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## Radotanypus a new genus of Tanypodinae from the Nearctic

(Diptera, Chironomidae)

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The new genus *Radotanypus* is erected for *Anatopynia submarginella* Sublette (SUBLETTE, 1964) nec *Psectrotanypus (Apsectrotanypus) florens* (Johannsen) sensu Roback (ROBACK, 1971). Generic diagnoses are given for the pupa and adult male.

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### Introduction

The genus *Brundiniella* was erected by ROBACK (1978 a, b) for the species *Anatopynia (Apsectrotanypus) eumorpha* Sublette. The pupa of *Brundiniella eumorpha* Sublette was described by ROBACK (1978a) and is distinguished by a very characteristic thoracic horn and abdominal setation. In the same paper ROBACK (l. c., p.172) also described and tentatively placed an unusual, but related, pupal type in *Brundiniella*. Associated adult male and pupae of this latter species have recently been obtained (leg. Ferrington) and the unusual pupa described by ROBACK (l. c.) is now known to be that of the species *Anatopynia (Apsectrotanypus) submarginella* (Sublette). This species was synonymized with *Anatopynia (Apsectrotanypus) florens* (Johannsen) by ROBACK (1971) but is here considered a valid species again. Detailed comparison of the pupa of *Brundiniella eumorpha* with that of *A. submarginella* has revealed such differences in morphology that the erection of a new genus is warranted to accommodate *A. submarginella*.

Generic diagnosis for the pupa and a partial diagnosis for the adult male of *Radotanypus submarginella* (Sublette) gen. nov., comb. nov. are given in this paper.

### Radotanypus gen. nov.

Type species: *Radotanypus submarginella* (Sublette) by present designation.

Etymology: The name is derived from the last four characters from the state name of Colorado, where the associated male and pupae were recently found.

Diagnosis

Pupa (Fig. 1)

Exuviae about 8.0 mm in length, yellow brown in colour; thorax darker around the median suture, abdomen without specific markings.

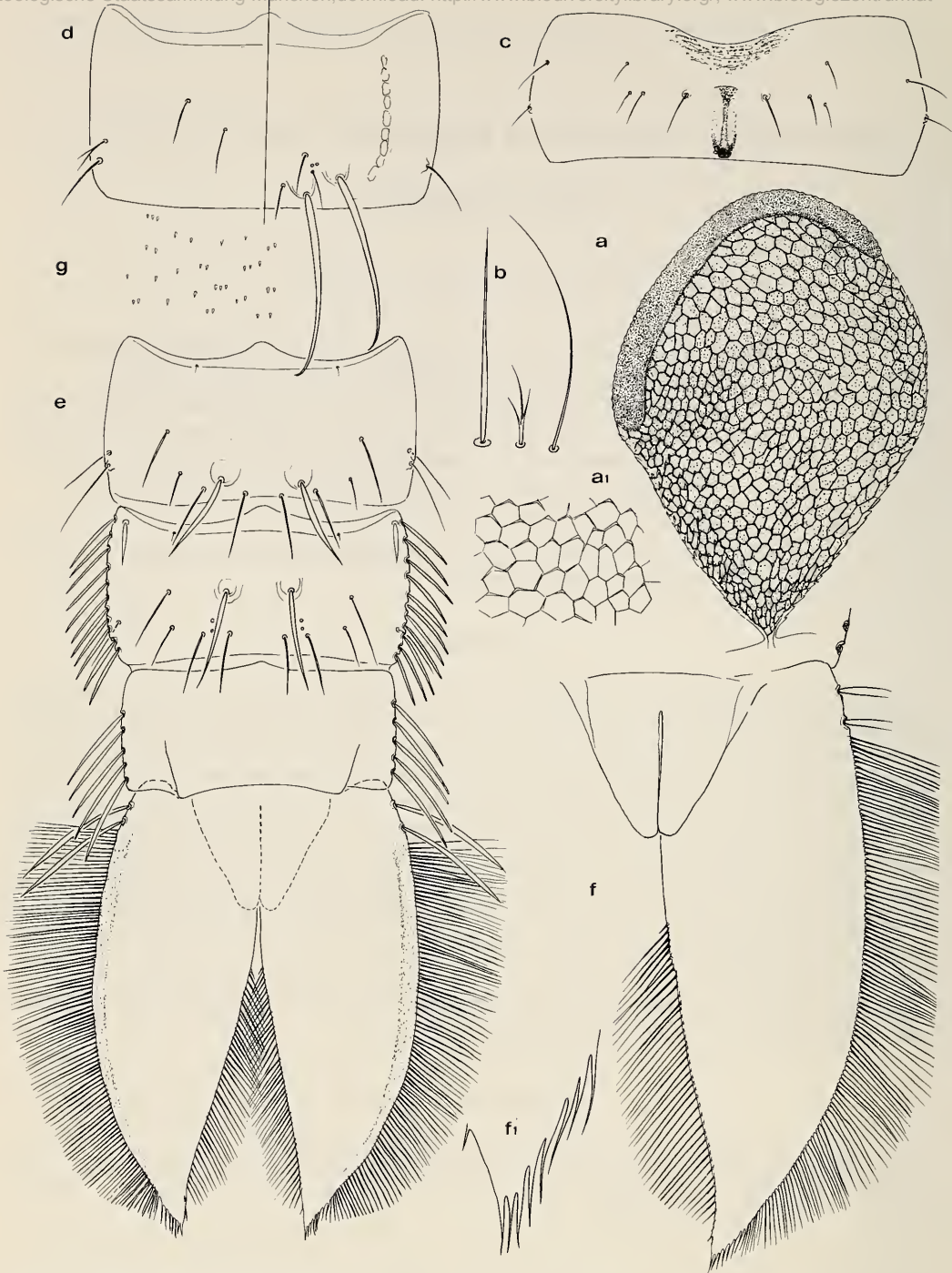


Fig. 1. *Radotanypus submarginella* (Sublette) gen. nov., comb. nov.; pupa. – a, a<sub>1</sub> thoracic horn. – b thoracic setae Dc 1, Dc 2, Sa. – c segment I, dorsal. – d segment IV, ventral/dorsal. – e segment VI–VIII and anal lobe. – f, f<sub>1</sub> anal lobe. – g shagreen of segment IV, dorsal.

Cephalothorax: Thoracic horn large, ovoid and flattened; longer than broad and broadest in the middle. Horn membrane reticulate, with spines interconnected at their bases forming broad scales. Hornsac fills the entire lumen, connected to the narrow plastron plate which forms a rim on the horn extending around at least  $\frac{3}{4}$  of the apical border. Thoracic membrane smooth apart from lateral ridges along the medial suture. Thoracic setae simple or branched. Dc 1 relatively robust, pointed distally; Dc 2 with 3–4 branches and approximately  $\frac{1}{3} \times$  Dc 1; Sa a little longer and more slender than Dc 1, pointed distally.

Abdomen: Tergite I with distinct elongate and pigmented scar,  $6 \times$  as long as wide. Shagreen on tergites composed of apically rounded spinules sparsely distributed over the surface. Posterior corners of segments II–VI with “pedes spurii”.

Abdominal setation: D setae of various forms, all D setae on segment I simple; D2, D3, on III–V elongate, hyaline and hooked, arising from distinct tubercles; D1 on VI and VII elongate, also arising from large tubercles. V setae mostly simple, occasionally branched on segments III and IV. Dorsal and ventral o setae noticeably long. L setae simple, pointed. LS setae absent on VI; 10–11 LS setae on VII, rounded distally; Segment VIII with 5 LS setae, anterior LS seta at 0.33 from base.

Anal lobe  $1.3 \times$  longer than broad, anal fin  $2.6$ – $2.9 \times$  as long as broad, convex on outer side, inner border more or less straight to slightly concave. Both inner and outer borders fringed. Apex of anal lobes serrate, with 2–3 long spinules. Genital sacs of male terminally round, reaching only 0.25 anal lobe length, median borders of genital sacs confluent along entire length.

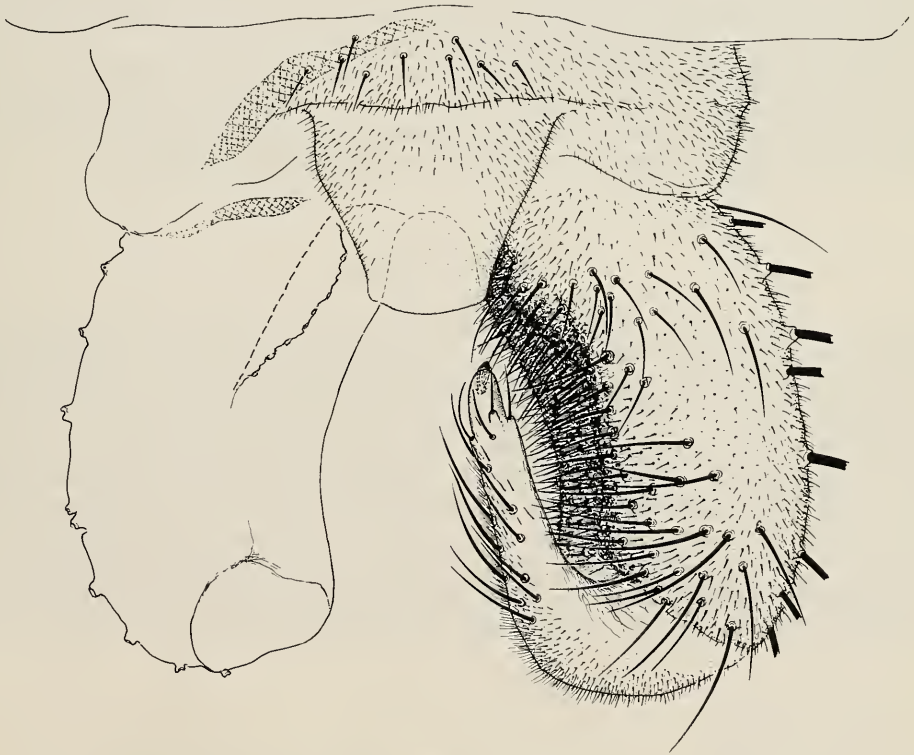


Fig. 2 *Radotanypus submarginella* (Sublette) gen. nov., comb. nov.; male hypopygium.

The following features, allied to the original description of the adult male of *A. submarginella* given by SUBLETTE (1964), may be regarded as characteristic for the new genus. Wings without spots or marks; legs without pigmented rings or bands; distal tooth on outer tibial spur of P III relatively short,  $\frac{2}{5}$  of the entire spur length.

Hypopygium: Tergite VIII slightly concave posteriorly and with an irregular row of 12/13 setae. Gonocoxite with a basal lobe on an otherwise concave inner border. Gonostylus gradually tapering but with an abrupt indentation before the apical tooth.

#### Material studied

1 adult male with associated Pe; 2 Pe. Beaver Dam on East River, 5.1 miles N of Gothic, Colorado, U.S.A., 13/VII/82, leg. Ferrington.

#### Comments

The pupa of *Radotanypus submarginella* comb. nov., gen. nov. bears a superficial resemblance to *Brundiniella* Roback but may be distinguished on the following characters (contrasting features for *Brundiniella* given in brackets). Thoracic horn broadest in middle, membrane reticulate and with scales (thoracic horn broadest in apical  $\frac{1}{3}$ , membrane non-reticulate, with spines); Dc2 branched (Dc2 simple).

All D setae on Sg I simple (two D setae on I branched); D2, D3 on Sgs III–V on very prominent tubercles (D2, D3 on III–V on less prominent tubercles); L setae on I–IV simple (branched); Sg VI with 4 LS setae (with 1 LS seta); Sg VII with 10–11 LS setae (with 7–10); Apex of anal lobe serrate (pointed); Anal fin convex on outer side only (biconvex); Genital sacs reaching  $\frac{1}{4}$  lobe length and medially confluent (reaching  $\frac{1}{3}$  lobe length and distally medially separate).

The adult male differs in the following respects: wings unmarked (with markings); Legs without pigmented bands (legs with bands); Tergite VIII with a posterior row of setae (without such setae); Gonocoxite with a basal lobe (without); Gonostylus gradually tapering towards the apex, with abrupt indentation (with distinct swelling on inner border and without abrupt indentation).

### Systematic position

*Radotanypus* belongs to the tribe Macropelopiini within the Tanypodinae and is apparently closely related to *Brundiniella* Roback. ROBACK (1971) placed *Anatopynia* (*Anatopynia*) *submarginella* Sublette as a synonym of *Psectrotanypus* (*Apsectrotanypus*) *florens* (Johannsen). In the original description the imago of *Tanypus florens* was described by JOHANNSEN (1908) as having “apex of femora and tibiae brown“. ROBACK (l. c.) also considers *A. florens* to have bands on the femora and tibiae. However SUBLETTE (l. c.) described the adult male and female of *Anatopynia submarginella* as having, among other characters, pale brown legs without femoral and tibial bands. The male imago here assigned to *Radotanypus* agrees in all respects with the original description of *Anatopynia submarginella* given by SUBLETTE (l. c., p. 103) and accordingly that species is now re-erected. The absence of clearly pigmented bands on the legs of *Radotanypus submarginella* (Sublette), together with the indented gonostylus and the basal lobe on the inner margin of the gonocoxite distinguishes this species from *A. florens* (Joh.).

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