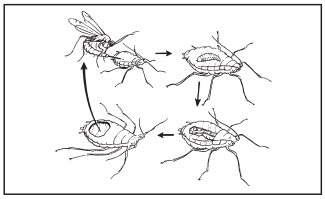
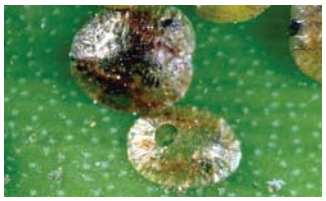
Parasites of Insect Pests

A parasite is an organism that lives and feeds 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.



Life cycle of an **aphid parasite** (left). The **adult female wasp** (right) lays one egg in each aphid host; the egg develops into a larva, which feeds inside of and kills the aphid. The wasp larva pupates then emerges as an adult wasp.

Parasitized aphids (left) die and turn into crusty "mummies" that can be black or beige. The hole in the **aphid mummy** (right) indicates a parasite has emerged.



The blackish scale insects on the twig at left are discolored because **wasp larvae** are developing within. Once parasites mature into adults, they emerge through an **exit hole** (right).

Some **whitefly parasites** turn hosts black; others do not. A good way to detect parasitization is to look for round exit holes in nymphs. A T-shaped slit indicates that a healthy whitefly emerged (far left). A circular hole indicates a parasite emerged (right).

Photos by J. K. Clark
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Caterpillar parasites include the *Hyposoter exiguae* wasp laying an egg in an armyworm (left). Pulling apart parasitized caterpillars can reveal the **wasp larva** within (right).

Other signs of parasitized caterpillars: A *Cotesia* wasp forms white **cocoons** (left) outside its redhumped caterpillar host; at right, redhumped caterpillars are **discolored and distorted** due to a *Hyposoter* wasp pupating within.

Some parasites, such as this ***Goniozus legneri*** on a navel orangeworm, (left) lay many eggs externally on a host resulting in multiple wasp larvae feeding on a single caterpillar (right).

Some parasites **attack insect eggs**, such as the *Trissolcus* wasp at left laying eggs in a stink bug egg cluster. The black corn earworm egg at right is dark because a *Trichogramma* wasp larva is developing inside. White eggs are healthy.

Tachinid flies (left) parasitize many types of insects. Tachinid eggs laid on the caterpillar at right will hatch and, as larvae, bore into the host. Some tachinids lay eggs on plants and enter their insect hosts by being eaten.

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