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INCIDENCE OF PATHOGENS IN FIRE ANTS, *SOLENOPSIS SPP.*, IN BRAZIL—(Note). The red and black imported fire ants, *Solenopsis invicta* Buren and *Solenopsis richteri* Forel, are essentially free of disease in the United States (Jouvenaz et al. 1977. Fla. Ent. 60: 275-9). In their native land, however, these and other *Solenopsis* spp. are infected with protozoa, fungi, and viruses (Allen, G. E. and W. F. Buren. 1974. J.N.Y. Ent. Soc. 82: 125-30; Allen, G. E. and A. Silviera-Guido. 1974. Fla. Ent. 57: 327-9; Avery et al. 1977. Fla. Ent. 60: 17-20; Jouvenaz et al., op cit). Only 1 entomopathogen specific to South American fire ants, the microsporidium *Thelohania solenopsae* Knell et al. (1977. J. Invertebr. Pathol. 29: 192-200) has been described. Also, no data have been published concerning the incidence of disease in fire ants in South America. We report here the results of surveys conducted in January-February 1976 and in October-November 1979 in the states of Mato Grosso and Mato Grosso do Sul, Brazil.

The techniques employed in these surveys were described in detail by Jouvenaz et al. (1977, op cit.). Briefly, samples of soil from nests containing adult and immature ants were slowly submerged by dripping water so as to force the ants to the surface. When the soil was completely submerged, the ants (including immatures rescued by adult workers) floated or clung in masses to the sides of the containers and were easily transferred to new containers. A sample of 1,000-2,000 mixed adults and immatures from each colony was then triturated in a glass tissue homogenizer with water, and the crude extract was examined by phase-contrast microscopy for fungal mycelia and spores, protozoan spores, virus polyhedra, and unusual numbers of bacteria. When extracts containing these were found, individual ants from the colony were examined to determine whether disease was indeed present.

In the 1976 survey, 184 colonies from the vicinities of Cuiabá and Rondonopolis (Mato Grosso) and Campo Grande and Coxim (Mato Grosso do Sul) were screened for disease. Of these, 21 (11.41%) were infected with *T. solenopsae*, 10 (5.43%) were infected with an undescribed, dimorphic microsporidium, and 1 (0.54%) was infected with a neogregarine similar or identical to *Mattesia geminata* Jouvenaz and Anthony.

In addition, a sporeforming bacterium was found in numbers indicating infection in a few larvae of 1 colony of *S. invicta* collected at Cuiabá. Only a small number of immatures were collected from this colony (possibly because the immatures were deep in the rocky soil), and most of these were free of the bacterium. Unfortunately, we had no way of cleaning the crude extract, and putrefaction was advanced when we finally attempted *per os* transmission after our return to the United States. By that time only spores remained in the suspension, the sporangia disintegrated, and transmission was not achieved. Attempts to isolate and culture the bacterium also failed. This bacterium was motile and contained a subterminal spore and a parasporal body that remained attached to the spore after disintegration of the sporangium. This is a characteristic of *Bacillus finitimus* Heimpel and Angus.

After our return to the United States, a nonoccluded virus was detected in a colony of an undescribed *Solenopsis* sp. that we had brought back for study (Avery et al., op cit.).

In 1979, 456 colonies from Cuiabá were screened for disease. Of these 444 were *S. invicta*; the remaining 12 were probably *S. saevissima* (determined by D. P. Wojcik). Of the total, 31 (6.30%) were infected with *T. solenopsae*, 13 (2.85%) with the undescribed dimorphic microsporidium, and 6 (1.32%) with the neogregarine. Dual infections of *T. solenopsae* and the undescribed microsporidium and of the neogregarine and the undescribed microsporidium were seen in 1 colony each.

Thus, 74 (11.56%) of the 640 colonies screened in 1976 and 1979 were infected by protozoa. *Thelohania solenopsae* occurred in a total of 52 (8.12%), the undescribed microsporidium in 23 (3.59%), and the neogregarine in 7 (1.09%).

A mold similar or identical to a dimorphic mold erroneously reported by Jouvenaz et al. (1977., op cit) as a yeast from *S. invicta* in the United States was seen for the first time in South America. This organism, which multiplies in the haemolymph but appears to be only very mildly pathogenic, was found in 1 colony.—D. P. JOUVENAZ, W. A. BANKS, AND J. D. ATWOOD. Insects Affecting Man and Animals Research Laboratory, Agricultural Research, Science and Education Administration, USDA, Gainesville, FL 32604.