

Ceratopogonid midges (Diptera, Nematocera) in cacao plantations of Pará and Rondônia, Brazil, with notes of their collecting sites

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Abstract

Several species of midges were collected and identified. At the same time their natural shelters were recorded. Most of the *Forcipomyia spatulifera* midges were collected in flowers. This find may suggest that *F. spatulifera* plays an important pollinating role in the cacao plantations of the States of Pará and Rondônia.

Key words: *Theobroma cacao*, *Forcipomyia*, Ceratopogonidae, pollination

Ocorrência de mosquinhos ceratopogonídeos (Diptera, Nematocera) em cacauais do Pará e Rondônia, Brasil, e anotações sobre seus locais de coleta

Resumo

Foram coletadas e identificadas taxonomicamente várias espécies de mosquinhos, bem como registrados os seus abrigos naturais. Sugere-se que *Forcipomyia spatulifera* pode desempenhar um importante papel na polinização do cacauero nessas regiões, uma vez que a maioria dos exemplares desta espécie coletados estavam nas flores dessa planta.

Palavras-chave: *Theobroma cacao*, *Forcipomyia*, Ceratopogonidae, polinização

Identifications are given for 121 midges collected in cacao plantations in the states of Pará and Rondônia, Brazil. Midges were captured manually and natural shelters recorded during the course

of preliminary insect surveys in 1977 and 1980. Shelters for the midges were recorded individually on field cards according to the methods of Soria (1973) and Soria, Wirth and Besemer (1978).

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Methods and keys used by us for identifications were those in general use by ceratopogonid specialists (Saunders, 1956; 1959; Wirth, 1952; 1972; Dessart, 1963; Chan and Le Roux, 1965; Wirth and Messersmith, 1971).

The following species were identified from these collections (listed in order of decreasing abundance): *Forcipomyia* (*Euprojoannisia*) *spatulifera* Saunders (70 specimens); *F. (Microhelea) fuliginosa* (Mg.) (24); *F. (Forcipomyia) sp.* (8); *Atrichopogon* spp. (4); *F. (F.) harpegonata* Wirth & Soria (3); *F. (E.) bromeliae* Saunders (2); *F. (Rhynchoforcipomyia) guamai* Wirth & Dow (2); *F. (F.) genualis* (Loew) (2); *Culicoides pseudodiabolicus* Fox (2); *F. (F.) sp. cinctipes* group (1); *Culicoides foxi* Ortiz (1); *Stilobezzia thomsenae* Wirth (1); and *S. kiefferi* Lane. Thus, two species, *F. (E.) spatulifera* and *F. (M.) fuliginosa* constitute the bulk of the material collected.

The sites recorded in *T. cacao* listed in order of decreasing frequency were: dry cherelles (80 midges), flower buttons (19), petal pouches (7), *Clitorea racemosa* trunks (7), sepals (6) and staminodes (2). The majority (66%) of the total of 121 midges collected were found on dry cherelles, indicating that these were the

preferred sheltering or resting places. It has to be admitted however that the midges may have been more easily observed and collected from cherelles. Of the midges collected on cacao 28 per cent were in flowers, and the majority of these were *F. spatulifera* a species which habitually visits flowers and efficiently pollinates cacao in Bahia (Soria and Wirth, 1974). This finding may suggest that *F. spatulifera* plays a similar role in pollinating cacao plantations in Pará and Rondônia.

With regard to their abundance in different cacao-producing regions midges were encountered more frequently in the plantations in the vicinity of Belém, Pará, than in those of Rondônia. This higher frequency of midges in Pará was considered to be the result of more prevalent humid conditions near the ocean, as compared to drier conditions in Rondônia and other cacao-growing areas in the Amazon Basin.

We conclude tentatively that *F. spatulifera* may play an important role in cacao pollination in Pará and Rondônia, but more data are necessary for any firm conclusions to be made. We suggest that further studies be made to determine the role of this species in the natural pollination of cacao in the Amazon.

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