THE GENUS *EULALIA* IN FLORIDA AND THE WEST INDIES

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The discoveries of a new *Eulalia*, and of an apparent case of anomalous distribution which helps to throw light on a problem of systematics within that genus, have pointed out the desirability of reviewing the genus as it occurs in this area. *Eulalia* is here used as it was defined by James and Steyskal (1962); the species referred to the related *Hedrioides* are, consequently, omitted.

1. Thorax almost entirely black, except apex and sometimes lateral margins of scutellum; vein R. absent (present in some related extralimital species) .......................................................... 2

   Thorax with at least postalar callus and some pleural areas reddish to yellow; these areas always distinct in the females, sometimes obscure in the males; vein R. present; antennal style acute; abdomen dorsally with ground color basically yellow, and with black transverse markings or with a black longitudinal stripe which may, however, cover most of the dorsal surface (subgenus *Eulalia*) ...................... 4

2. First antennal segment 1.5 length of second; vein M, distinct only at base, represented otherwise by an impressed line or fold; abdomen black dorsally, with narrow broadly interrupted yellowish apical margins on segments two to four; antennal style blunt, the last (sixth flagellar) segment but little longer than wide (subgenus *Achlyomyia*) ................................................................. *interrupta*

   First antennal segment no longer than second; vein M, distinct throughout or more distinct on its apical than on its basal half; abdomen greenish-yellow dorsally, usually with a longitudinal black stripe which may, however, be almost the width of the abdomen on segments three and four of the female (subgenus *Odontomyia*) ...... 3

3. Antennal style acute, the last (sixth flagellar) segment at least twice as long as wide; the pile beneath the front basitarsus as long as the width of the segment or nearly so; front of female usually with a pair of yellow spots below the ocelli................the *pilimana* complex

   Antennal style blunt, the last segment but little longer than broad; the pile beneath the front basitarsus of ordinary length; front almost wholly black .................................................. *virgo*

4. Style elongated, its terminal segment (sixth flagellar) longer than the fourth flagellar; abdomen of female dorsally black, with narrow lateral margins which are not sharply defined; abdomen of male with a longitudinal black stripe, narrowest on the third tergum, and covering approximately the median third of the abdomen.......*evansi*

   Style short or of moderate length, its terminal segment not more than two-thirds the length of the fourth flagellar; abdominal patterns varied, but well-defined, in both sexes.............................................. 5
5. Abdomen yellow to greenish-yellow, with a dorsal longitudinal stripe confined to the median third or fourth; pile of mesonotum deep yellow to brassy; face of male and face and front of female yellow, without distinct black spots ........................................... bahamensis

Abdomen basically yellow, but with black markings either in the form of cross-bands or of a median stripe which is expanded beyond the median third at the anterior margins of the terga; mesonotal pile white or silvery; frons of female with distinct black markings........ 6

6. Black markings of abdominal terga broad, trapezoidal, covering a large part of the respective tergum but broadly separated from the spots on the adjacent segments; face of male reddish-yellow medially and black laterally ...................................................... hermidensis

Black markings of abdominal terga not trapezoidal, at least on segments two and three, and more restricted in area, but at least narrowly connected to those of adjacent segments, sometimes in the form of a dorsal stripe ........................................................................ 7

7. Black markings of abdominal terga broadly connected with those of the adjacent segments and also broadly expanded anteriorly to the lateral margins so as to take in the anterior fourth of tergum 3 and the anterior half of tergum 4; the surrounded pale areas on terga 3 and 4 almost oval; male with black face and wholly black mesonotum ................................................................. rufipes

Black markings of abdominal terga but narrowly connected with those of adjacent segments in the female, broadly so in the male, the anterior expansion of the black very narrow in the female and lacking in the male, the pale areas consequently either not enclosed or not oval; face and sides of mesonotum of male yellow to green........ cinota

_Eudalia_ (Eudalia) evansi, n. sp.

**Male:** Head predominantly black; face yellow, except on sides, particularly above, and in depression above, oral margin; oral margin and lower facial orbits yellow; labella brownish; palpi pale yellow. Face at oral margin (97 micrometer units; 30 — 1 mm.) distinctly wider than its height (30); face gradually broadening downward, the sides, from front view, distinctly bowed. Eyes bare. Pile of head white to silvery; that of face bushy, abundant; narrow facial orbits silvery tomentose. Antennae brownish-yellow to blackish, variable, but characteristically the first two segments blackish with yellow apices, the flagellum brownish-yellow or reddish-yellow basally, becoming darker toward apex, but the terminal segment also reddish to brownish-yellow. Ratio: first segment 7, second 7, flagellum 27; flagellar segments typically 6:5:4:5:1:6.

Thorax mainly black, the following areas yellow: humeri; narrow lateral margins of mesonotal suture; postalar calli and area immediately preceding each; scutellum except broad basal area; scutellar spines except extreme apices; sclerites at wing base and adjacent mesopleural and pteropleural areas; and some indistinctly outlined pleural areas, especially around the anterior spiracale and along the upper margins of the sternopleura. Mesonotal tomentum silvery, scattered; mesonotum and pleura with conspicuous silvery pile. Legs yellow; the coxae mainly blackish, the
James: Genus Eulalia in Florida

femora at most somewhat discolored toward apexes. Wings hyaline; veins yellow; R₂ present, r-m and m-cu short. Halteres ivory.

Abdomen yellow; a median stripe extending from the base of the abdomen to the middle of the fifth tergite; this stripe occupying about the median third of the third segment and almost half of the fourth; from the third forward it widens gradually, so that most of the first segment is black; pile white, much less conspicuous than on the thorax, but the pile and pollen of the venter giving it somewhat of a silvery sheen. Genitalia yellow. Length, 10-11 mm.

Females: Head predominantly yellow, the following black: a transverse band on the vertex, crossing and including the ocellar triangle but not reaching the eyes; a pair of oval spots on the middle of the frons (or a broadly interrupted, arcuate transverse band in this area); a round spot adjacent to each eye just below the plane of the insertion of the antennae; and the proboscis, excluding the labellae. Width of vertex 33, gradually increasing to 40 at base of antennae; face almost parallel-sided. Frons strongly convex, both in lateral and transverse profile. Antennae, in color and structure, as in the male. Pile of head as in the male, but less conspicuous. Mesonotum colored as in male but may be more extensively yellow laterally behind the sutures; scutellum wholly yellow or black only at the base. Pectus, a connected spot on each mesopleuron, and the posterior margins of the metapleura black; pleural regions otherwise yellow. Prosternum discolored; mesosternum black. Pile of pleura and sides of mesonotum as in the male, but less conspicuous; mesonotum in addition with yellow tomentum which appears to be interrupted in a pair of ill-defined median stripes. Abdomen black or blackish dorsally, with a poorly defined yellow margin; the black may grade strongly into discoloration. Venter extensively brownish-yellow to discolored. Otherwise, except sexually, as described for the male.

Holotype: male, Cape Sable, Monroe Co., Florida, April 22-25, 1955. Biol. note 1027; James collection. Allotype: same data, Biol. note 1026. Paratypes: 6 ♀, 12 ♂, same data, Biol. notes 1021, 1022, 1023, 1024, 1025A, 1026, 1027; 4 ♀, 3 ♂, same data but March 24, 1954, Biol. notes 723, 732, 733B, 735, 740, 741; 1 ♂, Everglades, Florida, April 9, 1912; 1 ♂, Cape Flamingo, Florida. All the Cape Sable specimens were collected by Dr. Howard E. Evans, but they are not so indicated on the label.

The relationship of this species to E. microstoma (Loew) is close. The antennal style is long in both species; it is slightly the longer in microstoma. In that species, also, the pile of the head and thorax is distinctly yellowish; vein R₁ is wanting; the female is paler in coloration, the dark spots being usually light brown and those below the plane of the antennal insertion being absent; and the face of the male is predominantly black, the median area sometimes castaneous and the lower orbits yellow. It is possible that evansi is a southern subspecies of microstoma; the distributional pattern, so far as known, is discontinuous.

THE EULALIA PILIMANA COMPLEX

There are three nominal neartic species of Eulalia, subgenus Odontomyiina, which are characterized by the long pile (longer in the male than
in the female) on the ventral side of the front basitarsus. *E. pilimana* (Loew), which has a patterned abdomen and a strong facial tubercle, occurs widely in Southern Canada and the northern half of the United States, from coast to coast; *E. borealis* (James), which has a patterned abdomen but only a weak facial tubercle or none at all, occurs east of the one-hundredth meridian, from Southern Canada to Florida; *E. aldrichi* (Johnson), which has an entirely green abdomen, occurs from Nebraska and Iowa (Ames) southward to Texas (Fort Davis), and also in Florida. The status of this species complex needs clarification. Except for Florida, records for the states south of Virginia and east of the Mississippi are lacking, but *E. borealis*, so named because at the time it was supposed to be more northern than *E. pilimana*, actually appears to overlap the distribution of *pilimana* completely in the East and to extend much farther southward. If it were not for this broad overlapping, this complex might assume the pattern of a superspecies.

The collection of the State Plant Board of Florida contains one male and one female, Nassau Co., May 28, 1955 (H. V. Weems), at *Cyrilla racemiflora*, one male, Alachua Co., April 27, 1955 (Weems), at *Melilotus albus*, and one female, Gainesville, May 6, 1922 (G. B. Merrill), which fit the definition of *E. borealis*; also, there are two females, Levy Co., Sept. 10, 1955 (R. A. Morse), *Polygonum hydropiperoides*, which compare very favorably with Kansas and Nebraska specimens of *E. aldrichi*. Whether these latter form an independent development or a genetic continuum with the more western populations is, on present evidence, a matter of speculation. The late seasonal date of the Florida specimens may be of some significance.

**Distribution in Florida of the Other Species**

*Eulalia interrupta* (Latreille). Jacksonville, April 14 (Mrs. A. T. Slosson; Fla. Plant Board). Sanford, “3-5-26” (Ohio State Mus.)


*Eulalia rufipes* (Loew). Common in the South; I have numerous records from Pinecrest and Naples in Collier Co.; Paradise Key, Key Largo, No Name Key, Sugarloaf Key, Tamiami Trail, and “40 mi. E. of Everglades” in Dade Co.; and Cape Sable Road, 5 miles west of the Dade Co. line, in Monroe Co. My northernmost records are Hudson, Pasco Co., July 9, 1948 (K. H. Beamer, U. Kansas), and Lake Alfred, Polk Co., May 27, 1955 (R. P. Esser, Fla. Plant Board). This species also occurs in Cuba.

*Eulalia cinca* (Latreille). This widespread nearctic species apparently occurs throughout most of the State. I have records from the following counties: Alachua (Gainesville, etc.), Levy, Seminole (Sanford), Brevard, Broward (Hallandale), and Dade (Miami).

**Literature Cited**