

Insect Families of Cold Canyon

The orders and families included in this checklist have been compiled by the Bohart Museum of Entomology at the University of California, Davis. Because it is a monumental and on-going project, the list should be considered a work in progress. The information on type of metamorphosis, and larval (L) and adult (A) feeding style and habitat is provided to help the reader locate and identify different orders and families. It is generalized and does not include all exceptions. It was compiled from *California Insects* (Powell and Hogue 1979) and *An Introduction to the Study of Insects* (Borror et al. 1989), two invaluable resources for the Californian entomologist.

ORDER/Family	Common Name	Feeding Style		Habitat
		L	A	
<u>Simple Metamorphosis</u>				
THYSANURA	Silverfish			
Lepismatidae	--	S	S	in decaying organic material
MICROCORYPHIA	Bristletails			
Machilidae	--	S	S	in decaying organic material or rocky areas
Meinertellidae	--			in decaying organic material or rocky areas
EPHEMEROPTERA	Mayflies			
Baetidae	--	H	H	L: in water; A: in the air above creek
Leptophlebiidae	--			L: in still water; A: in the air above creek
Siphonuridae	--	P	P	L: rapid water; A: in the air above creek
ODONATA	Dragonflies and Damselflies			
Aeshnidae	Darners	P	P	L: on submerged vegetation; A: in the air above creek
Calopterygidae	Broad-winged damselflies	P	P	L: on submerged vegetation; A: in the air above creek
Coenagrionidae	Narrow-winged damselflies	P	P	L: on submerged vegetation; A: in the air above creek
Libellulidae	Skimmers	P	P	L: on submerged vegetation or litter; A: in the air, usually above creek
ORTHOPTERA	Grasshoppers, Crickets, and Katyids			
Acrididae	Grasshoppers	H	H	near vegetation
Gryllacrididae	Ground and camel crickets	H	H	on vegetation, on soil
Gryllidae	Crickets	H	H	on soil, near vegetation
Tetrigidae	Pygmy grasshoppers			near vegetation
Tettigoniidae	Katyids	H	H	near vegetation

BLATTARIA	Cockroaches			
Blattellidae	German or wood cockroaches	O	O	in decaying material
MANTODEA	Mantises			
Mantidae	--	P	P	on or near vegetation
PHASMIDA	Walking Sticks			
Timemidae	Timema walking sticks	H	H	on vegetation
DERMAPTERA	Earwigs			
Forficulidae	European and spine-tailed earwigs	O	O	in moist, dark places
ISOPTERA	Termites			
Hodotermitidae	Dampwood termites	W	W	in pine trees or downed logs
Rhinotermitidae	--	W	W	in subterranean wood
EMBIOPTERA	Webspinners			
Oligotomidae	--	S	S	under rocks, in leaf litter
PLECOPTERA	Stoneflies			
Chloroperlidae	Green stoneflies			L: in water; A: on riparian vegetation
Nemouridae	Spring stoneflies	H	H	L: in water; A: on riparian vegetation
Perlodidae	Perlodid stoneflies	P	H	L: moving water; A: on riparian vegetation
PSOCOPTERA	Barklice			
Psocidae	--	O	O	on or in vegetation or under rocks
HEMIPTERA	True Bugs			
Alydidae	Broad-headed bugs	H	H	on vegetation
Anthracoridae	Minute pirate bugs	P	P	on vegetation
Aradidae	Flat bugs	S	S	under tree bark
Belostomatidae	Giant water bugs	P	P	in open water or on submerged vegetation
Berytidae	Stilt bugs	H	H	on vegetation
Coreidae	Squash bugs	H	H	on vegetation
Corixidae	Water boatmen	O	O	in water
Enicocephalidae	Gnat bugs	P	P	under rocks or debris
Gelastocoridae	Toad bugs	P	P	at streamside
Gerridae	Water striders	P	P	on still water
Largidae	Largid bugs	H	H	on vegetation
Lygaeidae	Seed bugs	H	H	on and under vegetation
Miridae	Leaf bugs, plant bugs	H	P	on vegetation
Nabidae	Damsel bugs	P	P	on vegetation
Notonectidae	Backswimmers	P	P	open water
Pentatomidae	Stink bugs	H	P	on vegetation

Pyrrhocoridae	Red bugs, cotton stainers	H	H	on vegetation
Reduviidae	Assassin bugs, ambush bugs	P	P	in flowers or on vegetation
Rhopalidae	Scentless plant bugs	H	H	on vegetation
Saldidae	Shore bugs	P	S	at streamsides or on vegetation
Scutelleridae	Shield bugs	H	H	on vegetation
Tingidae	Lace bugs	H	H	on vegetation, often on underside of leaves

Intermediate Metamorphosis

HOMOPTERA	Aphids, cicadas, scale insects, etc.			
Achilidae	Achilid planthoppers	H	H	on vegetation
Aleyrodidae	White flies	H	H	on vegetation
Aphididae	Aphids	H	H	on vegetation
Cercopidae	Spittle bugs, froghoppers	H	H	on vegetation
Cicadellidae	Leafhoppers	H	H	L: in vegetation; A: on vegetation
Cicadidae	Cicadas	H	H	L: in roots of vegetation; A: on vegetation
Delphacidae	Delphacid planthoppers	H	H	on vegetation
Membracidae	Treehoppers	H	H	on vegetation
Psyllidae	Psyllids, jumping plant lice	H	H	on vegetation

THYSANOPTERA	Thrips			
Aeolothripidae	Broad-winged or banded thrips	P	P	on vegetation, esp. in flowers
Thripidae	Common thrips	H	H	on vegetation

Complete Metamorphosis

NEUROPTERA	Lacewings, alder flies, dobsonflies, antlions, etc.			
Berothidae	Beaded lacewings	P		in the air
Chrysopidae	Green lacewings	P	H, P	L: among vegetation; A: on vegetation
Corydalidae	Dobsonflies	P		L: in water; A: on riparian vegetation, in the air
Hemerobiidae	Brown lacewings	P		A: on vegetation, in the air
Myrmeleontidae	Antlions	P	P	L: in sandy soil; A: in the air (nocturnal)
Rhaphidiidae	Snakeflies	P		L: among vegetation; A: on vegetation
Sialidae	Alderflies	P		L: in riffles in creek; A: on riparian vegetation, in the air
MECOPTERA	Scorpionflies			
Bittacidae	Hangingflies	P	P	on vegetation

COLEOPTERA**Beetles**

Alleculidae	Comb-clawed beetles	O	H	L: in soil; A: on vegetation, in decaying material
Anobiidae	Store and furniture beetles	W	H	in wood, in decaying material
Anthicidae	Antlike flower beetles	O	H	L: in soil; A: on vegetation, in decaying material
Bruchidae	Seed beetles	H		L: in seeds; A: on vegetation
Buprestidae	Metallic wood-boring beetles	W, H	W, N	L: under surfaces of vegetation; A: at flowers, in downed wood
Byturidae	Fruitworm beetles	H		L: in vegetation
Cantharidae	Soldier or leather-winged beetles	P	H, P	on vegetation
Carabidae	Predaceous ground beetles	P	P	L: under rocks and in decaying material; A: under stones in moist places
Cerambycidae	Longhorn beetles	W	H	L: in wood; A: on vegetation, at flowers
Chrysomelidae	Leaf beetles	H	H	in leaves
Cicindelidae	Tiger beetles	P	P	L: in burrows; A: on ground
Cleridae	Checkered beetles	P	H	L: in downed wood, cones, and seeds; A: on vegetation
Coccinellidae	Ladybugs	P	P	on vegetation
Cucujidae	Flat bark beetles	S	S	under bark, in decaying material
Cupedidae	Reticulated beetles			under bark
Curculionidae	Weevils	H	H	L: in vegetation; A: on vegetation
Dascillidae	Soft-bodied plant beetles	H	H	on riparian vegetation
Dermestidae	Hide beetles	S	H	L: on decaying animal parts; A: at flowers
Dytiscidae	Predaceous water beetles	P	P	L: in water; A: in open water or the air
Elateridae	Click beetles	O	H	L: in soil or decaying material; A: at flowers or in downed wood
Erotylidae	Pleasing fungus beetles	S	S	under bark, on fungus
Gyrinidae	Whirligig beetles	P	P	L: in water; A: on pond surfaces
Heteroceridae	Variiegated mud-loving beetles			in creekside mud or sand
Histeridae	Hister beetles	P	P	in decaying material
Hydrophilidae	Scavenger water beetles	P	S, P	in still water or in decaying material or soil
Lampyridae	Fireflies	P		L: on ground or vegetation; A: on vegetation
Lathridiidae	Minute brown scavenger beetles	S	S	in decaying material, on flowers
Leiodidae	Round fungus beetles			in decaying material
Meloidae	Blister beetles	P	H	L: in bee's nests or grasshopper egg masses; A: on vegetation, on flowers
Melyridae	Soft-winged flower beetles	P	P	on flowers
Mordellidae	Tumbling flower beetles	H, P	N	L: in vegetation; A: at flowers
Oedemeridae	False blister beetles	W		L: in wood; A: at flowers
Pedilidae	Antlike flower beetles	O	H	L: in soil; A: on vegetation, in

Phalacridae	Shining flower beetles	S		decaying material
Rhizophagidae	Root-eating beetles	P	P	L: among fungus spores; A: at flowers
Scarabaeidae	Scarabs	S, H	S, H	under bark, in ant galleries
				L: in subterranean burrows; A: near
				vegetation; on flowers, dung, and
				carrion
Scirtidae	Marsh beetles			L: in water; A: on vegetation and in
				decaying material
Scolytidae	Bark beetles	H		under bark, in wood
Silphidae	Carrion beetles	S, H, O	S, H, O	beneath dead animals
Staphylinidae	Rove beetles	P, Pa, S	Pa, S	in decaying material
Tenebrionidae	Darkling ground beetles	H	H	L: in decaying material, on sand; A:
				on ground, in decaying material
Trogositidae	Bark-gnawing beetles	P, O		decaying material
TRICHOPTERA	Caddisflies			
Brachycentridae	--	H, P		L: at streamside, in water
Hydropsychidae	Web-spinning caddisflies	O		L: in water; A: on riparian vegetation
LEPIDOPTERA	Butterflies and Moths			
Adelidae	Fairy moths	H	N	L: on vegetation; A: at flowers
Arctiidae	Tiger moths	H	N	L: on vegetation, A: in vegetation
Coleophoridae	Casebearers	H		L: on vegetation
Danaidae	Milkweed butterflies	H	N	L: on vegetation; A: at flowers
Gelechiidae	Gelechiid moths	H		L: on vegetation
Geometridae	Geometrid moths	H	N	L: on vegetation; A: at flowers
Hesperiidae	Skippers	H	N	L: on vegetation, esp. grasses; A: at
				flowers
Incurvariidae	Incurvariid moths	H	N	L: on vegetation; A: at flowers
Lycaenidae	Blues, coppers, and hairstreaks	H	N	L: on vegetation, A: at flowers, on
				mud
Lyonetiidae	Lyonetiid moths	H		L: on leaves
Noctuidae	Millers and cutworms	H	N	L: on vegetation; A: at flowers
Notodontidae	Notodontid moths	H	N	L: on leaves; A: at flowers
Nymphalidae	Brush-footed butterflies	H	N	L: on flowering plants; A: at flowers;
				on mud, dung, sap, or fruit
Oecophoridae	Oecophorid moths	H, S		L: on vegetation, in decaying material
Papilioniae	Swallowtails	H	N	L: on vegetation; A: at flowers
Pieridae	Whites and sulfurs	H	N	L: on vegetation; A: at flowers, on
				mud
Plutellidae	Diamondback moths	H	N	L: on vegetation
Pyralidae	Snout and grass moths	H, S, P		L: on vegetation or in decaying
				material; A: in vegetation
Saturniidae	Silk moths	H	--	L: on vegetation
Satyridae	Satyrs	H	N	L: on vegetation; A: at flowers
Sphingidae	Hawk moths, sphinx moths	H	N	L: on vegetation; A: at flowers

DIPTERA		True flies		
Acroceridae	Small-headed flies	Pa	N	L: inside spiders; A: at flowers
Agromyzidae	Leaf-miner flies	H	S	L: in vegetation; A: in the air
Anthomyiidae	Anthomyiid flies	H, P	S	L: in vegetation, esp. roots; in water
Asilidae	Robber flies	S, H, P	P	L: in sand, soil, or decaying wood; A: in the air, on ground, on flowers
Bibionidae	March flies	S	S	L: in roots of grasses, in decaying materials; A: in meadows; in the air
Bombyliidae	Bee flies	Pa, P	H	A: at flowers, at streamsides
Calliphoridae	Blow flies	S	S	L: in decaying material; A: on dung or carrion
Cecidomyiidae	Gall midges	S, H, P	--	L: inside vegetation, in decaying material; A: in the air
Ceratopogonidae	Sand flies, "no-see-ums"	S	Pa, P	L: in moist places or water; A: in the air, on picnickers
Chamaemyiidae	Aphid flies	P		L: in aphids, scale insects, and mealy bugs; A: on vegetation
Chironomidae	Water midges	S	--	L: in water; A: in riparian areas, in the air
Chloropidae	Grass flies	H, S		L: in grass stems, in decaying material; A: near grasses
Conopidae	Thick-headed flies	Pa	N	L: in bees and wasps; A: at flowers
Culicidae	Mosquitoes	H, P	Pa, H	L: in water; A: in riparian areas, (males) on flowers, (females) on victims
Dolichopodidae	Long-legged flies	P	P	L: in water, in decaying material, under bark; A: on riparian vegetation
Drosophilidae	Pomace flies, small fruit flies	S, Pa, P		L: on rotting vegetation; A: in the air, on fruit
Empididae	Dance flies	P	P, H	L: in soil, in decaying material, in water; A: in the air, at flowers
Ephydriidae	Shore flies	S	S	L: in water; A: in moist places
Hippoboscidae	Louse flies	Pa	Pa	L: in the air, on birds or mammals (occasionally land on people)
Lauxaniidae	Lauxaniid flies	S	S	L: in decaying material; A: in moist places
Lonchopteridae	Spear-winged flies	S	S	L: in decaying material; A: in moist places
Muscidae	House flies, face flies, etc.	S	S, H	L: in decaying material; A: in the air, on animals, on decaying material
Mycetophilidae	Fungus gnats	S, P	H	L: in decaying material; A: in dark, damp areas
Otitidae	Picture-winged flies	H, S	S	L: on vegetation, in decaying material; A: on vegetation
Phoridae	Humpbacked flies	S, Pa	S	L: in decaying material, in nests; A: around decaying material
Piophilidae	Skipper flies	S	S	L: in decaying material; A: around decaying material
Pipunculidae	Big-headed flies	Pa	S	L: in leafhoppers; A: in the air

Psychodidae	Moth flies, sand flies	S		L: in water; A: near decaying material
Rhagionidae	Snipe flies	P	P	L: in soil, decaying material, or water; A: around vegetation
Sarcophagidae	Flesh flies	S, Pa	H	L: in decaying material, in insect nests; A: on decaying material
Scathophagidae	Dung flies	D, H	S	L: in dung, in vegetation; A: on riparian vegetation
Scatopsidae	Minute black scavenger flies	S	S	in decaying material
Sciaridae	Root gnats	S, H	S	L: in dark, damp decaying material; A: near water
Sepsidae	Black scavenger flies	S	S	L: in decaying material; A: near decaying material
Simuliidae	Black flies	S	Pa	L: in water; A: near streams, in the air
Sphaeroceridae	Small dung flies	S	S	in decaying material
Stratiomyidae	Soldier flies	H, S, P	H	L: in water or on land; A: at flowers, in the air, in moist places
Syrphidae	Syrphid flies or flower flies	P	H	L: in nests, in decaying material, on vegetation eating aphids; A: at flowers
Tabanidae	Deer and horse flies	P	Pa, H	L: in water or moist places; A: in the air, on or near animals
Tachinidae	Tachinid flies	Pa	N	L: inside insect larvae; A: at flowers, in the air
Tephritidae	Fruit flies	H	H	L: in fruit; A: on vegetation
Tipulidae	Crane-flies	H	--	L: in grass roots, in decaying material, in mosses; A: in moist places
Trixoscelididae	Trixoscelidid flies			A: among vegetation
HYMENOPTERA	Ants, bees, and wasps			
Andrenidae	Andrenid bees	H	N	L: in burrows; A: at flowers, in the air
Anthophoridae	Cuckoo, digger, and carpenter bees	H	N	L: in deep burrows; A: at flowers, in the air
Apidae	Bumble, honey, and orchid bees	H	N	L: in burrows or nests; A: at flowers, in the air
Argidae	--	H	N	on vegetation
Aulacidae	--	Pa	N	L: inside beetles and wasps; A: in the air, at flowers
Bethylidae	--	Pa	N	L: inside insect larvae; A: on ground, in vegetation
Braconidae	Braconid wasps	Pa	N, H	L: inside caterpillars; A: at flowers, on vegetation
Bradynobaenidae	--	Pa	Pa	A: on ground at night
Cephalidae	Stem saw flies	H	H	L: in vegetation; A: at flowers
Ceraphronidae	--	Pa		L: in insect nests; A: on ground, in vegetation
Chalcididae	--	Pa	N	L: inside caterpillars; A: in the air, at flowers
Chrysididae	Cuckoo wasps	Pa	N	L: in burrows of other wasps; A: in the air, at flowers

Colletidae	Plasterer bees, yellow-faced bees	H	N	L: in burrows in ground, in vegetation; A: at flowers
Cynipidae	Gall wasps	H	Pa	L: inside galls on oaks; A: on vegetation, on ground
Diapriidae	Diapriids	Pa	N	L: inside larval flies; A: in the air, in moist places
Dryinidae	--	Pa	N	L: inside adult or larval insects; A: at flowers, on ground
Embolemidae	--	Pa	N	L inside larval insects; A: at flowers, on ground
Encyrtidae	--	Pa	N	L: inside insects; A: at flowers, on ground
Eulophidae	--	Pa	N	L: inside insect eggs or larvae; A: at flowers, on ground
Eupelmidae	--	Pa	N	L: inside insects; A: at flowers, on ground
Eurytomidae	Seed chalcidoids	Pa, H	N	L: in vegetation; A: at flowers, on ground
Formicidae	Ants	H, C, O	H, P, O	L: in nests; A: on ground, on vegetation
Gasteruptiidae	--	Pa	H	L: in wasp and bee nests; A: at flowers, near wasp and bee nests
Halictidae	Sweat bees	H	H	L: in nests; A: at flowers
Ichneumonidae	Ichneumonids	Pa	N	L: inside insect larvae or spiders; A: in the air, at flowers
Leucospidae	--	Pa	N	L: inside insects; A: at flowers
Megachilidae	Leafcutting bees	H	H	L: in nests; A: at flowers
Mutillidae	Velvet ants	Pa	--	L: in bee nests; A: on ground in open areas
Mymaridae	Fairyflies	Pa		L: inside insect eggs; A: in the air
Ormyridae	--	Pa		L: inside gall insects; A: in the air
Platygastridae	--	Pa	N	L: inside gall gnats; A: at flowers
Pompilidae	Spider wasps	C	H	L: in burrow with killed spider; A: in the air, at flowers
Proctotrupidae	--	Pa	N	L: inside beetles and flies; A: flowers
Pteromalidae	--	Pa	N	L: inside insects; A: on vegetation, on ground
Sapygidae	--	Pa	N	L: inside bee and wasp nests; A: in the air, on vegetation
Scelionidae	--	Pa	N	L: inside arthropod eggs
Sphecidae	Digger wasps, thread-waisted wasps	C	P, N	L: in burrows; A: on ground, in the air, at flowers
Tenthredinidae	Common sawflies	H	H, P	L: on vegetation; A: on vegetation
Thysanidae	--	Pa		L: inside insect eggs or larvae
Tiphiidae	Tiphiids	Pa	H	L: on insect larvae; A: in the air
Torymidae	--	Pa, H	N	L: inside insect larvae, inside oak galls; A: in the air
Vespidae	Paper nest wasps, yellow jackets, hornets	C	O	L: in nests; A: in the air, on vegetation, at flowers

Feeding style key:

C = carnivore (eats animal material captured by adult—applies to larvae)

H = herbivore (eats plant material)

N = nectar feeder

O = omnivore (eats animal, plant, and/or fungal material)

P = predator (kills and eats animal material)

Pa = parasite (eats its prey slowly over time—applies to animals much smaller than the prey they eat)

S = scavenger (eats decaying material)

Se = seed eater

W = wood eater

-- = non-feeding life stage

