

SCIENTIFIC NOTE

New Records of Fruit Flies (Diptera: Tephritidae), Wild Hosts and Parasitoids (Hymenoptera: Braconidae) in the Brazilian Amazon

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Novos Registros de Moscas-das-Frutas (Diptera: Tephritidae), Hospedeiros Silvestres e Parasitóides (Hymenoptera: Braconidae) na Amazônia Brasileira

RESUMO - *Anastrepha anomala* Stone foi obtida de frutos de *Parahancornia amapa* (Huber) Ducke (Apocynaceae) e *Anastrepha hastata* Stone de *Cheiloclinium cognatum* (Miers.) (Hippocrateaceae) no Amapá, sendo obtidos dois braconídeos, *Doryctobracon* sp. e *Opius bellus* Gahan, dessa espécie. Este é o primeiro registro de *P. amapa* como hospedeiro de moscas-das-frutas. *C. cognatum* é o primeiro hospedeiro conhecido de *A. hastata* e os braconídeos são também os primeiros registros de parasitóides dessa espécie.

PALAVRAS-CHAVE: Amapá, *Parahancornia amapa*, *Cheiloclinium cognatum*

ABSTRACT - *Anastrepha anomala* Stone was obtained from *Parahancornia amapa* (Huber) Ducke (Apocynaceae) fruits, and *Anastrepha hastata* Stone from *Cheiloclinium cognatum* (Miers.) (Hippocrateaceae) in the State of Amapá, Brazil. Two braconids, *Doryctobracon* sp. and *Opius bellus* Gahan, were reared from the latter fruit fly species. This is the first record of *P. amapa* as a fruit fly host. *C. cognatum* is the first host known to *A. hastata*. Both braconids are also the first records of parasitoids for this species.

KEY WORDS: Amapá, *Parahancornia amapa*, *Cheiloclinium cognatum*

The State of Amapá, located in the northern region of Brazil, is the best-preserved state in the tropical strip, since 72% of its territory lies within areas protected by conservation units and indian lands (Silva 2007).

Until the year 2000, there were records of only three fruit fly species for the state, two in the genus *Anastrepha* Schiner, *A. coronilli* Carrejo & González and *A. striata* Schiner, and *Bactrocera carambolae* (Drew & Hancock) (Silva & Ronchi Telles 2000). However, nowadays there are 19 species recorded due to intensive survey, from which 18 belongs to *Anastrepha* (Zucchi 2007).

The objective of this study was to present new host records for *Anastrepha anomala* and *A. hastata*, as well as parasitoid records for the latter species. This information is part of intensive surveys on native hosts of *Anastrepha* species in the Amapá State. The importance of such studies based on fruit sampling conducted in natural areas is emphasized, since little is known on the diversity of tephritids, their hosts and distribution, as sampling are usually performed with traps in commercial orchards.

Anastrepha anomala Stone was collected in two samples

of *Parahancornia amapa* (Huber) Ducke (Apocynaceae) fruits fallen on the ground in the cities of Macapá (00°23'07.0"N 51°03'43.4"W) and Tartarugalzinho (01°24'11.3"N 50°57'36.8"W) on 01/15/2007 and 02/08/2007, respectively. Seven puparia were obtained from samples of *P. amapa* fruits, also known as "amapazeiro", in the city of Macapá (seven fruits, 358 g) (infestation of 19.6 puparia/kg fruit and 1.0 puparium/fruit), from which two females emerged (28.6% of pupal survival). Thirteen puparia were obtained from the Tartarugalzinho sample (three fruits, 470 g) (infestation of 27.7 puparia/kg fruit and 4.3 puparia/fruit), from which four females and seven males emerged (84.6% of pupal survival).

A. anomala was originally described from Panama, and recorded in Brazil from single females collected in the states of Bahia and Maranhão. However, Norrbom (2002) reported they differed from the Panamanian specimens. This is the first record of *A. anomala* in Amapá. This species belongs to the *serpentina* group, which is comprised of seven species (three undescribed), three of which develop on Apocynaceae (Norrbom *et al.* 2000). *A. anomala* is similar to *A. serpentina*,

from which it differs mainly due its longer aculeus.

So far, *Lacmellea panamensis* (Woodson) Markgr. (Apocynaceae) was the only host plant reported for *A. anomala* (Norrbom 2004). Therefore, this is the first record of *P. amapa* as a host of *A. anomala* in Brazil. In fact, this is the first record of this species as a host of a fruit fly. *P. amapa* is typical of the Brazilian Amazon region and occurs in dry land forests, in areas with humid and humic soil, and is frequently found along river banks. The tree exudes a milky sap often used in popular medicine, known as “*leite de amapá*” (amapá milk), employed to treat several illnesses, such as tuberculosis and gastric ailments. Its wood is used in carpentry and general construction, as well as in the production of cellulose and paper (Loureiro & Silva 1968). *P. amapa* fruits are fleshy, globose and berry-like, about 8 cm in diameter, with a dark-purple pericarp; when mature, they vary in thickness from 1 cm to 1.5 cm, with an edible, tasty and sweet-flavored pulp, containing numerous flattened seeds (Cavalcante 1996).

Anastrepha hastata Stone was obtained from three fruit samples of *Cheiloclinium cognatum* (Miers) (Hippocrateaceae) collected on the ground and in trees in the city of Ferreira Gomes (00°51'37.0"N 51°13'54.9"W), on 02/09/2007 and 03/11/2007.

One hundred and eighty-three puparia were obtained from the three samples of *C. cognatum* (223 fruits, 1.51 kg), also known as *bacupari-da-mata*, of which 12 specimens emerged (nine females and three males) (infestation index of 121.2 puparia/kg fruit and 0.8 puparium/fruit; 6.6% of pupal survival). This is the first record of a host for *A. hastata*.

A. hastata is typical of the Brazilian Amazon region, and was recorded in the State of Amazonas (v. Zucchi 2007); however, its host was unknown until now. It is a large species (15 mm in length), in which the aculeus (5 mm in length) has two lateral swellings and a toothless tip. This species belongs to the *hastata* group, which comprises two other species: *A. apicata* Norrbom & Korytkowski, recorded in Costa Rica on *Salacia petenensis* Lundell (Hippocrateaceae) and *A. cocorae* Norrbom & Korytkowski, which occurs in Panama on *C. cognatum*. The larvae of these two species feed on the seeds of these fruits (Norrbom et al. 2003).

C. cognatum has medicinal properties just like the other species of Hippocrateaceae. It is rich in triterpenes, which are compounds with several biological activities, including antitumoral, antimicrobial, cytotoxic and antimalarial (Jeller et al. 2004).

In addition, 45 parasitoids were obtained, including 37 of an unidentified species, probably a new species close to *Doryctobracon areolatus* (Szépligeti), and *Opius bellus* Gahan (eight specimens), representing a parasitism of 24.6%. These are the first records of braconids parasitizing *A. hastata*.

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