morph



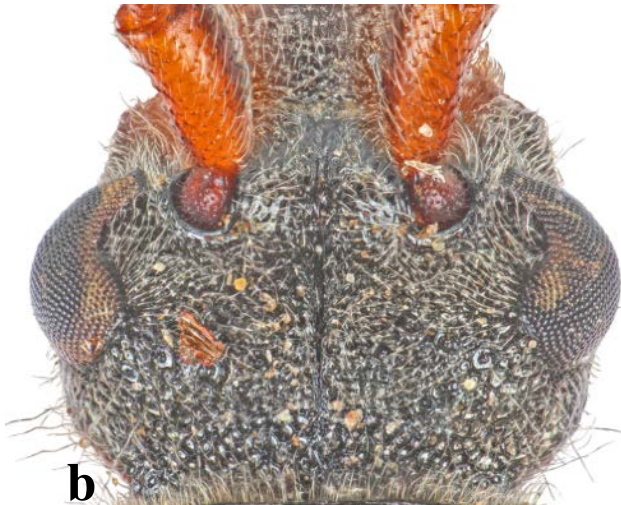
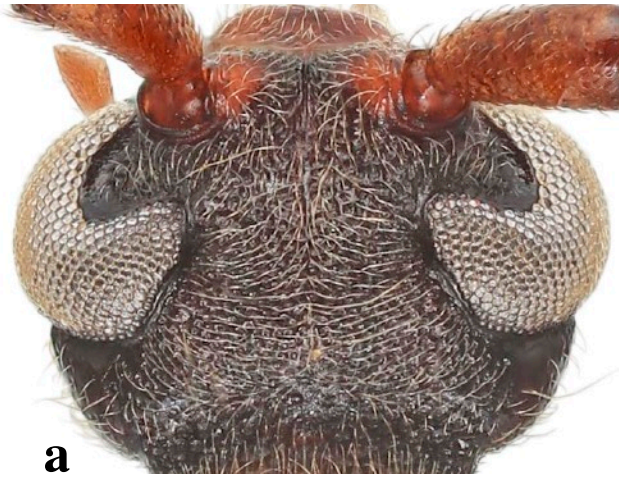
dark morph



99 (98)

Eyes deeply emarginate (a); pronotum and elytra brownish (c)...*Encyclops californica*

Eyes shallowly emarginate (b); pronotum and elytra of mature adults much darker (elytra often striped) (d).....*Leptalia macilenta* 



Encyclops
californica
Van Dyke



*Leptalia
macilenta*
(Mannerheim)



dark
elytron



broadly
striped
elytron



100 (95)

Thick longitudinal ridges running length of elytra, elytral color mottled black and yellowish orange-red (a) 1 species NA...*Rhagium inquisitor*

Elytra without thick longitudinal ridges running length of elytra, elytral color not mottled (b-d).....101



Rhagium
inquisitor
(Linnaeus)



101 (100)

Head and pronotum striped with pale pubescence (a)...*Enoploderes viticollis*

Head and pronotum without pubescent stripes (b-i).....102 



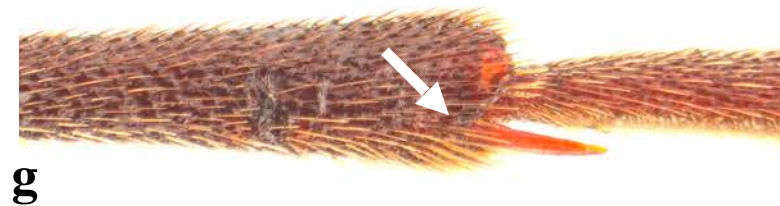
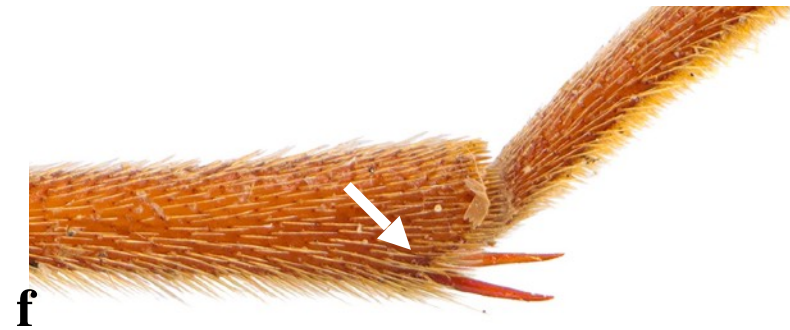
Enoploderes
viticollis
(LeConte)



102 (101)

Antennomeres short and stout (**a**); tibial spurs inserted before apex (**e**)...*Piodes coriacea*

Antennomeres longer and slender (**b-d**); tibial spurs inserted at apex (**f-g**).....103 



Piodes coriacea
LeConte



pale
form

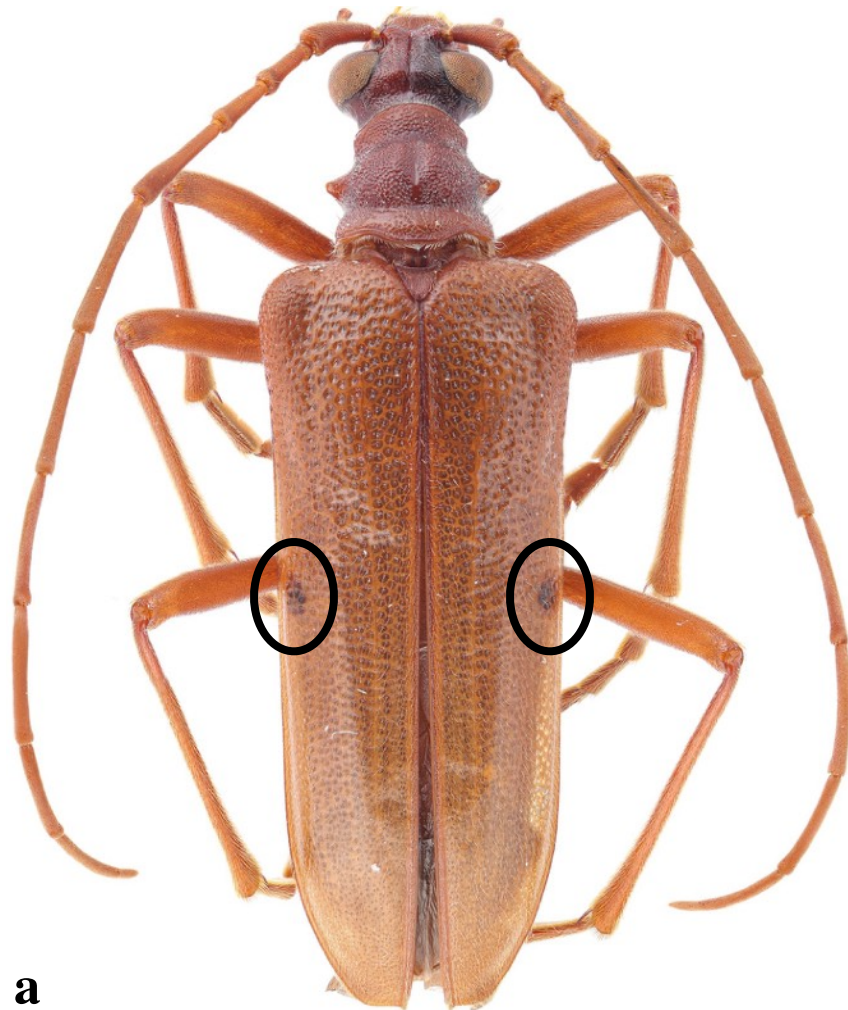


dark
form

103 (102)

Elytral color nearly uniform tan or light brown, usually with a single, small, dark, spot at the midpoint of each elytral margin (a) ~6 spp. WNA.....*Centrodera*

Elytral color otherwise (b-g).....104

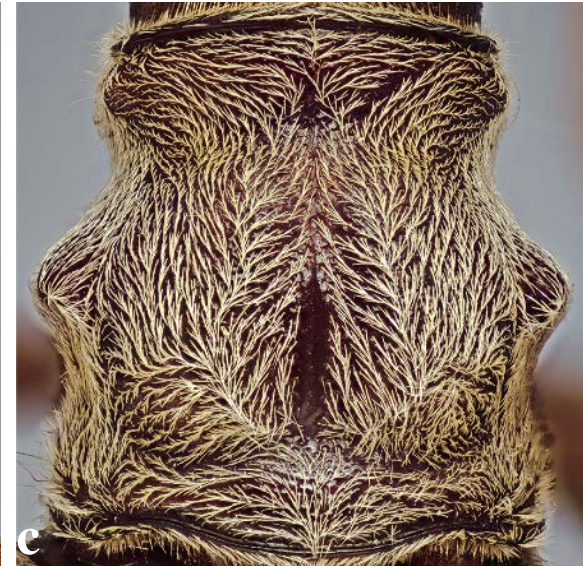
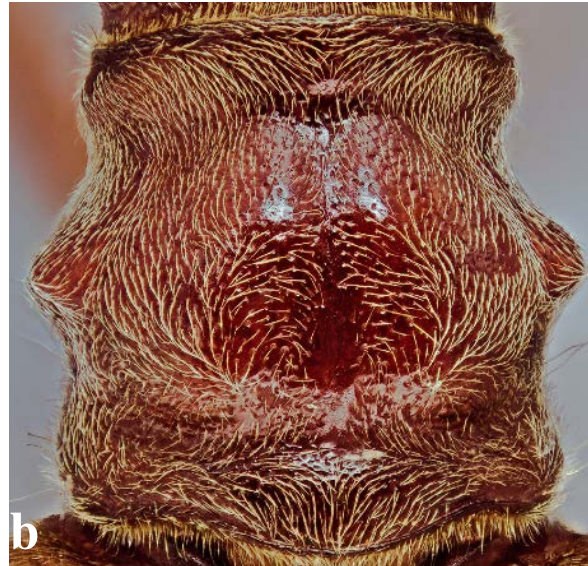
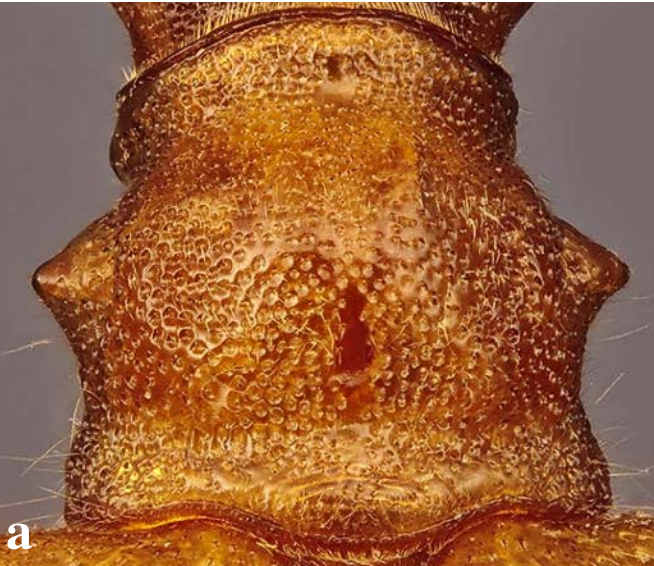


Centrodera Ia

Pronotum dorsally coarsely punctate (**a**) and elytra coarsely, densely punctate in anterior half (**d**); dorsal surface sparsely pubescent on pronotum (**a**) and elytra (**d**) *Centrodera* II



Pronotum dorsally finely punctate (**b-c**) and elytra finely, more sparsely punctate in anterior half (**e-f**); dorsal surface densely pubescent on pronotum (**b-c**) and elytra (**e-f**): other species of *Centrodera* (*C. nevadica* LeConte and *tenera* Casey)



Centrodera Ib



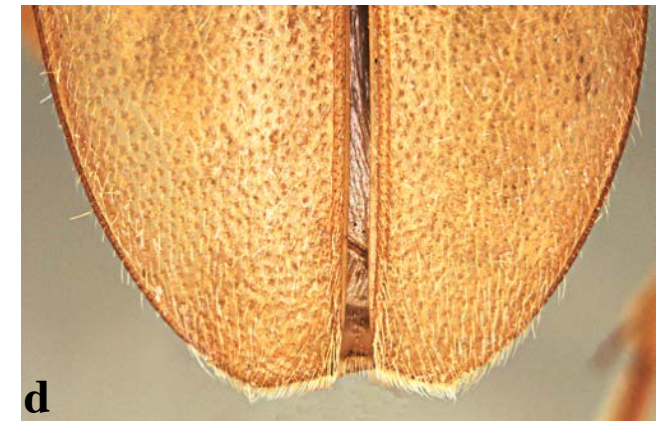
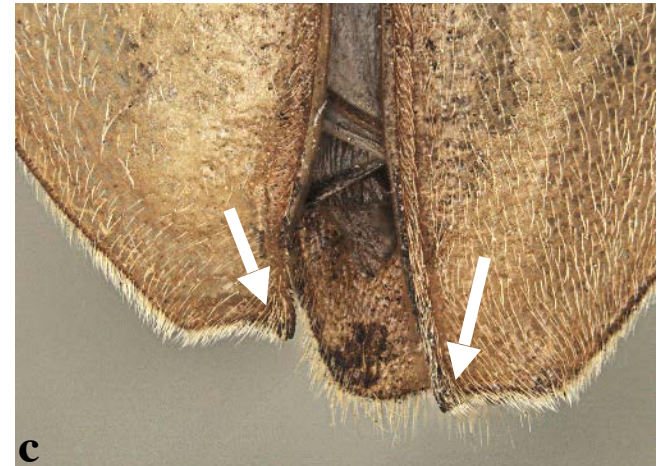
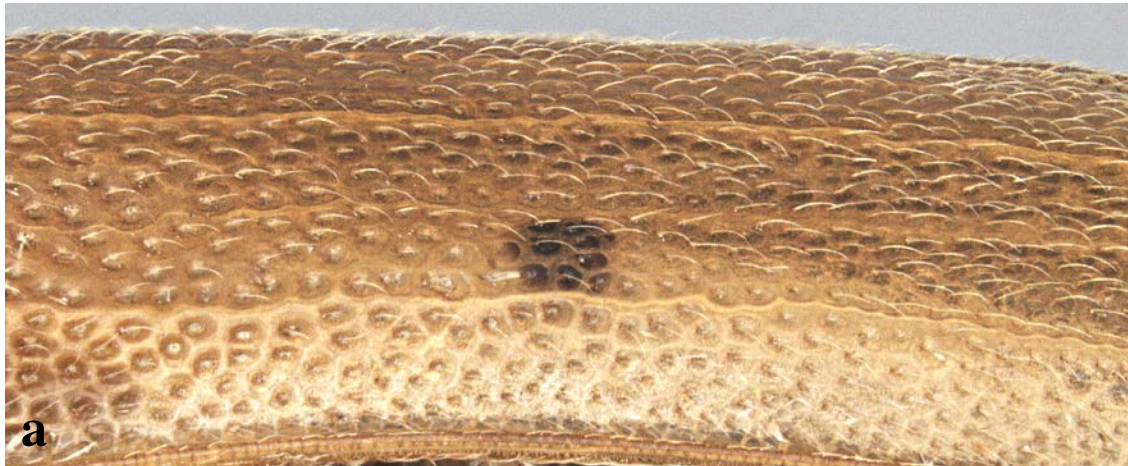
Centrodera II



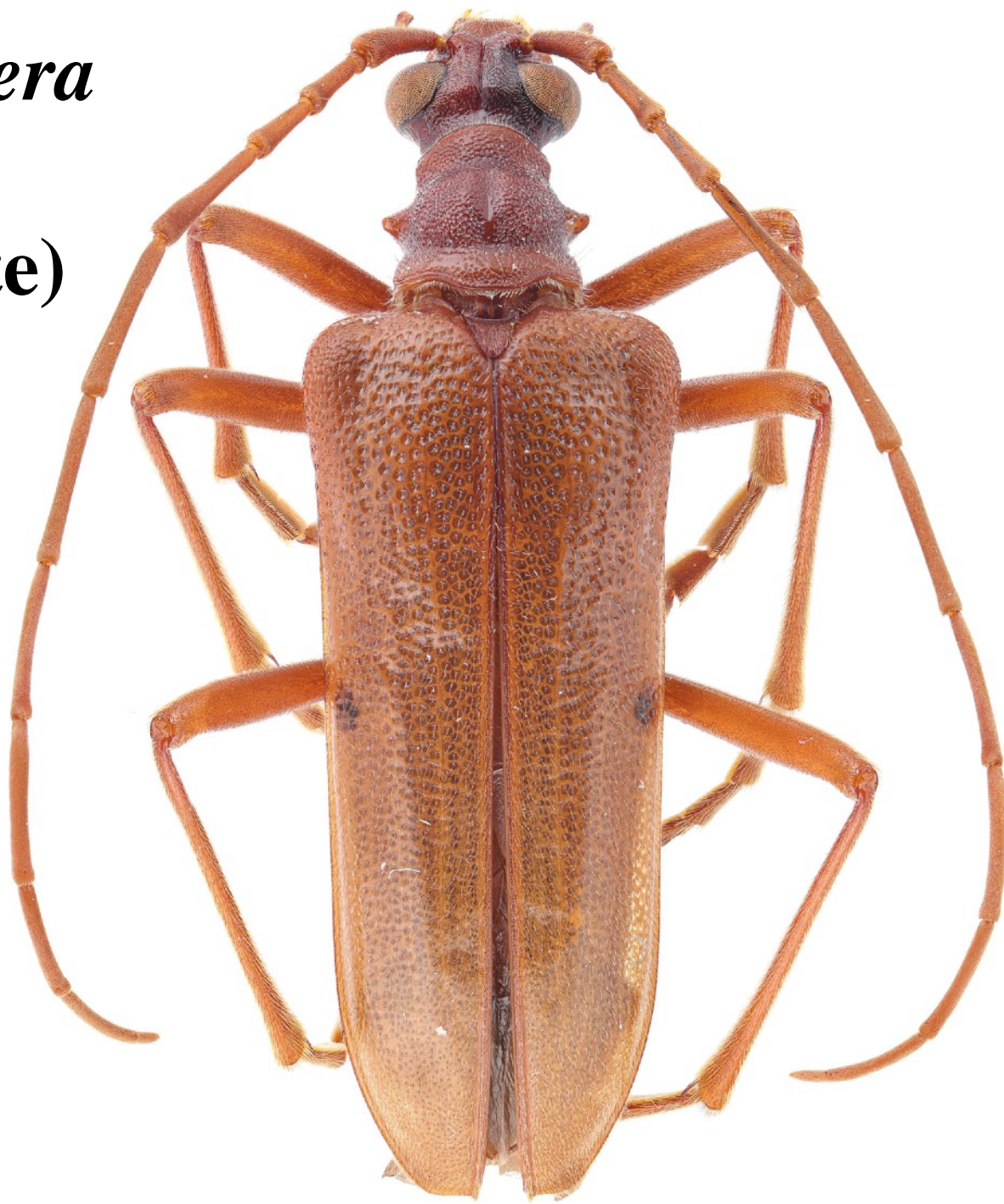
Begin key

Elytra with reclining pubescence (a), elytral apices often with sutural spurs (c).....*Centrodera spurca*

Elytra with suberect pubescence (b), elytral apices narrowly rounded, without sutural spurs (d).....*Centrodera* III



Centrodera
spurca
(LeConte)



Centrodera III



Tarsi short and broad, especially pro- and mesotarsi (a)...*Centrodera dayi*

Tarsi comparatively long and narrow (b): other species of *Centrodera* (*C. autumnata* Leech)

protarsus

protarsus

mesotarsus

mesotarsus

metatarsus

metatarsus

a

b

Centrodera
dayi Leech

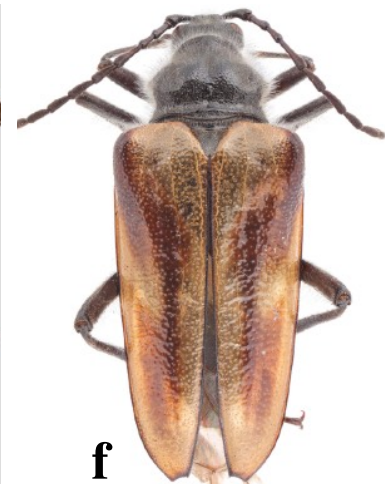
Begin key



104 (103)

Elytra each with two pale oblique bands; pronotal spines very sharp and narrowed (**a**): 1 species NA & WNA.....*Pseudoxylosteus ornatus*

Elytra either all dark (**b**) or with variable pale markings (**c-f**) but always without two pale oblique bands; pronotal spines duller and broader (**b-f**).....**105**



a

b

c

d

e

f

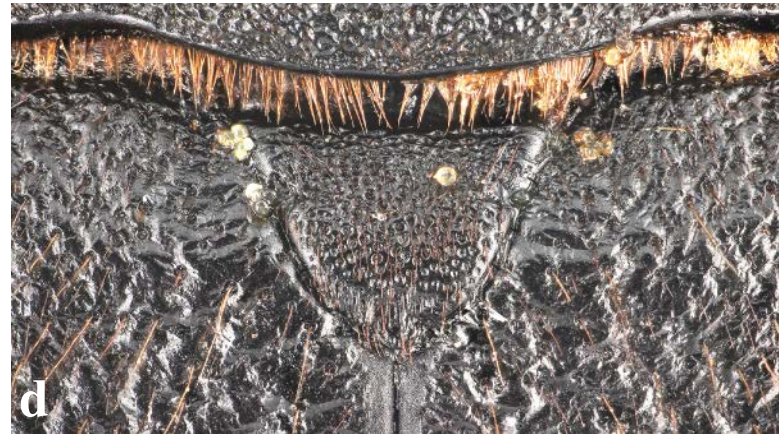
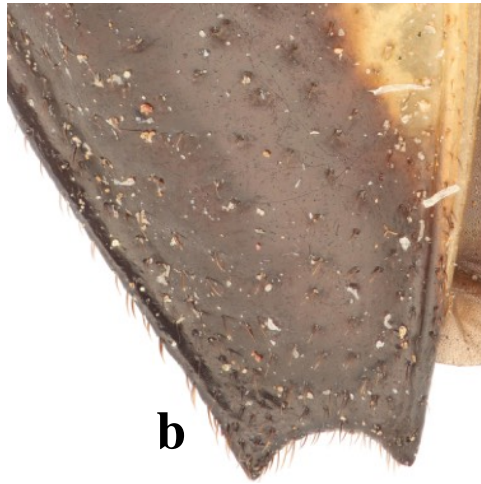
Pseudxylosteus
ornatus
(LeConte)



105 (104)

Elytral apices rounded (**a**); scutellum in about the same plane as the elytral bases (**d**): 4 species WNA and NA.....*Neanthophylax*

Elytral apices emarginate with dentate angles (**b-c**); scutellum sunken below the plane of the elytral bases (**e**): 2 species WNA and NA...*Pachyta* 



Neanthophylax
mirificus
(Bland) - male



Neanthophylax



Neanthophylax
tenebrosus
LeConte
male

Neanthophylax
tenebrosus
LeConte
female



Pachyta

*Pachyta
armata*
LeConte



*Pachyta
lamed*
(Linnaeus)

106 (94)

Posterior angles of pronotum sharp, at least partially covering anterior margins of humeri (**a-c**).....107

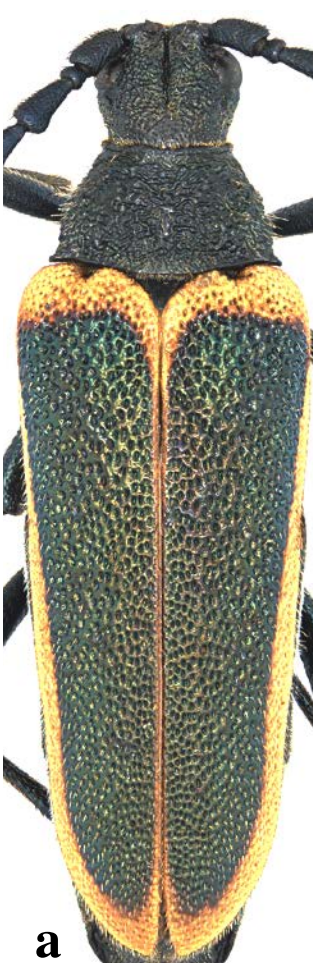
Posterior angles of pronotum not sharp, covering none of anterior anterior margins of humeri (**d-f**).....115



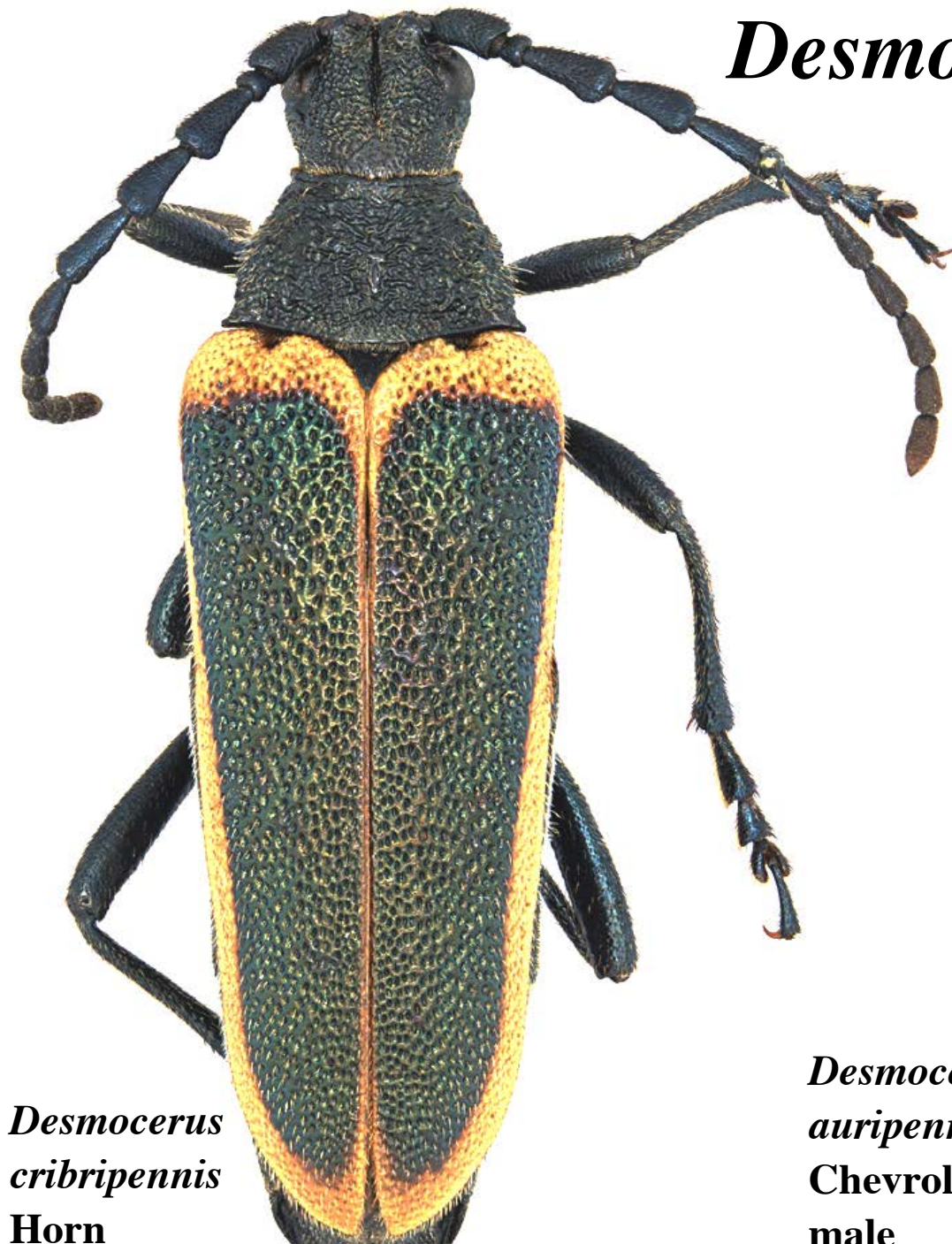
107 (106)

Entire dorsal surface coarsely, contiguously punctate (a): 5 species in WNA.....*Desmocerus*

Either entire dorsal surface more finely, sparsely punctate (b) or only part of dorsum coarsely, contiguously punctate (c-e).....108



Desmocerus



*Desmocerus
cribripennis*
Horn



*Desmocerus
auripennis*
Chevrolat
male

108 (107)

Pronotum with sides evenly arcuate from anterior to posterior (excluding the anterior and posterior impressions) (a-b).....109

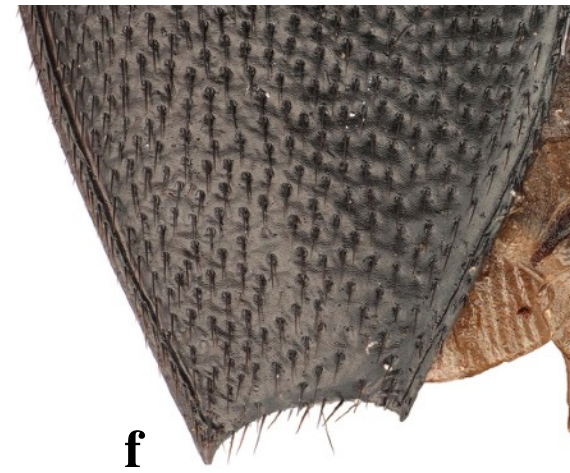
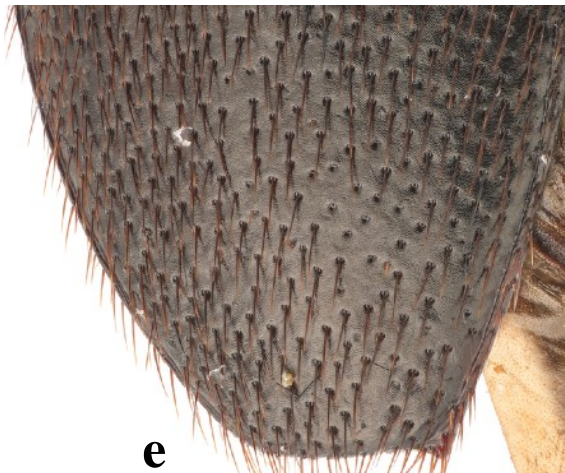
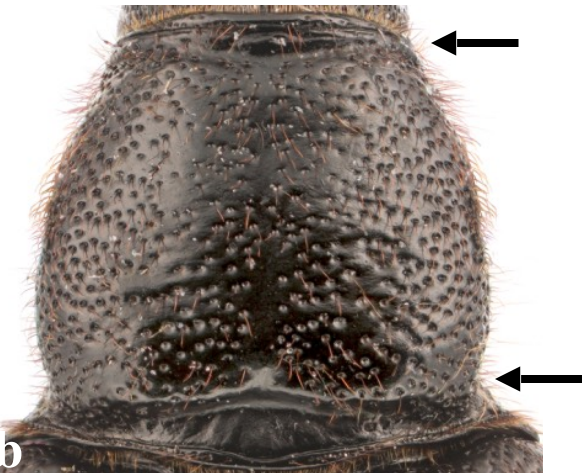
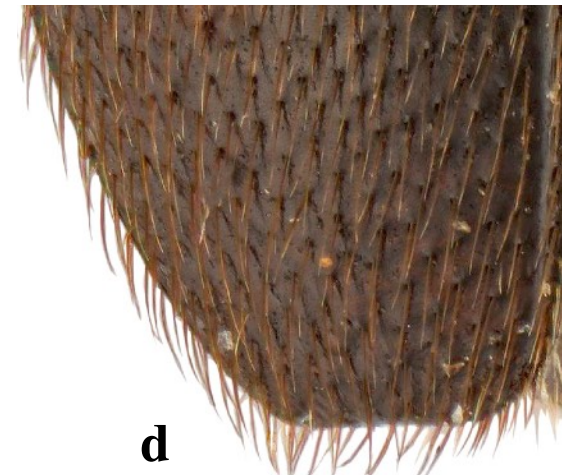
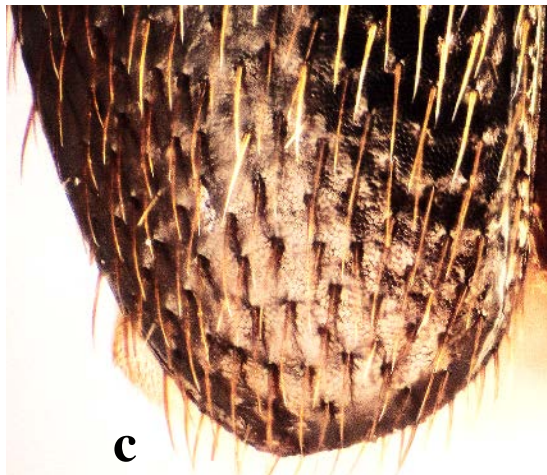
Pronotum with sides uneven, angulate or slightly tuberculate (c-f)....110



109 (108)

Prontum without anterior transverse impression and at most a feeble posterior impression (a); elytra apex broad, rounded (c) or truncate (d): 4 species in WNA.....*Grammoptera*

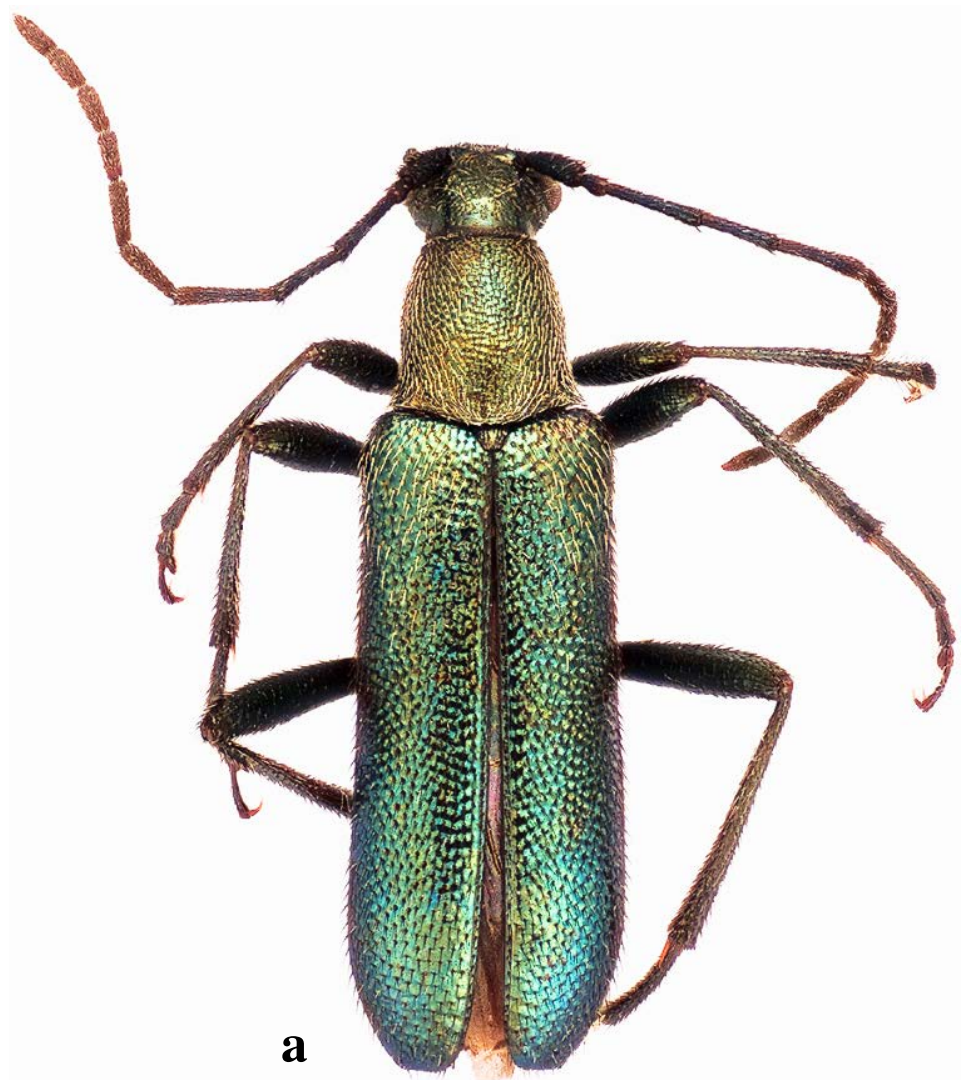
Prontum with both distinct deep anterior and posterior transverse impressions (b); elytra apex narrowed, truncate (e) or emarginate (f): 3 species in WNA & NA.....*Pygoleptura*



Grammoptera I

Body color metallic bluish or greenish (a): *Grammoptera militaris* or *G. molybdica*

Body color not metallic (b).....*Grammoptera* II



Metallic *Grammoptera*



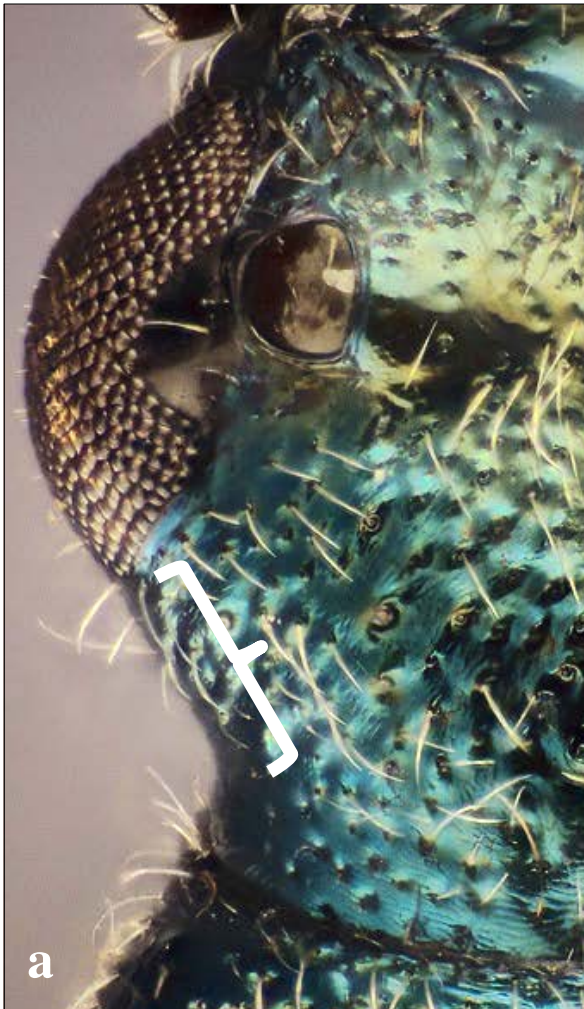
Grammoptera
molybdica
(LeConte)

Grammoptera II

Begin key

Tempora oblique or more-or-less parallel (a)...*Grammoptera rhodopus*
(no image available – metallic species used for character)

Tempora strongly rounded (b).....*Grammoptera subargentata*



Grammoptera
rhodopus
(LeConte)



Grammoptera
subargentata
(Kirby)



Pygoleptura



*Pygoleptura
carbonata*
(LeConte)

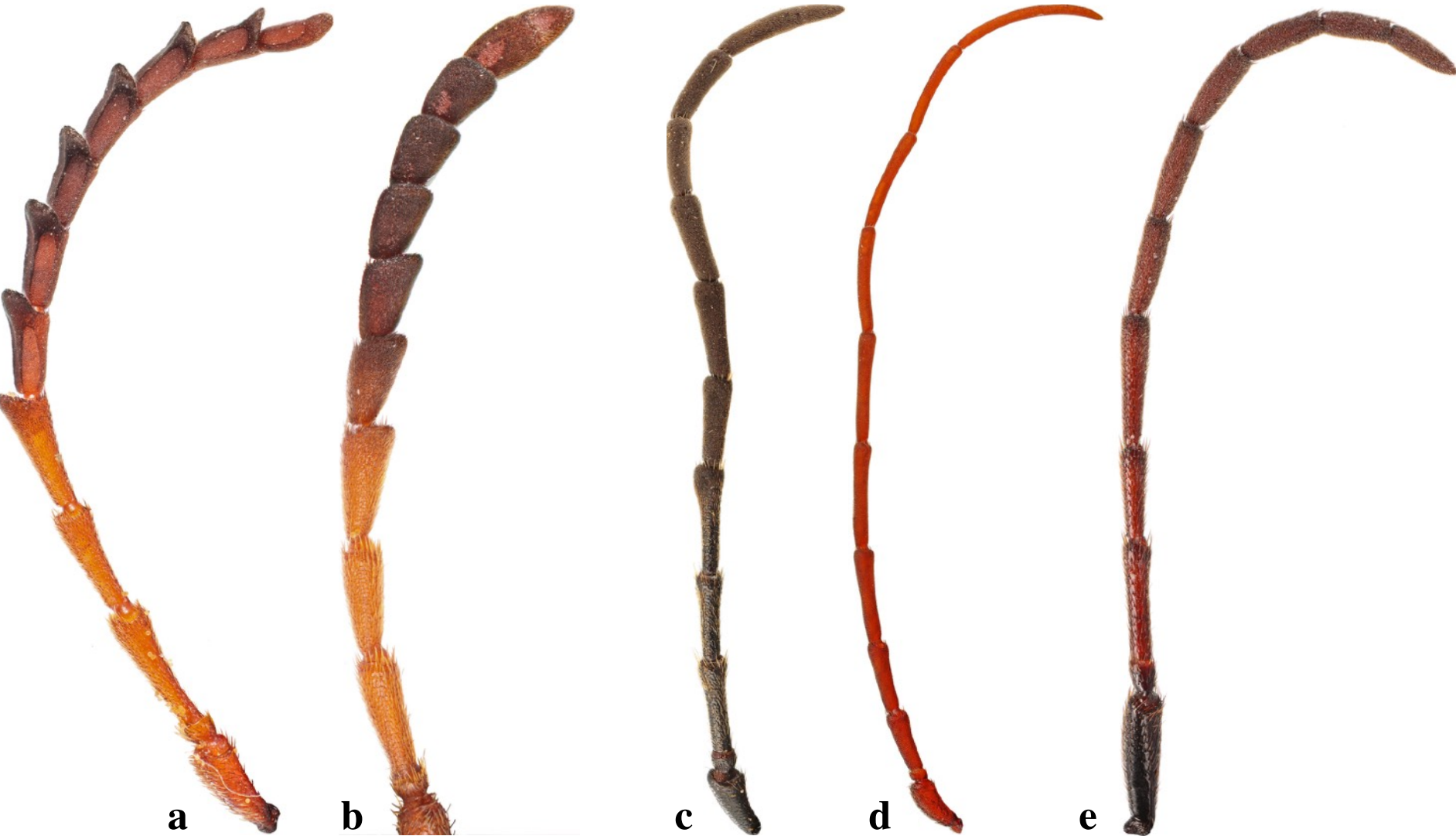


*Pygoleptura
nigrella*
(Say)

110 (108)

Antennal segments stout (**a-b**).....111

Most or all antennal segments narrow (**c-e**).....112



111 (110) I

Head (a), pronotum (c), and elytra finely punctate; area surrounding eyes greater (e); outer antennal segments with **very** small areas of small pores (g-i): 3 species in WNA and NA... ..

Head (b), pronotum (d), and elytra coarsely punctate; area surrounding eyes less (f); outer antennal segments with distinct areas of small pores (j-k): 6 species in WNA... ..
.....*Typocerus*



111 (110) II



e

Stenostrophia with area surrounding eyes longer and broader.

Typocerus with area surrounding eyes shorter and narrower.



f

111 (110) III



at high magnification, the pores on male antennae can be seen to be paired



Antennae of *Stenostrophia*. Areas with pores are on the **underside** of the outermost segments and are larger in males (**i**) than females (**h**) (almost invisible in these).

Antennae of *Typocerus*. Areas with pores are on the **underside** of segments and are larger and on more segments (~6th on) in males (**j**) than females (**k**) (and only on the outermost segments in these).

Stenostrophia



*Stenostrophia
amabilis*
(LeConte)

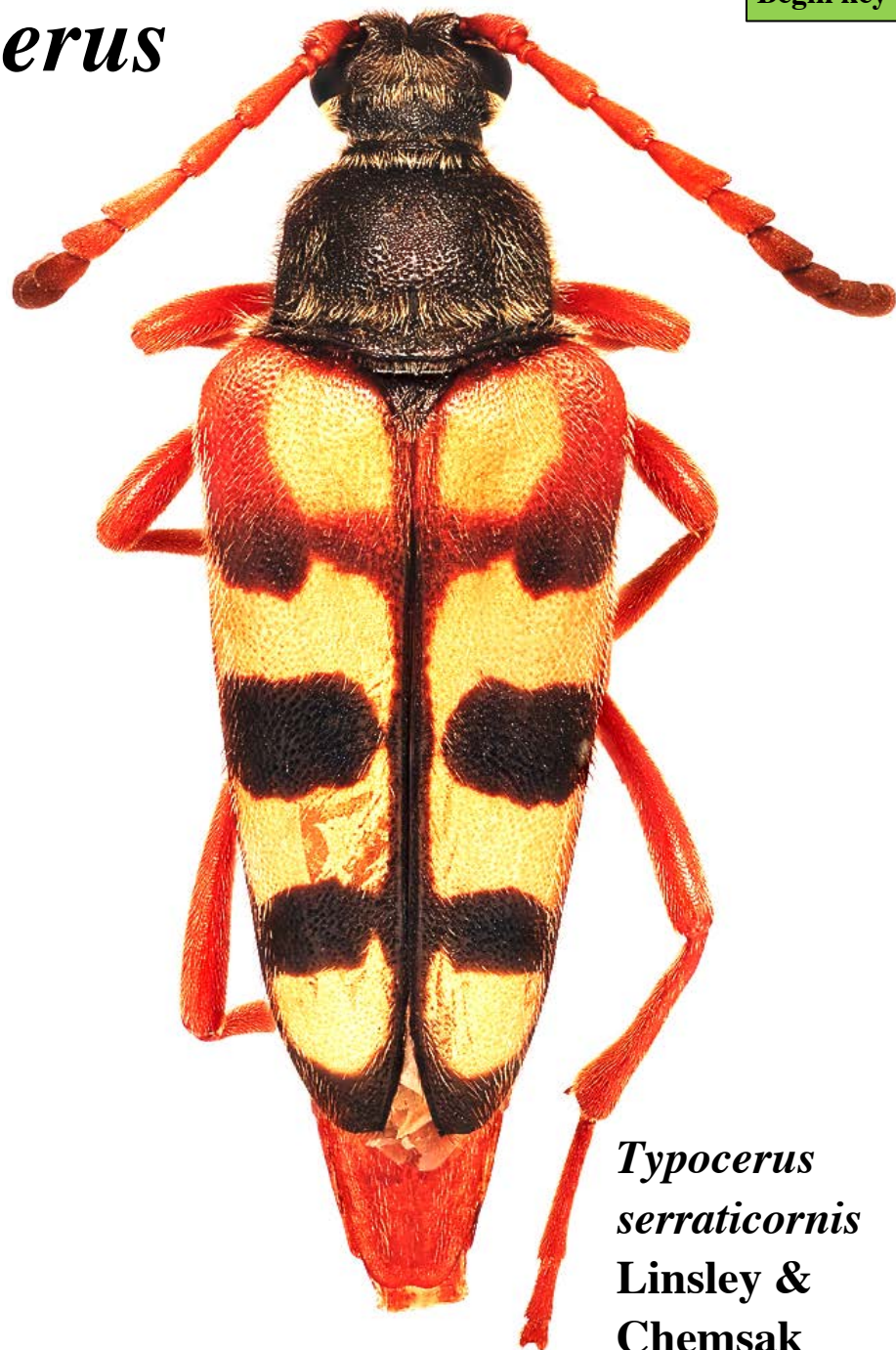


*Stenostrophia
tribalteata*
(LeConte)

Typocerus



Typocerus
octonotatus
(Haldeman)



Typocerus
serraticornis
Linsley &
Chemsak

112 (110)

Elytra brown or orange with at most apex dark (a).....*Nealosterna rubida*

Elytra either all dark or with dark and pale patterns (b-f).....113 



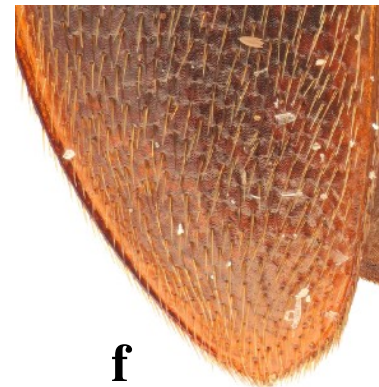
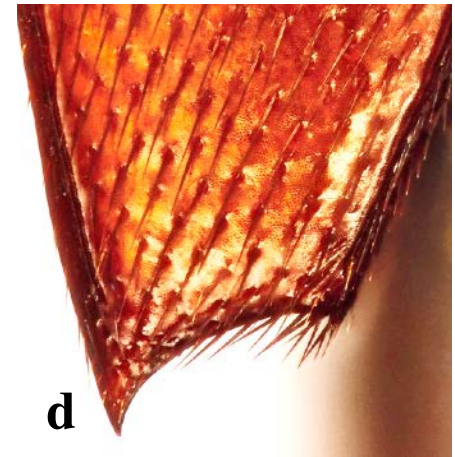
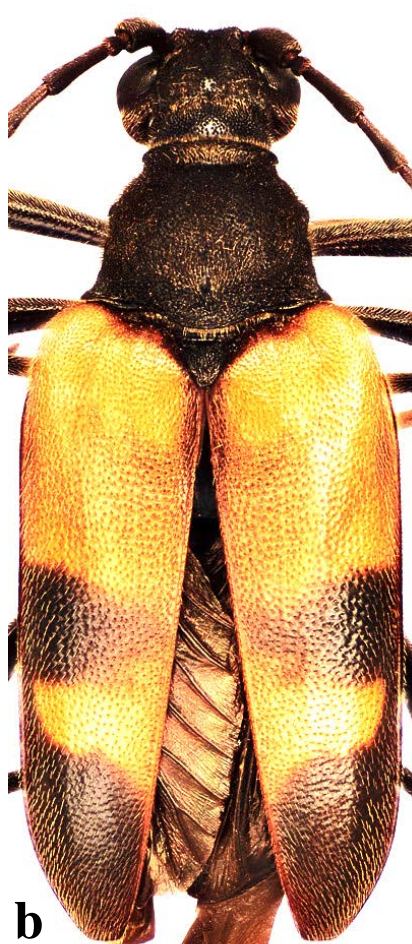
Neocalosterna
rubida
(LeConte)



113 (112)

Body slender (**a**); elytral apices most often emarginate and dentate (**d**): 8 species in WNA.....*Leptura*

Body stout (**b-c**); elytral apices never emarginate, either rounded (**b**) or truncate (**c**):114 



Leptura

Elytron normally with a large, dark oblique spot in anterior half and with a large, dark postmedian band, but pattern highly variable (**a**); legs and sides of head and pronotum at least partially pale (**d**).....*Leptura obliterata*

Elytron without an oblique spot in anterior half and without a post-median band; legs, head, and pronotum all dark (**b-c**).....other species of *Leptura*



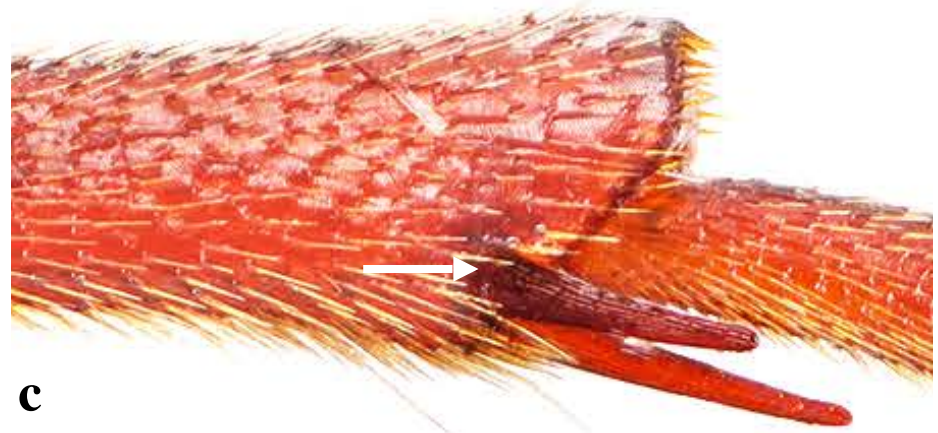
Leptura
obliterata
(Haldeman)



114 (113)

Head short, with broad tempora (a); metatibial spurs inserted before apex (c): 2 species in WNA & NA.....*Dorcasina*

Head long, with narrow tempora (b); metatibial spurs inserted near apex (d): 8 species in WNA.....*Judolia*



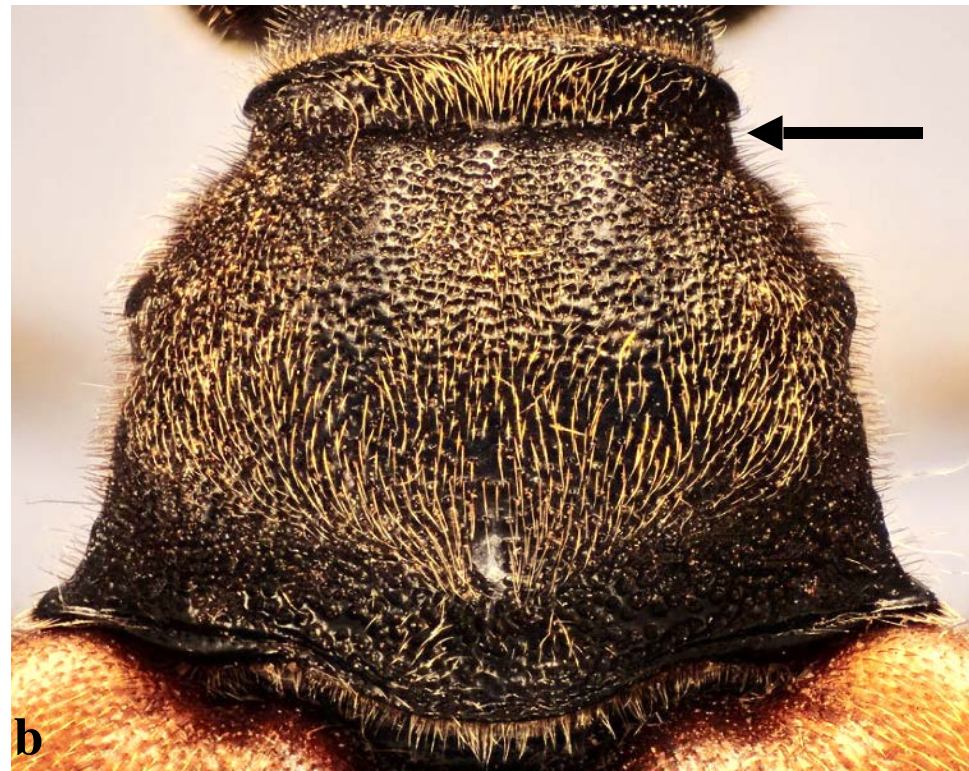
Dorcasina



Judolia

Pronotum with long pubescence; deep transverse impression just behind anterior margin (a).....*Judolia instabilis*

Pronotum with short pubescence; deep transverse impression well behind anterior margin (b):.....other species of *Judolia* in WNA



Judolia
instabilis
(Haldeman)



Note: In this species, the dark spots on the elytra vary greatly in size and shape.



115 (106) I

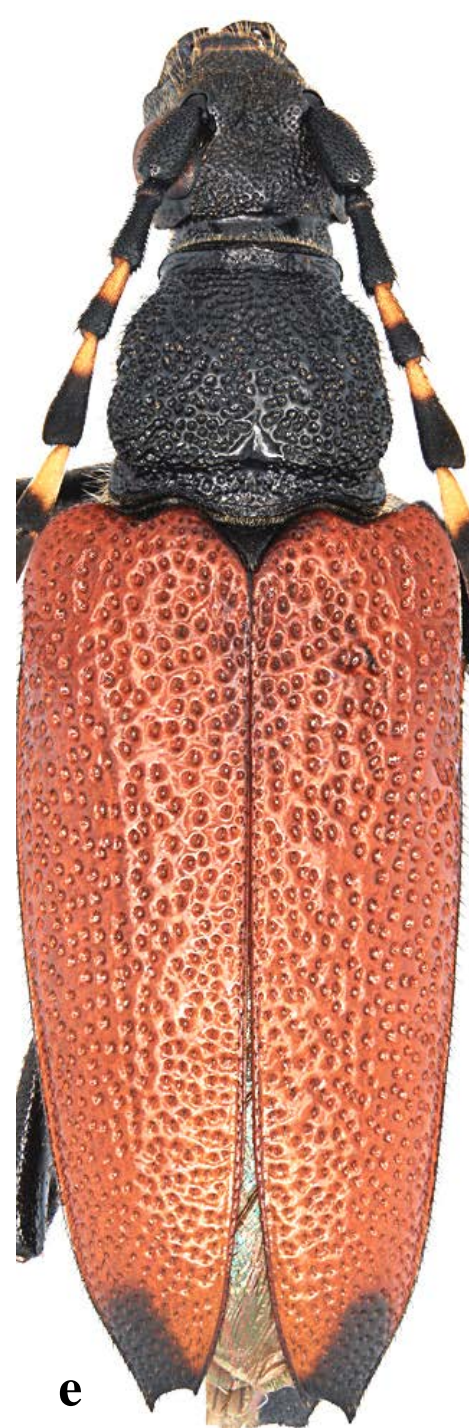
Begin key

Antennae distinctly banded and with segments 4-8 triangular (**a**); entire body coarsely, contiguously punctate (**e**).....*Stictoleptura canadensis*

If antennae distinctly banded, no segments are triangular (**b**), otherwise unbanded (**c-d**); body not coarsely, contiguously punctate (**f-o**).....116 



115 (106) II



Stictoleptura canadensis (Olivier)

black
morph



red
morph



116 (115)

Begin key

Anterior margin of eye entire (a).....117

Anterior margin of eye emarginate (b).....120 



117 (116)

Tempora abruptly constricted posteriorly (**a**); posterior margin of pronotum at most with faint bead (**e**): 18 species in WNA.....*Cortodera*

Tempora not abruptly constricted posteriorly (**b-d**); posterior margin of pronotum with well-defined bead (**f-h**).....**118**

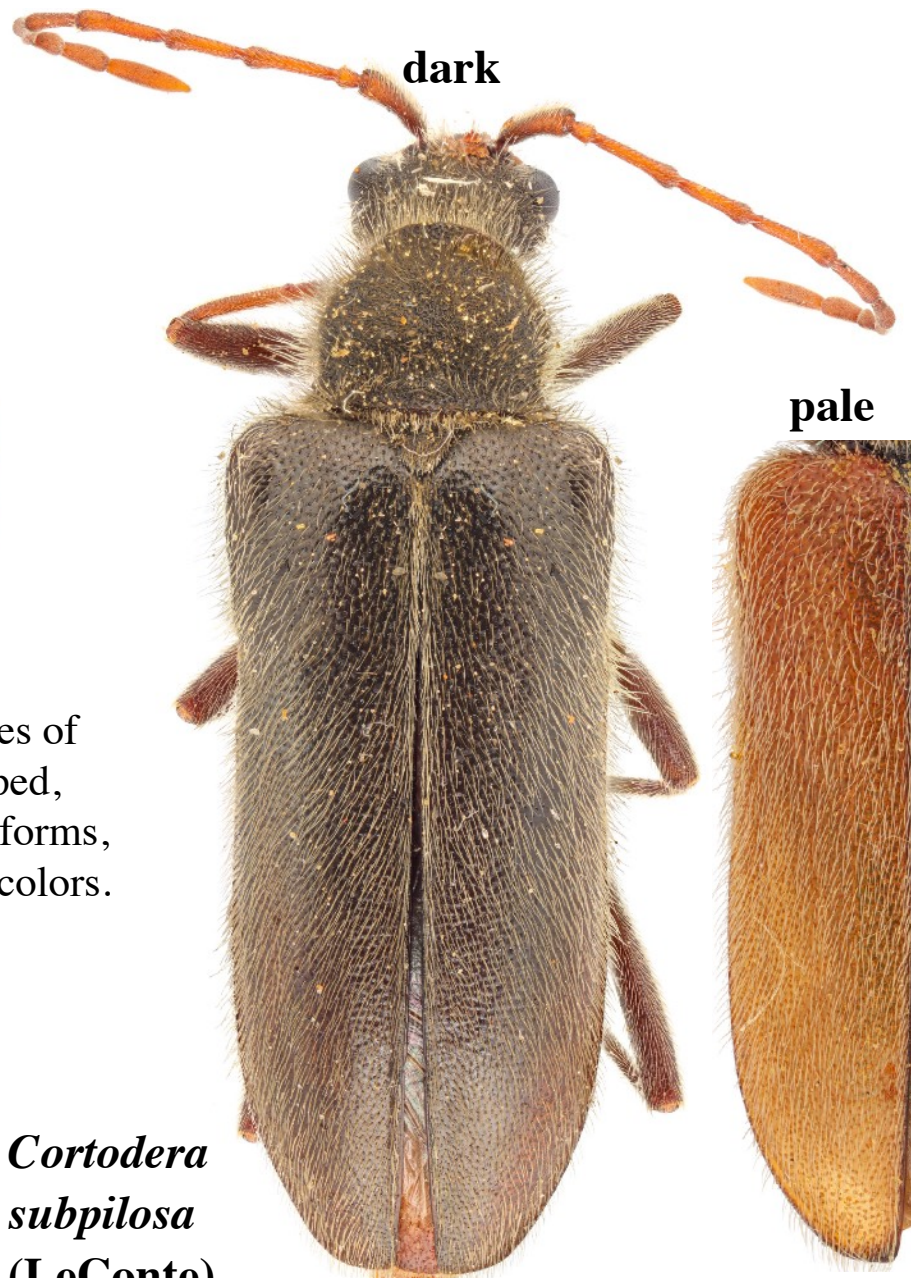


Cortodera



*Cortodera
longicornis*
(Kirby)

Note: many species of *Cortodera* are striped, have striped color forms, or variable elytral colors.



*Cortodera
subpilosa*
(LeConte)

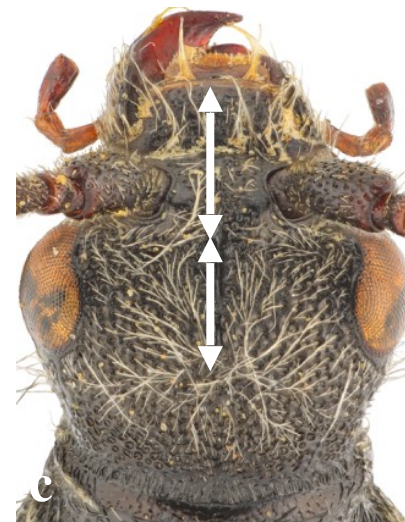
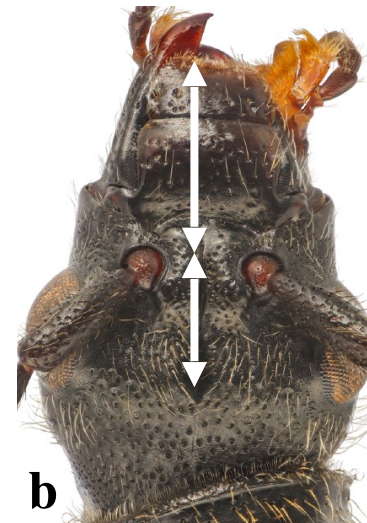
118 (117)

Begin key 

Front of head long (a).....*Gnathacmaeops pratensis*

*This species has been shifted in and out of *Acmaeops*. The most current taxonomic treatment has it separate.

Front of head short (b-c).....119 



*Gnathacmaeops
pratensis*
(Laicharting)

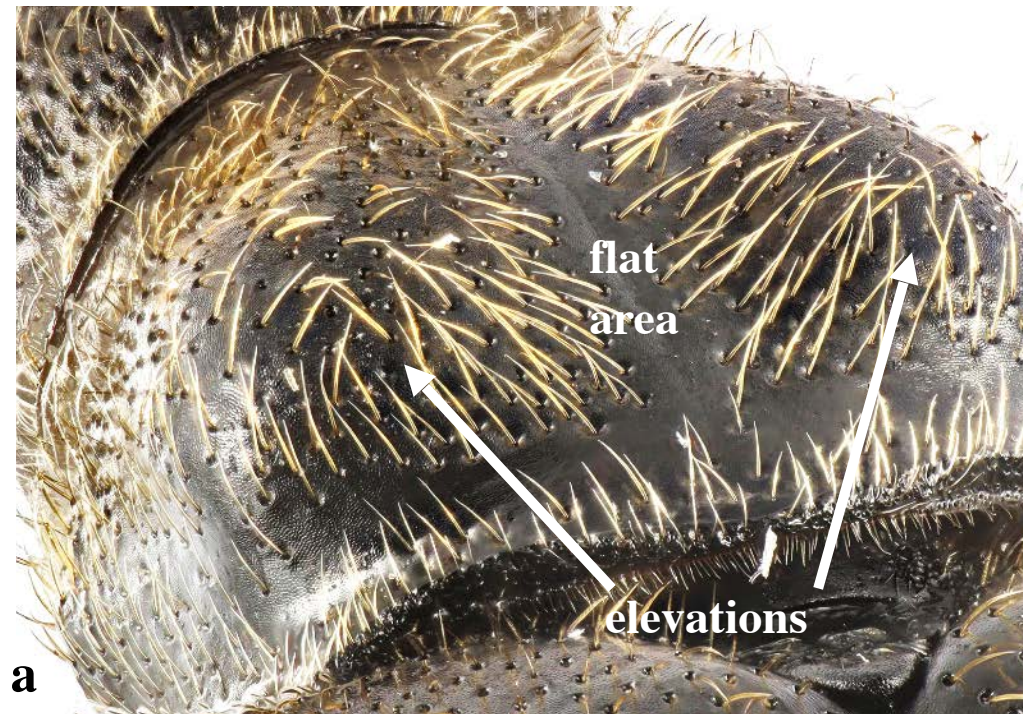


119 (118) I

Begin key

Disk of pronotum flattened, with obtuse elevations on either side (a); elytral apices emarginate (c) to truncate (d).....*Acmaeops proteus*

Disk of pronotum more or less evenly convex (b); elytral apices oblique (e) to rounded (f): 3 species in WNA.....*Brachysomida*



119 (118) II

Begin key



apices emarginate (c) to truncate (d)



apices oblique (e) to rounded (f)



Acmaeops proteus (Kirby)

Note: As the name suggests, the elytra and appendages of this species are highly variable in color.

dark morph



light morph



Brachysomida



These are just a few of the many variations of elytral coloration and pubescence characteristic of this extremely variable species. This extreme variation led to many synonyms.



Brachysomida californica
(LeConte)

120 (116)

Begin key 

At least some portions of integument obscured by dense pubescence (**a-d**)...121

Integument NOT obscured by dense pubescence (**e-n**).....122 



a



b



e



f



g



h



i



c



d



j



k



l



m



n

121 (120)

Begin key

Elytra unmarked (a) or at most striped (b): 2 species in NA..*Lepturobosca*

Elytra banded (c): 2 species in WNA.....*Strophiona*



Lepturobosca



*Lepturobosca
chrysocoma*
(Kirby)



*Lepturobosca
nigrolineata*
(Bland)

Strophiona

Anterior dark elytral band transverse (a).....*Strophiona laeta*

Anterior dark elytral band oblique (b).....*Strophiona tigrina*



Strophiona



Strophiona
laeta
(LeConte)



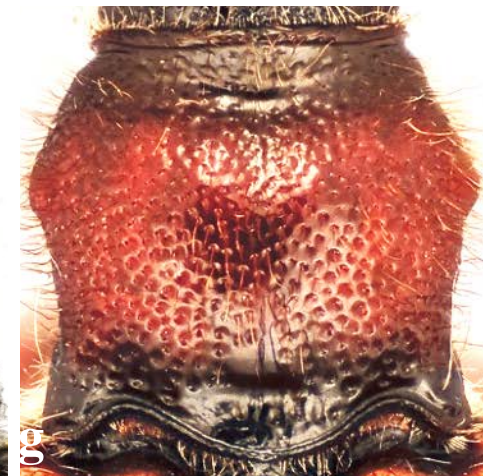
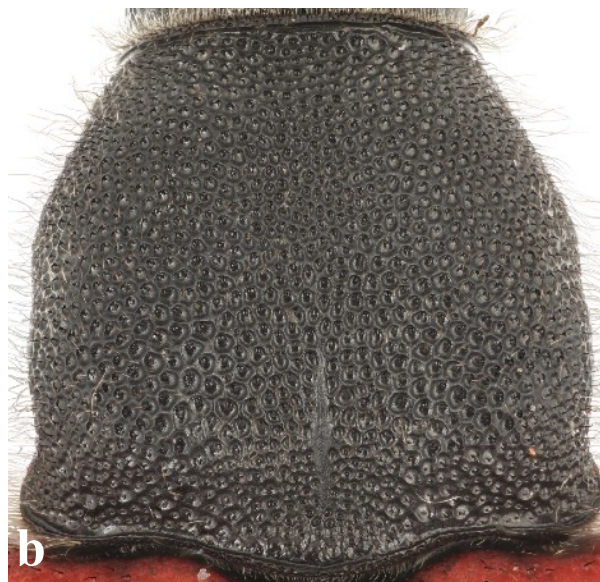
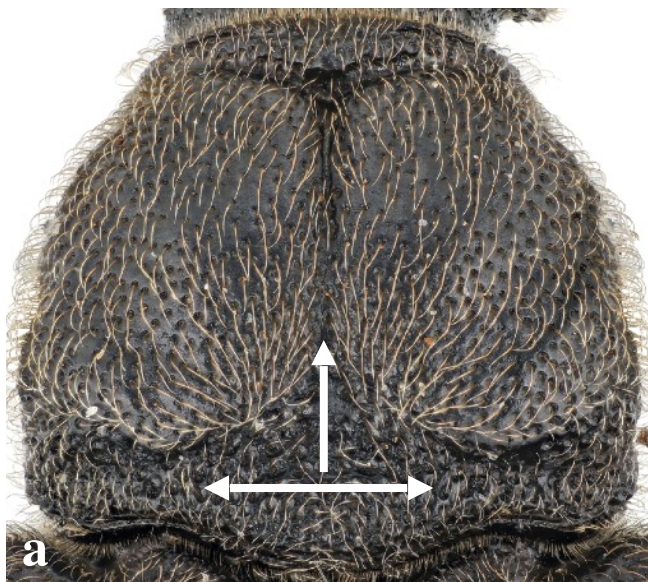
Strophiona
tigrina
Casey

122 (120)

Begin key 

Pronotum with deep linear median impression and the posterior impression strongly defined anteriorly (a).....*Lepturopsis dolorosa*

Pronotum otherwise (b-g).....123 



Lepturopsis
dolorosa
(LeConte)

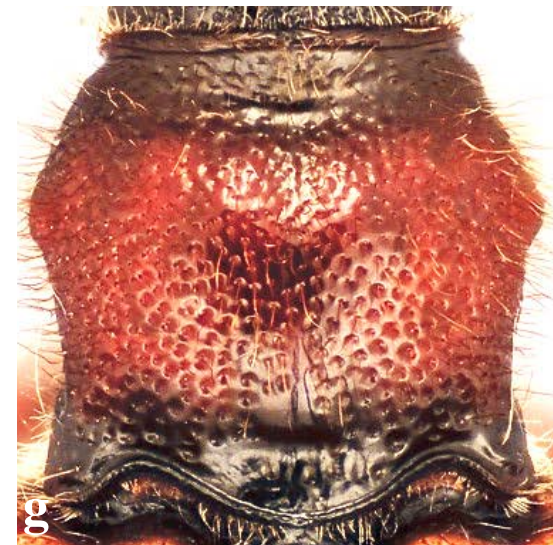
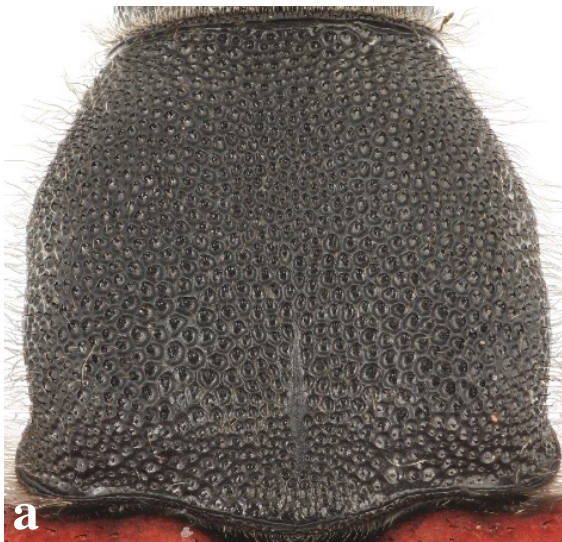


123 (122)

Begin key

Pronotum very rounded, with narrow anterior depression (a-b).....124

Pronotum more elongate, with broad anterior depression (c-f).....125 

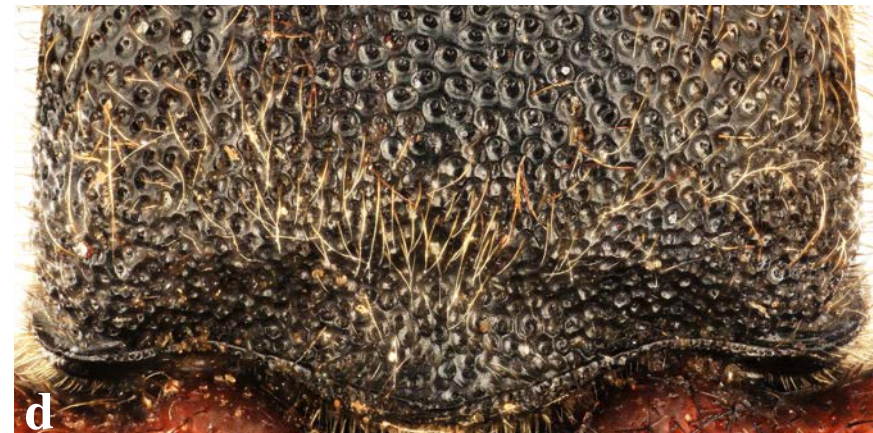
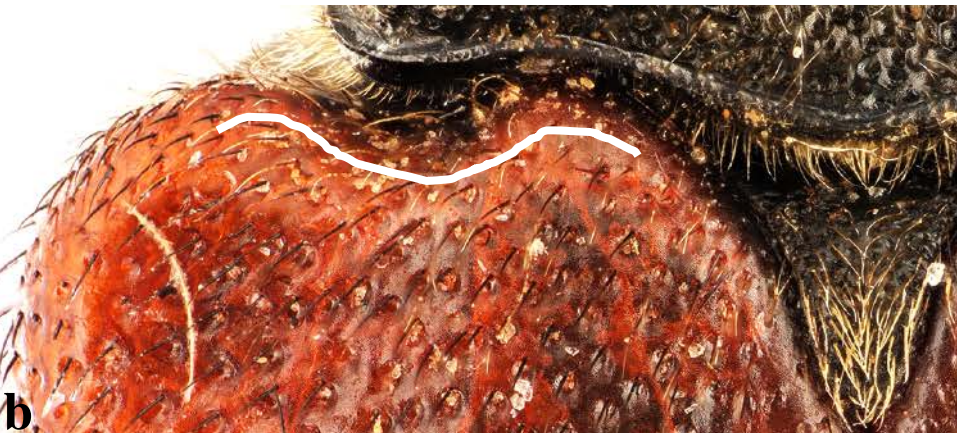


124 (123)

Begin key 

Anterior margin of elytron essentially straight, not lobed (**a**); pronotum with posterior horizontal impression shallow and narrow (**c**): 2 species in WNA.....*Anastrangalia*

Anterior margin of elytron sinuate, lobed around scutellum (**b**); pronotum with posterior horizontal impression deep and broad (**d**): 3 species in WNA.....*Brachyleptura* 



Anastrangalia

Anastrangalia
sanguinea (LeConte)

Anastrangalia
laetifica
(LeConte)

*genders differ
strongly in color
of the elytra and
the shape of
pronotum

female

male



Brachyleptura
dehiscens
(LeConte)



Brachyleptura



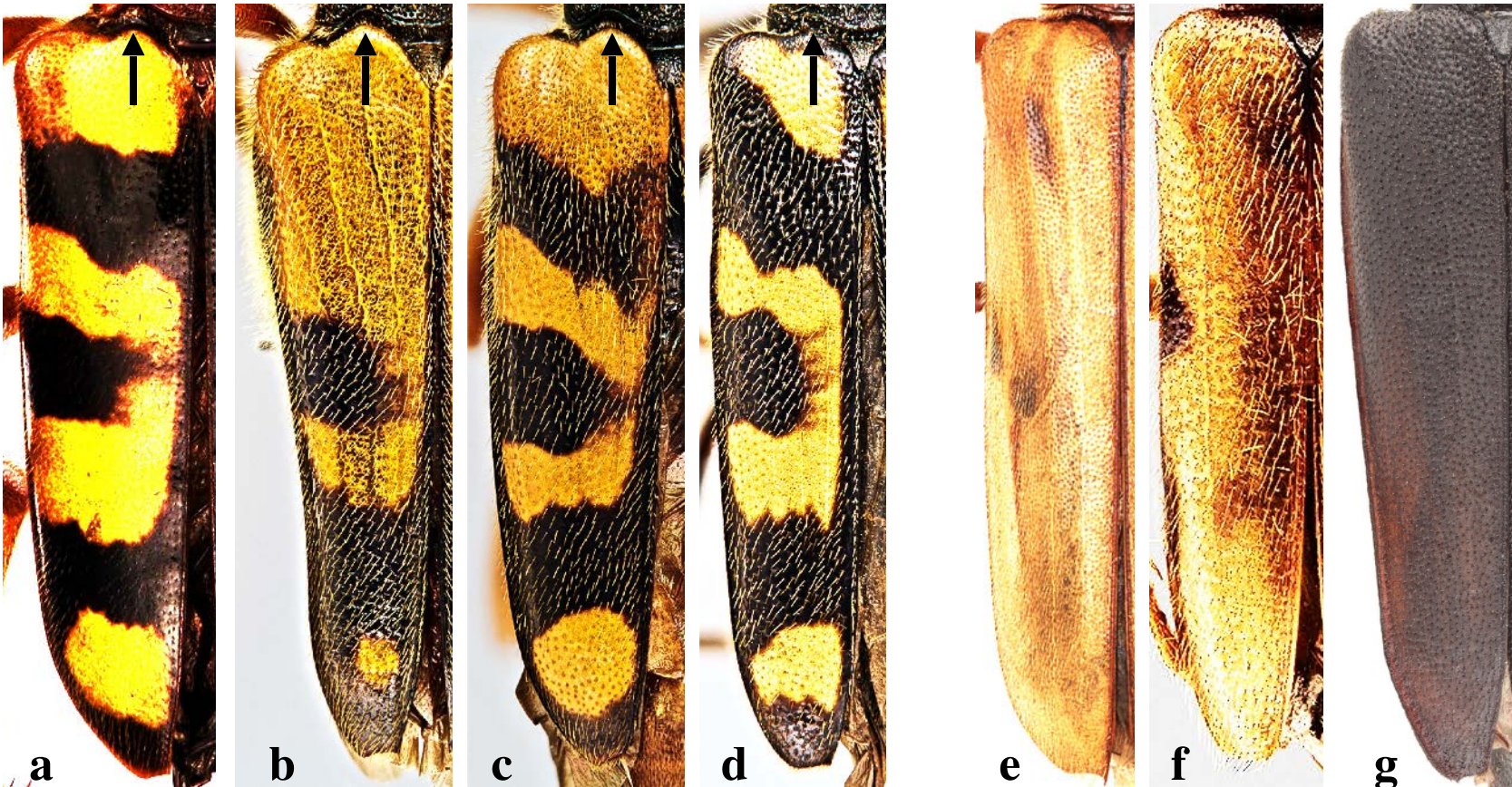
Brachyleptura
vexatrix
(Mannerheim)

*The maculations of the
elytra are highly variable.

125 (123)

Anterior margin of elytron strongly sinuate & projecting as a lobe on either side of scutellum, elytra of almost all species boldly patterned with bands or large spots (**a-d**): 4 species in WNA.....*Xestoleptura*

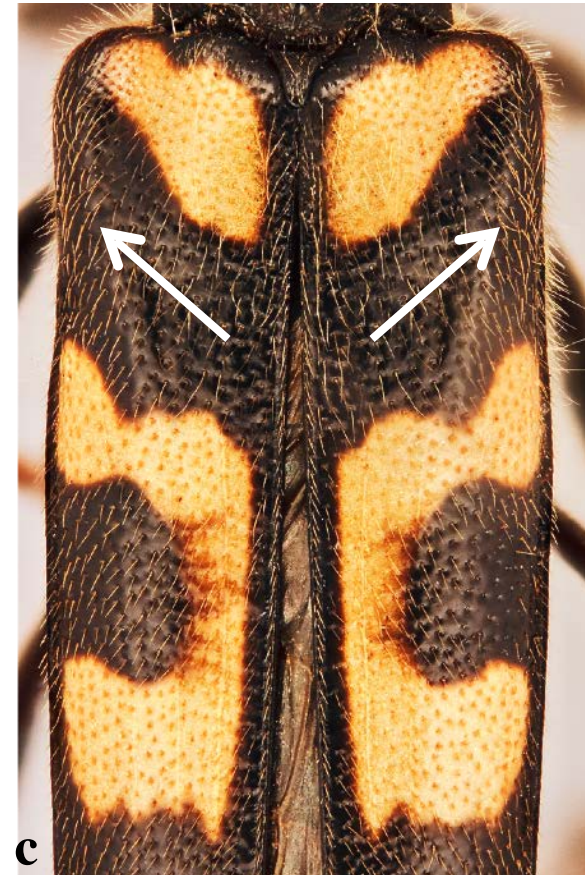
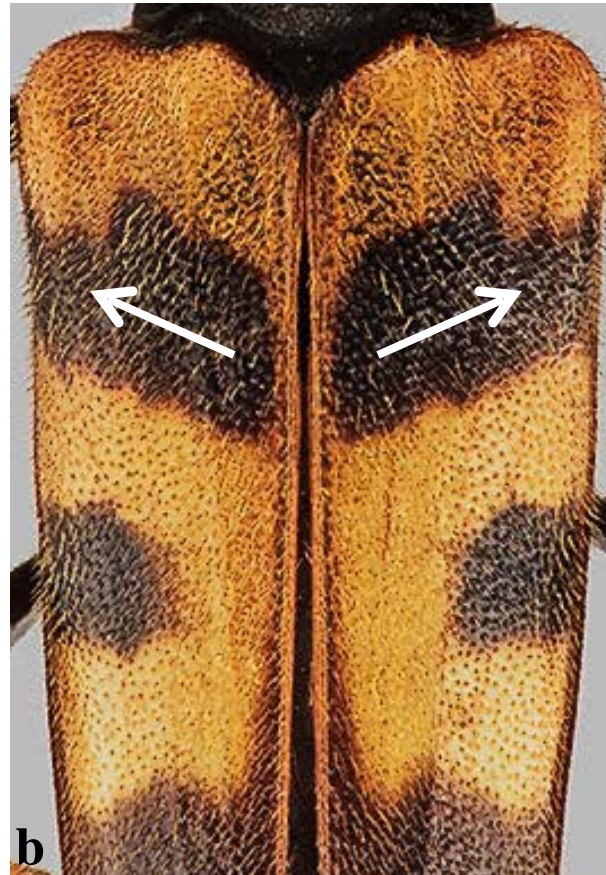
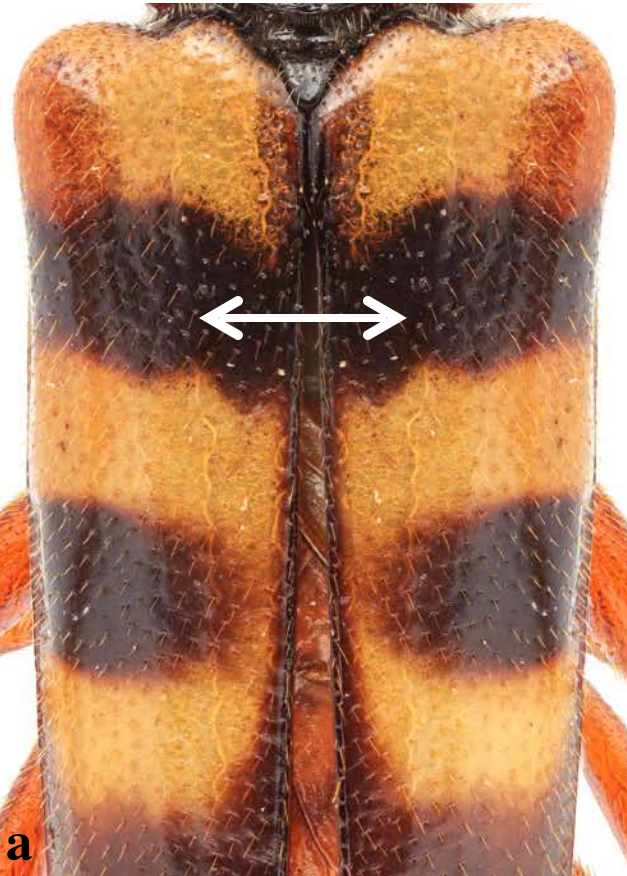
Anterior margin of elytron essentially straight & at most slightly sinuate & not lobed, elytra never with bands or large spots (**e-g**).....**126**



Xestoleptura I

Elytron with anterior dark band always present and transverse (a).....*Xestoleptura crassicornis*

If elytron has an anterior dark band, it is oblique (b-c).....*Xestoleptura* II



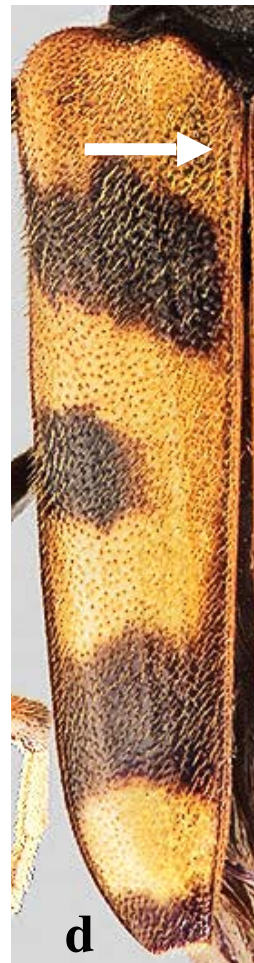
Xestoleptura
crassicornis
(LeConte)



Xestoleptura II

Elytral suture is dark anterior of anterior dark band
(a).....*Xestoleptura behrensi*

Elytral suture is pale anterior of anterior dark band
(b-d).....*Xestoleptura* III 



Xestoleptura behrensi (LeConte)

As with so many other cerambycids with maculate elytra, this species is highly variable. Many males (not shown) can have the entire anterior half of the elytra pale.



dark
elytra

Xestoleptura III

Legs pale (a).....*Xestoleptura crassipes*

Legs with at least femora dark (b).....*Xestoleptura tibialis* 

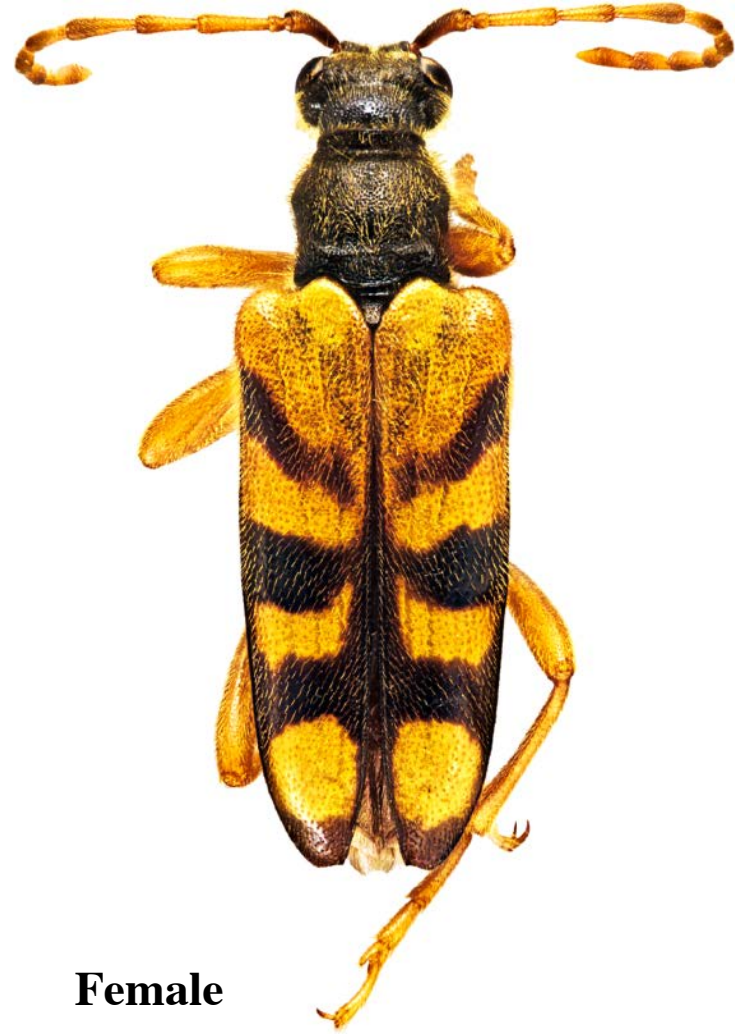


a

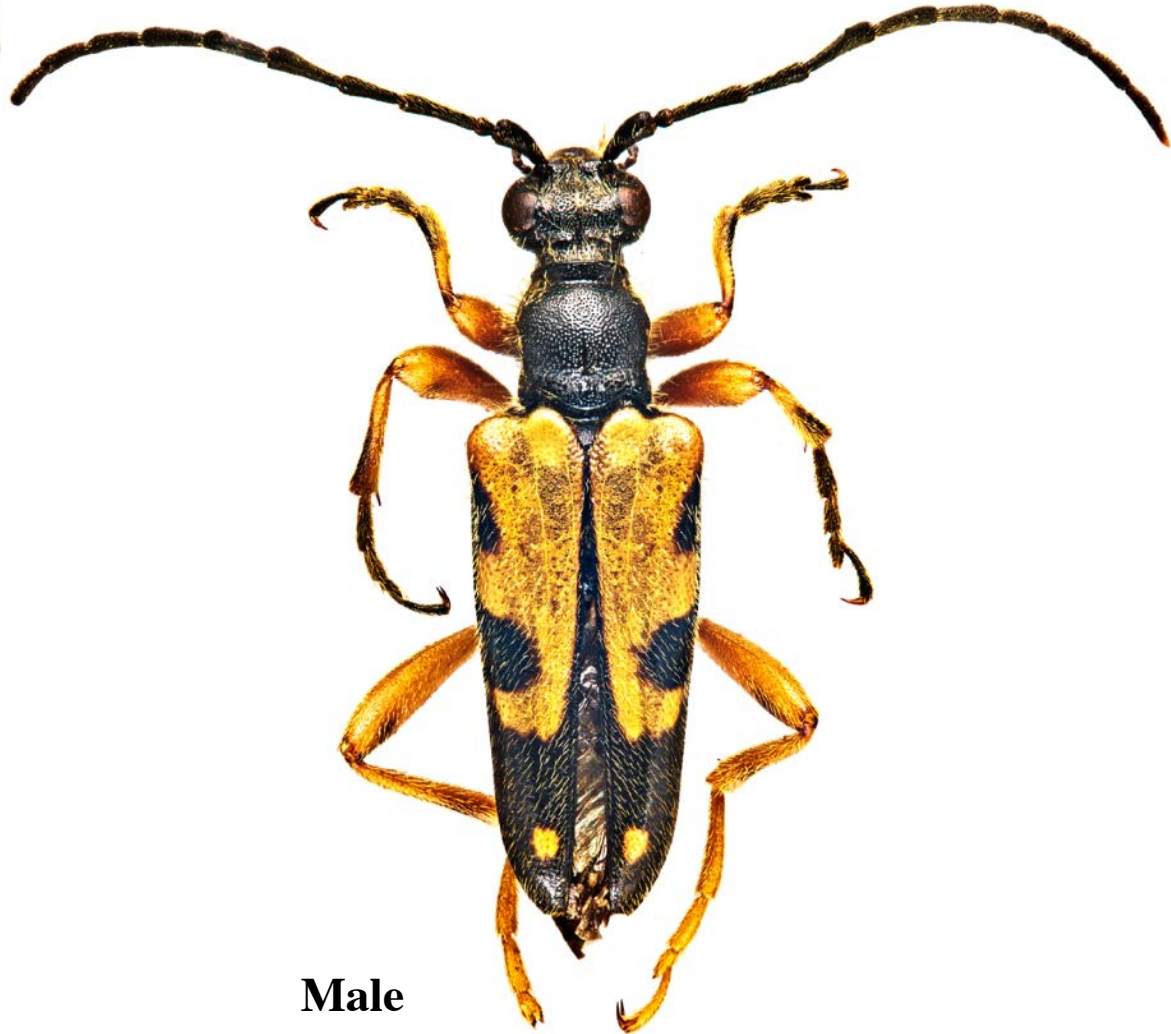


b

Xestoleptura crassipes (LeConte)



Female



Male

Xestoleptura
tibialis
(LeConte)



126 (125)

Body, including elytra, all dull black; sides of elytra convergent (a).....*Trachysida aspera*

At least elytra always brown and body shinier; sides of elytra essentially parallel (b-c).....127 



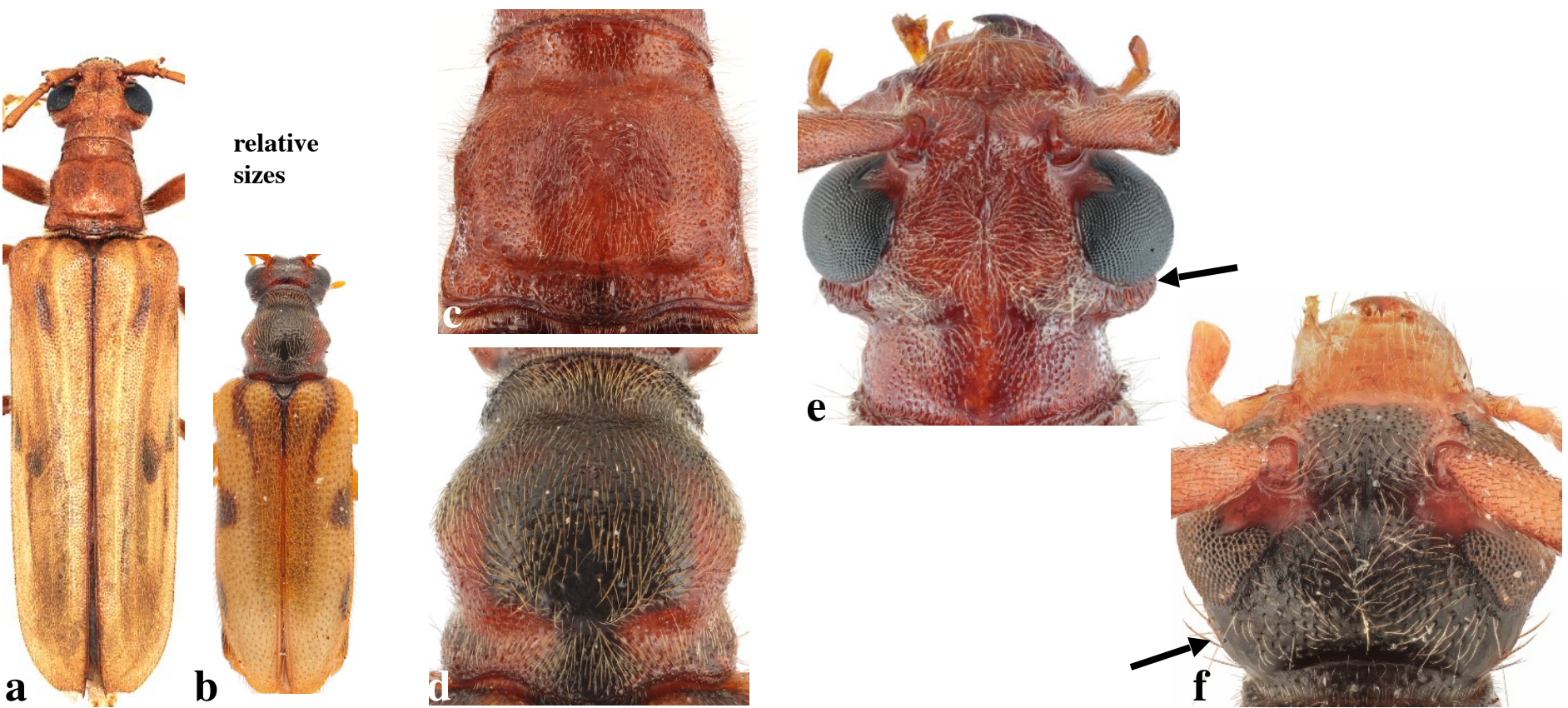
Trachysida
aspera
(LeConte)



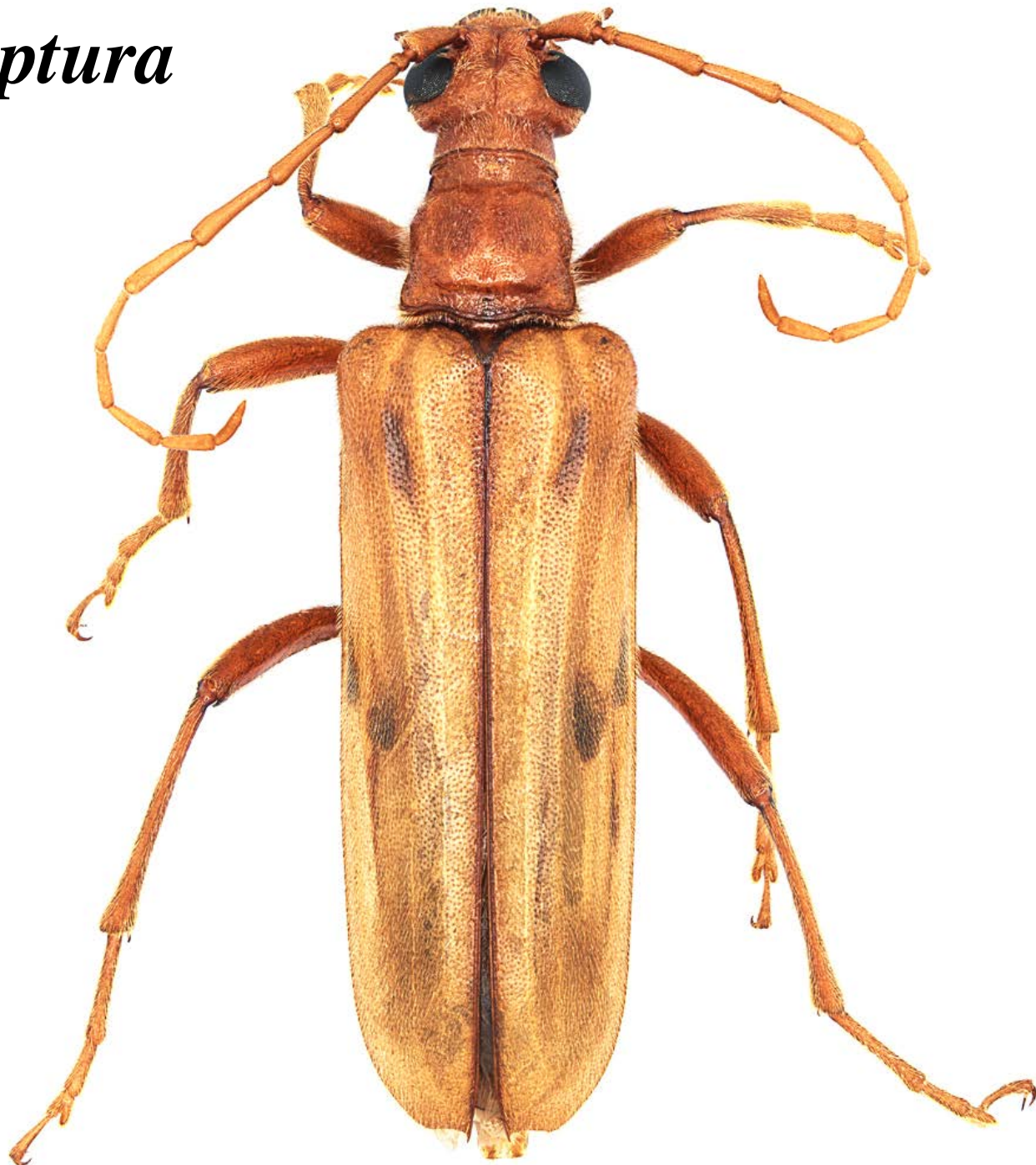
127 (126)

Body at least 13 mm long (generally much larger) **(a)**; sides of pronotum less inflated, almost triangular outline **(c)**; tempora narrow, almost rectangular **(e)**:
3 species in WNA & NA.....*Ortholeptura*

Body no more than 9 mm long **(b)**; sides of pronotum inflated, verging on tuberculate **(d)** tempora broader and oblique **(f)**: 3 species in WNA.....
.....*Pidonia*



Ortholeptura

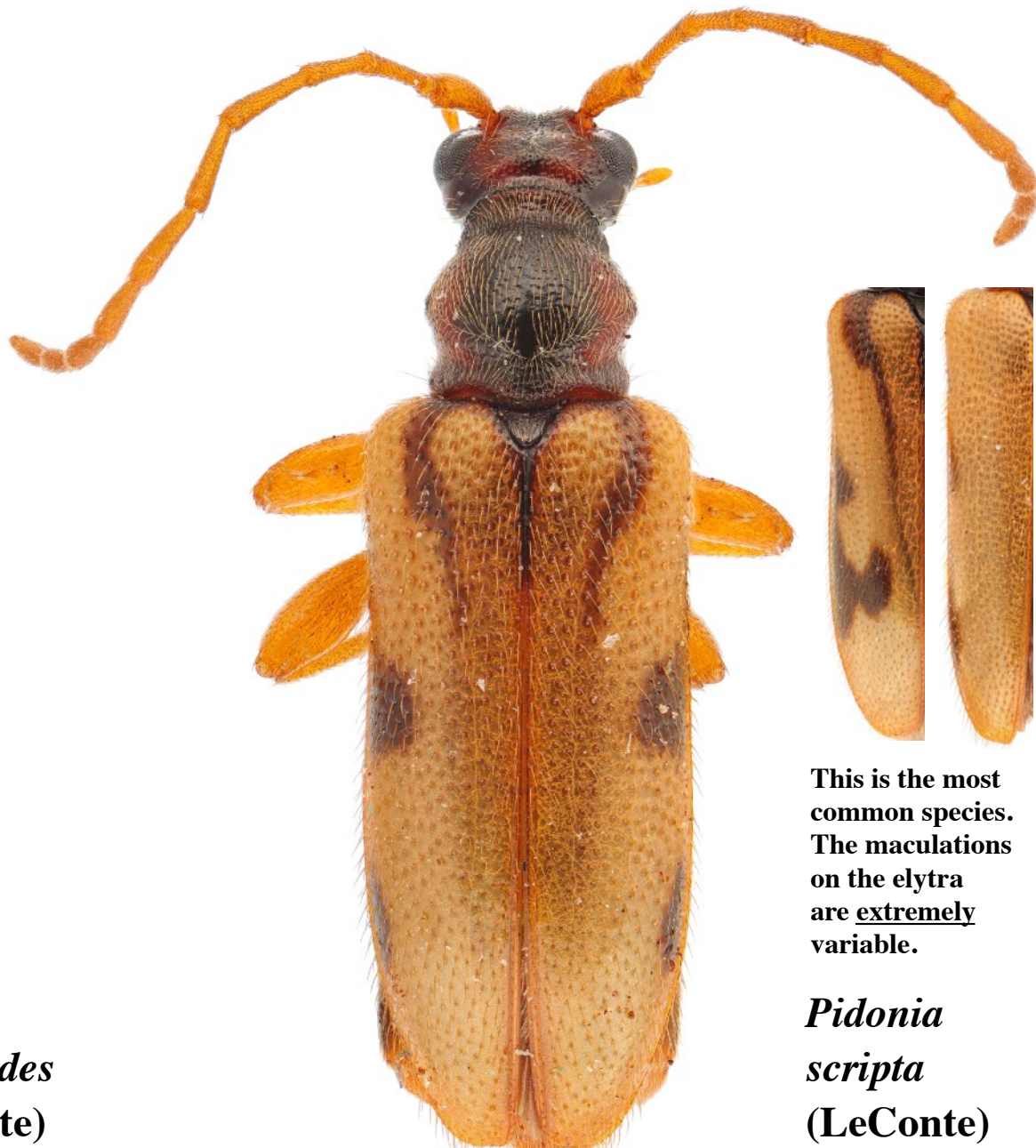


Ortholeptura
valida
(LeConte)

Pidonia



*Pidonia
gnathoides*
(LeConte)



This is the most common species. The maculations on the elytra are extremely variable.

*Pidonia
scripta*
(LeConte)