SMINTHURUS INCognITUS, NEW SPECIES
FROM FLORIDA (COlLEMBOLA: SMINTHURIDAE)

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ABSTRACT

A new species, Smintthurus (Smintthurus) incognitus Snider and Loring, is described from Florida. This species is most closely allied to Smintthurus (Smintthurus) fitchi Folsom and Smintthurus (Smintthurus) argenteornatus Banks, but can easily be separated on the basis of numerous dental setae and metatibiotarsal setal pattern. The type locality is Collier County, Florida. Specimens were taken from Polygonum hydropiperioides Michaux.

RESUMEN

Se describe una nueva especie, Smintthurus (Smintthurus) incognitus Snider y Loring, para el estado de Florida. Esta especie es la más cercana a Smintthurus (Smintthurus) fitchi Folsom y Smintthurus (Smintthurus) argenteornatus Banks, pero puede ser separada fácilmente en base a lo numeroso de sus dientes denticulares y al patrón metatibiotarsal de setas. La localidad del tipo es Collier County, Florida. Los ejemplares fueron colectados de Polygonum hydropiperioides Michaux.

In 1970 Dr. E. S. Del Foss sent a collection of Collembola from the Lee County Hyacinth Control District to the senior author for identification. His samples came from semi-aquatic and aquatic plants located in Broward, Collier, Glades and Lee Counties. In the course of identification, an unusual Smintthurus sp. was detected. Several times during identification procedures the species name was changed to reflect recent publications on collembolan systematics. Finally, the co-investigator was asked to analyze the species in light of his research on the genus. He found several characteristics which separated it as a distinct species. The purpose of this report is to describe that new species. Setal nomenclature follows Christiansen and Bellinger (1981), except for metatibiotarsal setae, which use unpublished designations.

Smintthurus incognitus Snider and Loring, New Species

COLOR DESCRIPTION (♀): Background white. Antennal segments with light purple dusting, more coarsely distributed on segments I and II. Frons with faint blue-purple polygons becoming darker on gena. Postgena with dark purple polygons. Trunk with many light and dark purple polygons forming irregular patterns. Faint mid-dorsal stripe originating on meta-thorax and ending at midpoint of abdomen. Large, saddle-shaped maculation
Snider & Loring: Sminthurus incognitus

on posterior, made up of dark purple polygons, leaving a dorsal median area of white. Abdominal segment VI with purple delimiting 2 white spots. Laterally with alternating light and dark polygons. Legs with alternating light purple, becoming heavier distally. Furcula colorless. (Fig. 1 and 2). ∆ unknown.

Morphological Description, Head: Eyes 8 + 8; ocelli A and B sub-equal, twice diameter of C and D (Fig. 3). Antennal segment ratio 1:1.5:2.5:6; ANT IV with 15 subsegments (Fig. 4), subsegments V and VII-XII bearing 2 setulae (Fig. 5), III, IV and XIV with 1 setula, I, II and XV without setulae; single apical bulb present (Fig. 6); ANT III with 6 heavy setae (Fig. 7), subapical sensillae in deep invagination, accessory setae absent (Fig. 8); ANT II with 4 ventral setulae (Fig. 9); ANT I with 3 fine posterior distal setae and 4 anterior setae (Fig. 10). Interocular cephalic setae A-G typical of genus, seta D up to 3/4 diameter of nearest ocellus, lanceolate and ciliate (Fig. 11); rows F to G spine-like; 2 unpaired frontal setae (Fig. 12). Frons with 2 oval organs near antennal bases, 1 near seta D, other in line with seta A, a 3rd located on lower frons in line between unpaired frontal setae; 3 posterior oval organs forming a right triangle on lower postgena (Fig. 12).

Body: Foreleg coxa without oval organ (Fig. 13); trochanter with 2 anterior oval organs (Fig. 14), femur with 9 anterior and 7 posterior setae (Fig. 15). Mesopleg coxa with oval organ and 3 anterior setae (Fig. 16); trochanter with 2 oval organs, 5 anterior and 1 posterior setae (Fig. 17); femur with 1 posterior oval organ and 1 setula (Fig. 18). Metapleal coxa with oval organ and 3 setae (Fig. 19); trochanter with 2 oval organs, 5 anterior setae and 1 posterior setula (Fig. 20); femur with posterior oval organ and 2 setulae (Fig. 21); anterior surface of tibia lacking subapical pseudopore, AE file with 10 setae, seta E₁ 1.31-1.38 times as long as outer edge of unguis, seta A₁ 0.60-0.95 times as long as outer edge of unguis (Fig. 22), posterior surface with 3 pseudopores near external edge between PE setae, PI file with 9 setae, PE file with 8-9 setae, L setae heavy with

Fig. 1-2. Sminthurus incognitus n. sp. Habitus of holotype. 1) Lateral view; 2) dorsal view.
Fig. 3-23. *Sminthurus incognitus* n. sp. (All drawings are from Collier Co., Florida paratype). 3) Eye patch, right side; 4) ANT IV; 5) ANT IV subsegment showing position of setulae; 6) ANT IV, apical view; 7) ANT III; 8) detail of ANT III sense organ; 9) ANT II; 10) ANT I; 11) post-
Snider & Loring: Sminthurus incognitus

L₄ short, L₅ missing, tenent hairs PE₄ and AE₄ acuminate (Fig. 22 & 23). Pretarsus with anterior and posterior setulae; unguis with tunica, anterior and posterior pseudonychia, inner tooth, and outer basal tooth; unguculus with strong corner tooth, subapical filament tapering, unguculus 2.7-3.0 times length of its filament (Fig. 24); mesotarsus similar, foretarsal unguis with minute inner tooth, unguculus without corner tooth, approximately 1.42 times the length of its filament (Fig. 25). Collophore with 1 + 1 subapical setae, 1 + 1 lateral setae, no posterior oval organs, sacs warty (Fig. 26). Corpus of tenaculum with 4 setulae, ramus with 3 teeth (Fig. 27). Manubrium with 8 + 8 dorsal and 1 + 1 ventral setae (Fig. 28). Dens with 12 ID setae (either ID₁ or ID₂ may be lacking), with D₁ setae, 13 E file setae, 11-12 L file setae, Ve setae normal for genus (Fig. 29-30). Mucro with 12-15 inner teeth, outer edge smooth, basal seta 0.45-0.5 times its length (Fig. 31-32). Bothriotrichium D similar in length to VN seta and at least twice that of N seta (Fig. 33). Female circumanal setae A₁₋A₃, P and Q typical for genus (Fig. 34), single oval organ on lower valve and upper valve posterior-lateral to seta N₁; subanal appendages acuminate, curved in lateral view, gladiiform in ventral view (Fig. 35). Length 1.5 mm.

**Diagnosis:** *Sminthurus incognitus* Snider and Loring, the keys out nearest to *Sminthurus fitchi* Folsom and *Sminthurus argenteornatus* Banks in Christiansen and Bellinger (1981). The metatibiotarsal seta AI₂ (−L₂ of Christiansen and Bellinger) is 0.60-0.95 times as long as the outer edge of the unguis. For *S. fitchi*, L₂ is 1.0-1.2 and *S. argenteornatus* 0.89-0.90. Both *S. fitchi* and *S. argenteornatus* can easily be separated from *S. incognitus* by the following morphological characteristics:

<table>
<thead>
<tr>
<th>incognitus</th>
<th>fitchi</th>
<th>argenteornatus</th>
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<tbody>
<tr>
<td>6 E setae on metatibiotarsus</td>
<td>7 E setae</td>
<td>7 E setae</td>
</tr>
<tr>
<td>10 AE setae on metatibiotarsus</td>
<td>9 AE setae</td>
<td>9 AE setae</td>
</tr>
<tr>
<td>8-9 PE setae on metatibiotarsus</td>
<td>7 PE setae</td>
<td>7 PE setae</td>
</tr>
<tr>
<td>3 posterior pseudopores on tibiotarsus</td>
<td>4 pseudopores</td>
<td>4 pseudopores</td>
</tr>
<tr>
<td>13 E seta on dens</td>
<td>8 E setae</td>
<td>8 E setae</td>
</tr>
<tr>
<td>11-12 L setae on dens</td>
<td>7 L setae</td>
<td>7 L setae</td>
</tr>
<tr>
<td>12-15 inner teeth on mucro</td>
<td>7-14 weak teeth</td>
<td>8-10 teeth</td>
</tr>
<tr>
<td>outer edge smooth</td>
<td>outer edge smooth</td>
<td>8 weak outer teeth</td>
</tr>
<tr>
<td>1 + 1 lateral setae on collophore</td>
<td>1 + 1</td>
<td>0 + 0</td>
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In Stach (1956), *S. incognitus* keys out nearest *S. fitchi* and *Sminthurus packardi* Folsom. Separation from *S. packardi* can be accomplished on the basis of 16-17 ANT IV subsegments for *S. packardi* and 15 subsegments for *incognitus*; tibiotarsal seta E₁, 1.31-1.38 times as long as outer edge of unguis for *S. incognitus*, while it is 1.5-1.7 for *S. packardi*.

**Types:** Holotype and paratypes deposited in Entomology Museum, Michigan State University. Collection data: Holotype (♀) and 2 paratypes; Florida, Collier County, Bridge 120061, SR. 82, on Polygonum hydor-
Fig. 24-35. *Sminthurus incognitus* n. sp. (All drawings are from Collier Co., Florida paratypoy). 24) Proleg, claw; 25) metaleg, claw; 26) collophore; 27) tenaculum; 28) manubrial setae; 29) dens, dorsal view; 30) dens, ventral view; 31) mucro, dorsal view; 32) mucro, inner view; 33) bothriotrichium D complex; 34) female papilla, dorsal view; 35) female subanal appendage, lateral view.

*Piperiodes* Michaux, 02-III-1978, E. S. Del Fosse, collector, in alcohol. Paratypes: Glades County, Bridge 050031, SR. 29, on *Polygonum* sp., 28-VI-1978, E. S. Del Fosse, collector, 1 on slide; Lee County, Bridge 120060, on *Polygonum* sp., 02-XI-1977, 22-XI-1977, E. S. Del Fosse, collector, 2 on slides and 1 in alcohol.
Acknowledgements

Special thanks are offered to Dr. D. A. Crossley, Jr. and the Department of Entomology, University of Georgia at Athens for laboratory facilities. Thanks are also extended to Dr. Kenneth A. Christiansen for reviewing the manuscript. Mailing address of the senior author: Department of Zoology, Michigan State University, East Lansing, MI 48824 USA.

References Cited


ReRedescription of Sminthurus floridanus

MacGillivray, 1893 (Collembola: Sminthuridae)

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Abstract

Adequate numbers of Sminthurus floridanus MacGillivray were collected from grass sweepings at the Savannah River Plant, U.S. Department of Energy, Aiken, South Carolina to prepare a redescriptions of the species. Characteristics not presented in early reports include: presence of unequal pseudonymchae, 4 tenacular setae, macronal seta and acminate subanal appendage. Details of metatibiotarsal and dental setae are presented.

Resumen

Una cantidad adecuada de ejemplares de Sminthurus floridanus MacGillivray se recolectó en pastos, con red para atrapar, en la Plana del Rio Savannah, Departamento de Energia de los Estados Unidos, Aiken, Carolina del Sur, para preparar una nueva descripción de la especie. Algunas características que no se presentaron en informes anteriores incluyen: la presencia de pseudoniquias desiguales, cuatro (4) setas tenaculares, seta macronal y apéndice sub-anal acuminado. Se presentan detalles de las setas metatibiotarsales y las setas dentales.

Recently, preliminary field investigations at the Savannah River Plant, U.S. Department of Energy, Aiken, South Carolina, produced a remarkable collembolan species. For 88 years specialists have had to rely on incomplete descriptions and a single specimen of Sminthurus floridanus MacGillivray for identification purposes and systematic studies. While making grass