



# CORNELL COOPERATIVE EXTENSION - SUFFOLK COUNTY

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## FLEAS

### DESCRIPTION AND INJURY

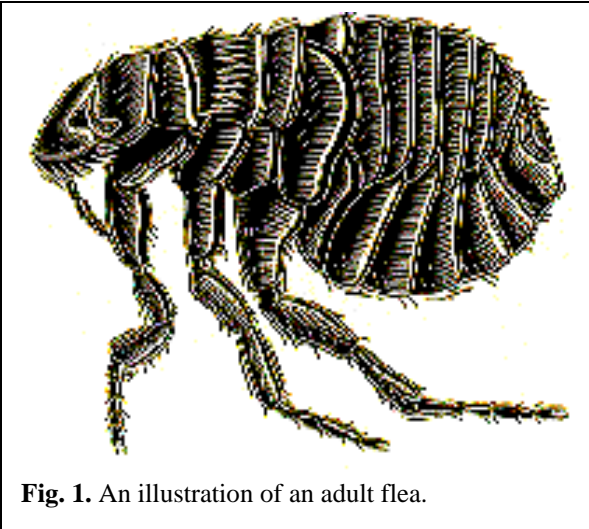


Fig. 1. An illustration of an adult flea.

Fleas are small, ¼ inch in length, wingless, laterally flattened brown to black insects (Fig. 1.) that feed as adults on the blood of birds and mammals. They have sucking mouthparts and long hind legs for jumping. Many species are very annoying because of their bites, and a few act as vectors for disease. Some people and pets are known to develop allergic reactions to flea bites.

Fleas become pests when they get into our houses. Fleas in houses are usually linked with a pet or a visiting cat or dog. Cat fleas (*Ctenocephalides felis*), and dog fleas (*C. canis*) are the species most often found in houses. Wild animals have fleas also, and if such animals are living in the homes, fleas may become a problem. Flea problems often occur when the host animal had been absent for a period of time, such as when the family goes on vacation taking or boarding the pet. Fleas may also be driven into the house during prolonged periods of wet weather.

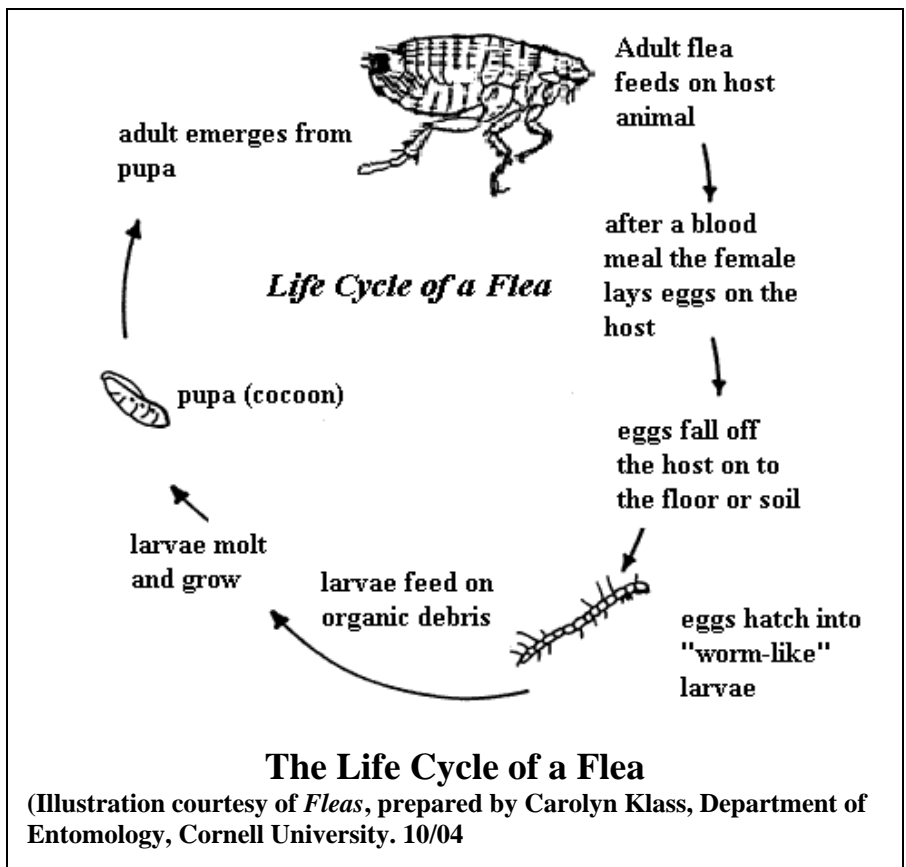
### BEHAVIOR AND ECOLOGY

Each species of flea has one or two kinds of animals it prefers, although when hungry, it will attack a wide variety of warm-blooded animals sometimes including humans.

Cat and dog fleas periodically jump on and off the host. When the host is removed for a period of time, they are left without food. Hungry adult fleas often attack on the first warm-blooded animal that comes in the door, often biting people around the ankles. In addition to adult fleas at the time, vibrations are known to cause, at least in part, the emergence of new adults from pupae. Walking across the floor may trigger emergence. Adult fleas live on the blood of the animals, and must have a blood meal to reproduce.

### LIFE HISTORY

Female fleas lay eggs, usually on the host, however, are not attached to the host and shortly fall off and develop on the ground or in the host's nest or resting place. He eggs hatch in 2 to 12 days under favorable conditions (65° – 80° F. and 70% or greater relative humidity), into tiny, whitish,



legless larvae with bristly hairs (**Fig. 2.**) They have a well-developed head capsule with chewing mouthparts. Flea larvae feed on organic debris (hair and shed skin of the animal), their own cast skins on the feces of adult fleas. Thus they are often found in pet resting places. Larvae tend to avoid light by burrowing down into carpeting or hiding under pet bedding. The larval stage may last from 4-6 to 24 days in the summertime, 21 to 200 days under less favorable conditions.

When fully grown, the larva spins a silken cocoon and enters the pupal or resting stage (lasting usually 5 to 14 days, however, if the stimuli for emergence are absent, fleas may remain in the pupal stage for prolonged periods of time). The adult cat and dog fleas emerge from the pupae and often crawl up on blades of grass out-of-doors or onto furniture, draperies or the like indoors and wait for a host to pass. They jump quickly onto the host and begin feeding. Adult cat and dog fleas are long-lived; they may live for a year or more with periodic feeding.

## MONITORING

A few relatively simple observations can help determine what a flea problem is like. Keep an eye on your pet and watch for how much it scratches. Note if and when fleas attempt to bite people. Determine where fleas are active by walking through suspect areas wearing white socks (tuck in pant legs) which allow you to see the fleas as they try to bite. Write down your observations.

Or, if you suspect fleas are present, place a shallow pan of water containing a little dishwashing detergent or vegetable oil on the floor and place a gooseneck lamp with the light about 6 inches above the liquid surface. Adult fleas try to leap toward the light at night and fall into the liquid and drown. There are also commercial lighted flea traps available. A good monitoring tool, these traps also help to remove fleas.

Use a flea comb to comb your pets regularly. The flea comb removes fleas from a pet, but doesn't kill them. Inspect the comb after each pass over the pet, dip comb into a bowl of warm soapy water, or pull captured fleas from the comb and flick into the container of soapy water to drown them. Keeping records of flea activity will help you determine if a population is increasing.

## MANAGEMENT

Prevent wild animals, especially rodents, from getting into and nesting in houses or other buildings.

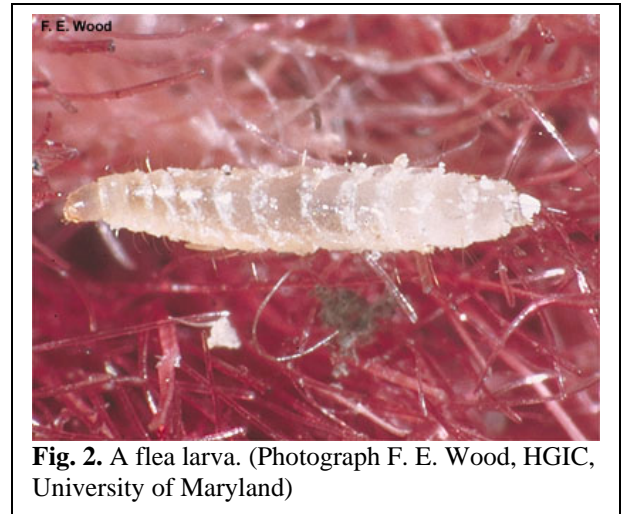
Establish a pet sleeping area in the home that can be cleaned easily and regularly. Restrict pets' access to bedrooms, attics, or basements where cleaning is difficult. Regularly remove and wash all pet bedding. If necessary, treat with insecticidal soap plus pyrethrins.

In the home, fleas can often be controlled by good housekeeping practices. Keeping the home clean may be more important than keeping the pet clean. Fleas, as eggs, larvae and pupae may spend 90% of their time off the pet on the carpet or furniture. Thoroughly clean all areas of the house with a vacuum cleaner - include carpets, rugs, upholstered furniture and other items on which eggs or larvae may be present. This will help to pick up any shed hair or skin particles from the pets (which the flea larvae feed on) as well as to vacuum up any larvae or eggs. Seal and discard vacuum bag soon after use or empty contents into another bag, seal and discard. Vacuuming on a weekly basis is recommended, but may be needed more frequently during late summer and fall when flea populations normally increase.

Steam cleaning of carpets and rugs to kill eggs and larval fleas may be helpful. Professional house cleaning or rug shampooing services are available in many areas.

Use a flea comb regularly to remove fleas from pets. If needed, bathe pets with a flea killing soap or with flea shampoo (pyrethrins are less toxic than other insecticides) or treat with a flea formulation when flea populations start to build. For use of flea collars for pets, contact your veterinarian. Evidence indicates that ultrasonic collars and other devices do not work.

The insect growth regulators methoprene (often sold under the name Precor or Cykil) and hydroxyflorfen (Gencor) can be harmful in breaking the flea life cycle. (The Insect Growth regulators are not known to be harmful to people or pets.) When a flea larva ingests or comes in contact with methoprene, it still grows normally, spins a cocoon, but does not pupate. Therefore, no adults emerge from the cocoon. Adult fleas are not affected by the growth regulator, but when they



die, they will not be replaced by newly maturing adults. Because adults are not affected, an insect growth regulator alone will not control existing flea problems.

D-limonene, a citrus peel extract, is a natural fast-acting adult killer that leaves no toxic residues. D-limonene plus linalool products control both adults and larvae. **DO NOT USE THESE PRODUCTS ON CATS AS SOME CATS HAVE ADVERSE REACTIONS.** Only use products on pets that are labeled for use on the animal. **\*\*Home Remedies** such as the use of herbal flea repellents are also available.

During the summer if your pet is housed out of doors, it may also be necessary to control fleas in the yard or under the house. Spot treatments to pet resting areas are often sufficient. Keeping the lawn trimmed can help to create a drier, more hostile environment for flea larvae and can facilitate the penetration of pesticide applications. Formulations of the following pesticides: insecticidal soap plus pyrethrins, Baygon, deltamethrin, malathion, permethrin or resmethrin are registered for flea control **out of doors**.

When above methods are not enough, choices are: (1) to treat with a registered insecticide yourself, or (2) to seek the help of a pest control company. Household insecticides registered for flea control may contain the insecticides d-limonine, insecticidal flea soap, pyrethrins, silica gel plus pyrethrum, Baygon, cyfluthrin, deltamethrin, permethrin, resmethrin or tetramethrin. Some are available as foggers or bombs. **WHEN USING ANY PESTICIDE BE SURE TO READ THE LABEL BEFORE EACH USE AND FOLLOW THE MANUFACTURERS DIRECTIONS CAREFULLY AND THOROUGHLY.** Consider using a professional pest control service for large flea populations or where the above procedures fail to solve the problem. Cooperate with the company to help identify pet sleeping and resting areas and routes of travel. Remove toys and other items from the floor so that all floor areas can be treated. You must take care of treating or getting your pet treated at the same time.

6/72 prepared by Carolyn Klass, Senior Extension Associate, Department of Entomology, Cornell University.

10/04 revised by Carolyn Klass

**\*\*HOME REMEDIES** – These remedies are **not** endorsements by Cornell University of any product or procedure. They are not recommendations for use either express or implied. Neither Cornell University, nor its employees or agents, are responsible for any injury or damage to person or property arising out of the use of this information.

The Pesticide Management Education Program (PMEP), in cooperation with the New York State Department of Environmental Conservation (NYSDEC), maintains a web site with a searchable database for pesticide products currently registered in New York State. Homeowners who have Internet access can locate currently registered products at <http://pmep.cce.cornell.edu/pims/current>. Several different queries are available that will produce a summary for the product(s) that the system locates. If the system fails to locate the product in question, then that product is not currently registered in New York State. The database also provides a summary of important information related to every product currently registered. Two data fields “Status” and “Expiration Date” are provided in each summary. Products with a status of “Registered - Discontinued” are currently registered but will probably be discontinued for use, sale, and distribution in New York State after the date noted in the “Expiration Date” field.

**This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly, and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold, or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension specialist or your regional DEC office. Read the label before applying any pesticide.**

**TK: 12/2008**