



Department of
Primary Industries and
Regional Development

Journal of the Department of Agriculture, Western Australia, Series 3

Volume 3
Number 6 *November-December, 1954*

Article 8

11-1954

Insect pest - fleas and their control

C F.H Jenkins
Department of Agriculture

Follow this and additional works at: https://library.dpird.wa.gov.au/journal_agriculture3

Recommended Citation

Jenkins, C F.H (1954) "Insect pest - fleas and their control," *Journal of the Department of Agriculture, Western Australia, Series 3*: Vol. 3: No. 6, Article 8.

Available at: https://library.dpird.wa.gov.au/journal_agriculture3/vol3/iss6/8

This article is brought to you for free and open access by the Agriculture at Digital Library. It has been accepted for inclusion in Journal of the Department of Agriculture, Western Australia, Series 3 by an authorized administrator of Digital Library. For more information, please contact library@dpird.wa.gov.au.

INSECT *Pests*

AND THEIR CONTROL

By C. F. H. JENKINS, M.A., Government Entomologist

FLEAS AND THEIR CONTROL

EVERY year, with the advent of warm weather, trouble is experienced from what are popularly known as "sand fleas." The fallacy of this name, however, cannot be too firmly stressed, for all fleas favour a warm-blooded host and are quite incapable of surviving and reproducing in sand without periodic supplies of blood from a suitable animal.

There are many different species of fleas and they are commonly known according to the host which they favour, as dog fleas, cat fleas, rat fleas, human fleas, mouse fleas, etc. It must not be inferred, however, that every flea found upon a dog is a dog flea, or upon a rat is a rat flea. A great deal of latitude as regards hosts exists and only a specialist can accurately determine the species. Excepting in special cases, however, the exact species of flea concerned will be of little importance.

Fleas are admirably adapted for their specialised mode of life. Their shiny compressed forms slip easily between the hairs

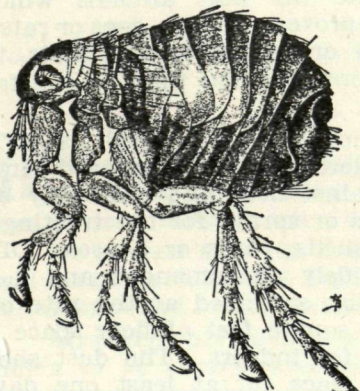


Fig. 1.—Adult female of the human flea (greatly enlarged)

—After Howard.

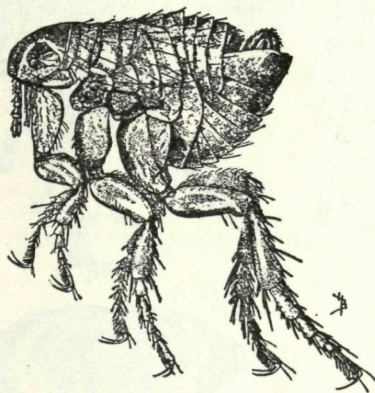


Fig. 2.—Adult male of the human flea. Note difference in shape of abdomen as compared with Fig. 1 (greatly enlarged)

—After Howard.

on the host body, and their well-developed jumping legs enable them to easily obtain a host immediately their immature stages in the soil have been completed.

In metropolitan homes, cats and dogs are the chief breeders of fleas. The fact that outbreaks occur in dwellings where no pets are kept can sometimes be explained by the fact that the previous occupants kept animals and that the immature stages of the fleas have persisted in the soil or in cracks and crevices of the floor until weather conditions have favoured the

emergence of the adults. The introduction of animal manures for garden purposes is also a source of flea infestation which should not be overlooked.

Under favourable conditions, the adult flea may live for a considerable time. There are records of a human flea, fed regularly, living for 513 days and one of a performing flea living for 18 months. Dog fleas have been known to live 58 days without feeding. One remarkable adaptation which enables the insect to tide over unfavourable periods also accounts for the sudden appearance of a flea plague in abandoned houses or camp buildings. The adult flea when it first emerges from the pupa may remain motionless within its thin silky cocoon for a period of a year or more. When the cocoons are prodded or shaken the fleas emerge at once and commence jumping about with great activity.

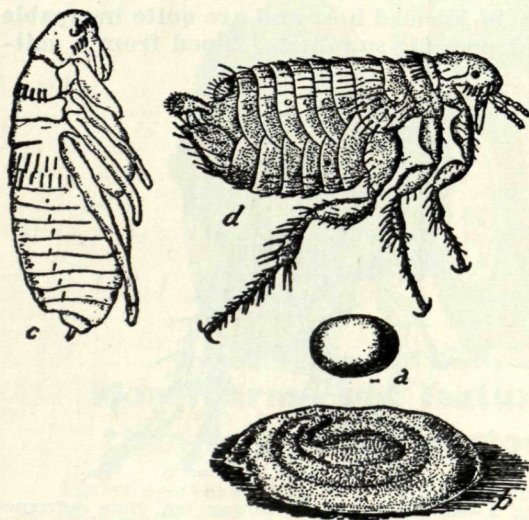


Fig. 3.—The dog flea: (a) egg; (b) larva in cocoon; (c) pupa; (d) adult. All greatly enlarged

—After Howard.

RELATION TO DISEASE

The rat flea (*Xenopsylla cheopis* (Roth.)) is of world-wide importance because of its association with bubonic plague, but a number of other fleas including the dog flea (*Ctenocephalides canis* (Curtis)), the cat flea (*C. felis* (Bouche)), and the human flea (*Pulex irritans* L.) have been proved capable of carrying this disease.

All these species and many others occur in Western Australia, but fortunately

bubonic plague is a rare disease throughout the Australian Commonwealth. Several outbreaks of plague have occurred in Australia, but all have been successfully stamped out, and very stringent precautions are continually taken to prevent the introduction of infected rats, from which animals the fleas may transmit the disease to humans. (Patton, 1931.)

LIFE HISTORY

Adult fleas spend the majority of their time on warm blooded hosts and may lay their eggs in this situation. Flea-infested cats for instance may have so many eggs in their fur that hundreds of the tiny pearl-like bodies are shed wherever the cat happens to scratch or shake itself. In the case of most other host animals, the majority of eggs are found in the nest or favourite sleeping quarters. The eggs hatch in a few days and give rise to tiny worm-like larvae which shelter in any dust or litter. The food consists of organic material, mainly the excreta of adult fleas which is dropped copiously and becomes mixed with the dust or floor covering. After a week or more the larva pupates within a silken cocoon and finally emerges as an adult. As is the case with all insects, the length of the life cycle varies greatly under different conditions. In warm weather little more than two weeks will be necessary for development from egg to adult, while under cold conditions several weeks or even months may elapse before maturity is reached.

CONTROL

In controlling fleas the first essential is to locate the host animals which will usually prove to be cats, dogs or rats. After treating or destroying the hosts, the infested premises can then be satisfactorily treated.

The new insecticides such as DDT, BHC and Chlordane have all proved very effective against fleas and they may be used as dusts or sprays for the treating of infested sheds, yards or houses. DDT has been widely recommended and a 10 per cent. dust sprinkled at the rate of 1 lb. per 500 square feet of floor space is prescribed for indoors. The dust should be left in place for at least one day after which it may be taken up with a vacuum cleaner (Anon, 1952). Sprays containing

4 per cent. DDT may also be used either for indoors or outhouses at the rate of 1 pint per 100 square feet (Seddon, 1951). Kerosene solutions of DDT will prove most suitable for indoor use, as they can be applied to carpets, skirting boards, etc., without staining. Water-miscible types, however, will be found more economical for sheds, yards, and other outdoor situations. Water-dispersible DDT and BHC powders may be used for washing animals (except cats) but emulsions are not advised as the solvents may prove irritating to the skin. The strengths recommended are 0.5 per cent. DDT and 0.1 per cent. gamma isomer of BHC. Ten per cent. dusts may also be used to rub into the animals' fur, but dusts remain effective for shorter periods than washes. As cats frequently lick their fur, DDT and BHC may prove toxic, and pyrethrum and derris powders should be rubbed into the fur. Potassa sulphurata may also be used as a wash.

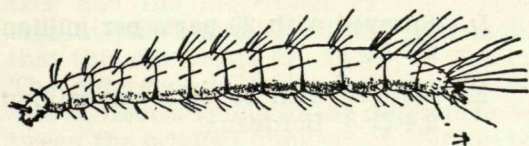


Fig. 4.—Flea Larva (greatly enlarged)

One of the older treatments for fleas which still appeals to many people is kerosene emulsion. It may be used for uni-

versal spraying and also for washing animals. It may be prepared as follows:—

Dissolve $\frac{1}{2}$ lb. soap in 1 gallon of boiling water. Remove from fire and slowly add 2 gallons of kerosene, at the same time vigorously agitating the solution for 5 or 10 minutes so as to get a thorough mix. Dilute for general use to about 1 part of stock to 6-8 parts of water. Warm water and constant agitation during the dilution process will ensure a stable mixture.

Phenyle, hot water and soap, creosote or creosote emulsion may also be used to treat infested buildings. Creosote emulsion may be prepared by substituting creosote for kerosene in the details given for the preparation of kerosene emulsion.

The main essential is to see that corners, cracks and crevices are well flushed out with liquid.

REFERENCES

- Anon, 1952. "Household Insect Pests and Their Control." 3rd Edition. New South Wales Department of Agriculture. Insect Pest Leaflet No. 47, p. 24.
- Patton, 1931. "Insects, Ticks, Mites and Venomous Animals of Medical and Veterinary Importance." Pt. II, p. 247.
- Seddon, H. R., 1951. "Diseases of Domestic Animals in Australia." Part 2. Commonwealth of Australia. Department of Health Service Publication (Division of Veterinary Hygiene) No. 6.

KEEP YOUR JOURNALS

HERE at the production end, we are sparing neither expense nor effort in making the "Journal of Agriculture" a publication which will help you in your farming operations.

We suggest that the Journal is worth keeping and that a year's issue will make an attractive and useful volume for your library—a volume that is full of sound factual information, attractively presented.

Arrangements have been made for the compilation of a comprehensive index to be incorporated in the December issue—a feature which will greatly enhance the value of the Journal as a work of reference.