

Melissodes of the tallgrass prairie region and the greater midwest

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Males:

1. T2-T4 each with a narrow band of pale apical fasciae, either appressed and dense, or suberect and somewhat diffuse; all tergites without medial or subapical fascia; rare species (*s.g. Apomelissodes*)

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T2-T4 lacking a narrow band of pale apical fasciae, but at least some tergites (usually T2-T3) with medial or subapical appressed pale fasciae, complete or incomplete; occasionally fasciae completely lacking and abdomen all dark.....

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2. Galea (post-palpal portion) very long, longer than head length; T2-T4 apical fascia suberect and somewhat diffuse; all hairs on T2-T3 pale; rare species throughout its range, no TGP or Midwest records.....

fimbriatus

Galea shorter, no longer than length of head; apical fasciae of tergites whitish, dense, appressed; hairs on T2-T3 basad of apical fasciae dark brown, short; *Pontedaria* oligolege; EUS species, few TGP or Midwest records.....

apicatus

3(1). F1 and F2 equal in length; antenna short for a **Melissodes**, only about 1/2 - 2/3 length of forewing; clypeus and labrum entirely dark; *Callirhoe* oligolege; southern half of TGP.....

intortus

F1 much shorter than F2, often not much longer than pedicel; antennae usually as long or longer than forewing length; clypeus usually yellowish or whitish, at least in part.....4

4(3). Black and white species; abdomen all black except for white fasciae at the sides of T2-T4; hind tibiae and tarsi with white hairs on outer surfaces; clypeus yellow with pale hairs, labrum all yellow, and mandible yellow at base; galea shiny throughout; wings very dark; throughout TGP region

bimaculatus

Without the above combination of characters.....

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5(4). T2-T6 hairs largely or entirely black, pale medial fascia usually absent, but sometimes present on T2; leg hairs including hind tibia and tarsi all blackish; clypeus mostly yellowish, its surface usually with scattered dark hairs; F1 1/3 the length of F2; *Cirsium* oligolege; throughout most of TGP region except for sTGP.....

desponsus

Note: *M. rivalis*, also a *Cirsium* oligolege, is much like *desponsus* but usually with some degree of pale medial fascia on T2 and often on T3-T4, and with some amount of pale hairs on the outer surfaces of the tibia. It is a western species that occurs sparingly on the western margins of the northern TGP region, esp. MN.

Either: (1) abdomen with abundant pale hairs and/or pale fasciae on T2-T4, **or** (2) leg hairs mostly pale, not black, **or** (3) F1 minimum length less than 1/3 max. length of F2, **or** (4) clypeal hairs pale.....6

6(5). Base of gonostylus with conspicuous tuft of long hairs (these often partially appressed to gonostylus), hairs at least half as long as length of gonostylus; galea completely shiny, unshagreened; clypeus, labrum, and basal half or more of mandible all yellowish; wing membranes usually somewhat darkened (light brown), not clear.....7

Base of gonostylus without tuft of long hairs, hairs of gonostylus extremely short and often hardly visible; clypeus variable, sometimes dark in part; galea often tessellate in apical third or more; labrum usually dark, at least in part (around margins), but occasionally all yellowish to whitish; mandible often all dark or with small yellowish to whitish spot at base, rarely basal half all yellowish or whitish; wings often clear.....8

7(6). T2 apical area impunctate but with scattered short appressed hairs that do not arise from punctures (these hairs often worn away), interband zone with fine, dense punctures; short side of F1 about 1/5 maximum length of F2; throughout TGP region**communis**

Note: *M. blanda*, an uncommon species in the sTGP region, is superficially similar to **communis** and **comptoides** (gonostylar tuft present, etc.) but has clear wings, F1 1/5 the length of F2, and a unique S7 (see Laberge 1956, p. 1191 Figs. 96-97).

T2 apical area with dense punctures at least in basal half of apical area, these punctures similar to those in interband zone and giving rise to short blackish hairs; F1 shorter than in *communis* (short side of F1 about 1/7 - 1/8 maximum length of F2); absent from northern TGP.....**comptoides**

8(6). Clypeus, labrum, and basal portion of mandible all yellowish, resembling *communis* and *comptoides*; T1 densely punctate throughout except for narrow apical margin (which is impunctate); hairs on T1 dark at least in apical 1/4.....9

Clypeus usually yellow to whitish in color but sometimes dark at base, rarely all dark; labrum color variable, but usually dark around margins, sometimes all dark or with small pale spot centrally; mandible with or without yellow spot at base; hairs on T1 often all pale (subgenus *Eumelissodes*).....11

9(8). Tergal margins broad and translucent, somewhat clear; T2 distal band complete but narrow, of even width across T2; F1 1/7 length of F2; galea shiny, unshagreened; gonostylus not conspicuously capitate; absent from northern TGP.....**tepanecus**

Tergal margins dark, weakly translucent if at all; T2 distal band incomplete, not continuous across T2, usually present only laterally; F1 1/6 to 1/8 length of F2; galea often dull, shagreened; gonostylus distinctly capitate (subgenus *Callimelissodes*).....10

10(9). Large bee (15mm or greater) with dark wings and mostly dull (shagreened) galea; T2 fasciae present only laterally, often almost absent; hairs on S3-5 long, but becoming shorter and thinner medially; probable *Helianthus oligolege*; central TGP and Osage Plains.....**coloradensis**

Smaller bee, 12mm or so, with lighter-colored wings and shinier galea; T2 fasciae more developed, reaching onto dorsal surface of T2 but interrupted medially; hairs on S3-S5 short; possible sand obligate; rare species throughout its range but distribution unclear, perhaps throughout TGP region

.....**tuckeri**

11(8). Head, scutum and scutellum with hairs all pale (white to ochraceous), dark brown hairs absent

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While pale hairs may still dominate, either vertex, scutum or scutellum (or all three) with at least some dark brown or blackish hairs present, usually as a patch on scutum and/or scutellum and on vertex, occasionally only a few dark hairs present in these areas.....21

12(11). Tergal margins clear, colorless, contrasting with the dark basal portions of tergites; tergites without dark hairs; mandible often with basal maculae; wing veins usually pale, but varying from honey-colored to yellow to dark reddish; (includes *agilis*, *coreopsis*, *gelida*, *menuachus*, *nivea*, *perlusa*, *snowi*, *subagilis*, *elegans* in part)....

.....13

Tergal margins darker, may be translucent but never clear and colorless, but **if** so, **then** tergites almost always with some dark hairs (especially T3-T4); mandible lacking basal maculae; wing veins darker (includes *bidentis*, *boltoniae* in part, *dentiventris*, *fumosa* in part, *trinodis*).....19

13(12). F1 extremely short, its width greater than twice its length, and only 1/10 the length of F2 (includes *coreopsis*, *gelida* in part, *nivea*, *snowi*, *subagilis* in part)

.....14

F1 not quite as short, its width no greater than twice its length, and at most only 1/7 length of F2 (includes *agilis*, *elegans* in part, *gelida* in part, *menuachus*, *perlusa*, *subagilis* in part).....16

14(13). Wing veins brown, light-brown or reddish brown; mandible without basal maculae, galea shiny (unshagreened), and labrum usually all dark; throughout TGP region.....**coreopsis**

Note: rare individuals of *subagilis* with dark wing veins may key here; see couplet 18. Also, some *elegans*, an uncommon sTGP species, could introduce confusion here because of their dark wing veins and translucent tergal margins, but the presence of mandibular maculae, maculated labrum and partially shagreened galea should separate *elegans* (see couplet 32).

Wing veins more pale, mandible usually with a small basal macula, labrum pale at least in part (sometimes just a small spot of yellow/white); galea variable, may be shagreened in part.....15

15(14). Labrum entirely whitish/pale yellow, or very nearly so; mandible with basal maculae; hairs of entire body snow-white, more so than *nivea* (below); S3-S5 hairs long, longer than those of *nivea*; Great Plains species, no TGP records.....**sn**
owi

Labrum incompletely maculated, never wholly so; mandible usually with basal maculae; hairs not as snow-white, and not as long, as in *snowi*; central TGP and Osage Plains.....**niveus**

Note: some *M. gelida* could key here; see couplet 18.

16(13). Large species, 13-15mm or more, F1 at least as long as wide, and 1/5 the length of F2; mandible with basal maculae; labrum completely maculated or nearly so; galea usually shagreened distally; central and northern TGP region.....**menuachus**

Note: small individuals of *menuachus* overlap in size with *agilis*

Usually smaller species with a shorter F1; **if** F1 about 1/5 the length of F2, **then** mandible without basal maculae, labrum with reduced maculae or entirely dark, and galea mostly shiny....17

17(16). F1 short, broader than long, and 1/7 length of F2 or shorter.....18

F1 about 1/5 the length of F2, mandible without basal maculae, labrum with reduced maculae or entirely dark, and galea mostly shiny; central and northern TGP region.....**perlusus**

18(17). Three species key to this couplet: *agilis*, *gelida*, and *subagilis*, the first, *agilis*, being by far the most common and widespread of the three.

agilis: common species throughout TGP region, usually at *Helianthus*; mandible and labrum with yellowish maculae

subagilis: central and northern TGP region, uncommon; *Grindelia* oligolege; mandible and

labrum lacking maculae; slightly smaller than *agilis*

gelidus: a Great Plains species with no TGP records; possibly in the central and southern TGP;

terga like *subillata*, mandible and labrum usually maculate.

19(12). Labrum all dark; T1 apical margin narrowly translucent; F1 very short, 1/10 or less the length of F2; tergites without pale medial fasciae except occasionally on T2 and T3 in part, the fasciae more brownish rather than pale; galea shagreened at least in apical 1/2; large, usually 12mm or larger; central and southern TGP region, probably absent from northern TGP.....

.....**dentiventris**

[Note: rare all-pale individuals of *druriella* with dark labrum could cause confusion here, but F1 is always longer in *druriella* (1/4-1/6 of F2), and tergal fascia are usually present on T2-T5. Also, pale individuals of *boltoniae* and *fumosa* with dark labrum can come to this couplet because of their short F1, but they have distinct pale fascia on the tergites and less tessellate galea (see couplet 32). *M. dentiventris* individuals are always larger - 12mm or more - than *druriella*, *boltoniae* and *fumosa*].

Labrum maculated; F1 longer; T2-T4 with pale fasciae though fasciae may be incomplete; galea variable but usually more lightly shagreened to shiny.....20

20(19). F1 1/7 or less the length of F2; T1 punctate nearly to apical margin, punctures crowded, about one puncture width apart or less; probably throughout TGP region.....*trinodis*

Note: some pale *boltoniae* individuals could cause confusion here, but usually have a slightly shorter F1, and T2-T4 usually with weakly punctate tergal margins (impunctate in *trinodis*), and often with no dark hairs on the terga, and whitish, not yellowish hairs on the thorax.

F1 longer, 1/5 or more the length of F2; T1 punctures more separated (1-3 puncture widths apart), and not punctate nearly to apical margin; uncommon species; Osage Plains, central and northern TGP region.....

.....*bidentis*

Note: rare all-pale individuals of *druriella* could come to this couplet but have the galea more shagreened in the apical 1/2, *bidentis* galea are largely shiny.

21(11). Clypeus darkened at base, sometimes only narrowly so, but sometimes as much as 1/4 or more (includes *confusa* in part, *denticulata*, *tincta*, and *vernoniae* in part); *if* clypeus all or nearly all dark, see *confusa*, cplt.

31.....

.....22

Clypeus all pale.....

.....25

22(21). Hairs of hind tibia and basitarsi short (on tibia no longer than tibial width, on basitarsi less than 2X width of basitarsi), T1 usually with basal 3/5 to 4/5 punctate, *and* galea densely tessellate throughout; *Vernonia* oligoleges.....

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Hairs of hind tibia and basitarsi longer, and T1 with basal 4/5 or more punctate.....24

23(22). Wing veins reddish, membranes clear; F1 about 1/7 length of F2; T1 and T2 punctures small, faint; mandible often with basal macula; length 11-15mm; probably throughout TGP region

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.....*vernoniae* in part

Wing veins dark, membranes often weakly infumate; F1 shorter, about 1/9 length of F2; T1 and T2 punctures larger, closer together, more distinct; mandible usually without macula but exceptions occur; labrum sometimes all dark; usually slightly smaller than *vernoniae*; probably absent from southern TGP region.....

.....*denticulatus*

24(22). Northwest TGP region only (MN, ND); T2 with basal area punctures minute, separated by 2-4 puncture widths.....

confusus in part
Central and southern TGP region; T2 basal area punctures dense.....**tinctus**

25(21). F1 long, 1/3 - 1/6 the length of F2, AND mandible dark at base; labrum usually all dark.....26

F1 shorter; mandible and/or labrum often maculated at least in part.....27

26(25). Extreme northwest TGP only; F1 1/3 of F2..... **grindeliae**

Central and northern TGP; F1 shorter, 1/4 - 1/6 of F2..... **druriellus**

27(25). T2 apical area long, impunctate, longer than preapical area; preapical area weakly, faintly punctate (includes *illata*, *subillata* and *wheeleri*)

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T2 apical area at most as long as preapical area but no longer; preapical area usually densely punctate.....

.....30

28(27). F1 no shorter than 1/7 length of F2; absent from southern half of TGP region.....**subillatus**

F1 1/8 or less length of F2; throughout TGP region.....
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29 (28). Mandible with basal macula; hairs on thorax and head often yellowish.....**wheeleri**

Mandible rarely with basal macula, **if** so then macula tiny; thorax and head hairs whitish

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.....**illatus**

30(27). Northwestern portion of the TGP region only (MN, ND)
.....31

Southern, central, and southern portion of northern TGP (not in ND or MN except extreme southern MN)

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.....32

31(30). **confusus** in part: labrum and mandible dark; T2 with basal area punctures minute, often separated by 2-4 puncture widths, sometimes closer.

lutulentus: T2 with basal area punctures much closer, separated by about 1/2 a puncture width; labrum usually with maculation.

32(30). Three very similar species key to this couplet and can be difficult to separate; all three have T2-T4 with apical areas weakly punctate to impunctate, and F1 short (F1 1/8 - 1/10 of F2), and are absent from the northern TGP:

boltoniae: throughout TGP region except absent from northern part

fumosus: very similar to *boltoniae*; central TGP and Osage Plains only

elegans: very similar to *fumosa*; southern half of TGP only

end of key 2/6/20