Entomology Circular No. 299
October 1987

Florida Dept. Agric. & Consumer Serv.
Division of Plant Industry

Tropical fowl mite, *Ornithonyssus bursa* (Berlese)

(ACARI: MACRONYSSIDAE)[1]

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INTRODUCTION: The tropical fowl mite (Figs. 1a-c) was first described by Berlese (1888) as *Leiognathus bursa*, Hirst (1916) placed it in *Liponyssus bursa* and Sambon (1928) placed it in *Ornithonyssus bursa*. This mite, commonly found on birds, has become a pest to man in areas of high bird populations or where birds are allowed to roost on roofs, around the eaves of homes, and office buildings. Nesting birds are the worst offenders. After the birds abandon their nests, the mites move into the building through windows, doors, and vents and bite the occupants. The bite is irritating to man and some individuals react to the bite with prolonged itching and painful dermatitis. Several to many reports are received each year of mites invading homes. The mites are usually the tropical fowl mite found in the central and southern areas of the state. The northern fowl mite, a close relative, is also found in Florida.

DISTRIBUTION: Africa - Egypt, Nigeria, Nyasaland, Union of South Africa, Zululand. Asia - China, India, Thailand. Indonesia - Java, Mauritius. Australia - New South Wales, Queensland, South Australia. Central America - Canal Zone. Islands of the Indian Ocean - Comoro Island, Zanzibar. Islands of the Pacific - Hawaii, New Guinea. North America - Canada, United States. South America - Argentina, Colombia. West Indies - Bahamas Islands. This mite is almost entirely restricted to warm and tropical regions. Canadian records could have been from birds returning from a warm region or a misidentification of the northern fowl mite.

HOSTS: Mammals - bandicoot, gerbil, man. Birds - canaries, caracara, chickens, common sparrow, ducks, English sparrow, English starling, kingbird, meadowlark, pigeons, red-eyed vireo, turkey, wild birds, and wood thrush.

ECONOMIC IMPORTANCE: It is a serious pest of domestic fowl and wild birds. It is almost never found on wild mammals although there are many records of it biting humans. It has never been implicated in vectoring diseases. Chamberlain and Sikes (1955) concluded, after exhaustive tests, the mite is unimportant as a reservoir or transmitter of equine encephalitides. Attacks on man cause discomfort similar to that caused by *Ornithonyssus sylviarum* (Canestrini and Fanzago), northern fowl mite (Figs. 2a, 2b) which is also a pest of domestic fowl and wild birds. Other than bandicoots and gerbils it apparently does not attack other mammals except man and this occurs only when a bird or fowl host is not available. The northern fowl mite is common in the north temperate zone, but also is found in Florida.

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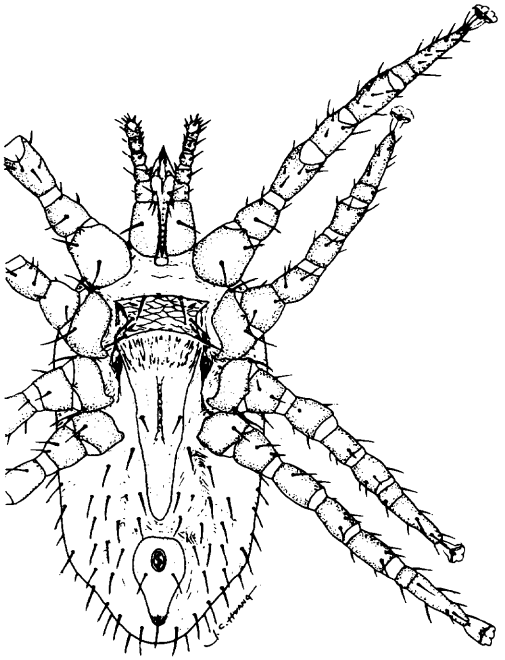

Fig. 1a. Ventral view. Tropical fowl mite ***Ornithonyssus bursa*** (Berlese) (after Strandtmann & Wharton).

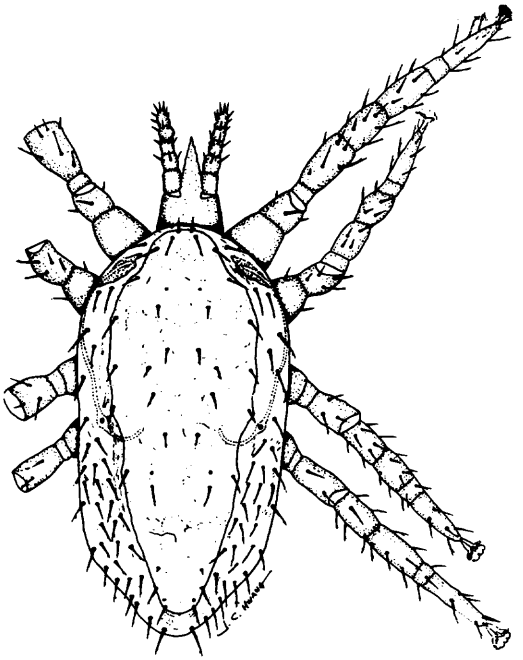

Fig. 1b. Dorsal view. Tropical fowl mite ***Ornithonyssus bursa*** (Berlese) (after Strandtmann & Wharton).

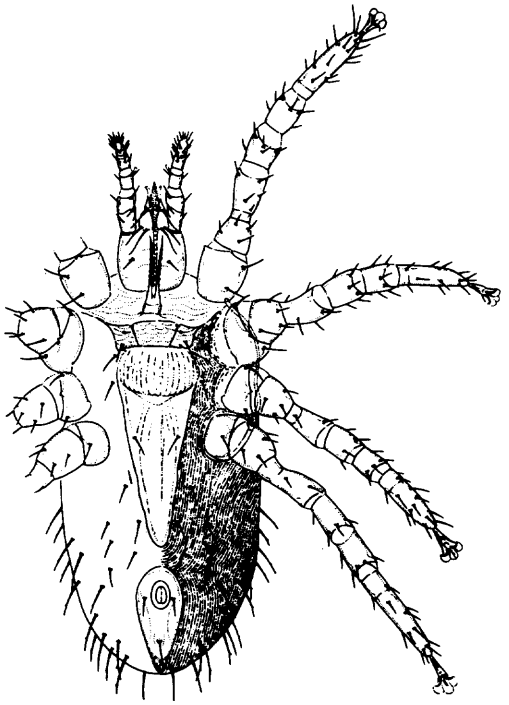

Fig. 2a. Ventral view. Northern fowl mite ***Ornithonyssus sylviarum*** (C. & S.) (after Strandtmann & Wharton).

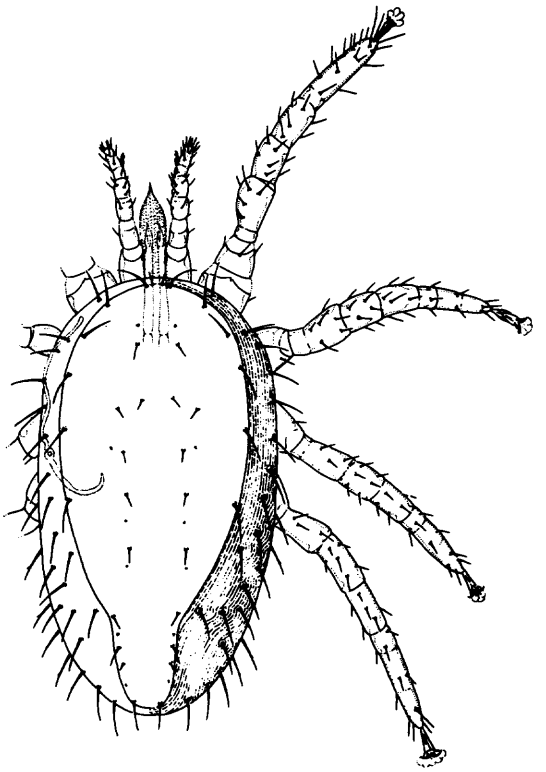

Fig. 2b. Dorsal view. Northern fowl mite ***Ornithonyssus sylviarum*** (C. & S.) (after Strandtmann & Wharton).

Fig. 1c. Tropical fowl mite ***Ornithonyssus bursa*** (Berlese). SEM photograph by junior author.

SURVEY AND DETECTION: Look for nesting birds around the eaves of buildings. Remove nests and discourage birds from nesting in or on building. Secure all openings to attic, windows, and doors.

LIFE CYCLE: This mite's life cycle is similar to the northern fowl mite. It has 5 stages - egg, larva, protonymph, deutonymph, and adult. In the laboratory, it lays most of its eggs in the litter away from its hosts. In the field, it lays its eggs on the host or in the nest. Eggs hatch within 3 days. The nonfeeding larvae molt in about 17 hours. The protonymph will molt in 1 or 2 days, but the length of the deutonymphal stage has not been determined. It is about a day in length in the northern fowl mite. The nymphs and adults of the tropical fowl mite take blood meals as opposed to only the protonymph and adult stages in the northern fowl mite. On birds, most of the breeding takes place in the nests. Only a few mites are found on birds that are flying about. On chickens, the mites prefer the fluffy downy feathers and are numerous about the vent, accumulating on a few feathers. If a man handles the infested chicken he will become infested, since mites will move from chicken to man. This has occurred in the layer industry when there are heavy mite infestations.

DESCRIPTION: Although the tropical fowl mite is similar to the northern fowl mite, it can be separated by the dorsal plate. The posterior end tapers acutely in ***sylviarum*** but more evenly in ***bursa***. There are 3 pairs of setae on the sternal plate in ***bursa*** and only 2 pairs in ***sylviarum*** (see figures 1a and 2a).

CONTROL: In homes or commercial buildings, remove all bird nests and wash the walls with a strong spray of water or steam clean. In poultry layer operations, use synthetic pyrethroids. The Entomology and Nematology Department, University of Florida, recommends treating the eaves and walls with permethrin (Ambush,^{R} Pounce,^{R} or Atroban^{R}). If the mites migrate into the home, a fumigant such as the new Raid* fumigant may serve as a good control agent. Follow label directions. This mite can only live for about 10 days away from the bird hosts so its effect on man is temporary.

LITERATURE CITED

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