

Meet the Beneficials:

Natural Enemies of Garden Pests

Predators hunt, attack, and kill their prey. Encourage these natural enemies by avoiding pesticides that kill them; choosing plants that provide them pollen, nectar, and shelter; and keeping ants out of pest infested plants. Common predators that eat garden pests are pictured below.



Convergent lady beetles prefer to eat aphids but sometimes eat whiteflies and other soft-bodied insects. Shown here are the adult (left), larva (center), and cluster of eggs (right).



Green lacewing adults eat nectar and pollen. Some species also eat insects.



Green lacewing larvae feed on mites, eggs, and small insects, especially aphids.



Green lacewing eggs are laid on slender stalks in groups (as shown here) or individually.



Predaceous ground beetle adults stalk soil-dwelling insects, such as cutworms and root maggots.



Predaceous ground beetle larvae live on soil and in litter, feeding on almost any invertebrate.



Assassin bugs attack almost any insect.



Pirate bugs attack mites and any tiny insect, especially thrips.



Damsel bugs are predaceous on a wide variety of small insects.



Soldier beetle adults eat mostly aphids; their larvae are soil-dwelling.



Spiders, including this crab spider, attack all types of insects.



Syrphid fly (flower fly, hover fly) adults eat pollen and nectar.



Syrphid fly larvae eat mostly aphids but also soft-bodied insects.



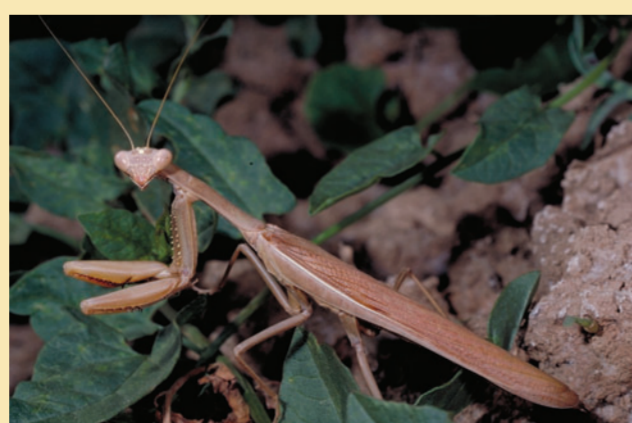
Sixspotted thrips attack mostly mites.



Western predatory mites attack pest mites.



Adults of predatory wasps, such as this paper wasp, prey on caterpillars and other insects.



Praying mantids don't control pests, because they eat both beneficials and pests.

Parasites live and feed in or on a larger animal (host). Nearly all insect pests have at least one parasite that attacks them. Insects that parasitize other invertebrates (sometimes called parasitoids) are parasitic only in their immature stages and kill their host just as they reach maturity. Most insect parasites are host-specific wasps or flies, and many are so small that often you won't see them. An adult parasite can lay eggs in hundreds of host individuals with a resulting quick reduction in pest numbers.



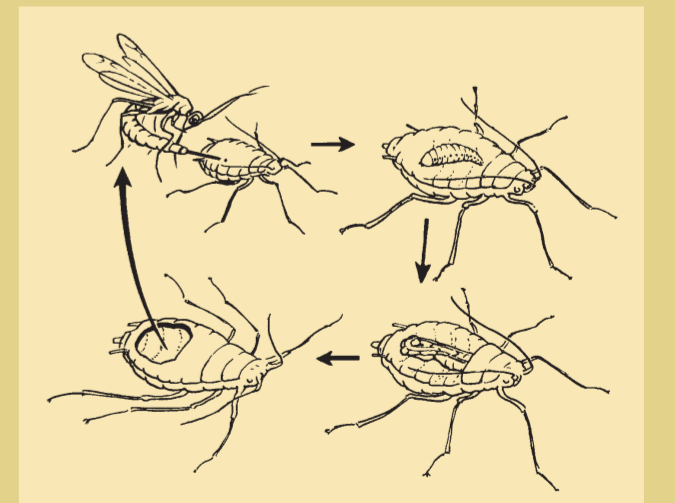
Some parasites attack insect eggs, such as the *Trissolcus* species wasp.



Parasitized aphids die and turn into crusty "mummies" that can be black or beige. The hole in the mummy at left indicates a parasite has emerged. The aphid in the middle is healthy.



The blackish scale insects have wasp larvae developing within.



Aphid parasite life cycle: The adult lays an egg in an aphid. The egg hatches into a larva that feeds inside. After killing the aphid, the wasp larva pupates then emerges as a wasp.



Caterpillar parasites include the *Hyposoter exiguae* wasp.

PHOTOS: J. K. CLARK

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University of California Agriculture and Natural Resources
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