

# TWO NEW SPECIES OF *BALOCERUS* FROM THAILAND AND CHINA (HOMOPTERA: CICADELLIDAE)<sup>1, 2</sup>

PAUL H. FREYTAG AND WILLIAM P. MORRISON

*Department of Entomology, University of Kentucky, Lexington, Kentucky 40506*

## ABSTRACT

Two new species of *Balocerus* are described from the Oriental Region, *B. orientalis* n. sp. from Thailand, and *B. chinensis* n. sp. from China.

Two new species of *Balocerus* are here described from the Oriental Region. This genus has been known previously only from a single species, *B. rozeni* Freytag and Morrison, occurring in New Guinea (Freytag and Morrison, 1972). All material for this study was loaned through the kindness of Dr. David A. Young, Jr., of North Carolina State University, and Dr. Sutharm Areekul of Kasetsart University, Bangkok, Thailand.

These two species can be separated from *Balocerus rozeni* and from each other by the following key.

## KEY TO MALES OF *BALOCERUS*

1. Aedeagus with long base and short processes on dorsal part of shaft. (from New Guinea) *rozeni* Freytag and Morrison
- 1'. Aedeagus with short base and long processes on dorsal part of shaft. (from Oriental region) . . . . . 2
- 2(1'). Aedeagus with leaf-like processes dorsal to gonopore parallel, not separated at apex. (from Thailand) . . . . . *orientalis* n. sp.
2. Aedeagus with leaf-like processes dorsal to gonopore separating near middle and separated by their length at apex. (from China) . . . . . *chinensis* n. sp.

## *Balocerus orientalis* new species

Figures 1-3.

Length of male 3.8-4.2 mm., and of female 4-4.3 mm.

Structure: Head wider than pronotum, rounded. Body generally wedge-shaped. Forewings narrow with a large appendix.

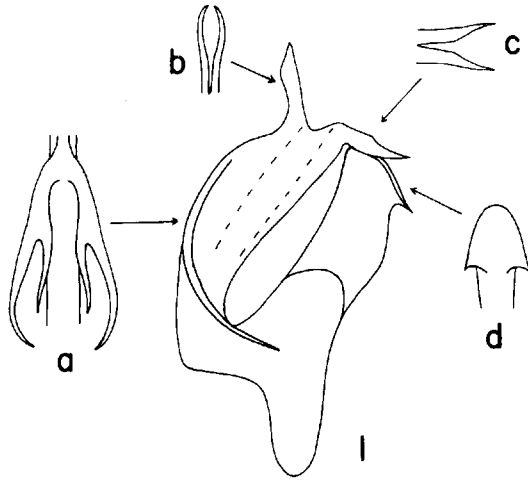
Coloration: Generally yellowish-brown, with female more highly patterned than male. Both sexes with a dark brown spot on mesopleural area. Male face entirely yellow, slowly changing on crown to yellowish-brown. Pronotum and scutellum yellowish-brown with base of claval area yellow; costa yellow and also thickened; veins yellowish-brown, except apical veins smoky brown. Face of female mostly brown, clypeus completely dark-brown, slowly changing on crown to yellowish-brown. Pronotum, scutellum, and wings as in male.

Male genitalia: Plates greatly expanded beyond middle in lateral view, paddle-shaped. Style gradually enlarged near bifurcate apex; ventral arm knife-like and pointed; dorsal arm thumb-like, with serrate ventral margin. Connective small, Y-shaped. Aedeagus, in lateral view, with short base from which two parts of shaft arise; dorsal part expanded near middle, with a pair of bifurcate processes arising on dorsal margin, longest process extending to base, apex of dorsal part with a pair of short leaf-like processes above and below gonopore, dorsal pair closely parallel to each other, ventral pair forking and lying just above ventral part of shaft; ventral part same width throughout and extending nearly same length as dorsal part, apex abruptly but only slightly expanded, keel-shaped. Pygofer, in lateral view, with median ventral margin expanded. Anal tube with robust extension surrounding aedeagus.

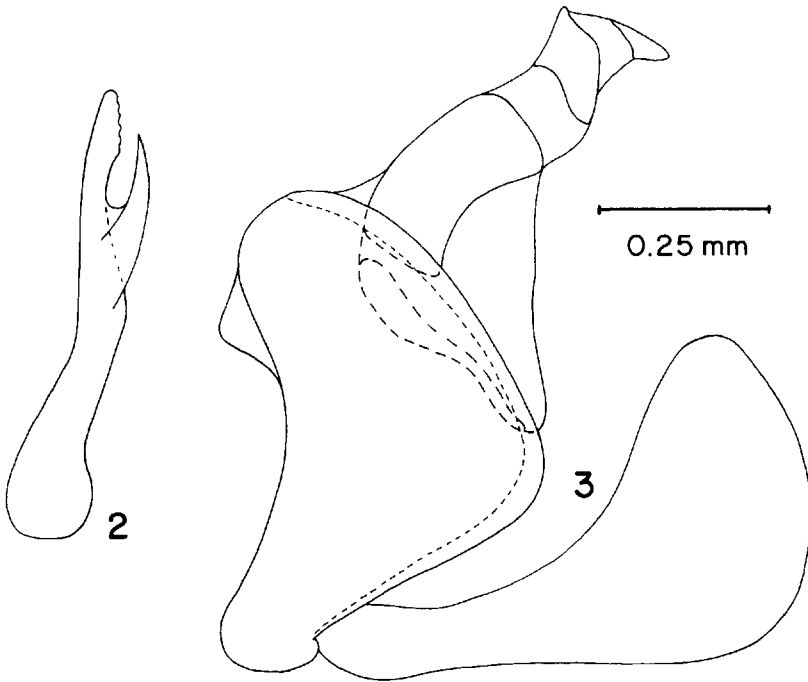
<sup>1</sup>This paper (72-7-121) is published with approval of the Director of the Kentucky Agricultural Experiment Station, Lexington.

<sup>2</sup>Manuscript received October 9, 1972.

Female genitalia: Ovipositor extending beyond pygofer nearly twice its own width. Pygofer narrow and long. Posterior margin of 7th sternum broadly rounded with a large median emargination.

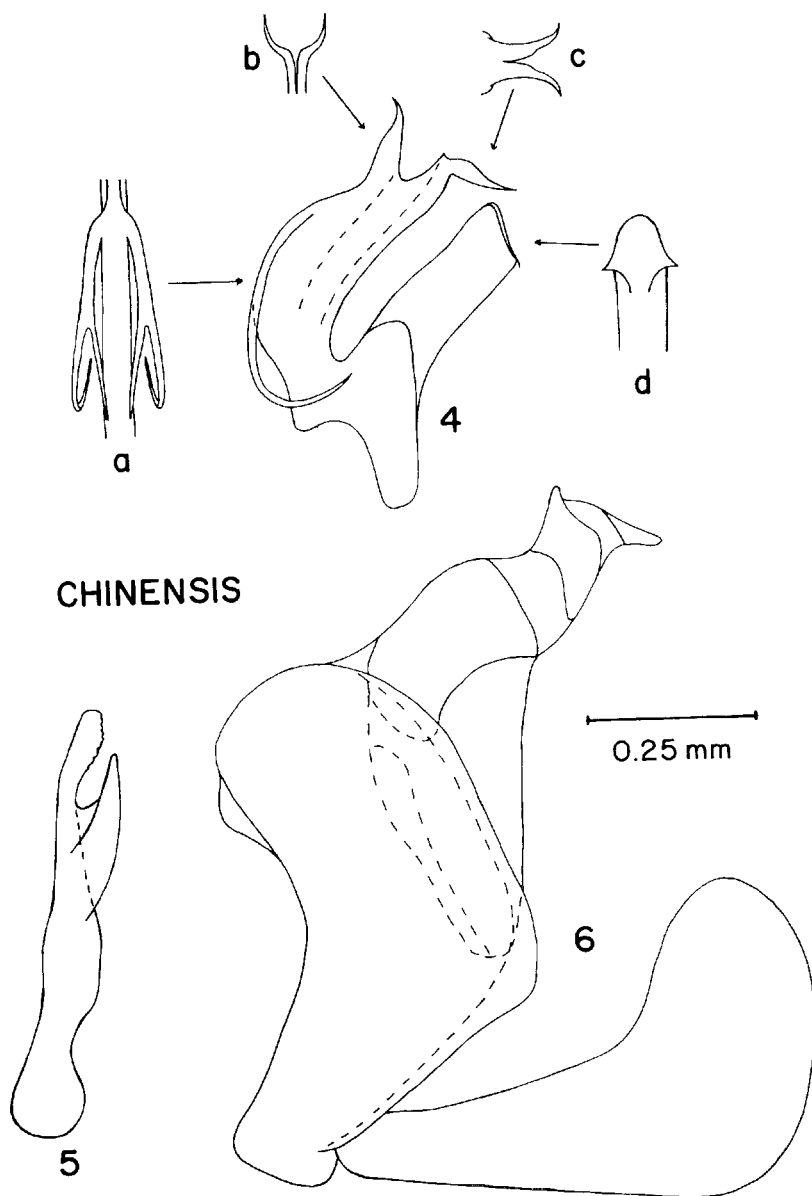


**ORIENTALIS**



**EXPLANATION OF FIGURES 1-3**

FIGURES 1-3. *Balocerus orientalis* n. sp. 1. aedeagus, lateral view (a. dorsal processes, dorsal view; b. dorsal terminal processes, dorsal view; c. ventral terminal processes, ventral view; d. terminal end of ventral shaft, ventral view); 2. style, lateral view; 3. pygofer, plate and anal tube, lateral view. All drawn to same scale.



## EXPLANATION OF FIGURES 4-6

FIGURES 4-6. *Balocerus chinensis* n. sp. 4. aedeagus, lateral view (a. dorsal processes, dorsal view; b. dorsal terminal processes, dorsal view; c. ventral terminal processes, ventral view; d. terminal end of ventral shaft, ventral view); 5. style, lateral view; 6. pygofer, plate, and anal tube, lateral view. All drawn to same scale.

Types: Holotype male, Petchaboon, Thailand, March 30, 1965. Allotype female, same data as holotype. Paratypes, 2 males, 2 females, same data as holotype. Holotype and allotype in the U. S. National Museum; 2 paratypes (1 male, 1 female) in The University of Kentucky Collection, and 2 paratypes (1 male, 1 female) in Kasetsart University, Bangkok, Thailand.

**Balocerus chinensis** new species

Figures 4-6.

Length of male 4-4.5 mm., and of female 4.5-4.8 mm.

Structure: Head wider than pronotum, rounded. Body generally wedge-shaped. Forewings narrow, with a large appendix.

Coloration: Generally yellow to brownish-yellow in male, yellow-brown to brown in female, female darker than male. Both sexes with a dark-brown spot on mesopleural area, in female covering most of mesopleuron. Male head, pronotum, and scutellum entirely yellow. Forewings smoky yellowish-brown, with claval area bordering scutellum broadly yellowish-green, end of second claval vein and claval suture with a yellow spot, base of costa yellow fading to brown near middle then dark-brown near first apical cell; apical veins dark-brown. Face of female brown, with lora and clypeal area dark-brown, crown yellow-brown. Pronotum and scutellum brown, apex of scutellum yellow-brown. Forewing as in male, except claval area with yellowish area more restricted to base.

Male genitalia: Plates greatly expanded beyond middle in lateral view, paddle-shaped. Style gradually enlarged near bifurcate apex, ventral arm knife-like and pointed, dorsal arm thumb-like with serrate ventral margin. Connective small, Y-shaped. Aedeagus, in lateral view, with short base from which two parts of shaft arise; dorsal part expanded near middle with a pair of bifurcate processes arising on dorsal margin, longest process extending as far as base of aedeagus then recurved to base of ventral part of shaft, apex of dorsal part with a pair of short leaf-like processes above and below gonopore, dorsal pair closely parallel at base then widely separated at apex, ventral pair forking and lying just above ventral part of shaft; ventral part same width throughout and extending nearly same length as dorsal part, apex abruptly but only slightly expanded, keel-shaped. Pygofer, in lateral view, with median ventral margin expanded. Anal tube with robust extension surrounding aedeagus.

Female genitalia: Ovipositor extending beyond pygofer a little more than its own width. Pygofer narrow. Posterior margin of 7th sternum broadly rounded with a shallow median emargination.

Types: Holotype male, Mei-haien; E. Krantung, S. China, May 30, 1936, L. Gressitt. Allotype female, same data as holotype. Paratypes: 1 male, same data as holotype; 4 males, 1 female, same data, except June 9, 1936. Holotype, allotype and 4 paratypes (4 females) in the North Carolina State University Collection, 2 paratypes (1 male, 1 female) in The University of Kentucky Collection.

## LITERATURE CITED

**Freytag, P. H., and W. P. Morrison.** 1972. A new genus of Leafhoppers from New Guinea. *Ent. News* 83: 41-44, 9 figs.

**Bedrock Geology of the Flint Ridge Area, Licking and Muskingum Counties, Ohio.** *Richard M. DeLong.* Ohio Division of Geological Survey, Report of Investigations 84, 1207 Grandview Ave., Columbus, Ohio 43212. 1972. Colored map, one sheet with text, folded in a plastic envelope. \$1.75, plus 8 cents tax in Ohio, and 17 cents mailing charge.

The Flint Ridge area has been of geologic interest from the time the Indians quarried flint there for their arrow heads and tools down to the present day when mineral hobbyists come long distances to see the outcrops of flint, Ohio's official gemstone. Report of Investigations 84 consists of a geologic map of Flint Ridge and the surrounding area, with a cross section of the bedrock and a geologic column with descriptions of all the rock units found in the area. All mineral resources recovered from this area—coal, clay, limestone, flint, oil, and gas—are discussed. On the reverse side of the sheet are paragraphs about the origin of flint, prehistoric use of flint, origin of the American Indian, historic use of flint, Ohio's official gemstone, and Flint Ridge State Memorial. Each of these articles is illustrated with colored pictures.

The geologic map and the discussion of mineral resources will make this map valuable to property owners and business men in this part of Licking and Muskingum Counties. The material about flint will be of interest to rock and mineral collectors, and the information about the Indians will fire the imaginations of school children and amateur archeologists. The map will also be of interest to anyone interested in Ohio's geology and its relationships to man's life, both in the present and in the past. A copy of this map would enhance any visit to Flint Ridge.