***Andrena*** subgenera male key, TGP and greater midwest

M. Arduser *edited November 3, 2023*

**1.**  Pronotum with a dorso-ventral ridge and/or humeral angle present………………………..………..2

Pronotum without a humeral angle or dorso-ventral ridge present……………………………………..……17

**2(1).** Clypeus yellow or ivory, at least in part…………………………………………………….………………………….3

Clypeus dark, without any ivory or yellow maculae……………………………………………………………………..9

**3(2).** Lower or mid-genal margin posteriorally with a large angular protuberance; mandibles very long, nearly twice as long as eye length……………………………………………………….………………………..***Genyandrena***

Genal margin without any protuberance (but genae may be very broad and carinate); mandibles may be long but never approaching twice the length of the eye…………………………………………………………………..4

**4(3).** Mandible with a ventro-basal tooth or angle……………………………………………………………………….5

Ventral margin of mandible entire, without a tooth or angle at its base…………………………..…………6

**5(4).** T7 with a large, smooth, hairless, triangular pygidial plate; rare bees…………………..***Archiandrena***

T7 lacking a pygidial plate; specialists on *Uvularia, Potentilla, Phacelia*…………………………***Derandrena***

**6(4)**. Forewings with two submarginal cells; 6th sternum reflexed with apico-lateral teeth; *Salix* specialists…………………………………………………………………………………………………………..……….***Parandrena***

Forewings with three submarginal cells; 6th sternum not reflexed ……………………………………………7

**7(6)**. Tergites (T1-T4) densely, finely punctate throughout; paraocular maculae present, large, usually occupying all of the paraocular area; scutum with scattered but obvious punctures even at low magnification……………………………………………………………………………………………***Holandrena cressonii****, in part*

Tergites (T1-T4) weakly punctate at most, usually impunctate; paraocular maculae usually absent, rarely present and large; scutum usually completely impunctate…………………………………..………………………………8

**8(7)**. Genae posterior margin carinate, carinae reaching all the way to behind and touching the eye margin; paraocular areas yellow at least in part; rare, localized species………………………….***Notandrena***

Gena posterior margin narrowly rounded but not carinate; paraocular areas dark, without maculae; common widespread species………………………………..…………………………………………………….***Larandrena***

**9(2)**. Pronotum with dorso-ventral ridge crossed or terminated by a narrow sulcus.....***Tylandrena***

Dorso-ventral ridge of pronotum entire, not crossed or terminated by a narrow sulcus…………10

**10(9).** Mandible with ventro-basal tooth or angle, ***or*** a measurable malar space present

………………………………………………………………………………………………………………………………………..…***Andrena***

Mandible without a ventro-basal tooth or angle, and without a measurable malar space…………11

**11(10)**. Galea either sharply pointed apically, ***or*** maxillary palp individual segments elongated, collectively exceeding galea apices by the last three segments………………………………………..***Ptilandrena***

Galea not sharply pointed apically; maxillary palps shorter………………………………………………………12

**12(11).** Genal margin posteriorally carinate to some degree…………………………………………….13

Genal margin posteriorally narrowly rounded……………………………………………………………………….14

**13(12)**. Clypeus apico-medially produced and more-or-less reflexed; 6th sternum apically flat, not reflexed; late spring-early summer bees; *Cornus* (subgenus *Kraniopsis)* oligoleges….***Gonandrena***

Clypeus not produced apico-medially, not reflexed; 6th sternum apically reflexed to some degree; late summer-autumnal bees………………………………………………………………………………….***Cnemidandrena***

**14(12)**. Hind tibial spurs flexed mid-length, not straight or evenly curved; tergites very finely and densely puncate……………………………………………………………………………………..….***Leucandrena*** *in part*

Hind tibial spurs either straight or evenly curved; tergal punctures present or absent…………………….15

**15(14)**. Tergites closely, densely and distinctly punctate; T2-T4 with white apical fasciae at least laterally………………………………….………..***Holandrena cressonii*** (rare immaculate forms, see couplet 7)

Tergites impunctate or nearly so, punctures if present faint and well-separated; tergites without apical fasciae…………………………………………………………………………………………………………………………………………..16

**16(15)**. Propodeal triangle and pleura relatively smooth, without reticulae or these extremely limited

……………………………………………………………………………………………………………………….***Leucandrena*** *in part*

Propodeal triangle and pleura coarsely striate-reticulate………………………………………….***Xiphandrena***

**17(1)**. Clypeus and/or paraocular areas yellow or ivory, at least in part………………………………………18

Clypeus and paraocular areas without yellow or ivory maculae……………………………………………………..23

**18(17).**  Malar space long, half as long as broad; clypeus yellow in apical half (or slightly more or less), black basally; Ericaceae specialis…………………………………………………………………………………..***Conandrena***

Malar space very short to absent, never approaching half as long as wide……………………………………19

**19(18).** Clypeus inflated**,** greatly convex; glossa long and thread-like; labrum large and semicircular in shape; *Viola* specialist…………………………………………………………………………………………***Iomelissa*** *in part*

Clypeus weakly convex at most, not inflated; glossa normal, like a small pointed paint brush; labrum variable, but never large and semicircular………………………………………………………………………………….20

**20(19)**. Small bees, usually around 6 mm, usually relatively hairless; forewing vein that separates the first and second submarginal cells touches marginal cell usually within one or two vein widths of the stigma; S6 not reflexed apically…………………………………………………………………………..***Micrandrena*** *in part*

Larger bees, 8 mm or larger; usually quite hairy species; forewing vein that separates the first and second submarginal cells touches marginal cell usually 4-5 vein widths or more from the stigma; S6 usually reflexed apically, usually across the entire apical margin…………………………………..………..…21

**21(20).** Maxillary palps relatively short, not reaching beyond tips of the galea; paraocular areas often maculated; tergal fasciae and sternal fimbriae usually present; Asteraceae specialists ………………………………………………………………………………………………………….……………***Callandrena*** *in part*

Maxillary palps longer, reaching beyond tips of the galea (usually by the last two segments); paraocular areas usually dark, but occasionally maculated; tergal fasciae present or absent; rarely at Asteraceae flowers……………………………………………………………………………………………………..………………………………..22

**22(21).** T2-T4 withconspicuous pale apical fasciae; S6 usually slightly emarginated apically; Brassicaceae specialists………………………………………………………………………….……………………….***A. (Scaphandrena) arabis***

T2-T4 withpale apical fasciae extremely weak to absent; S6 entire apically; *Rhus* and *Amorpha* specialists…………………………………………………………………………………………………….………………….***Rhacandena***

**23(17)**. Clypeus inflated**,** greatly convex; glossa long and thread-like; labrum large and semicircular in shape; *Viola* specialist…………………………………………………………………………………………***Iomelissa*** *in part*

Clypeus weakly convex at most, not inflated; glossa normal, like a small pointed paint brush; labrum variable, but never large and semicircular……………………………………………………………………………………….24

**24(23)**. Hind tibial spur markedly curved, and sometimes weakly broadened at base (lamellate); S6 strongly reflexed with conspicuous apico-lateral teeth…………….…………………***A. (Plastandrena) crataegi***

Hind tibial spur only weakly curved if at all and not broadened basally; S6 usually not strongly reflexed and without conspicuous apico-lateral teeth……………………………………………………………………………………..25

**25(24)**. Small bees, usually around 8 mm or less, usually relatively hairless; forewing vein that separates the first and second submarginal cells touches marginal cell usually within one or two vein widths of the stigma………………………………………………………………………….……………….***Micrandrena*** *in part*

Size variable, but ***if*** small (6-8mm), ***then*** forewing vein that separates the first and second submarginal cells touches marginal cell at least 4-5 vein widths from the stigma…………………………………………….26

**26(25).** Maxillary palps relatively short, not reaching beyond tips of the galea; S6 reflexed (at least apico-laterally); tergal fasciae and sternal fimbriae usually present; Asteraceae specialists

…………………………………………………………………………………………………………………………..…***Callandrena*** *in part*

Maxillary palps longer, reaching beyond tips of the galea (usually by the last two segments); S6 rarely reflexed; tergal fasciae present or absent; rarely at Asteraceae flowers…………………………………….27

**27(26).** Propodeum dorsally coarsely sculptured (more-or-less reticulate), ***and*** dorsal and posterior surfaces separated at least in part by a carina; mesepisternum (pleura) coarsely sculptured (*Trachandrena* and *Scrapteropsis*)………………………………….…………………………………………………………..28

Propodeum usually finely sculptured to smooth dorsally, ***if*** somewhat coarsely sculptured then there is no carina separting dorsal and posterior surfaces; mesepisternum (pleura) smooth, occasionally punctate, but not coarsely sculptured……………………………………………………………………………………………29

**28(27).** T2 apical arealength equals at least 1/3 of the total length of T2 (measured medially); outline of genital capsule in lateral view forming a right angle …………………………………………………***Trachandrena***

T2 apical arealength equals less than 1/3 of the total length of T2 (measured medially); outline of genital capsule in lateral view not forming a right angle…………………………..…………………..***Scrapteropsis***

**29(27).** Vertex length greater than the diameter of an ocellus; tergites usually punctate to some degree…………………………………………………………………………………………..…………………………………………………30

Vertex length no greater than the diameter of an ocellus; tergites *usually* impunctate …………………….31

**30(29).** F2-F4 all of equal length and all longer than F1; tergites finely and densely punctate all the way to apical margins, T2-T3 with narrow white lateral fascia apically, T4-T5 with complete narrow fasciae apically…………………………………………………………………………………………….…………….***Taeniandrena wilkella***

F2-F4 variable but never all of equal length; tergites usually not densely and finely punctate all the way to apical margins, tergal fasciae either absent or very weak, and T4-T5 never with complete apical fasciae………………………………………………………………………………………………………..…………………***Melandrena***

**31(29).** S6 reflexed along apical margin…………………………………………..***Thysandrena,*** *in part (Thy. bisalicis)*

S6 not reflexed along apical margin, flat……………………………………………………………………………………32

**32(31)**. Galea relatively long and narrow, and acute apically…………..………………….***Euandrena****, in part*

Galea broader…………………………………………………………………………………………………………………………..33

**33(32)**. Penis valves narrow throughout, not broadened basally……………………***Euandrena****, in part*

Penis valves broadened towards base…………………………………………………………………………………….34

**34(33)**. S2-S5 apical fimbria distinct…………………………………………………………………………………………35

S2-S5 apical fimbria absent or very reduced…………………………………..………………………………………..36

**35(34).** S6 apically broadly emarginate; sternal fimbria hairs long

……………………………………………………………………………………..……..***Thysandrena,*** *in part (Thy. w-scripta)*

S6 apically entire, sternal fimbria hairs very short………………..***Leucandrena,*** *in part (L. barbilabris)*

**36(34)**. Clypeus and tergites with obvious punctures at low magnification; F1 slightly longer than F2

……………………………………………………………………………………………….….***Euandrena***, *in part (Eu. nigrihirta)*

Clypeus and tergites without punctures or punctures very obscure even at high magnification; F1 and F2 of equal length………………………………………………………………………………………………………***Simandrena***

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