

Field Guide to the COMMON BEES of California

**Including Bees of the
Western United States**

Text by Gretchen LeBuhn

Illustrations by Noel B. Pugh

**Appendix Two: Key to Females
of Common California Genera**



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An X indicates that the genus has the character. A blank means the genus does not have the character or that it is variable. Identifying characteristics are visible with a dissecting microscope or hand lens.

Genus	Size		Thorax integument color				Markings	
	Equal to or larger than <i>Apis</i>	Smaller than <i>Apis</i>	Black or brown	Bright green	Dull metallic black, dark blue, or green	Red	Red	Yellow or white
<i>Andrena</i>	X	X	X		X			X
<i>Osmia</i>	X	X	X		X			
<i>Nomada</i>	X	X	X			X	X	X
<i>Triepeolus</i>	X	X	X				X	
<i>Peponapis</i>	X	X	X					X
<i>Megachile</i>	X	X	X					
<i>Hoplitis</i>	X	X	X					
<i>Halictus</i>	X	X	X					
<i>Anthophora</i>	X	X	X					
<i>Colletes</i>	X	X	X					
<i>Melissodes</i>	X	X	X					
<i>Agapostemon</i>	X	X		X	X			
<i>Bombus</i>	X		X					
<i>Xylocopa</i>	X		X					

	Wings	Identifying characteristics
	Number of submarginal cells	
	3	Wide facial fovea, lined with flat, tiny, white to brown hairs
	2	No pale markings on integument; arolium present; parapsidal line condensed to simple pit or short line
	2 or 3	Thin and wasplike; most commonly head, thorax, and abdomen bright red with usually extensive yellow markings; with black integument, yellow markings always present; scopa absent; jugal lobe of hind wing small, one-sixth as long as vannal lobe or less
	3	No scopal hairs; beveled
	3	Clypeus prominent viewed from side; base of mandible dark; end of mandible with distinct notch or tooth at tip; notch relatively shallow, may be gone in older individuals with mandible worn away; interior of fore wing's cells with microscopic hairs scattered across surface
	2	No pale markings on integument; arolium absent; scopa on sternites
	2	No pale markings on integument; arolium present; hooked apical flagellomeres
	3	Basal vein strongly arched at base of vein; bands of hair lining rim of tergites; scopal hairs on tergites
	3	Often similar to bumble bee; vertex flattened or slightly concave; interior of fore wing's cells with no microscopic hairs scattered across surface; upper and lower margins of third submarginal cell about equal length; first recurrent vein ending near middle of second submarginal cell
	3	Second recurrent vein with lower portion distinctly arched outward toward wing tip, appearing S-shaped
	3	Tegula not symmetrical, narrowed anteriorly; clypeus little or moderately bulging in profile; vertex flat or slightly concave; interior cells of wings with minute hairs
	3	Bright, shiny, race car green
	3	Corbicula on hind tibia present on pollen-carrying species; thorax and abdomen densely hairy; hind wing without jugal lobe
	3	Large as queen bumble bee; marginal cell long and narrow; stigma absent; hind tibia without corbicula, with normal scopal hairs

continued →

Genus	Size		Thorax integument color				Markings	
	Equal to or larger than <i>Apis</i>	Smaller than <i>Apis</i>	Black or brown	Bright green	Dull metallic black, dark blue, or green	Red	Red	Yellow or white
<i>Dufourea</i>		X	?					
<i>Tetraloniella</i>	X		?					
<i>Perdita</i>		X	X		X		X	
<i>Lasioglossum</i>		X	X		X			
<i>Hylaeus</i>		X	X				X	X
<i>Dianthidium</i>		X	X				X	X
<i>Sphecodes</i>		X	X				X	
<i>Anthidium</i>		X	X					X
<i>Panurginus</i>		X	X					
<i>Heriades</i>		X	X					
<i>Ashmeadiella</i>		X	X					
<i>Ceratina</i>		X			X			X
<i>Apis</i>			X					

Wings Number of submarginal cells	Identifying characteristics
2	Antennal bases set well below middle of face and separated from clypeus by little more than diameter of antennal socket; clypeus short and wide, its upper margin not much arched up into rest of face; scopal hairs on femur; labrum nearly as long as clypeus
3	Clypeus not strongly bulging or protuberant; vertex flattened to slightly concave; mandible simple without teeth or notches on upper or lower edges; interior of fore wing's cells with microscopic hairs scattered across surface
2	Two subantennal sutures; facial fovea relatively small, narrow, and not filled with hair; short marginal cell
	Basal vein strongly arched at base of vein
2	No scopa; jugal lobe of hind wing about three-fourths as long as vannal lobe; narrow slots or foveae running along compound eye from antennal base to ocelli
2	Yellow, white, or ocher markings on tergites; arolium present; scopa on underside of abdomen; apical end of middle tibia with one small outer spine or sometimes just a tooth
2	Brown to black head and thorax, but almost always with bright red abdomen; basal vein strongly arched at base of vein; no scopal hairs
2	No arolium; yellow or white markings on tergites; subantennal sutures nearly straight; six or more teeth on mandible
2	Two subantennal sutures; facial fovea small, narrow, and not filled with hair; long marginal cell
2	No pale markings on integument; coarse, dense punctuation
2	No pale markings on integument; arolium present; scopa on sternites
3	Shiny; hairs short and sparse throughout with no abdominal bands; clypeus almost always with short white or yellowish bar; end of abdomen forming a point
3	Brown and with sparse pale hairs; eyes with obvious long hairs; corbicula present on hind tibia