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HEBARD, (ORTHOPTERA, PHANEROPTERINAE)

BY

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From the Transactions of the American Entomological Society

Volume 112: 81-84

Issued June 27, 1986

1540

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This is a separatum from the TRANSACTIONS and is not a reprint. It bears the original pagination and plate numbers, and library copies were mailed at Philadelphia on the above date of issue.

A REDESCRIPTION OF THE ANGULAR—WINGED  
KATYDID, *MICROCENTRUM LOUISIANUM* HEBARD,  
(ORTHOPTERA, PHANEROPTERINAE)

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ABSTRACT

The male of *Microcentrum louisianum*, originally described from a single adult specimen, is redescribed documenting variation in important taxonomic characters. The female is described for the first time. Characteristics separating this species from the closely related *M. retinerve* are summarized.

Hebard (1939) described the angular-winged katydid, *Microcentrum louisianum*, from a single adult male taken by J.A.G. Rehn at Shreveport, LA on 19 August 1915 from "a mixed deciduous and conifer forest." Hebard's description is adequate to distinguish *M. louisianum* from other *Microcentrum* species of eastern United States. However, no description of variation of adult taxonomic characters of *louisianum* is available, and the female has remained undescribed. The purpose of this study is to describe important selected characters from all available specimens and to describe the female for the first time. Notes taken from Hebard's (1939) original description are shown in brackets [ ]. Important contrasts with the closely related *M. retinerve* are made.

**Microcentrum louisianum** Hebard

General coloration grass green in the more recently collected specimens, normal for the genus; faded green in the older specimens [light green]. Eyes reddish-brown to greenish-yellow brown [russet]. Setal pits dark brown on the following areas; pronotal disc and dorsally on lateral lobes, proximal ends of tibiae, and distal ends of caudal femora [microscopic dots of brown]. Setae unpigmented (darkly pigmented microscopic setae on pronotal disc of *retinerve*). Stridulatory field green with light brown along vannal fold (stridulatory vein brown in *retinerve*). Light brown along pronotal carinae and anal [sutural] edge of tegmina. Purplish coloration to labrum of Hebard's type (normal for living *retinerve*), not shown on the other specimens.

*M. louisianum* is of small size for the genus. Basic body measurements are summarized in Table 1.

Fastigium of vertex nearly square, declivent, and mediolongitudinally dimpled (more sharply sulcate in *retinerve*). Transverse vertexal suture straight, approximately 2x second antennal segment. Pronotum smooth; disc rounding sharply into lateral lobes to form carinae; a broad, transverse depression near cephalic margin. Cephalic margin of pronotum concave with a faint, broad, median tooth in some specimens. Metasternal lobes ovoid-rectangulate, caudal border rounded (usually pointed in *retinerve*).

Tegmina fully developed, widest at the angle, the anal border distal to the angle straight and declivent, apex broadly rounded. Hindwings fully developed and extending beyond tegmina 4.7-5.2 mm.

TABLE I. Measurements<sup>1</sup> (mm) of Selected Taxonomic Characters of *M. louisianum*<sup>2</sup> Hebard

	Type ♂	RMS♂	TJW♂	TJW♀
Length of body	21.1	20.0	22.6	19.9
Length of pronotum	5.2	5.0	5.1	5.0
Greatest width of pronotum	4.4 [3.7]	4.2	4.4	4.0
Length of tegmina	34.8	36.4	36.1	35.0
Greatest width of tegmina	10.8	10.4	10.8	10.8
Length of caudal femur	18.8	18.0	17.6	18.6
Length of cercus	2.7	2.8	2.8	2.2
Length of stridulatory vein	3.0	3.1	2.9	
No. of teeth in stridulatory file	137	144	131	
No. of non-movable spines on caudolateral carina of hind tibia (rt. leg/lt. leg)	22/21	-/20	19/20	25/20

<sup>1</sup>All measurements, repeated 3x each, were made on the left side with engineering dividers. The stridulatory file was studied by the technique described by Spooner (in press).

<sup>2</sup>*Material Examined*: Holotype Male: Shreveport, LA, 19 August 1915, J.A.G. Rehn; 1 male, Agric. Coll., MS, 23 October 1917, R.M. Lancaster; 1 male, Obion Co., TN, 4 September 1970, T.J. Walker; 1 female, Obion Co., TN, 4 September 1970, T.J. Walker.

Supra-anal plate of both sexes declivent, elongate-triangular with weakly convex lateral margins. Cerci of males cylindrical, elongate, tapering slightly, upcurved and incurved, with apex swollen and bilobate, the ventral surface of inner lobe rounded (often flattened in *retinerve*), proximal ends with setae borne on raised tubercles. An elongate triangular tooth at the end of each cercus (Fig. 1) measuring ca. 0.2 mm and equal to 1/2 or less the smallest cercal width (ca. 0.4 mm in *retinerve* and equal to more than 1/2 to subequal the smallest cercal width). Male subgenital plate with median carina; also lateral carinae that continue caudad into rounded, tubular processes as long as wide forming a U-shaped emargination between. Elongate styles [6x as long as broad] extend from the caudal processes of the subgenital plate. Cerci of female tuberculate, elongate, incurved, tapering into a point. Subgenital plate of female consisting of two lateral processes that converge caudoventrally to a median carina measuring 1.7 mm, ventral edge of each process straight near carina, then curving to meet dorsal edge thus forming a point, each process measuring 1.2 x 2.8 mm.

Ovipositor falcate, (Fig. 1) shape typical for the genus, and ca. same size as in *retinerve*, apex of first valvulae obtuse and rounded, all blades finely crenate distally with low triangular teeth, such teeth bordering intervalvular suture no larger than other teeth (terminal teeth of valvulae at suture enlarged in *retinerve* from LA and SC). Greatest width of ovipositor (at bend) 2.5 mm, straight line from beginning to end of intervalvular suture 5.8 mm. Fovea (Fig. 1) near anteroventral border of valvifer (first valvifer of Snodgrass, 1935; basal plate of Emsley *et al.*, 1967) shallow compared to that of *retinerve*.

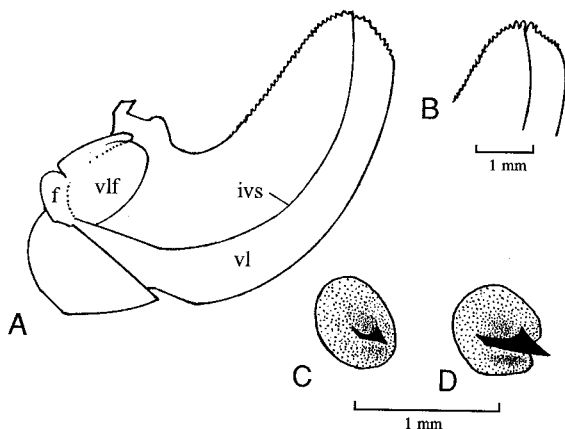


FIG. 1. Some diagnostic structures of *Microcentrum louisianum* (A and C) and *M. retinerve* (B and D). A and B, ovipositor; C and D, end view of male cercus; f, fovea; ivs, intervalvular suture; vl, 1st valvula; vlf, valvifer.

#### REMARKS

Hebard (1939) concluded correctly that *M. louisianum* is very closely related to the sympatric *M. retinerve* (Burmeister). Principal characters separating *louisianum* from *retinerve* are: (1) unpigmented microscopic pronotal setae in both sexes (dark brown in *retinerve*), (2) the uniformly green-colored stridulatory vein and adjacent cephalic field in the male (brown in *retinerve*), (3) the rounded end of the first valvula of the ovipositor of the female (truncate in *retinerve*), and (4) terminal cercal tooth of male equal to no more than 1/2 smallest cercal width (subequal smallest cercal width in *retinerve*). Both species have pigmented pronotal setal pits. These pits are large in *louisianum* and occur over the entire

disc, whereas they mostly occur along the pronotal carinae in *retinerve*. Differences in the length of the median carina of the subgenital plate of the female, the depth of the fovea of the valvifer (possibly reflecting differences in the size of the terminal cercal tooth of males), and the size of the terminal teeth of the valvulae may be significant.

The paucity of specimens available for study attests to Hebard's conclusion that *M. louisianum* is a species of deciduous tree tops.

#### ACKNOWLEDGEMENTS

I graciously thank Daniel Otte (Academy of Natural Sciences of Philadelphia) for the loan of the type specimen and T.J. Walker (University of Florida) for the loan of the other three specimens of *louisianum*. Dr. Walker has deposited his specimens in the Florida State Collection of Arthropods. Appreciation is extended to Matt Dakin (University of Southwestern Louisiana) and John C. Morse (Clemson University) who loaned specimens of *retinerve* for comparison. I thank B.C. Kondratieff, D.A. Nickle, and T.J. Walker for their review and comments on the manuscript.

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