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HORSE FLIES (DIPTERA: TABANIDAE) NEW TO FLORIDA AND THE UNITED STATES<sup>1</sup>—(Note). In early April 1977 L. L. Pechuman and I, while collecting with a flight traps in Ochlochonee River State Park, Wakulla County, FL, took a short series of females of *Tabanus kisluki* Stone. During the same year J. R. Wiley took a further short series of both sexes in a flight trap set up on the Columbia-Baker County line in Osceola National Forest. These were the first definite records for this little known species from Florida, previously reported from Mississippi, Louisiana, and Alabama by Stone (1940. Proc. Ent. Soc. Wash. 42(3): 59-63, Fig. A-F), and Philip (1950b Amer. Midland Nat. 43(2): 430-7), Philip's (1950a Ann. Ent. Soc. Amer. 43(1): 115-22), report of the species from Florida gives no definite locality and may have been a misreading of Florala, AL. The species is not mentioned from Florida in Jones and Anthony (1964 USDA Tech. Bull. 1295: 1-85, 18 fig.), but was listed by Bargren (1961. Fla. Ent. 44(2): 69-84, 2 pl.) on the basis of Philip's 1950a record.

Under the name *Tabanus quirinus*, Philip (1950a) described a single male from Port St. Joe, Gulf County, FL; no other specimens have ever been reported. In conversation, Dr. Pechuman speculated that *quirinus* might be an oversized male of *kisluki*, a species with which it had not been compared, and suggested that I should borrow the type, since I had undoubtedly males of *kisluki*. Through the kindness of Dr. P. Wygodzinsky, I have been able to compare the male type of *quirinus* in the American Museum of Natural History with males and females of *kisluki* and find no differences (NEW SYNONYMY). The type of *quirinus* is larger than any of my males, but some of my females exceed it in size, the species being quite variable in this respect. My specimens bear the following data: 1 ♀, Columbia-Baker County line, Osceola National Forest, FL, 16-30-III-76, Malaise trap, J. Wiley coll.; 2 ♂, 3 ♀, same locality, 13-26-IV-77, and 25-IV to 17-V-77, Malaise trap, J. Wiley coll.; 5 ♀, Wakulla County, Ochlochonee River State Park, FL, flight trap, 7-9-IV-77, G. B. Fairchild coll.

Another dubious Florida species of *Tabanus* has been *Tabanus nigrescens* var. *atripennis* Stone, reported from Jefferson County, Monticello, by me in 1937 (Fla. Ent. 19(4): 58-63; 20(1): 10-1), and by Stone in 1938 (USDA Misc. Publ. 305: 1-171, 79 fig.); the record is now imbedded in the literature through repetition, though no later reported collections have confirmed its presence here. I have re-examined one of the Monticello specimens, collected 3-VI-35, and det. *atripennis* by Stone, and find it is actually *Tabanus aranti* Hays. The entire type series of *atripennis* was from Kansas, Oklahoma, and Texas, and it seems possible that some, at least, of the other eastern specimens later included by Stone (1938) also may have been *aranti*. *Aranti* is said to range north to Arkansas and Virginia and may be separated from *nigrescens* P.de B. and var. *atripennis* by the bluish pruinose abdomen and other characters detailed by Hays (1961 Ent. News 72(5): 127-9, fig. A-C).

Finally I report a species new to the U.S., *Tabanus pungens* Wiedemann. The specimen, a female, is labelled McAllen, Hidalgo County, TX, C. C. Porter coll., and is in the Florida State Collection of Arthropods. The species is common throughout the Neotropical region, known from Mexico to

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Argentina, and most recently discussed and redescribed by Wilkerson (1979 *Cespedesia* 8(31-2): 87-435).—G. B. FAIRCHILD; Dept. Entomology and Nematology; University of Florida; Gainesville, FL 32611. Also, Research Associate; Florida State Collection of Arthropods; Gainesville, FL 32602.

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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. Silveira-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.