

mofawuses
pachea

FIELD KEY TO THE COMMON SPECIES OF DROSOPHILA IN SOUTHERN ARIZONA

By William B. Heed (updated by W. J. Etges)

1. Prescutellar bristles present; anterior scutellar bristles divergent . . . 2
Prescutellar bristles absent; anterior scutellars divergent, straight or
convergent. 6
2. Acrostichal hairs in front of anterior dorsocentrals in 10 or more rows, and
usually irregular; eyes bare (without hairs) 3
Acrostichal hairs in front of anterior dorsocentrals in 6 or 8 rows,
regular; eyes with short black hairs; small (2-2.5 mm) shiny black or
brown body (polymorphic) with contrasting velvet frons; habitat,
bleeding cottonwoods *Scaptodrosophila brooksae*
(2.7-0-7.3)
3. Arista with long branches; wings variously spotted; abdomen, with various
patterns; 4 mm or larger; habitat, mushrooms genus *Leucophenga*
Arista with very short branches or bare; wings clear; abdomen with various
patterns; mesonotum spotted; habitat, cactus genus *Gitona* 4
4. Arista with about 5 dorsal and 4 ventral very short branches not including
terminal fork; color of eye exactly split in half with dorsal half redder,
ventral half purplish *Gitona bivisualis*
(.04-0-.10)
Arista bare; eye all one color 5
5. Second visible abdominal segment with all spots connected by a band;
4th vein index about 3.0 *Gitona sonoita*
Second visible abdominal segment with lateral spots not connected to more
dorsal spots by a band; 4th vein index about 3.9 *Gitona americana*
6. Acrostichal hairs in 2 regular rows; narrow, long-winged; mesonotum
striped; habitat, watercress, periwinkles etc. Genus *Scaptomyza*
Acrostichal hairs in front of anterior dorsocentrals in 6 or 8 rows;
mesonotum spotted, spots sometimes fused into irregular stripes or blotches;
habitat, cactusrepleta species group, genus *Drosophila* 23
Acrostichal hairs in front of anterior dorsocentrals in 6 or 8 rows;
mesonotum plain or striped or patterned but not dominated by spots
. remainder of species in genus *Drosophila* 7
7. Arista with very short branches; black; habitat, tubular flowers
. *D. floricola*(= *lutzii*)
Branches of arista long; not usually flower feeders 8
8. Arista with only one ventral branch besides terminal fork; anterior
scutellars divergent; mesonotum striped; habitat, mushrooms, above 5000' . . 9
Arista with 2-4 ventral branches; anterior scutellars divergent,
straight or convergent; mesonotum may or may not be striped 10

9. Body brownish; frons golden *D. orbospiracula*
 Body greyish; frons dark grey *D. grisea*
 (.1-.2-0)
10. Sex combs present in males; abdominal bands not broken
 in middorsal line 11
 Sex combs absent in males; abdominal bands may or may not be broken in
 middorsal line 14
11. Two sex combs on foretarsi of males; mesonotum smooth black or grey,
 sometimes with indistinct lighter stripes; abdominal segments solid black;
 testes red or purple; not strictly domestic species 12
 One sex comb on foretarsus of males; mesonotum yellow or light brown;
 abdominal bands do not fill each segment except 5th and 6th in males;
 testes yellow; eyes bright red; domestic species 13
12. Distal sex comb with only one tooth; proximal sex comb with 4-5 teeth;
 usually below 5000' *D. azteca*
 (.4-.4-.5)
 Distal sex comb with 3-4 teeth, proximal with 4-5 teeth;
 habitat, fir forest (above 5000') *D. lowei*
 (3.1-4.9-0)
 Distal sex comb with 5-6 teeth, proximal with 6-8 teeth;
 habitat, desert to mountain tops *D. pseudoobscura*
 (50.0-71.4-14.1)
13. Male genitalia clam-shaped when viewed in profile; female
 generally has larger eye and stubbier body than *melanogaster*
 but difficult to distinguish with more than 80% accuracy *D. simulans*
 (5.5-0.3-14.2)
 No clam-shaped process in male genitalia; both species most
 common in orchards, picnic grounds etc. *D. melanogaster*
 (3.3-1.0-7.1)
14. Posterior crossvein clouded 15
 Posterior crossvein clear 19
15. Anterior crossvein noticeably clouded; forest dwellers above 5000'. . . . 16
 Anterior crossvein clear 18
16. Tip of 2nd long vein with a clouded spot; frons reddish *D. rubrifrons*
 (2.2-3.6-0)
 No extra spot on wing 17
17. Large, usually over 3 mm; very long winged; light brown body; both
 crossveins evenly clouded *D. macroptera*
 (1.3-1.4-0)
 Medium size, 3 mm or less; shiny dark mahogany or blackish body;
 anterior crossveins more heavily clouded than posterior ones *D. tenebrosa*
 (0.3-0.5-0)
18. Brownish striped thorax; below 6000', riparian communities
 with willow *D. novamexicana*
 Blackish striped thorax; above 5000', with alder and aspen *D. montana*
 (.01-.02-0)

19. Male with very noticeable black recurved spine on genitalia;
female ovipositor noticeably ebony-black, flattened dorsoventrally;
mesonotum plain brown; habitat, riparian communities below 5000¹,
feeds on fungus *D. macrospina*
(1.3-0-3.4)
Not as above 20
20. Mesonotum patterned or striped 21
Mesonotum uniformly black or brown 22
21. Mesonotum striped, the median stripe divides into two parts just anterior
to the scutellum; small (2 mm.); yellowish; abdomen patterned; pleurae
striped; habitat, orchards, picnic grounds etc. *D. busckii*
(.02-0-.1)
Mesonotum patterned; large (3 mm and over) habitat, riparian
communities below 6000' *D. fulvalineata*
22. Mesonotum dull black; abdomen and legs shining black;
habitat, bleeding mesquite trees *D. carbonaria*
(.9-.03-2.5)
Thorax and abdomen shining brown; body hump-shaped;
forest dweller above 5000' *D. innubila*
(.5-.8-0)
23. Abdominal banding continuous (aside from middoral line) to lateral
margin of tergites 24
Abdominal tergites with distinct pattern, on lateral margin or the
banding (usually) interrupted by lighter areas below angle of tergites . 31
24. Posterior crossveins clouded; femura black; frons velvety black;
above 5000' *D. californica* (= *fuliginea*)
(.3-.4-0)
Posterior crossveins not clouded 25
25. Males with long recurved hairs inside of foretarsi 26
Recurved hairs may be present but none longer than width of tarsi . . . 28
26. Color of abdominal bands same intensity throughout; arista 3-4/2;
4th vein index 1.4 or greater 27
Color of abdominal bands more intense on lateral edges; arista 5/3;
4th vein index very close to 1 *D. bifurca*
(.01-.02-0)
27. Grey or blackish; tip of 2nd costal break black;
4th vein index 1.4 *D. nigrohydei*
(.005-.01-0)
Brown; tip of 2nd costal break clear;
4th vein index about 1.8 *D. hydei*
(2.0-1.4-3.1)
28. Eye dark maroon; cheek very wide, almost 1/2 widest diameter of eye . . 29
Eye red or bright red; cheek width 1/3 or less widest diameter of eye . 30

29. Bristles on frons form a "V"; cheek usually dark; 3rd costal section with heavy bristles on basal 1/3 - 1/2; midorbital 1/2 or more length of posterior reclinate; male genitalia with single row of teeth on claspers when viewed ventrally; habitat, saguaro cactus *D. nigrospiracula*
(2.2-.0-5.6)

Frons randomly bristled; cheek light; 3rd costal section with heavy bristles on basal 1/4; midorbital less than 1/2 length of posterior reclinate; male genitalia with a chitinous "row" surrounding single row of teeth on claspers; habitat saguaro, cardon *D. mettleri*

30. Eye bright red; lateral area of tergites usually solidly colored, especially in males; 6th tergite of females soaetimes with reduced banding or no banding on lateral margin; sternite bristles on lateral and apical margins of about equal length; 5000' or above; not common . . . *D. ritae*

Eye red but not bright; banding on lateral area of tergited solid or interrupted but not distinct in either case; general coloring brown or grey (polymorphic); apical bristles of abdominal sternites shorter than lateral bristles; second most common species in southern Arizona; above and below 5000'; usually associated with *D. longicornis* from which it may be distinguished by the lighter wing veins. *D. hamatofila*
(21.6-12.1-37.6)

31. Predominantly black; large (3 mm); tip of 2nd costal break black; legs conspicuously banded above and below femoral-tibial joint; testes lemon yellow *D. melanopalpa*
(.01-0-.04)

Predominantly gray or brown; usually smaller than 3 mm 32

32. Abdomen usually definitely patterned along lateral margin (especially males); apex of 2nd costal break distinctly darkened; band at base of tibia distinct at least on 2nd and 3rd legs 33

Abdomen with solid banding or only vaguely patterned along lateral margin, apex of 2nd costal break clear; band at base of tibia indistinct 30

33. Eye bright red; posterior crossvein not darker than other wing veins; Clear area separating bands of tergites, at lateral margin diagonal; in low numbers in many collections above and below 5000'. . . . *D. arizonae*
(.07-.04-.1)

Eye bright red; posterior crossvein not darker than other wing veins; Clear area sometimes separating bands of tergites, at lateral margin usually thinly rectangular; body color greyish to black, associated with organ pipe in Arizona (pitaya agria in Baja California and Sonora, and California barrel cactus in southern California). *D. mojavensis*

Eye red bit not especially bright; wing veins dark, posterior crossveins especially dark; clear area separating bands of tergites at lateral margin horizontal, especially in males; this area may be solidly colored in females; common below \$000*; associated with and difficult to distinguish from *D. hamatofila* but the wing veins of *D. hamatofila* are light *D. longicornis*
(2.6-1.6-4.4)

Currently absent from this key is *D. pachea*, a member of the *nannopectera* group that uses only senita cactus, *Lophocereus schottii*, throughout the Sonoran Desert region.