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DESCRIPTION OF THE LARVAE OF TWO SPECIES OF *HEMIPEPLUS LATREILLE* (COLEOPTERA:MYCTERIDAE)

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INTRODUCTION

The key description and illustrations of mouthparts, ocelli, and terminal abdominal segments by Béving & Craighead (1931) have been the only information on the larval stages of the genus Hemipeplus Latreille, except for the observation by van Emden (1942) that individuals of the genus would not key properly in Béving & Craighead's key. Their example was of an undescribed species from Cuba. The semidiagrammatic illustrations make it difficult to identify the species illustrated, although it may be H. marginipennis (LeConte).

This paper is based on larvae collected by the authors, in each case associated with adults.

From the family diagnosis of larval Mycteridae (Crowson & Viedma 1964), Hemipeplus larvae differ noticeably in the form of the sensorium, which Crowson & Viedma describe as "very short, dome-shaped"; in Hemipeplus it is elongate and conical. From the larva of Mycterus (described by Crowson & Viedma 1964) those of Hemipeplus also differ in having five ocelli on each side (cf. two), mala with an uncus and medial pit (cf. without uncus or medial pit), mola ridged (cf. not ridged), cardines not divided (cf. distinctly divided), labial palpi with only one distinct palpomere (cf. with two palpomeres), abdominal asperities absent (cf. asperities present), and different form of spiracle (compare fig. 13 with fig. 4 in Crowson & Viedma 1964).

Larvae of Hemipeplus are more similar to that of Euryplus muelleri Seidlitz (described by Costa & Vanin 1977) than to that of Mycterus. As in Hemipeplus, Euryplus larvae possess five ocelli arranged in rows of three and two on each side; two pairs of tubercles at posterior margin of abdominal sternite IX; mala with an uncus, and cardines divided. Hemipeplus larvae differ from those of Mycterus most notably in the form of abdominal tergite IX (see Costa & Vanin 1977: fig. 2). The uncus is located on the mesal margin of the mala in Hemipeplus, whereas it is located on the ventral aspect of the mala in Euryplus.

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Prothorax with scattered long and short setae, longest setae at anterior angles; a pair of small, pigmented triangular marks located medially at anterior and posterior margins; meso- and metathorax with short discal setae but without longer lateral setae; all coxae widely separated, legs arising nearly laterally; legs (fig. 9) with scattered femoral and tibial setae; thoracic spiracle near anterior lateral margin of mesothorax, with a single large opening and numerous air tubes arranged most posterior to main opening.

Abdominal segments (fig. 1) gradually increasing in length and width through segment V, then gradually decreasing in length and width through segment VII; segment VIII longer; abdominal segments with long lateral setae and anterior and posterior rows of minute discal setae; urogomphi of tergite IX (fig. 10-11) with median cuture, lobed laterally and with elongate lateral setae; sternite IX (fig. 12) surrounds segment X, which bears anus; two pairs of sclerotized tubercles are located at the apex of sternite IX (fig. 12); abdominal spiracles (fig. 13) similar to thoracic spiracle.

_Hemipeplus marginipennis_ (LeConte)

**MATURE LARVA:** Length, 7.8-9.7mm. Head transverse, 1.9 times wider than long; antenna (fig. 7) equal in length to head, length ratios of antennomeres 1:1.5:0.88; antennomere I 1.6 times longer than wide; antennomeres II and III each four times longer than wide; sensorium about 0.19 times length of antennomere II. Length ratios of thoracic segments 1:1.05:0.9; prothorax 1.2 times wider than long; mesothorax 1.3 times wider than long; metathorax 1.5 times wider than long; the distance between mesal margins of each pair of coxae 0.68 times width of prothorax; 0.75 times width of mesothorax; and 0.76 times width of metathorax; length ratios of abdominal segments: 1-VIII = 0.42:1.52:1.42: 1.58:1.58:1.52:1.52; length/width ratios of same segments are I, 1.7; II, 1.4; III, 1.4; IV, 1.5; V, 1.3; VI, 1.2; VII, 1.3; VIII, 1.0; urogomphi (fig. 11) 1.68 times wider than long, wider than abdominal segment VIII at its widest; posterior margin of abdominal tergite IX straight medially, with an acute turn anteriorly before base of urogomphi.

Described from four larvae collected with adults and pupae from an unopened frond of *Sabal palmetto* (Walt.)Lodd., Florida: Dade Co., South Miami, 18-IV-1983, M.C. Thomas.

_Hemipeplus microphthalmus_ (Schwarz)

**MATURE LARVA:** Length, 4.8-6.2mm. Head transverse, 1.46 times wider than long; antenna (fig. 8) 0.625 times length of head; length ratios of antennomeres...
1:1.5:1.25; antennomere I as long as wide; antennomere II twice longer than wide; antennomere III 2.5 times longer than wide; sensorium 0.18 times length of antennomere II. Length ratios of thoracic segments 1:1.03:1; prothorax 1.38 times wider than long; mesothorax 1.41 times wider than long; metathorax 1.67 times wider than long; distance between mesal margins of procoxae 0.33 times width of prothorax; that of mesocoxae 0.63 times width of mesothorax; that of metacoxae 0.67 times width of metathorax; length ratios of abdominal segments I-VIII are 1:1.03:1.23:1.27:1.30:1.23:1.13:1.57; length/width ratios of same segments are: I, 1.03; II, 1.74; III, 1.73; IV, 1.60; V, 1.64; VI, 1.67; VII, 1.66; VIII, 1.02; urogomphi (fig. 10) 0.73 times width of abdominal segment VIII at its widest; posterior margin of abdominal tergite IX curved medially, without a straight margin.

Described from five slide-mounted larvae collected with numerous adults and several other larvae in leaf sheaths of Andropogon virginianus L., Florida: Alachua Co., Gainesville, 17-V-1962, R.E. Woodruff.

ACKNOWLEDGEMENTS

We thank T.J. Spilman and D.H. Habeck for reading and criticizing this manuscript.

ABSTRACT

Mature larvae of Hemipeplus marginipennis (LeConte) and H. microphthalmus (Schwarz) are described and illustrated for the first time.

REFERENCES


KEY TO THE KNOWN LARVAE OF HEMIPEPLUS IN FLORIDA

1. Antennae elongate (fig. 7), equal in length to head; antennomeres II and III each four times longer than wide; urogomphi (fig. 11) wider than abdominal segment VIII; length of mature larvae 7.8-9.7mm. ........................................ marginipennis (LeConte)

1'. Antennae less elongate (fig. 8), slightly more than half length of head; antennomeres II and III each less than 2.5 times longer than wide; urogomphi (fig. 10) narrower than abdominal segment VIII; length of mature larvae 4.8-6.2mm. ........................................ microphthalmus (Schwarz)
Fig. 7-10. *Hemipeplus* spp. 7) *H. margini-pennis*, antenna; 8) *H. microphthalmus*, antenna; 9) *H. marginipennis*, left mesothoracic leg, posterior view; 10) *H. microphthalmus*, abdominal tergite IX, left side. (For figs. 7, 9, 10, line = 0.5mm; for fig. 8, line = 0.25mm.)

Fig. 11-13. *Hemipeplus* spp. 11) *H. margini-pennis*, abdominal tergite IX, left side; 12) *H. microphthalmus*, abdominal segments VIII-X, ventral view; 13) *H. marginipennis*, spiracle. (For fig. 11, line = 1.0mm; for fig. 12, line = 0.1mm; for fig. 13, line = 0.125mm.)