

# The Fowl Tick

BY F. C. BISHOPP<sup>1</sup>

**MANY POULTRY RAISERS** have burned down a chicken house badly infested with fowl ticks because they thought there was no other way to get rid of this tough and dangerous pest. It can be controlled, however, by following the directions given in this article.

ONE of the most serious handicaps to poultry raising in the Southwestern States is the fowl tick, or blue bug (*Argas mineatus*). It is a persistent bloodsucker, and its presence in a poultry house in considerable numbers results in weakened stock, fewer eggs, and emaciation and not infrequently death of some of the fowls. A form of paralysis associated with this tick also affects many fowls, some of which die.

The tick was first found in southern Texas; it probably occurred in southern New Mexico, Arizona, and California many years ago. More recently it has become established in Florida, and it has spread northward in the Southwestern States so that it is now found in about two-thirds of California and Arizona, and the southwestern half of Oklahoma. Isolated infestations have occurred in Louisiana, Mississippi, Alabama, Nevada, and Utah.

There is abundant opportunity for the tick to be shipped about the country because of its habit of remaining attached to fowls for several days and of hiding in crates and other places. If it were not for the adverse effect of cold and damp climates, it would no doubt by now have spread over the entire country.

## LIFE HISTORY AND HABITS

The fowl tick is extremely hardy. It can withstand many insecticides, and specimens have lived shut up in a small box without food for more than 3 years. In all its stages of development, the tick feeds exclusively on blood. Although it may occasionally bite

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domestic animals and human beings, it much prefers to feed on birds, including poultry. Chickens and turkeys are most affected, but ducks, geese, and other domestic fowls, as well as some wild birds such as turkeys, quail, hawks, and vultures are also attacked.

The tick is oval and very flat and has a leathery skin, so that it can easily hide in cracks. Its habits are also admirably adapted to those of the poultry on which it feeds. The hungry ticks become active at night and crawl about, seeking the fowls on the roost. The adults and those in the second, or nymphal, stages crawl onto the sleeping fowls and insert their beaks, drawing blood rapidly. Before day breaks they have returned to their hiding places in cracks about the roosts, walls, and nests.

Mating takes place in the hiding places, and a few days after feeding the female lays a batch of 50 to 100 brownish eggs (fig. 1). Another blood meal is taken a few weeks later, and a second clutch of eggs is deposited. This process may be repeated as many as 8 times and a total of 900 eggs may be deposited. During warm weather the eggs hatch in 10 or 12 days, but in cool weather the period may be as long as 3 months.

The young seed ticks that hatch from the eggs are grayish in color and have six legs. After a few nights they crawl about actively in search of a fowl. When one is encountered they crawl upon it and attach themselves to various parts of the body, particularly where the feathers are sparse (fig. 2). Over a period of 3 to 10 days the seed ticks enlarge considerably and become dark reddish blue. They leave the fowls at night and crawl about in search of cracks or crevices, or even rough places on the roosts in which to hide. During a period of 4 to 9 days spent in these hiding places, the seed ticks shed their skins, acquire another pair of legs, and increase somewhat in size, although they remain very flat. A blood meal is taken in a few days, and then a second molt occurs, followed by another feeding and a molt to the adult stage. While hiding, the ticks move about to some extent, even when not hungry. They void a dark-

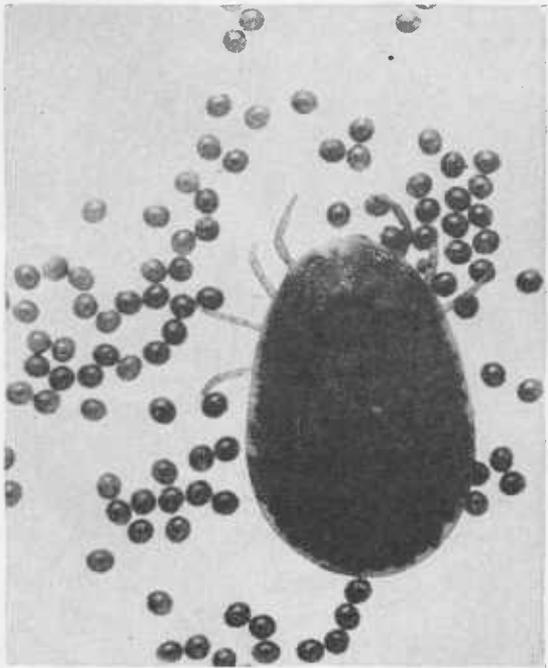


FIGURE 1.—Female fowl tick with eggs. Greatly enlarged.

colored excrement that dries on the wood and readily shows their presence.



FIGURE 2.—The fowl tick. A mass of seed ticks (first stage) attached beneath wing of a chicken.

## METHODS OF CONTROL

The great resistance of the fowl tick to insecticides makes it inadvisable to attempt to destroy the seed ticks on the fowls. Moreover, most of the ticks present at any one time are to be found in the cracks and crevices around the roosts and roost supports, in the nest boxes, and on adjacent walls. In old and heavy infestations the ticks are established throughout the poultry house, including the roof, and not infrequently they are in barns and other outbuildings and in trees frequented by poultry.

To destroy these tough and well-hidden parasites a strong and penetrating material is required. Pure carbolineums, chemically

known as anthracene oil, are the most effective of the many materials tried. They are very penetrating and are so deadly that ticks placed on roosts painted with one of the carbolineums several weeks before gradually died off without laying eggs.

Crude petroleum and creosote oil are also useful in combating the fowl tick, but they are not as satisfactory in all respects as the carbolineums.

## TREATMENT OF INFESTED BUILDINGS

In the morning remove the roosts, nests, and any loose boards. In case of heavy infestations it is necessary to treat the entire inside of the chicken house. This is best done by spraying with a good bucket spray pump with a 10- or 12-foot lead of sound hose firmly attached and a cyclone or bordeaux nozzle.

The carbolineums and crude petroleum spray better if diluted with kerosene, 2 parts of the former to 1 part of the latter. If creosote oil is used, it should not be diluted. The spray should be driven into all cracks and crevices about the roosts, nests, and walls. The roosts and nest boxes and the floor should then be sprayed. After the former are dry they may be put up again, and fresh straw may be placed in the nests. Care should be taken by the operator not to get any of the material in his eyes or an unnecessary amount on his skin. The fowls should be kept out of the house until the material has soaked in and dried.

It is a common practice for poultry owners to shut the fowls out of a chicken house infested with fowl ticks. This should not be done, since it merely makes the birds roost in other places and thus scatter the infestation.

Usually one thorough spraying will clean out an infestation, but if it is scattered or very heavy, or if the house is double-walled, a second application 20 to 30 days after the first is required, and in some instances a third has been found necessary.

If roosts and nests are built as described below, the second and third applications can be made with a brush, as it is seldom necessary to treat the roof and upper walls a second time if the roosts and nests are kept well covered with the oil.

## ROOST AND NEST CONSTRUCTION

Roosts and nests should be as free from hiding places for the ticks as possible, and should be so made that they can be easily examined and treated. Since the ticks tend to crawl upward rather than onto the ground, it has been found possible to largely protect fowls from attack by constructing the roosts on supports resting on the floor or driven into the ground. A convenient method is to notch the tops of the four supporting posts to receive a horizontal 2 by 4, which in turn is notched to receive the roosts. The roosts and their supports should be left without nailing, so that they may be easily lifted up and treated. None of the roost structure should be in contact with the wall.

Where roosts are hinged to the back wall, as is often the case, the parts reaching the wall should be kept thoroughly treated with one of the materials mentioned.



FIGURE 3.—Nest boxes so constructed as to be easily removed and treated.

Nest boxes may also be kept away from the walls and should be so constructed that they can be easily removed and treated, as shown in figure 3.

### COST OF TREATMENTS

Many chicken houses have been burned by their owners because of the prevalent idea that fowl ticks cannot be destroyed otherwise. The treatment described is not prohibitive in cost, and its efficacy is attested by thousands of farmers and poultrymen.

A bucket pump is almost a necessity on any farm for spraying trees and applying whitewash. It usually costs from \$3 to \$8. The carbolineums usually cost from \$1 to \$1.50 a gallon, creosote oil 50 to 75 cents a gallon, and crude petroleum 10 to 50 cents a gallon, according to the distance from the source of supply. A chicken house

10 by 14 feet would require 5 or 6 gallons of the mixture described. In a small house brush treatments of the roosts and nests would require less than 1 gallon.

## PREVENTIVE METHODS

It is much easier to keep ticks off uninfested premises than to eradicate an infestation. In starting in the poultry business, a site well removed from other flocks should be chosen, and in arranging and constructing the building and pens the importance of the fowl tick and other poultry pests should be kept constantly in mind.

It is well to start with chicks from a hatchery known to be free of ticks and not to bring any grown fowls or used crates onto the premises. Any fowls brought in should be kept isolated for 10 days, and the pen or coop containing them should be thoroughly sprayed.

The methods described for combating the fowl tick are effective in controlling the common chicken mite (p. 1055), the bedbug, and the Mexican chicken bug (p. 1071).

At the time this book went to press, the drugs and other materials mentioned in various articles—chiefly as disinfectants, insecticides, and anthelmintics—were still available for veterinary and medical use. Under war conditions, however, it is possible that some of these materials may become scarce or unavailable. In that case, the reader should obtain professional advice from the Department of Agriculture, the State experiment station, a local veterinarian, or the county agent as to available substitutes.