

A NEW SPECIES OF *CHILOPHAGA* ON *ARISTIDA*
(GRAMINEAE) IN FLORIDA
(DIPTERA: CECIDOMYIIDAE).

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ABSTRACT

The new species *Chilophaga gyraantis* Gagné is described, illustrated, and compared to adults of other species of *Chilophaga*. It forms broom-shaped stem galls on *Aristida gyrans* (Chapman) in Florida.

Larvae of the new species *Chilophaga gyraantis* Gagné form broom-shaped galls (Fig. 4) on the stems of *Aristida gyrans* Chapman (Gramineae), a grass occurring in dry sandy soil from Georgia to Florida. The galls are made of closely imbricated leaf sheaths created by the fore-shortening of the internodes. Within each composite gall are 1 to 15 larvae, each enveloped in a cylindrical sheath formed by 1 leaf. The larva feeds head downward; when full grown, it reverses position and usually climbs a short distance up the sheath to pupate. The adult emerges a short time later through the open end of the sheath. Because the host has no dormant season, the midge generations probably succeed one another throughout the year. Adults have been reared and larvae observed frequently by Stegmaier since December 1970, when first noticed, to May 1971, the completion date of this manuscript.

Unlike other Lasiopteridi, adults of *C. gyraantis* exhibit striking sexual differences in scale color. The males are covered with cream or brownish-cream colored scales except on the abdomen where areas of black scales alternate with cream to form a distinctive pattern; the females are covered almost entirely with black iridescent scales. There are 3 other known species of *Chilophaga*: *C. colorati* (Felt) and *C. tripsaci* (Felt), whose larvae live between leaf blades of the grasses *Muhlenbergia* and *Tripsacum*, respectively, and *C. coloradensis* (Felt), whose host is unknown. Unlike *C. gyraantis* adults which have unicolorous legs, adults of those 3 species have legs banded with alternating light and dark colored scales. The genus *Chilophaga* is unknown outside the Nearctic region.

The immatures of *C. gyraantis* are heavily parasitized by *Platygaster longiventris* (Ashmead) (Platygasteridae). Infected galls were common and yielded 8 to 46 specimens of this parasite, previously known from a single Florida specimen without host data. Several specimens of *Meromyzobia* sp. (Encyrtidae) were reared once from a gall.

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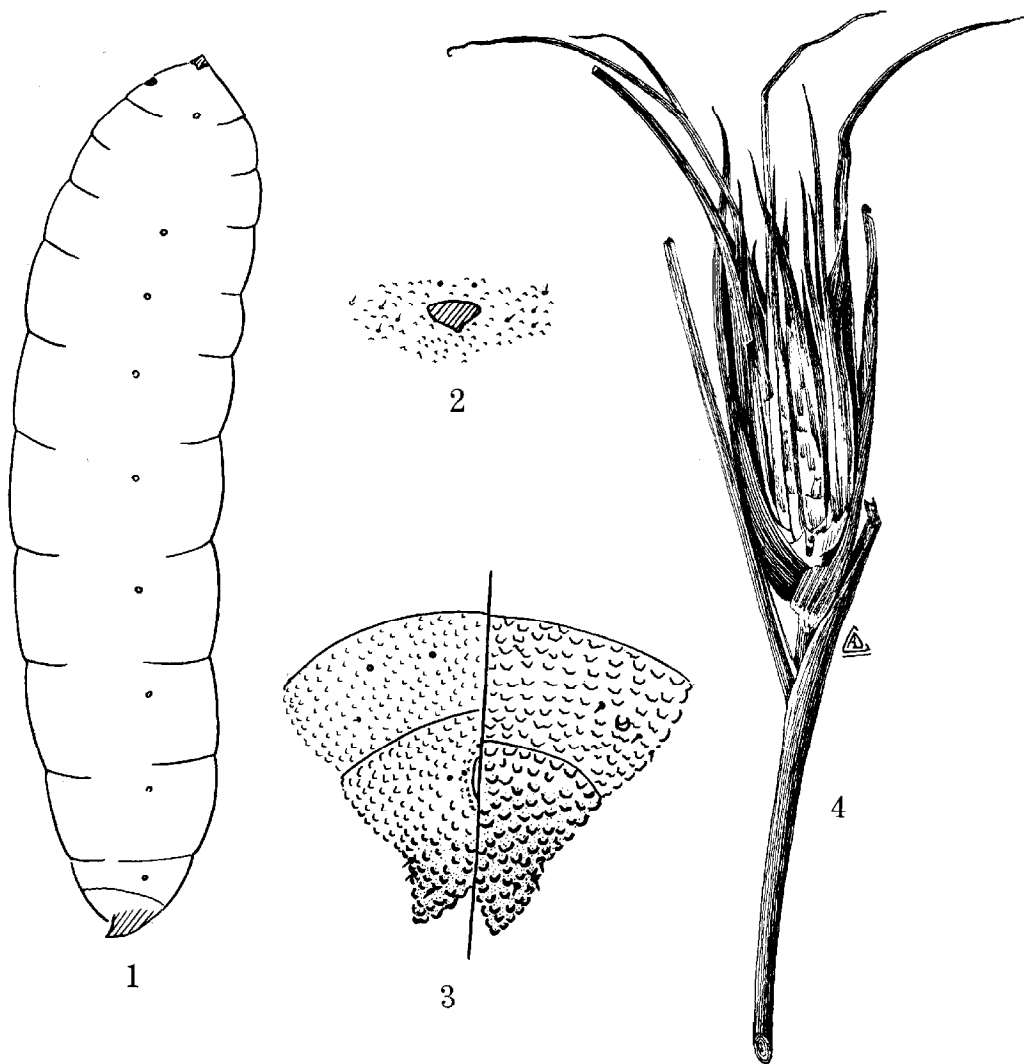


Fig. 1-3: Last instar larva; 1) larva, lateral view, slightly flattened bilaterally; 2) sternal spatula and adjacent papillae; 3) split drawing (left, ventral; right, dorsal) of terminal segments.

Fig. 4. Longitudinal section of gall.

man for the illustration of the gall (Fig. 4). The name *C. gyantis* is to be attributed to Gagné.

Chilophaga gyantis Gagné, new species

MALE: Wing length 1.1 to 1.3mm. Scale color: cream on head, mesonotum, scutellum, pleuron, and halteres; brownish-cream on costal margin of wing along length of R_5 , white at juncture of C and R_5 , black beyond; cream on entire abdominal tergum I and on terga II-VIII exclusive of black in the shape of an arrowhead pattern (Fig. 6) decreasing in extent on succeeding terga from II to VIII; cream dorsally and ventrally on abdominal pleura, black mesally; black on sterna; cream on genitalia. Antenna with 11 to 12 short flagellomeres, length and width of each approximately equal,

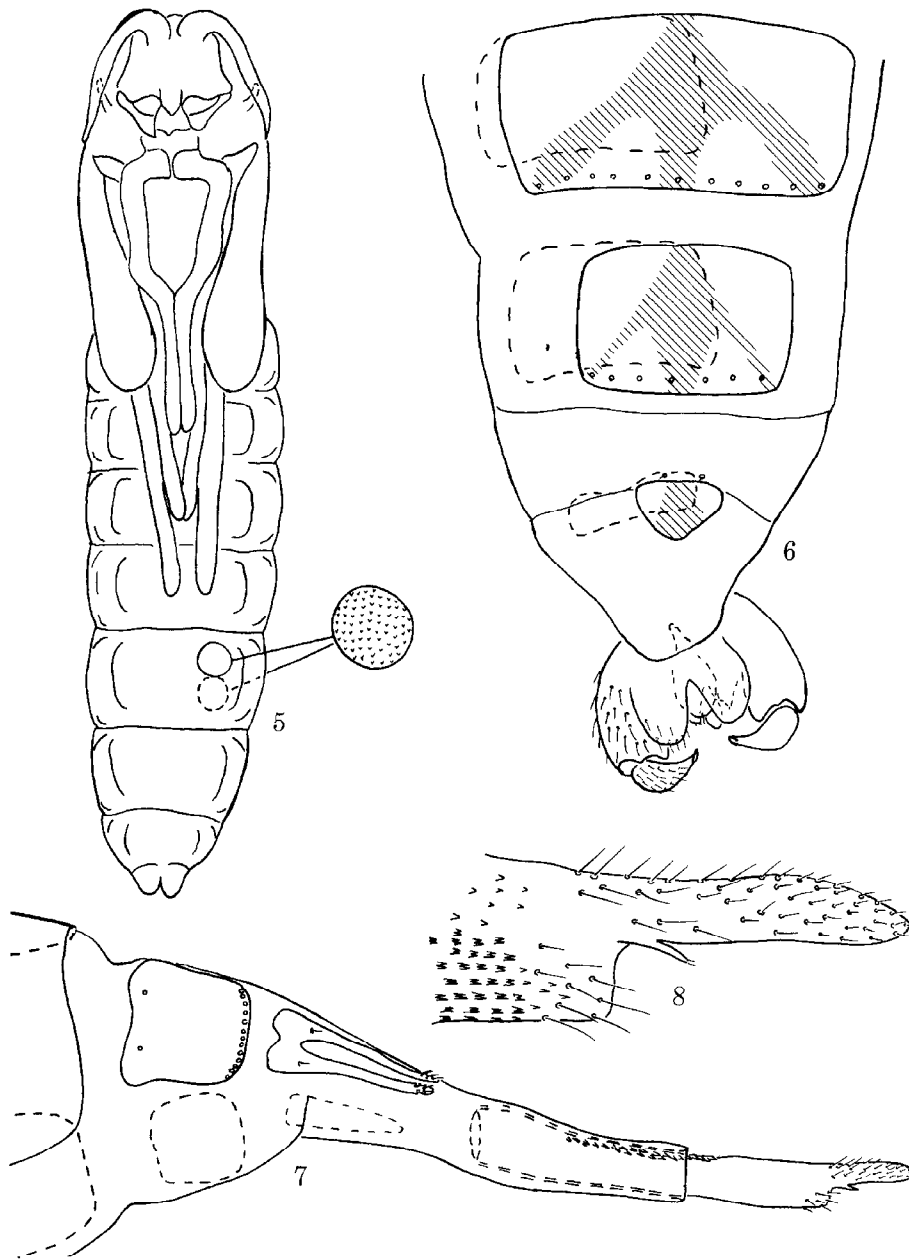


Fig. 5. Pupa, ventral view.

Fig. 6. Male abdomen, tergum VI to genitalia, dorsal view (shaded area of terga is that covered with black scales).

Fig. 7. Female abdomen, tergum VI to cercus, dorsolateral view.

Fig. 8. Apex of ovipositor, lateral view.

setae present only within bounds formed by circumfila. Palpus: length of segments I to IV about as 7:15:20:19; segment I without setae, segment II widest. Mesonotum covered entirely and uniformly with scales, dorsocen-

tral rows with 9 to 12 setae; mesanepimeron with 7 to 10 setae. Length R_5 from arculus 0.45 to 0.50 length wing. Abdomen (Fig. 6): terga I to VII and sterna II to VIII rectangular; tergum VIII small, triangular, well sclerotized; width sternum VII approximately 3 times length; sternum X entire, convex; aedeagus stout basally, narrowing gradually to rounded apex; claspettes obtuse, shorter than aedeagus; telomeres stout basally, narrowing abruptly at two-thirds length.

FEMALE: Wing length, 1.3 to 1.4mm. Scale color: black except for white spot at juncture of C and R_5 and silver on basal half of abdominal tergum I; black scales iridescent on thorax and abdomen. Antenna with 12 to 13 flagellomeres; otherwise as in male. Palpus and thoracic setation as in male. Abdomen (Fig. 7-8): terga I-VII and sterna II-VII rectangular; tergum VIII almost entirely divided longitudinally into 2 elongate sclerites; sternum VIII elongate, cuneiform, less strongly sclerotized than tergum VIII; distal half of ovipositor about 4 times length tergum VII (measured from basal to apical setae); setulae on distal portion of ovipositor bifid; dorsal lamella elongate, covered with setae diminishing in size from base of lamella to apex.

PUPA (Fig. 5). Antennal horns rounded. Facial papillae absent. Pronotal papillae very short. Abdominal terga and sterna covered with small rounded verrucae.

LARVA (Fig. 1-3). Integument verrucose throughout. Sternal spatula very short, triangular. Setae evident but short: laterals 4 (Fig. 2), terminals 4 (Fig. 3). Terminal segment modified into 2 conic, slightly sclerotized lobes bearing the terminal papillae.

Holotype, male, ex stem galls *Aristida gyrans*, coll. 14-XII-1970, Miami, Florida em. 21-XII-1970, C. E. Stegmaier, Jr., U.S. Nat. Mus. Type No. 71562. Paratypes (all from stem galls *A. gyrans*, Miami, Fla.): 3 ♀, pupal exuvium, same data as holotype; ♀, em. 23-XII-1970; 5 pupae, coll. I-1971; 2 ♀, 3 ♀, em. 14-I-1971; 2 ♀, em. 23-I-1971; 4 ♂, em. 26-I-1971; 1 pupa, 2 larvae, coll. 3-II-1971; 5 ♀, em. 10-IV-23-1971; ♂, em. 12-V-1971. Additional specimens: galls with enclosed larvae and pupae. Four ♂ and 4 ♀ will be deposited in the Florida State Collection of Arthropods in Gainesville, Fla., the remainder in the USNM.