

Figure 2-1. Contrary to popular opinion, not all cockroaches look the same.

Chapter 2

Know Your Enemy

The first step in insect control is to know what pest you are dealing with. Each domestic cockroach species prefers a different area in a residence, so identification is important for best control. A cockroach infestation has individuals of different sizes, including reproducing adults with wings (usually) and immature individuals without wings. Unlike some insects, butterflies for example, immature and adult cockroaches live in the same habitat and eat the same foods.

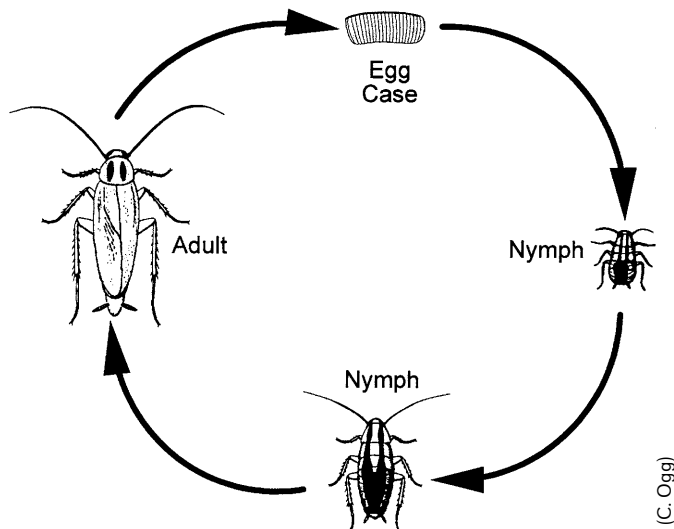


Figure 2-2. German cockroach life cycle, similar to other cockroach species.

Immature cockroaches, called *nymphs*, are smaller than *adults*, and hatch from *egg cases* the adult female deposits. As the nymph grows, it sheds its “skin” or *exoskeleton* so it can get larger. Each nymphal stage is larger than the previous one, and the adult emerges after the last nymphal stage. Figure 2-2 shows the life cycle (egg, nymph and adult) of the German cockroach. Although only two nymphal stages are shown, the German cockroach has at least six. Each cockroach species has a unique number of immature stages (see Chapter 3).

All stages can be identified, but features of adults are larger and more distinctive, so we will concentrate on identifying adults. Identification is

not difficult, but you must recognize features on the cockroach body. Refer to the body parts of a cockroach adult in figure 2-3.

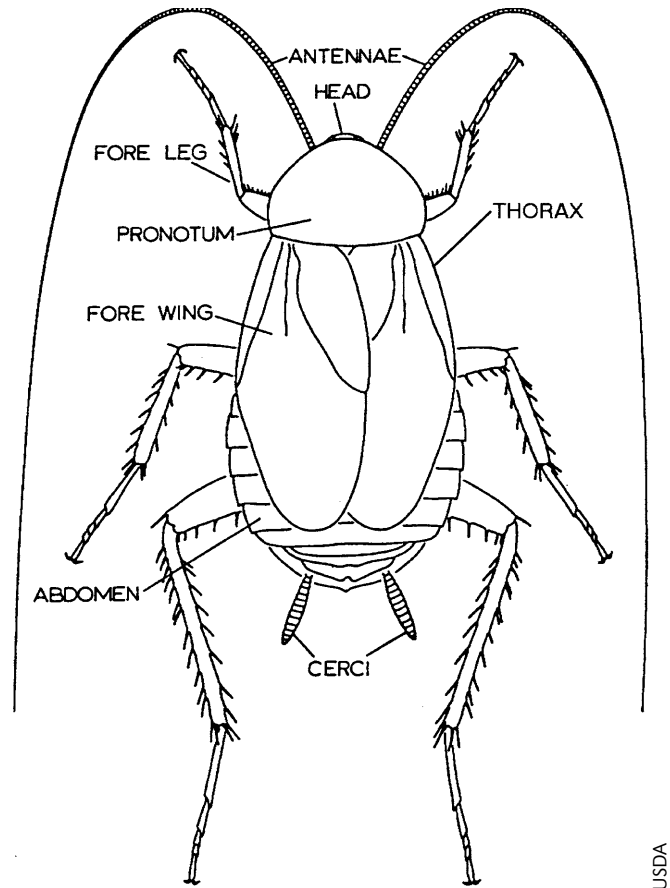


Figure 2-3. Structures of a cockroach body.

Head. On the head, cockroaches have chewing mouthparts used to chew or scrape off food too large for them to swallow whole. Cockroaches have a pair of compound eyes, but have poor vision except they can distinguish easily between light and dark. You have probably noticed these pests are nocturnal, (active at night and hidden during the day) because they are repelled by light. Another structure on the head, is a pair of long, well-developed antennae, sensory organs used to detect odors and vibrations in the air. Inside the head is a small brain which coordinates the various body functions.

Thorax. On the thorax, all cockroaches have three pairs of legs. Adults of most of the domestic species have two pairs of wings, although one species, the oriental cockroach, has poorly-developed wings in both sexes. Even the winged species are poor flyers, but have excellent running abilities. Many species of cockroaches can defy the law of gravity and crawl across the wall or ceiling.

There is a large plate-like structure on the thorax, just behind the head. This structure, the *pronotum*, has color patterns which distinguish several cockroach species, so it is an important anatomical feature.

Abdomen. The abdomen of the cockroach houses the reproductive system. The eggs are enclosed in a tough egg case which protects them from drying out. The female of one species, the German cockroach, carries the egg case around with her until the eggs are nearly ready to hatch. See Table 2-1 for common locations eggs of each species may be found. Cockroaches show no parental care and may be cannibalistic, eating their young if no food is available. They eat injured and

dead cockroaches, too.

On the end of the abdomen, there are a pair of *cerci*, projections which are sensory organs. Cerci function in a similar manner to antennae, sensing vibrations through air or ground. Cerci are directly connected to the legs of the cockroach via abdominal nerve ganglia (a sort of secondary brain), which is an important survival adaptation. Whenever a cockroach “feels” a presence with its cerci, its legs start running, even before the brain receives the signal. Once a cockroach is running, you have to be pretty fast to step on it.

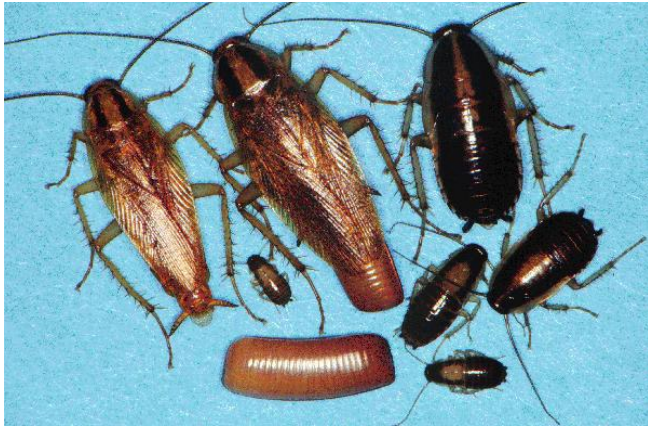
Identify Your Roaches

Use the following pictures or those on the back cover, to identify your roaches. If you find an odd looking cockroach, take it to an entomologist for identification. Remember, this manual only discusses the most common cockroaches found in the northern states. Southern states have all these cockroaches plus some others.

Table 2-1. Characteristics of common domestic cockroach species

Roach Species	Length	Color and Markings	Eggs ¹	Egg to Adult	Reproductive Characteristics
German (<i>Blattella germanica</i>)	9/16 in. (14 mm)	Light brown with two dark stripes on the pronotum	37	55-68 days	Female carries egg case until about 24-hours before hatching, then drops it in a secluded place.
Brownbanded (<i>Supella longipalpa</i>)	9/16 in. (14 mm)	Tan-golden with faint V-shaped lighter bands on wings	16	95-276 days	Egg case glued undersurface of objects, shelves, furniture in crevices.
Oriental (<i>Blatta orientalis</i>)	1 - 1-1/4 in. (32 mm)	Dark red-brown-black	14	300-800 days	Egg case deposited in debris or food in a sheltered place.
American (<i>Periplaneta americana</i>)	1-1/2 in. (38 mm)	Reddish brown throughout with a pale band on the edge of the pronotum. A very large roach.	14	285-616 days	Egg case carried up to six days before depositing in a sheltered area.

¹Average number per egg case. The number actually hatched can be fewer.



(J. Kalisch)

German cockroach



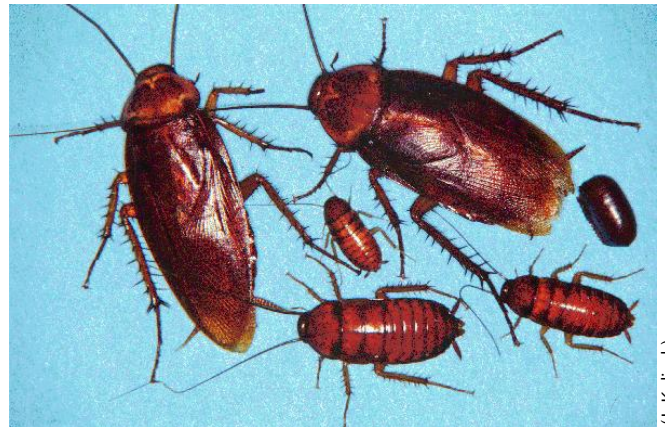
(J. Kalisch)

Brownbanded cockroach



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Oriental cockroach



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American cockroach

Figure 2-4. Common cockroaches of the northern U.S.