

SYSTEMATICS, MORPHOLOGY AND PHYSIOLOGY

A New Species of *Anagrus* (Hymenoptera: Mymaridae) from Amazonas, BrazilSERGUEI V. TRIAPITSYN¹, RANYSE B. QUERINO² AND MALU C.B. FEITOSA³¹Entomology Research Museum, Dept. of Entomology, Univ. of California, Riverside, California 92521, USA; serguei.triapitsyn@ucr.edu²Embrapa Roraima, BR 174, km 8, Distrito Industrial, 69301-970 Boa Vista, RR, Brazil; ranyse@cpafrr.embrapa.br³Coordenação de Pesquisas em Entomologia, Instituto Nacional de Pesquisas da Amazônia, INPA, C. postal 478, Av. André Araújo, 2936, Petrópolis, 69011-970, Manaus, AM, Brazil; malu_chris@yahoo.com.br*Neotropical Entomology* 37(6):681-684 (2008)Uma Nova Espécie de *Anagrus* (Hymenoptera: Mymaridae) do Amazonas

RESUMO - Uma nova espécie de mimarídeo Neotropical, *Anagrus* (*Anagrus*) *amazonensis* Triapitsyn, Querino & Feitosa, sp. n., é descrita e ilustrada. *Anagrus* Haliday é um gênero extenso de Mymaridae (Hymenoptera), que agora inclui oito espécies registradas para o Brasil. Esta nova espécie ataca ovos de libélulas (Odonata: Zygoptera).

PALAVRAS-CHAVE: Odonata, parasitóide de ovos, Neotropical, taxonomia

ABSTRACT - A new fairyfly species from the Neotropics, *Anagrus* (*Anagrus*) *amazonensis* Triapitsyn, Querino & Feitosa, sp. n., is described and illustrated. *Anagrus* Haliday is a large genus of Mymaridae (Hymenoptera), which now includes eight species recorded from Brazil. This new species attacks eggs of damselflies (Odonata: Zygoptera).

KEY WORDS: Odonata, egg parasitoid, Neotropics, taxonomy

The fairyfly genus *Anagrus* Haliday is one of the most speciose, "large" genera of Mymaridae, with 86 valid species described. It is cosmopolitan and occurs in terrestrial and aquatic habitats. *Anagrus* was recently studied in the Neotropics by Triapitsyn (1997, 2000, 2002), who provided keys based on females.

To date, seven species of *Anagrus* are known from Brazil: *A. brasiliensis* Triapitsyn, *A. breviphragma* Soyka, *A. empoasca* Dozier, *A. flaveolus* Waterhouse, *A. lineolus* Triapitsyn, *A. nigriventris* Girault, and *A. urichi* Pickles (Noyes 2003), among the 28 species registered in South America. However, there is no doubt that the number of species of this genus in Brazil and also in the entire Neotropical region is much greater.

Several species of *Anagrus* are important egg parasitoids of various pests belonging to Auchenorrhyncha (Hemiptera), and a few mirid and tingid bugs (Heteroptera: Miridae and Tingidae, respectively) (Triapitsyn & Beardsley 2000). Identification of *Anagrus* species is difficult because of their minute size and also because of the poor preservation techniques of voucher specimens. Thus, most of the earlier identifications and especially the catalog records of *Anagrus* species in the New World require confirmation (Triapitsyn 2002).

In spite of the importance of Mymaridae for the biological control of insects and their abundance among the faunistical

survey material, knowledge of the Mymaridae diversity in Brazil is still very limited. In this paper we describe a new species of *Anagrus* collected in a creek in the tropical forest in Amazonas, Brazil. It occurs in an aquatic habitat and parasitizes eggs of an unidentified species of Zygoptera (Odonata). Mymaridae is one of the families of parasitic Hymenoptera that have species with aquatic habits. One of the first species of an aquatic fairyfly with a known biology was *Caraphractus cinctus* Walker (Hagen 1996). Fursov (1995) registered five species of Mymaridae from eggs of aquatic insects in several places in Europe.

Material and Methods

The description is based on ethanol-collected samples. Specimens were dried using a critical point drier, and slide mounted in Canada balsam or point-mounted. Measurements were determined from slide-mounted individuals and they are given in micrometers (µm). Quantitative data are reported as a range if variation was extensive. Photomicrographs of the antennae, wings, and genitalia were made using an Automontage system. Terms for morphological features are those of Gibson (1997). Abbreviations for depositories of specimens are as follows: CNCI, Canadian National Collection of Insects, Ottawa, Ontario, Canada; INPA,

National Institute for Research in the Amazon, Manaus, Amazonas, Brazil; UCRC, Entomology Research Museum, University of California, Riverside, California, USA; USNM, National Museum of Natural History, Washington, District of Columbia, USA. An abbreviation used in the text is: F = funicle (in females) antennal segment.

***Anagrus (Anagrus) amazonensis* Triapitsyn, Querino & Feitosa, sp. n. (Figs. 1-6)**

Types. Holotype female [INPA] on slide: BRAZIL, Amazonas, Presidente Figueiredo, BR 174, km 123, Creek Santa Cruz, 24.xi.2005, M.C. Feitosa and C. Ramalheira, from eggs of Odonata on *Rhynchospora pubera* (Vahl) Bockeler (Cyperaceae). Paratypes: One female on point [CNCI], five females and five males on points [INPA], two females and three males on slides as well as five females and two males on points [UCRC], and one female on point [USNM], all with the same label data as the holotype.

Description (holotype and paratypes). Female. Body length 460–660 µm. Body mostly brown except posterior scutellum pale and gastral terga partially light brown; appendages light brown except flagellum brown.

Head slightly wider than mesosoma. Antenna (Fig. 1) shorter than body. Scape 3.4–3.5 x as long as wide; F1 much shorter than pedicel or F2; all funicle segments except for F1

much longer than wide, F1 the shortest and F6 usually the longest; F2 and F3 subequal in length and a little shorter than F4; F4 and F5 usually subequal in length but sometimes F4 slightly longer than F5 and about as long as F6; longitudinal sensilla on F4 (1), F5 (1), and F6 (2); clava 3.2–3.4 x as long as wide (in lateral view), with five longitudinal sensilla.

Mesosoma. Mesoscutum with a pair of adnotaular setae. Forewing (Fig. 2) narrow, 11.0–11.1x as long as wide; length of the distal macrochaeta about 1.5x that of the proximal macrochaeta; longest marginal seta about 3x maximal width of disc; disc notably infumate, more so medially, with one complete median row of setae beyond venation in addition to a row of setae along each wing margin and a few setae at wing apex. Hind wing (Fig. 3) about 23x as long as wide; disc notably infumate, with setae only along margins; longest marginal seta about 6x maximal width of disc.

Metasoma. Gaster longer than mesosoma. Ovipositor about 3/4 length of gaster, not reaching tip of mesophragma anteriorly and barely exert beyond apex of gaster posteriorly (exserted part of ovipositor 1/20–1/15 of its total length); ovipositor length:protibia length ratio 2.0–2.1:1. External plate of ovipositor with two setae.

Measurements (holotype). Body: 658 µm; head (length, taken before slide-mounting): 100 µm; mesosoma: 236 µm; metasoma: 306 µm; ovipositor: 261 µm. Antenna: scape: 85 µm; pedicel: 40 µm; F1: 16; F2: 40; F3: 39; F4: 47; F5: 48; F6: 52 µm; clava: 103 µm. Forewing: 576/52 µm; longest marginal seta: 161 µm. Hind wing: 540/23 µm; longest



Figs 1–3. *Anagrus (Anagrus) amazonensis* Triapitsyn, Querino & Feitosa, sp. n. (female, holotype). 1. Antenna. 2. Forewing. 3. Hind wing.

marginal seta: 136 μm . Legs (given as femur, tibia, tarsus): pro-: 133 μm , 125, 161; meso-: 121, 172, 152 μm ; meta-: 131, 197, 170 μm .

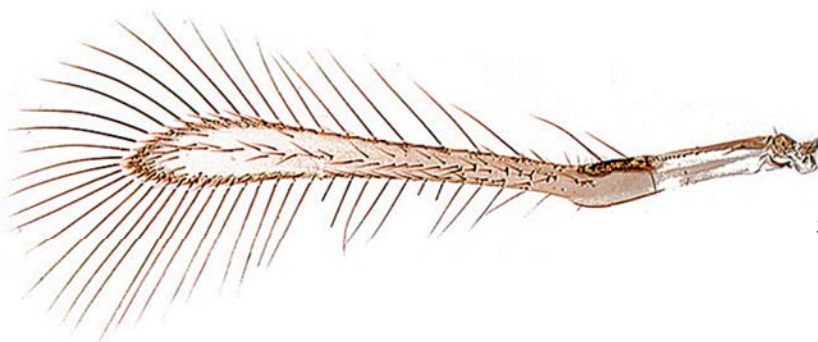
Male. Body length 460-660 μm . Similar to female except for normally sexually dimorphic characters such as antenna with an 11-segmented flagellum (Fig. 4) and genitalia (Fig. 6). Coloration of body is slightly darker than female. Forewing (Fig. 5) slightly wider than female, about 9.5x as long as wide; its disc with an additional incomplete row of setae only in the middle.

Diagnosis. *Anagrus amazonensis* sp. n. belongs to the *incarnatus* species group of the nominate subgenus of *Anagrus*, as defined by Chiappini *et al.* (1996). The male genitalia of *A. amazonensis* are not typical in shape and

structure for the *incarnatus* group species, as discussed by Chiappini & Mazzoni (2000), but more similar to the male genitalia of the Neotropical species *A. lineolus* Triapitsyn (Triapitsyn 2000) and *A. urichi* Pickles (Triapitsyn 2002), and also of *A. brasiliensis* Triapitsyn (Triapitsyn 1997), all of which also occur in Brazil. In the key to the Neotropical species of *Anagrus* Haliday by Triapitsyn (2002), *A. amazonensis* would key to the same couplet with *A. lineolus*. *Anagrus amazonensis* differs from *A. lineolus* in having a more infumate forewing disc in both sexes (the forewing disc is almost hyaline in *A. lineolus*), and also a different shape of the male genitalia: the latter are significantly more elongate in *A. lineolus*, as illustrated by Triapitsyn (2000). From *A. urichi*, which also has an infumate forewing disc, *A. amazonensis* differs in having a complete median row of setae on the forewing disc (the forewing disc has an incomplete



4



5



6

Figs 4-6. *Anagrus (Anagrus) amazonensis* Triapitsyn, Querino & Feitosa, sp. n. (male, paratype). 4. Antenna. 5. Forewing. 6. Genitalia.

row of at most 10 setae in *A. urichi*). Also, F1 of the male antenna is subglobular and much shorter than the remaining flagellomeres in *A. urichi* (Triapitsyn 2002), but similar in *A. amazonensis*. The new species differs from *A. brasiliensis* by the F2 of the female antenna, which is about as long as F3 in *A. amazonensis* but much shorter than F3 in *A. brasiliensis* (Triapitsyn 1997).

Etymology. The specific name is an adjective (gender: masculine) referring to the occurrence of this species in the Amazonas State of Brazil.

Host. An unknown species of Zygoptera (Odonata).

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