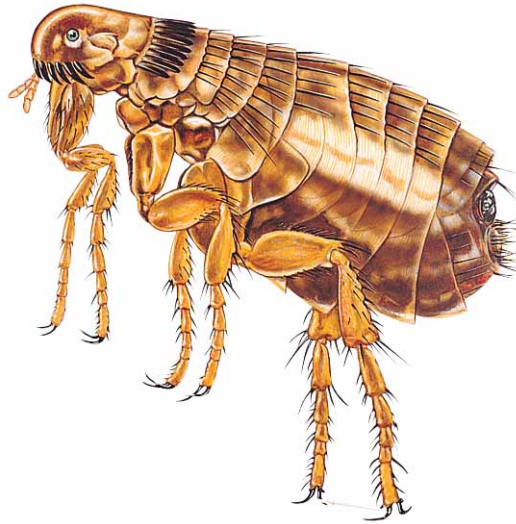


## Fleas – (*Siphonaptera*)



There are approximately 60 species of flea in the UK, all of which are blood-sucking parasites of warm-blooded animals. Fleas are dark brown, flattened laterally (side to side) and covered with backward pointing “combs” of bristles. This allows them to travel forwards very rapidly between the hairs of their host animal and also helps them to cling tightly and resist dislodging by scratching. Fleas have well developed back legs, enabling them to jump onto the host and also to escape if necessary.

### Fleas cause problems for a number of reasons:

- 1 The spread of disease. Two diseases in particular, Murine typhus and bubonic plague are zoonoses – that is, animal diseases spread to man through flea bites. The Tropical Rat Flea *Xenopsylla cheopis*, from the Black Rat, spread plague in the 14<sup>th</sup> and 17<sup>th</sup> centuries, killing one third of the population of Europe during the Black Death. Fleas can also transmit tapeworms, the eggs being swallowed by the host when biting the fur in an attempt to kill the flea.
- 2 Flea bites irritate and can sometimes produce walnut-sized swellings. Some people become sensitised to the bite. Scratching can lead to secondary infection.
- 3 Fleas are unwelcome residents in houses that keep a pet dog or cat. They are also a problem in hospitals where feral cats live in ductings.

### Cat Flea – (*Ctenocephalides felis*)

Human Fleas (*Pulex irritans*) are comparatively rare nowadays, largely due to

the advent of the vacuum cleaner, and also central heating into homes in the UK, as the larvae are very sensitive to moisture loss and will die on prolonged exposure to dry air. Cat fleas which are equally at home on a broad range of mammalian hosts are the modern cause of most flea bites on Man.

**Eggs** The eggs are laid in fur, feathers or bedding of the host. Although slightly sticky they can be easily brushed off. Hatching occurs in 2-6 days.

**Larvae** Tiny, threadlike larvae are legless and eyeless, moving by means of bristles which ring each segment. They grow up to 5mm long. The larvae feed primarily on blood from the faeces of adult fleas, which it can normally get by grazing around the bedding of the host animal. This is taken to an extreme by the Tropical Rat Flea, *Xenopsylla cheopis*, which has to feed on blood squirted from the anus of the adult. The larvae of this species actively follow the adult around the nest.

Flea larvae actively avoid light and seek areas of higher humidity. The larvae moult three times, before spinning a silk cocoon in which to pupate, incorporating particles of dust as camouflage.

**Pupae** This stage lasts about 7-10 days.

**Adults** The adult flea may remain in the cocoon for up to 20 weeks. It is stimulated to emerge by a combination of warmth and vibration, but carbon dioxide levels also play a role. This is why when empty houses are first entered, large numbers of fleas simultaneously emerge and those entering can receive many bites. A normal adult lives about three months, but can survive much longer if starved, or if temperatures are low. Under warm conditions the flea will feed daily.

The Cat Flea, described above can infest a variety of hosts. Some species of fleas can be quite restricted to only a few related species of hosts. Other fleas include:

**Dog Flea** – (*Ctenocephalides canis*)

Will readily attack many animals including Man. Especially prevalent on wild animals related to dogs eg. fox.

**Bird Fleas** – (*Certhophyllus* spp)

*C. gallinae* is a common parasite of fowl and other wild birds. *C. columbae* is restricted to pigeons and doves.

**Human Fleas** – (*Pulex irritans*)

Primary host is Man, but will breed on other mammals especially pigs and badgers.

**Hedgehog Flea** – (*Archaeophyllus erinacei*)

Occasionally brought indoors by domestic pets which may encounter hedgehogs on their garden "territories".

## **Control of Flea Infestations**

Before entering an infested premises you need to protect yourself against being bitten. Tuck trousers into socks or boots and close your boilersuit at the neck and wrists. Enter the building spraying in front of you, especially important in a building that has been empty for some time. Although fleas are much rarer in homes now due to improved cleaning with vacuum cleaners, infestation do still occur, largely because of domestic pets, or less welcome animals such as birds and squirrels. Where a domestic pet is **not** the likely cause, it becomes important to identify the species of flea as this may point out the source and therefore which areas need treatment. It may also be necessary to carry out additional work, such as removal of squirrels or birds and their nesting material.

## **Domestic Infestation**

Where pets are present, establish where the animals like to sleep or rest. Any bedding must be burned or thoroughly cleaned. Kennels and baskets should also be cleaned out, before a light spray with insecticide. The pets themselves need to be treated, but this must be done by a vet or by the pet owner.

Treatment is most successful where a co-operative householder carries out some pre-treatment cleaning. All floors should be vacuumed, hard floors scrubbed and dirt and fluff removed from between floorboard. The vacuum bag should be disposed of, as it contains live fleas of all stages. Furniture such as sofas should be moved for vacuuming underneath. Treat all furnishings and carpets lightly to avoid damage. Don't forget to spray underneath furniture as flea larvae avoid light. Pay particular attention to any areas where pets like to rest.

The householder needs to be informed that adult fleas will be emerging from their cocoons for a few days following treatment and will die on the insecticide. This may help to avoid unnecessary and costly call-backs. Finally, advise the householder that even the cleanest pets can pick up fleas in the garden or elsewhere and so regular flea treatments of the animals are recommended.

## **Commercial and Public Health Infestation**

Often caused by feral cats or other unwanted animals, removal of these pets by trapping or other suitable means is the first step to a successful treatment. Treatment of flea breeding sites may not be possible as the area e.g. of ducting, may be too extensive to be viable. However, where fleas have infested a certain area, it is often because the host animal has died and the fleas have left its body in search of food. In this case, removal of the dead animal and insecticidal treatment of the localised area is required.

## **Infestation in an Empty House**

A common problem, as adult fleas are able to survive so long in their cocoons and emerge in large numbers as soon as a person or persons enter the house. Spray in front of you, using Crackdown working methodically from room to room until all areas have been treated thoroughly. The adult fleas will die when they emerge and come into contact with the insecticide.