

FOULBROOD DISEASES OF BEES

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Special Circular • April 1957

**THE CONNECTICUT
AGRICULTURAL EXPERIMENT STATION
NEW HAVEN**

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The honeybee may be affected by several diseases. The name foulbrood has been used to describe bacterial diseases that attack and kill the larvae of honeybees. The name comes from the odor of the decaying bees. Two distinct types of foulbrood have been recognized in Connecticut. In the early part of this century, European foulbrood was very common. More recently American foulbrood has been the more destructive.

European Foulbrood

European foulbrood is caused by an infection of *Bacillus alvei*. The exact method of transfer from one colony to another has not been established. When apiary inspection was started in Connecticut in 1910, almost half the colonies of bees were affected by this disease. With the help of the inspectors, beekeepers soon reduced the number of infected colonies by destroying weak colonies, introducing the Italian variety of honeybee and good management to produce strong colonies. By 1928 the disease was rare, and it has been seen in only a few colonies since that time.

American Foulbrood

American foulbrood has been recognized as a distinct disease caused by *Bacillus larvae*. It is a very serious disease and usually kills the infected colony. It was first found in Connecticut in 1914 and has continued to exist in spite of the thorough inspection system. Infection of the larvae occurs during the first two days after they hatch from the egg. The larvae usually do not die until after the cell has been capped. The bacteria are spread by the worker bees.

The spores of this bacterium are very resistant to drying, heat and cold, and will live for years. The usual means of spread is by "robbing" of weakened or dead colonies. The disease persists in uninspected or abandoned hives, and possibly in wild colonies.

Control of American Foulbrood

The principal control measure has been very strict sanitation. Infected colonies have been destroyed along with the frames. The hives can be

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scraped and washed thoroughly with lye and hot water and rinsed with cold water before using them again. It should be remembered that honey, hives, tools and extracting equipment may be contaminated, and that use of this contaminated equipment can spread the disease.

The use of sulfathiazole in a sugar syrup has helped to protect colonies in an infested apiary. Directions for such treatment can be obtained from the apiary inspectors.

Inspection of Bees

The statutes require each person owning bees to register with the town clerk on or before the first day of October, giving the location of the bees. The town clerks report these registrations to the State Entomologist, who uses them to locate bees for inspection.

The statutes require further that bees, brood comb, frames or hives shall bear a certificate of health issued after an inspection before they can be sold, transferred or given away to a different owner.

The sole purpose of this legislation is to reduce the hazard of spread of foulbrood. The efficacy of the provisions has been proved many times in the past. Any failure to inspect the bees in an area has been followed by an increase in incidence of foulbrood.

The statutes on the subject are as follows:

Section 3256. *Registration of honey bees.* Each person owning one or more hives of bees shall, annually, on or before the first day of October, make application to the town clerk of the town in which such bees are kept, for the registration of such bees, and such town clerk shall issue to such applicant a certificate of registration upon the payment of a recording fee of twenty-five cents, which certificate shall be in the form prescribed and upon blanks furnished by the state entomologist and shall be recorded in the office of such town clerk. A record of such registration and of the name and place of residence of the registrant and the definite location in the town where bees are kept by him shall be accessible to the public. Each town clerk shall, on or before December first, report to the state entomologist whether or not any such owners have been registered by him, and file with said state entomologist a complete list of such registrations. Any owner of bees who shall fail to register as required by the provisions of this section shall be fined not more than five dollars.

Section 3257. *Contagious diseases among bees.* The state entomologist shall, to such extent as he shall deem necessary or expedient, examine apiaries and quarantine such as are diseased and treat or destroy cases of the disease known as foulbrood. The

state entomologist may appoint such inspectors as he may deem necessary or expedient, and he or any person whom he may appoint for that purpose shall have access at reasonable times to any apiary or place where bees are kept or where honeycomb and appliances are stored. He is authorized to make suitable regulations regarding inspections and quarantine and to prescribe suitable forms for permanent records which shall be on file and open to public inspection, and to make reasonable rules for the services of such inspectors, and may pay a reasonable sum for such services. No person or corporation shall remove bees under quarantine to another locality without obtaining the written permission of a duly authorized inspector. No person or transportation company shall receive for transportation any colony or package of bees, unless such colony or package shall be accompanied by a certificate of good health, furnished by a duly authorized inspector. No person or transportation company shall deliver any colony or package of bees brought from any other country, province, state or territory unless accompanied by a certificate of health furnished by a duly authorized inspector of such country, province, state or territory. Any person or transportation company receiving a shipment of bees from without the state, unaccompanied by such certificate, shall, before delivering such shipment to its consignee, notify the state entomologist and hold such shipment until inspected by a duly authorized inspector. In case contagious diseases shall be found therein, such shipment shall be returned to the consignor or delivered to a duly authorized inspector of this state for treatment or destruction, provided the requirements of this section shall not apply to shipments of brood comb, with or without bees, suspected of being diseased and consigned to the state entomologist, the agricultural experiment station or any duly authorized apiary inspector of the state or to the bureau of entomology of the United States or the United States department of agriculture, and provided there shall be no destruction of any shipment of bees as herein provided in the absence of a reasonable notice to the consignee thereof. No person shall resist or hinder the state entomologist, or any inspector whom he may appoint, in the performance of the duties imposed by the section. No person or corporation shall sell, to be removed to another location, bees, brood-comb, frames or hives that have been in use, with or without combs, until they have been inspected by a duly authorized inspector who will issue a certificate of health, if they are found free of contagious disease. Any person violating any of the provisions of this section shall be fined not more than fifty dollars.