Utah State University Extension
Extension Entomology
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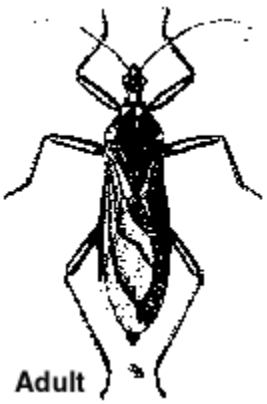
ASSASSIN BUG

Description



Assassin bugs are true bugs belonging to the family Reduviidae. Typically, the eyes are large and set at the middle or rear of the head with a neck-like area behind the head. The antennae have four segments. Assassin bugs, like all true bugs, have piercing, sucking mouthparts (collectively called a beak) that are used to remove body fluids (blood in some cases) from the prey. The beak has three segments and rests within a groove between the front legs when it is not in use. In Utah, our most common species of assassin bugs are about five-eighths to one inch in length when fully grown.

Two species of assassin bug are the most important in Utah due to the fact that they will bite humans or animals. The most common species of assassin bug that is submitted for identification is the masked hunter (*Reduvius personatus*). The western bloodsucking conenose (*Triatoma protracta*) is much less commonly encountered but is noteworthy since it is a blood feeder. Most of the information given here is for these two species.

There are at least thirteen other species found in Utah, all of which would be considered beneficial since they feed upon other insects and seldom if ever bite humans or animals. Although assassin bugs may have some preferences in their prey, those which are not blood feeders are considered to be general predators of other insects. Their value as beneficial insects is somewhat limited by their low rate of reproduction and unspecialized feeding habits.

Life Cycles

Eggs of the masked hunter are laid in dusty corners or other secluded spots. The eggs of this species have no particular arrangement or attachment, and the number of eggs deposited may vary considerably. Egg laying activity is influenced by day length. Nymphs of the masked hunter pass through five instars before maturing. In the midwest, adults are most common in June. This species has a single generation per year.

The western bloodsucking conenose probably lays most of its eggs in wood rat nests where it is most often found in nature. Smaller instar nymphs are most common during summer and early fall while larger instars are present during late fall and winter. The composition of nymphs and adults depends somewhat on the local climate and the presence of wood rats. In indoor situations, egg laying occurs in

midsummer until at least early September. This species also has a single generation per year.

Feeding and Habits

The masked hunter is a predator of other insects by nature but will readily bite if it is handled carelessly or pressed against the skin. Bugs in flight may sometimes bite if they land upon a person. This insect is often associated with bedbugs upon which it feeds. It may be found in swallow nests where it feeds upon the swallow bug or in bat nesting areas where it feeds upon the bat bug (both the swallow bug and bat bug are members of the bed bug family). Indoors, the masked hunter is often associated with infestations of the common bed bug which feeds upon humans and other mammals. Various other insects are undoubtedly fed upon by this species.

The common name of the masked hunter is derived from the fact that the nymphs will cover themselves with fragments of foreign material to disguise their presence. This masking allows the insect to capture prey more easily and may also play a role in avoiding detection by its natural enemies.

Strictly speaking, the masked hunter does not feed upon humans or animals but bites in self-defense. Bites of the masked hunter are extremely painful and have been equated with bee stings or snake bites by those who have experienced them. Swelling and irritation from the bite may persist for a week or more, and a numbing sensation may accompany some bites.

The symptoms of masked hunter bites are caused by the injection of protein-degrading enzymes. In the United States, there are only a few cases per year where bites from these insects require medical attention.

Nymphs of the masked hunter are often found in dusty corners or other infrequently used areas. Adults are sometimes attracted to lights, resulting in their entry into homes and increasing the likelihood that they will come into contact with humans.

The western bloodsucking conenose belongs to a genus of assassin bugs whose members are blood feeders. Primarily in Central and South America, other members of this genus are responsible for transmission of a parasitic flagellate that causes Chaga's disease, a form of sleeping sickness. In the United States, three documented cases have been reported (from Texas and California), but this disease has never been found in Utah. Organisms similar to that which causes Chaga's disease have been found in various animals and in other species of *Triatoma*, but there is controversy as to whether they are the same organism that infects humans.

Like other members of this genus, the western bloodsucking conenose injects an anesthetic when feeding and, thus, has a painless bite. For this reason, people may not be aware they have been bitten until after the insect has completed its feeding. An anticoagulant is also injected to ensure continued blood flow, and allergic reactions may occur.

Conenose bite symptoms may include nausea, faintness, heart palpitation, breathlessness, violent itching, and unconsciousness. Bites may cause various skin reactions including elevation of the skin near the bite, itching and burning, redness, and blistering. Reactions to bites depend on both the sensitivity of the individual and the amount of antigen injected. The bugs most commonly bite the hands, arms, feet, head and trunk. Bites are most common during the months of May and June.

The western bloodsucking conenose is associated with the nests of wood rats and other rodents. In the

hot summer months, the bugs require more food and may leave wood rat nests to seek hosts in human dwellings. Attraction to lights may lead them to houses which they enter but do not colonize. Hunger may also cause the insects to make dispersal flights and cause problems in outdoor areas such as swimming pools.

Control

Control of assassin bugs generally involves exclusion of the insects, elimination of potential breeding areas, and control of their prey or hosts. Insecticide treatments directed specifically at assassin bugs will give some control but such treatments are likely to provide only temporary relief.

The masked hunter becomes established in homes only if it has insect prey to feed upon. Thus, the elimination of prey species, such as bedbugs, will effectively control any assassin bugs. Elimination of swallows and bats may be the only effective control when the nests of such animals are the source of the insects. Bugs entering homes due to attraction to lights can be excluded by ensuring that screens are intact and other potential entry areas are well-sealed. Removal of dust and other accumulations from corners or seldom-used areas might help to reduce populations of masked hunters since these insects rely on such debris for camouflage and deposit their eggs in these areas.

Western bloodsucking conenoses are most often associated with wood rat nests, so elimination of nesting areas from around dwellings is the most effective control. As with the masked hunter, exclusion of these insects (with screens, etc.) is important due to their attraction to lights. If they cannot be excluded from dwellings, mosquito netting can be used to protect sleeping persons from their bites.

If a flying assassin bug alights on the skin, it should be gently brushed away. Attempting to pick up the insect or strike it will most often result in a bite.

For indoor control, a two-percent spray solution of malathion has been recommended by some workers. Other insecticides such as pyrethrins, which are effective against bedbugs, would probably help control assassin bugs as well. Only formulations intended for indoor application should be used, and insecticides should only be applied to specific sites listed on their labels.

Certain repellents and insecticides will provide some personal protection from assassin bug bites. These include deet (found in many mosquito repellents) and permethrin (sold as Permanone Tick Repellent). Although more effective, Permanone may only be applied to clothing and cannot be used to provide protection on exposed areas of the skin.

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