

Key to the **Megachile** of the TGP region and greater midwest
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Females

1. Abdomen parallel-sided, i.e., T1-T4 (T5) all of equal width (in dorsal view); hind basitarsi relatively narrow and not much broadened medially, LxW of basitarsi usually around 4:1, but sometimes less

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.....2

Abdomen not parallel-sided, T1-T4 (T5) not of equal width, abdomen either broadest in basal portion then gradually narrowing posteriorly, **or** broadest medially (i.e., cordate to broadly or narrowly ovate); hind basitarsi usually somewhat broadened medially, its LxW often 3:1 or less.....11

2(1). Head in lateral view with a large ventral tooth-like process (i.e., postero-lateral portion of gena with strong tooth-like process); hypostomal area smooth and shiny, flattened; throughout TGP region

.....
.....**pugnata**

Genae rounded or carinate, but without any tooth-like process
.....3

3(2). Clypeus with apical margin greatly expanded as a broad, flattened area perpendicular (more-or-less) to the basal portion of the clypeus; mandible length at least 3x its basal width (at articulation).....4

Clypeus with apical margin variously modified but never expanded into a broad flattened area perpendicular to its basal portion; mandible not so long, never more than 2.5 times its basal width.....5

4(3). Bee very large, 20mm or more in length; posterior margin of genae strongly carinate; mandible apically broadened, with 4 teeth, its length about 3x its basal width; wings heavily infuscated; thorax pubescence dense and uniformly tawny to yellowish-red, tegulae of the same color; introduced species, throughout TGP region but sporadic.....**sculpturalis**

Bee smaller, 15mm or less; posterior margin of genae rounded, without a carina; mandible not at all broadened apically, with 2-3 small teeth, very long and narrow, 4-5x its basal width; wings very lightly infuscated; thorax pubescence thin and uniformly pale white, tegulae dark; central and southern TGP region.....**rugifrons**

5(3). Mandibles without any "cutting margins" between teeth, i.e., spaces between teeth (sinuses) entire, without any angles, processes, etc.; bees usually less than 15mm in length; 2nd hind tarsal segment usually relatively long, about 1/3 the length of hind basitarsis.....6

Mandibles with a "cutting margin" between the two medial teeth (2nd and 3rd teeth), this cutting margin forming a small right angle, emanating from the inner margin of the 2nd tooth but not reaching the 3rd tooth; bees usually 15mm in length

or more; 2nd hind tarsal segment shorter, no more than ¼ length of hind basitarsis
.....9

6(5). Clypeal margin with one to several bead-like denticles
.....7

Clypeal margin lacking any denticles or tiny teeth, although margin may be somewhat irregularly thickened.....8

7(6). Clypeal apical margin with a single median denticle (sometimes weak), and several smaller denticles laterally; T6 pubescence all dark; central and southern TGP region.....**exilis**

Clypeal margin with two similarly-sized denticles medially, with one or two smaller denticles laterally; T6 pubescence usually largely pale, with intermixed darker hairs; throughout TGP region

.....**campanulae**

8(6). S6 hairs dark, uniformly covering surface, not forming a distinct apical fringe, surface of S6 strongly and densely punctate; T6 covered with short more-or-less erect hairs; basal (1st) tooth of mandible well-defined, sinus between 1st and 2nd tooth deep, broadly U-shaped; southern half of TGP with a few records in the prairie peninsula.....**georgica**

S6 surface with scattered pale hairs and a distinct apical fringe, central portion of the sternite smooth and impunctate; T6 in profile without erect hairs except at extreme sides; basal (1st) tooth of mandible little more than a weak angle, sinus between 1st and 2nd tooth extremely shallow; throughout TGP region.....

.....**montivaga, in part**

9(5). Clypeus with long dark erect hairs, and pale, shorter, subappressed hairs beneath the dark hairs; clypeus flattened, the margin somewhat undulate but without any lateral processes or teeth; mandible usually with a very small process or "point" between 1st and 2nd teeth; throughout TGP region

.....**frugalis**

Clypeus with erect pale hairs only, without any dark hairs; clypeal margin usually with a pair of lateral or sublateral processes or toothlike projections; mandible with sinus between 1st and 2nd teeth entire, without a small tooth or angle.....10

10(9). Clypeal margin weakly trilobed, medial portion produced as a very broad weakly triangular lobe between two small lateral toothlike or lobelike processes; clypeus weakly convex; S5 hairs all pale; throughout TGP region.....

.....**inimica**

Clypeal margin laterally with a pair of toothlike or lobelike processes, but medial portion entire, not produced; clypeus flattened; S5 apical margin with black

hairs, S5 hairs otherwise pale; central and southern TGP region.....
.....**policaris**

11(1). Pubescence of head and thorax all or nearly all blackish.....12

Pubescence of head and thorax largely pale, usually with some black pubescence.....13

12(11). Tergal fasciae absent; scopa all blackish; wings very dark with violaceous reflections; mandible with five teeth; southern half of TGP region but apparently expanding northwards

.....**xylocopoides**

Tergal fasciae present (T2-T5), usually dusky-brown in color; scopa largely pale (at least on S2-S4); wings lightly infuscated, without violaceous reflections; mandible with four teeth; extreme southern TGP region.....
pruina, in part (dark forms)

13(11). S6 with a very narrow, smooth, hairless apical margin that is abruptly reflexed upwards 70-90 degrees; clypeal margin smooth, shiny and entire on either side of a very small median denticle; mandible with a complete cutting margin present between 2nd and 3rd teeth; throughout TGP region

.....**parallela**

S6 apical margin variable, occasionally very narrow, smooth and hairless, and very weakly reflexed, but never abruptly reflexed at a 70-90 degree angle; **if** clypeal margin with a median denticle, **then** denticle bordered by several smaller denticles, never by a smooth shiny area.....14

14(13). Very large species, 18mm or so, pubescence of bee entirely pale (tawny, yellowish, to dull orange); S6 bare apical margin very narrow, extending slightly beyond its apical hair fringe; forebasitarsis with long fringe of hairs on posterior margin; throughout TGP region.....**fortis**

Smaller, 15mm or less; dark to blackish hairs present either on terga, scopa, head or scutum

.....15

15(14). S6 apical half with its central area largely bare, hairs usually present laterally and apically

.....16

S6 uniformly hairy in apical half, though hairs may be somewhat sparse.....20

16(15). T6 hairs all extremely short, shorter than hairs on T5, mostly appressed (extreme lateral margins may have some long hairs)

.....17

T6 with long, erect to suberect hairs throughout most of disc, dense or sparse; short appressed hairs may be present or absent..

.....18

17(16). Clypeal margin medially with a pointed denticle (mucro), bordered by 1-2 smaller denticles; mandibles with a cutting margin between 1st and 2nd teeth, visible in dorsal view; southern half of TGP region.....

.....**albitarsis**

Clypeal margin entire, usually with a narrow, smooth shiny edge, lacking any denticles or teeth; mandibles without any cutting margins visible in dorsal view; throughout TGP region..**montivaga**, *in part*

18(16). Mandible with 4 teeth; T6 and/or S6 with blackish hairs at least in part.....19

Mandible with 5 teeth, 1st and 2nd teeth small and close together compared to other teeth; T6 and S6 hairs usually all pale.....

.....**latimanus** and **perihirta**, *in part*

[Note: *latimanus* and *perihirta* females are extremely similar, the differences being largely a matter of pubescence, *perihirta* usually having more dark hairs on the scutum, on T2, and on T6, than does *latimanus*. However, there is considerable variation in pubescence in both species. *M. perihirta* is primarily western with few records in the TGP/Midwest region, while *latimanus* is common in the central and northern TGP and throughout the Midwest (based on males). Occurrences of *perihirta* in our region should be based on males.]

19(18). Narrowest space between upper margin of eye and posterior margin of vertex no greater than one ocellar diameter; genal margin weakly carinate; hind basitarsi hairs all pale; no cutting margin between 2nd and 3rd tooth, 2nd tooth truncate; widespread.....**petulans**

Narrowest space between upper margin of eye and posterior margin of vertex slightly more than one ocellar diameter; genal margin rounded; hind basitarsi hairs usually blackish, at least in part; cutting margin present between 2nd and 3rd tooth, 2nd tooth acute; extreme southern TGP

.....**pruina**, *in part (light forms)*

20(15). Small bees, 10mm or less; sternites (S2-S5) with white apical fasciae; T2 and sometimes T3 dorsally with a pair of shallow foveae (these are oblong to round, somewhat fuzzy or velvety “patches” on the terga, roughly the size of the tegulae); introduced from the Old World, of sporadic occurrence throughout our region.....

.....21

Larger bees (rarely 10mm), sternites lacking apical fasciae; tergites lacking foveae.....23

21(20). Clypeal margin with a medial somewhat triangular-shaped projection; foveae present on T2 and T3.....

.....**apicalis**

Clypeal margin without a medial projection, either entire or weakly emarginate; foveae absent on T3, but present on

T2.....22

22(21). Foveae on T2 distinct; distance between upper eye margin and nearest posterior margin of vertex nearly equal to nearest distance between eye margin and lateral ocellus; mid and hind basitarsi narrower than in *concinna* (below)

..... **rotundata**

Foveae on T2 indistinct, superficial, sometimes hardly noticeable except at certain angles; distance between upper eye margin and nearest posterior margin of vertex about half the distance between eye margin and lateral ocellus; mid and hind basitarsi broader than in *rotundata*.....**concinna**

23(20). Tergites lacking pale fasciae, even on lateral margins; mandible with four teeth.....24

At least some tergites with pale fasciae, usually complete but occasionally only on the lateral margins; mandible with four or five teeth.....

.....26

24(23). Clypeus convex; forebasitarsi posterior margin hairs all shorter than length of forebasitarsi; hind basitarsi length x width 3:1; cutting margin between 1st and 2nd tooth incomplete; north and central

TGP.....

.....**gemula**

Clypeus flattened throughout; forebasitarsi posterior margin hairs all as long, or slightly longer than length of forebasitarsi; hind basitarsi length x width 2-2.5:1; cutting margin between 1st and 2nd tooth complete.....

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25

25(24). Hairs on scutum all pale yellow; T2 largely pale but with black hairs on posterior margin; scopal hairs all black; Prairie peninsula.....

.....**mucida**

Scutum with dark hairs at least medially; T2 entirely pale yellow, without black on posterior margin; scopal hairs usually fulvous/reddish at least in part;

nTGP.....**melanophaea**

26(23). T6 pubescence extremely short, the hairs much shorter than T5 discal pubescence, appressed, mostly dark.....

.....27

T6 pubescence comprised of long hairs at least in central part of tergite, these hairs similar in length to hairs on T5; hairs may be erect, sub-erect or decumbent, dense or scattered, dark or pale...30

27(26). Cheeks very broad, 1.5 times as broad as eye width (in lateral view); clypeal margin irregularly dentate, with two small lateral lobate processes and a medial process that is somewhat bidentate; mandible with 5 teeth; S6 hairs all pale; large bee, length 15mm or more; nTGP.....**inermis**

Cheeks narrower, no wider than eye width (in lateral view); clypeal margin either entire or with a small median denticle; mandible with 4 teeth; S6 hairs dark; size variable.....28

28(27). Clypeal margin entire; bee length no greater than 15mm.....29

Clypeal margin with a small median denticle; bee length 15mm or more; sTGP..**deflexa**, *in part*

29(28). Lateral ocelli much closer to eyes than to posterior margin of vertex; apical margins of T3-T5 strongly depressed, central portions of T3-T5 strongly convex; nTGP, cTGP, PP.....**dakotensis**

Lateral ocelli subequally distant from eyes and posterior margin of vertex; apical margins of T3-T5 depressed only laterally, hardly so medially, and central portions of T3-T5 flat, not convex; widespread.....

.....**mendica**

[Note: *M. gentilis* Cr. will come to this couplet; probably occurs in AR, LA, OK, TX. S6 hairs all black, and T6 weakly concave, not as flat in profile as *mendica*.]

30(26). T6 in profile concave (or depressed).....
.....31

T6 in profile
straight.....
.....34

31(30). T3-T5 apical margins depressed, narrowly convex medially (from side to side); S6 hairs all dark

.....
.....32

T3-T5 apical margins and medial portions of discs nearly flat, at most only very weakly depressed or convex; S6 hairs variable, pale to dark.....33

32(31). Clypeus apical margin denticulate; widespread but absent from sTGP..... **addenda**

Clypeus apical margin entire;
widespread..... **texana**

[Note: Formerly a subspecies of *M. texana*, *M. lippiae* has recently been recognized as distinct from *M. texana* by Sheffield et. al.; the females of *M. lippiae* have black hairs only on T5 and T6 (in dorsal view), compared to *M. texana*, which has black hairs on most tergites, not just T5/T6. The two are more-or-less sympatric, although *M. lippiae* is far less common in the TGP/Midwest than *M. texana*.]

33(31). T6 and S6 hairs, including apical fringe of S6, all pale yellowish to orangeish; apical span of mandible 1.5 times width of mandible at base; mandible with five teeth but easy to misinterpret as four

teeth.....

.....**latimanus** and **perihirta**, *in part*

[Note: *latimanus* and *perihirta* females are extremely similar, the differences being largely a matter of pubescence, *perihirta* usually having some dark hairs on T6, *latimanus* having all pale hairs on T6; *perihirta* is primarily western with few records in the TGP/Midwest region, while *latimanus* is common in the central and northern TGP and throughout the Midwest (based on males). Occurrences of *perihirta* in our region should be based on males.]

T6 and S6 with at least some dark hairs, S6 narrow apical fringe always dark; apical span of mandible about equal to basal width of mandible; mandible with four teeth; widespread.....**brevis**

34(30). Large bee, 15mm in length or more; lateral ocelli much closer to eyes than to posterior margin of vertex; clypeal margin with a single median denticle;

sTGP.....**deflexa**, *in part*

Bees no larger than 15 mm; lateral ocelli subequally distant from eyes and posterior margin of vertex; **if** with a single median denticle **then** most of clypeal margin denticulate.....35

35(34). Clypeal margin denticulate, usually with a slightly more pronounced though still small median denticle; hind basitarsi broad, width nearly half the length; sand oblique; throughout most of region but absent from

nTGP.....

.....**integra**

Clypeal margin entire or with a small median notch; hind basitarsi not as broad.....36

36(35). Mandible with four teeth; cheeks broader than eye width in lateral view.....37

Mandible with five teeth; cheeks in lateral view no greater than eye width.....38

37(36). S6 hairs all pale; tergal fasciae restricted to lateral margins on T2-T3, fasciae complete on T4 and T5, though T4 fasciae sometimes interrupted medially; nTGP.....**frigida**

S6 hairs all dark; fasciae complete on T2-T5; PP, cTGP.

.....**ingenua**

38(36). T6 hairs all dark; malus apically acuminate; nTGP, cTGP, PP.....

centuncularis

T6 with some dark hairs but predominantly with orangeish-golden hairs; malus apically mucronate; nTGP, cTGP,

PP.....**relativa**

end