

Decision tree for bees, near bees, or mimics

	Order	Suborders		Subgroups		Superfamily (forms)			Family	Distinctives	Likely specimens on exam
Fly mimic										2 wings	Any number of bee-like mimics, flower flies, bee flies, mosquitoes
	Hymenoptera									4 wings, Ants, wasps, bees	
		Broad-waisted								Sawflies	Sawflies
			Narrow-waisted							Apocrita, "wasp-waisted"	
				Parasitica						Parasites, long ovipositors, long antennae, slender build	Any number of parasitic wasps
					Aculeata					Stinging hymenopterans, longitudinal wing folding	Hornets, yellowjackets, velvet ants
						Apoidea 1. Spheciform 2. Apiform				Sphecid wasps + bees, pronotum and tegulum separate, pronotal processes meet ventrally	Mud daubers, cicada killers, other sphecid wasps
							Apiform, non-corbiculate			True bees, vegetarian, branched hairs, hairy scopae	Carpenter bees, sweat bees, any number of solitary non-corbiculate bees
								Apiform, corbiculate		True bees, corbiculate scopae	
									Apidae	3 sub-marginal cells, eyes narrow	Honey bees (all 3 types), bumble bees (both sexes)

Diptera



Hymenoptera



Two wings and haltaries are diptera, four wings are hymenoptera.

Broad-waisted Hymenopterans



Parasitica

Long ovipositor for depositing eggs on or in prey

Long antennae for sensory purposes.



Stinging Hymenoptera

Yellowjackets

- *Dolichvespula, Vespula* wasps
- Eastern yellowjacket
- Southern yellowjacket
- Bald-faced "hornet"
- Enclosed paper nests



Paper wasps

- *Polistes* wasps
- Open paper nests



Hornets

- *Vespa* wasps
- Aerial nests



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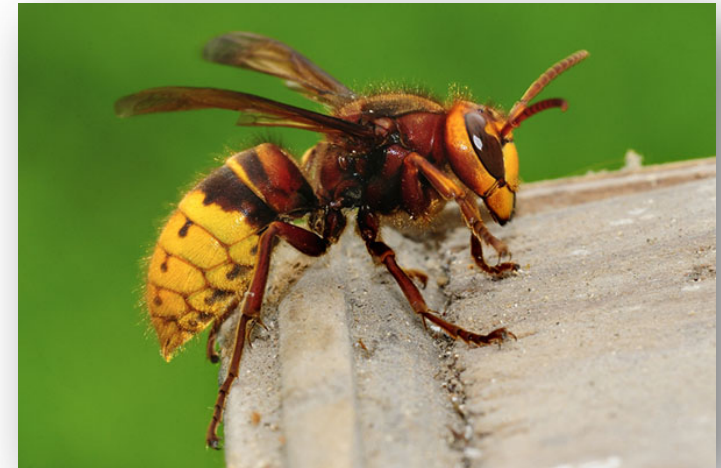
Paper wasps

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Hornets

- *Vespa* wasps
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Apoid

Superfamily (Apoidea) including
Sphecoid wasps and all bees

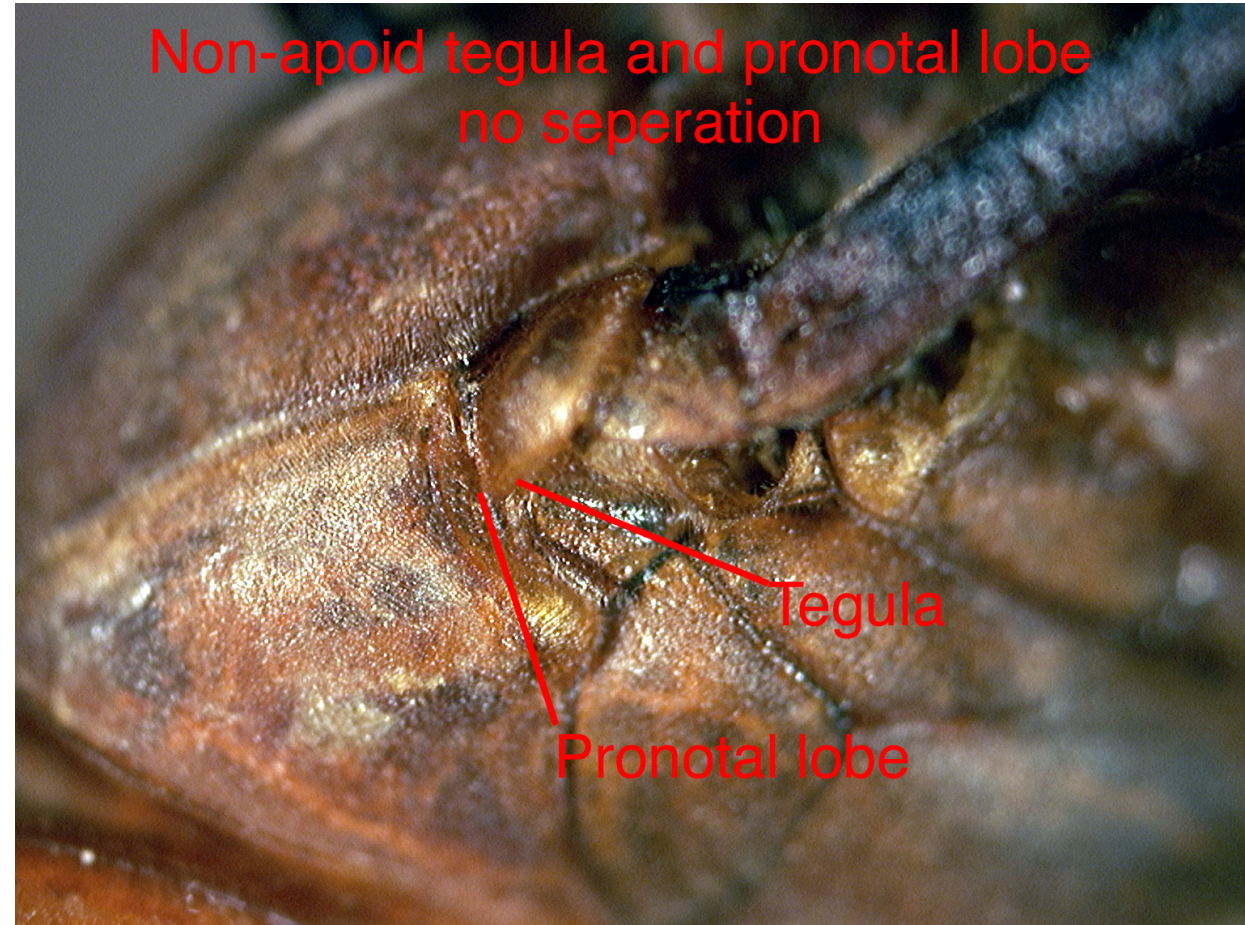
Apoid tegula and pronotal seperation



Non-Apoid

Vespidae, or hunting wasps
(many subfamilies)

Non-apoid tegula and pronotal lobe
no seperation



Non-Apoid Vespid, or hunting wasps longitudinal wing folding



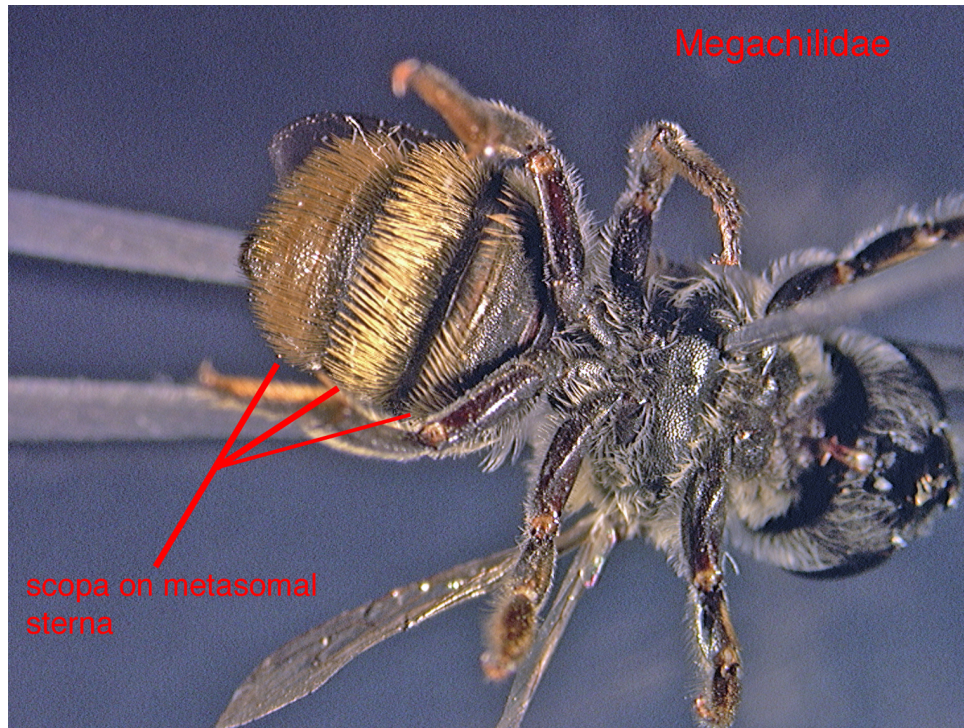
Spheciform Wasps

No scopae and few hairs on body
Cicada killers, mud-daubers



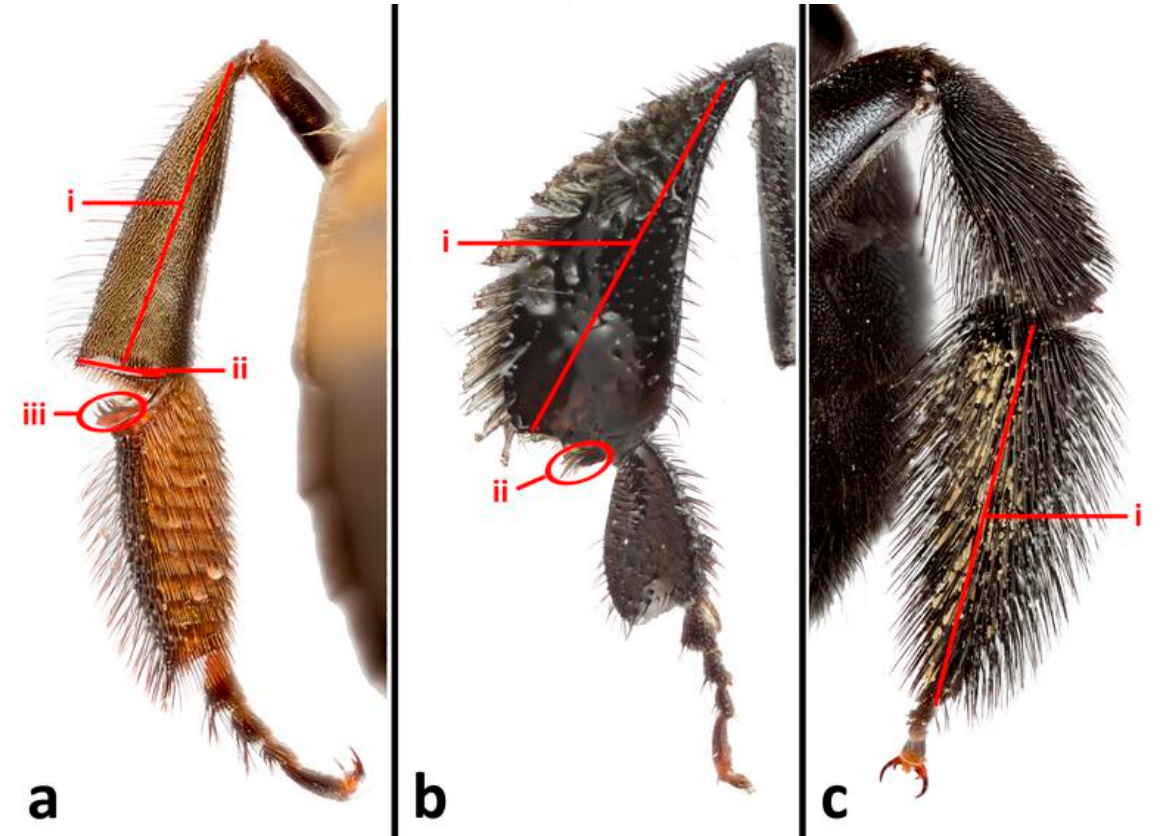
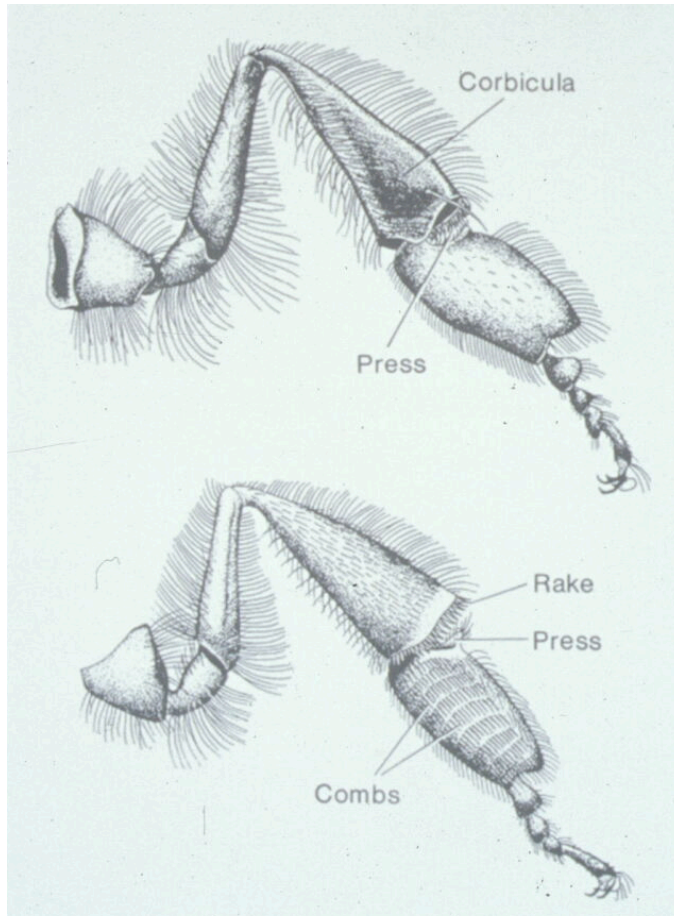
Scopa

Generic name of pollen-carrying character, non-specialized



Scopae on Legs

A leg scopa specialized with a depressed distal tarsum, proximal combs, and pollen press is a *corbiculum*



a: corbiculum of honey bee, b: corbiculum of bumble bee, c: non-corbiculate leg scopa