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*DICYRTOMA (PTENOTHRIX) RENATEAE*, NEW SPECIES  
FROM THE SAVANNAH RIVER PLANT AND GEORGIA  
(COLLEMBOLA: DICYRTOMINAE)

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ABSTRACT

A new species, *Dicyrtoma (Ptenothrix) renatae* Snider, is described from South Carolina and Georgia. While sharing unique characteristics with *Dicyrtoma (Ptenothrix) vittata* (Folsom), *D. renatae* can be identified on the basis of: smooth circumanal setae, corpus of tenaculum with 5-6 setulae, circumanal seta G present, seta DD spine-like, and its color pattern. The type locality is Barnwell County, South Carolina, Savannah River Plant. Specimens taken from litter and grass.

RESUMEN

Se describe una nueva especie, *Dicyrtoma (Ptenothrix) renatae* Snider, de Carolina del Sur y Georgia. Aún cuando comparte características únicas con *Dicyrtoma (Ptenothrix) vittata* (Folsom), *D. renatae* puede ser identificada por: cerdas circumanales suaves, cuerpo de tenáculo con 5-6 "setulae", presencia de la cerda circumanal G, cerda DD en forma de espina, y por su patrón de coloración. La localidad tipo es el condado de Barnwell, Carolina de Sur y Savannah River Plant. Los especímenes fueron coleccionados en pastos y hojarasca.

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I am currently conducting a survey of the Collembola found on the Savannah River Plant, Aiken, South Carolina. Many new species have been taken along with new records for existing species. The purpose of this paper is to describe a new species of Dicyrtominae.

*Dicyrtoma (Ptenothrix) renatae*, NEW SPECIES

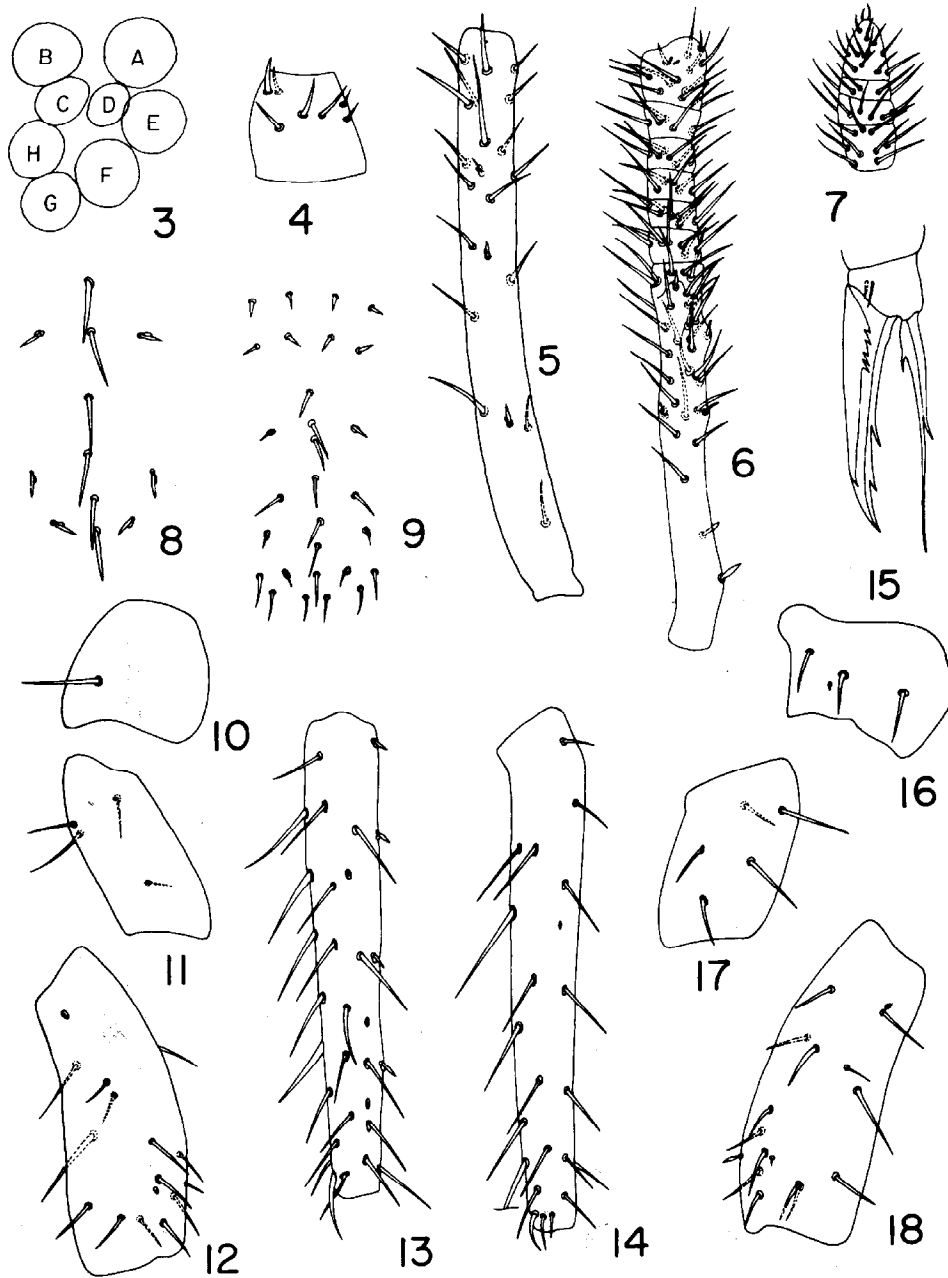
COLOR and PATTERN (♀): Background white to creamy-white with dark to light purple pigment laid down in polygons forming distinct patterns. Head with purple polygons on gena and vertex joining posteriorly to form a uniform pattern; interantennal area with dark purple polygons forming a rectangle, central area olive-yellow; genal groove from base of antenna to lower gena bordered with purple; lower frons with purple polygons forming a pattern with white maculae. Antennal segment I uniformly

purple; II basally purple,  $\frac{3}{4}$  distance from base a purple band, distally light olive; III purple for  $\frac{1}{2}$  its length, then light olive, purple distally; IV purple, becoming darker distally. Body with irregular purple polygons forming a broken pattern of transverse bands, well defined posteriorly; anal papilla mostly white, bordered with purple and dorsal spot. Legs banded irregularly with purple. Collophore with purple polygons basally, otherwise white. Furcula with light dusting of purple (Fig. 1-2).

HEAD: Eyes 8+8 with dark pigment; ocellus D  $\frac{1}{2}$  diameter of A, ocellus C  $\frac{3}{4}$  diameter of A, all others subequal to A (Fig. 3). Mean antennal ratio 1:5:5.5:1.5; ANT I with 6 dorsal and 1 ventral setae (Fig. 4); ANT II with 2 dorsal and 1 ventral cup sensilla (Fig. 5); ANT III divided into 7 subsegments, armed with cup sensilla, subapical sensilla exposed, lying in shallow depressions (Fig. 6); ANT IV divided into 4 subsegments (Fig. 7). Dorsal setae of head spine-like, but not outstandingly so; 6 unpaired facial setae (Fig. 8), sometimes 7 (Fig. 9); 1+1 oval organs on lower frons. FORELEG: Coxa with 1 seta, no oval organ (Fig. 10); trochanter with 2 anterior and 2 posterior setae (Fig. 11); femur with basal posterior and distal anterior oval organs, cup sensillum on outer margin (Fig. 12); tibiotarsus with 4 cup sensilla and 3 oval organs on anterior surface (Fig. 13), 1 oval organ on posterior surface (Fig. 14) and tenent hairs acuminate; pretarsus with anterior and posterior setulae; unguis lacks tunica, with small lateral teeth and 2 strong inner teeth; unguiculus with strong corner tooth, apical filament long and tapering beyond tip of unguis (Fig. 15). MESOLEG: Coxa with 3 anterior setae and 1 oval organ (Fig. 16); trochanter with 4 anterior and 1 posterior setae (Fig. 17); femur with anterior and posterior oval organs, cup sensilla on outer margin (Fig. 18); tibiotarsus with 5 cup sensilla and 3 oval organs on anterior surface (Fig. 19), 1 oval organ on posterior surface (Fig. 20); pretarsus with anterior and posterior setulae; unguis lacks tunica, with small lateral teeth and 2 strong inner teeth; unguiculus with strong corner tooth, apical filament tapering beyond tip of unguis (Fig. 21). METALEG: Coxa with 4 anterior setae and oval organ (Fig. 22); trochanter with 5 anterior and 1 posterior setae (Fig. 23); femur with anterior and posterior oval organs, cup sensillum on outer margin (Fig. 24); tibiotarsus with 5 cup sensilla and 1 oval organ on anterior surface (Fig. 25); differen-



Fig. 1-2. *Dicyrtoma (Ptenothrix) renatae* n. sp. 1. ♀ Habitus, lateral view; 2. Habitus, dorsal view.



*Dicyrtoma (Ptenothrix) renatae* n.sp. Fig. 3-18. 3. Right eyepatch; 4. ANT I; 5. ANT II; 6. ANT III; 7. ANT IV; 8. Unpaired facial setae, adult; 9. Unpaired facial setae, immature; 10. Forecoxa; 11. Foretrochanter; 12. Forefemur; 13. Foretibia, anterior view; 14. Foretibia, posterior view; 15. Foreclaw; 16. Mesocoxa; 17. Mesotrochanter; 18. Mesofemur.

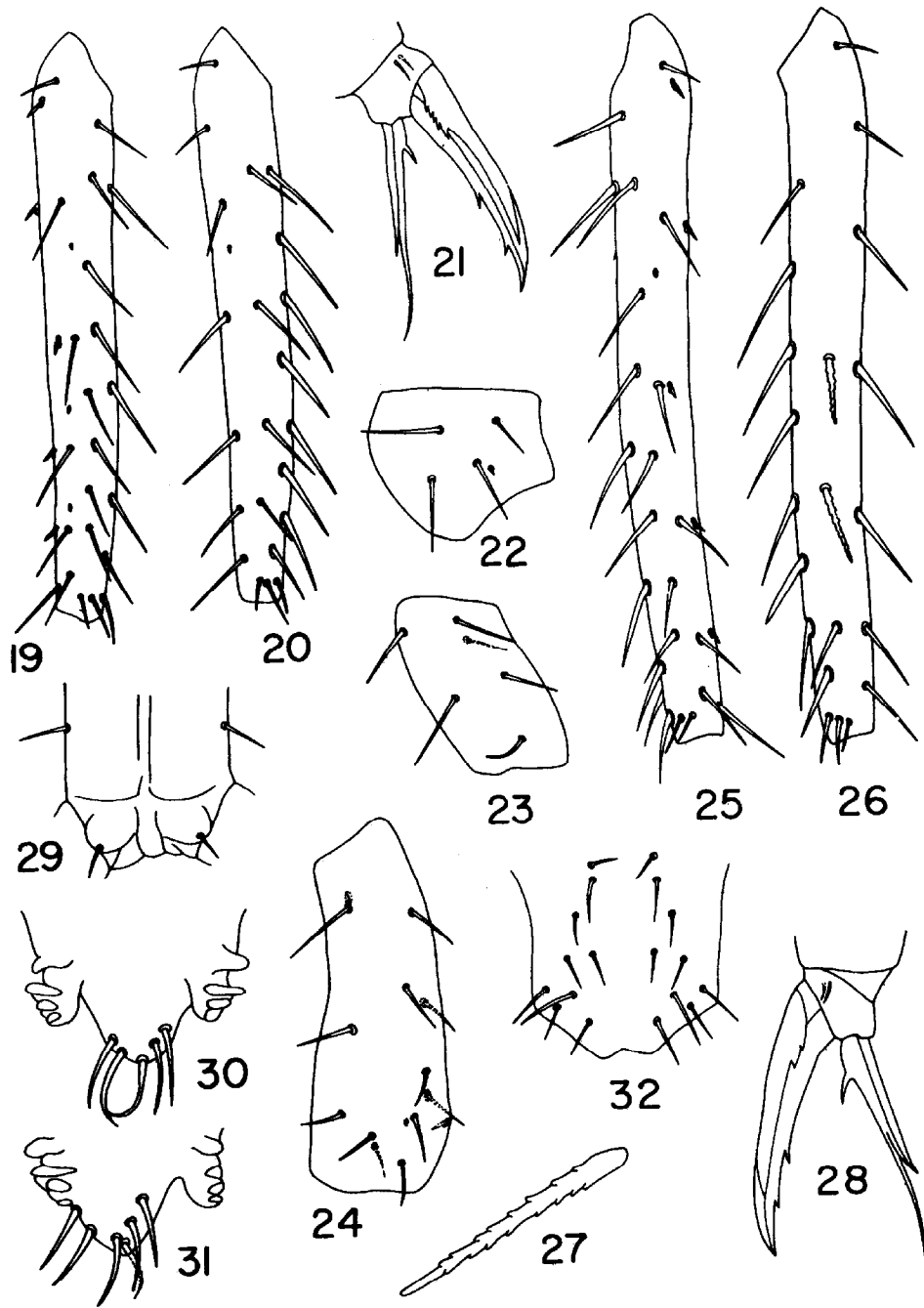


Fig. 19-32. 19. Mesotibia, anterior view; 20. Mesotibia, posterior view; 21. Mesoclaw; 22. Metacoxa; 23. Metatrochanter; 24. Metafemur; 25. Metatibia, anterior view; 26. Metatibia, posterior view; 27. Metatibia seta, detail; 28. Metaclaw; 29. Collophore, anterior view; 30. Retinaculum, normal; 31. Retinaculum, atypical; 32. Manubrial setae.

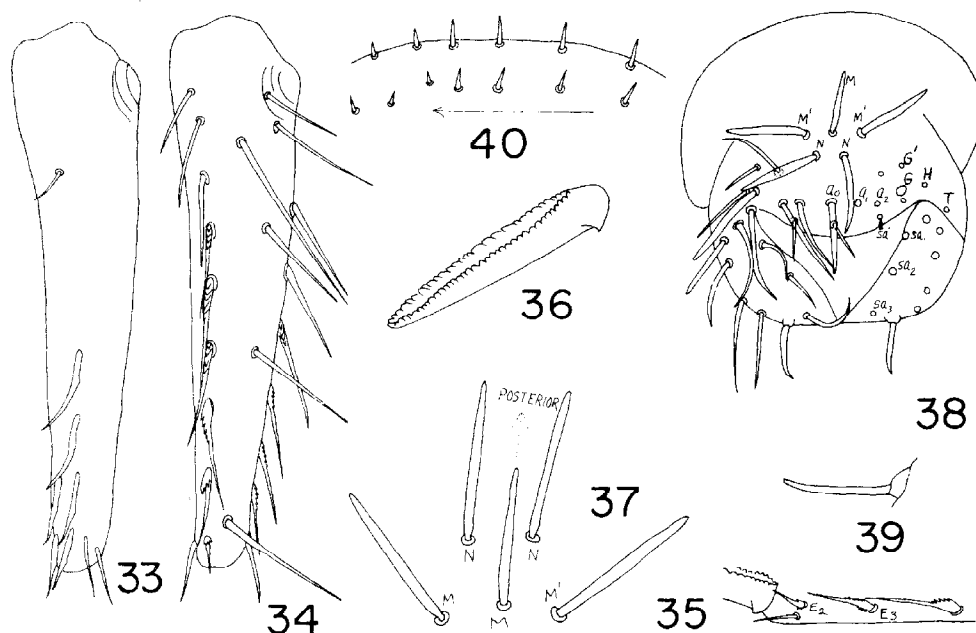


Fig. 33-40. 33. Dens, ventral view; 34. Dens, dorsal view; 35. Dental setae  $E_1-E_4$ ; 36. Mucro; 37. Supranal setae M-N; 38. ABD VI; 39. ♀ subanal appendage; 40. Dorsal setae of great abdomen, arrow indicates anterior direction.

tiated setae on posterior surface heavily serrate (Fig. 26-27); pretarsus with anterior and posterior setulae; unguis lacks tunica, with small lateral teeth and 2 strong inner teeth; unguiculus with strong corner tooth, apical filament tapering beyond tip of unguis (Fig. 28). GREAT ABDOMEN: Collophore with 1+1 subapical and 1+1 lateral setae (Fig. 29), sacs warty. Corpus of tenaculum with 5 setulae (Fig. 30), rarely 6 (Fig. 31), ramus with 3 teeth and horn. Manubrium with 9+9 dorsal setae (Fig. 32). Dens with 3-2-1-1  $V_e$  setae (Fig. 33), dorsal setae typical of genus (Fig. 34), E setae ratio  $E_1/E_2 = 1.69$  and  $E_3/E_2 = 2.70$  (Fig. 35). Mucro with inner and outer teeth, 23-30 outer and 37-43 inner (Fig. 36). Circumanal setae M, M' and N spine-like and smooth (Fig. 37), seta sa normal; other setae follow pattern for genus  $\begin{matrix} M & N & T & H & G & A_o & s_a \\ 3 & 2 & \pm & \pm & + & + & - \end{matrix}$  (Fig. 38). Female subanal

appendage acuminate, weakly curved (Fig. 39). Bothriotrix D present. Body setae short, dagger-like, becoming longer at midpoint of great abdomen (Fig. 40), only heavy spine-like, becoming longer at midpoint of great abdomen (Fig. 40), only heavy spine-like seta is DD, others thin, curving. Length up to 2mm.

DIAGNOSIS: *Dicyrtoma (Ptenothrix) renatae* Snider keys out closest to *Dicyrtoma (Ptenothrix) vittata* (Folsom) in Christiansen and Bellinger (1981). They recognized 4 subgenera based largely on setal patterns. Hence the subgenus *Dicyrtoma* is characterized by the presence of bothriotrix A and absence of D, 3-6 unpaired facial setae, 1 M and 4 N setae, and lacking antennal subsegmentation. *D. (Ptenothrix) renatae* has both bothriotrix A and D, 6-7 unpaired facial setae, 3M and 2N setae, and antennal subsegmentation is clearly defined. These characteristics place it in the subgenus *Ptenothrix*. However Christiansen and Bellinger (1981) state that within *Ptenothrix*, the unpaired facial setae number is 2, *D. (Ptenothrix) vittata* being the exception with 4-5. Besides color pattern, *D. renatae* can be separated from *D. vittata* using the following morphological characteristics:

*D. renateae*  
 Seta DD spine-like, others normal  
 Circumanal setae smooth  
 Corpus of tenaculum with 5-6 setulae  
 Circumanal seta G present  
 $E_1/E_2 = 1.69$ ,  $E_3/E_2 = 2.70$

*D. vittata*  
 DD normal?  
 Ciliate or serrate  
 4 setulae  
 G absent  
 $E_1/E_2 = 1.0$ ,  $E_3/E_2 = 2.30$

*D. (Ptenothrix) renateae* also shares common characteristics with *Dicyrtoma (Ptenothrix) texensis* (Packard). Both have and seta sa much smaller than  $A_o$ , supranal setae M and N spinelike, and weakly serrate dental setae. Number of unpaired facial seta, lateral teeth on unguis, ratios of  $E_1/E_2$  and  $E_3/E_2$  and numbers of tenacular setulae will readily separate the species.

TYPES: Holotype (♀) and 173 paratypes in alcohol; 9 paratypes mounted in CMCP-9 on slides. Holotype and 163 paratypes deposited in the Entomology Museum, Michigan State University; 10 paratypes in alcohol deposited in the Entomology Museum, the University of Georgia at Athens. Collection data: Georgia, Oglethorpe County, near Buffalo Creek on HWY 70/10E, under pines sweeping grass, "October 18, 1980", R. J. Snider, collector. South Carolina, Aiken County, Savannah River Plant, Road A, 50 meters from Upper Three Runs, grass sweeping, "November 12, 1980"; Barnwell County, Road B, 100 meters NE of Road A, grass sweeping (type locality); Ellenton, Small Pond, pine litter, R. J. Snider, collector.

I take pleasure in naming this elegant species for my wife, Renate Machan Snider, who has added to the hours of collecting and writing an enthusiasm for field studies that keeps us both looking for the unexpected.

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