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A new species of *Dicrotendipes* (Diptera: Chironomidae) from Costa Rica

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Abstract

The adult male of *Dicrotendipes baru* is described from the Dominical area of southwestern Costa Rica. The species is characterized by its elongate club-like superior volsella. This species represents the third member of the genus known from Costa Rica.

Introduction

Although *Dicrotendipes* is generally a widespread and common genus, only two species have been recorded from the Central American country of Costa Rica. *Dicrotendipes palearivillosus* Epler was described from the provinces of San Jose and Heredia by Epler (1988) and *D. californicus* (Johannsen) was recorded from the province of Guanacaste by Watson & Heyn (1992). This apparent deficiency is probably due to a combined paucity of collected specimens and chironomid systematists, a situation similar to that of Mexico as stated in Epler (1987b). This paper describes a third species from the province of Puntarenas, Costa Rica.

Methods

Morphological terminology and abbreviations follow Sæther (1980) and Epler (1988). Unless otherwise stated, measurements are given in μm. The structures on the inner wall of the cibarial pump previously referred to as 'cibarial setae' are termed cibarial sensillae in this paper; these minute structures appear to be sensilla chaetica and are not true setae. Epler (1987a, 1987b, 1988) gave a total number of dorsocentral setae from both sides of the thorax; this paper gives an average of the setae from both sides.

It must be noted that the venarum ratio, VR, given in my earlier papers (Epler 1987a, 1987b, 1988) was calculated incorrectly. In those papers the formula given in Soponis (1977) was followed. However, she had used the reciprocal of the original formula for VR as given in Fittkau (1954) and followed by Sæther (1980) (VR = length of CU divided by length of M). Correct VR values can be obtained by dividing the values given in my previous papers into one (i.e., 1/previous VR).

Species description

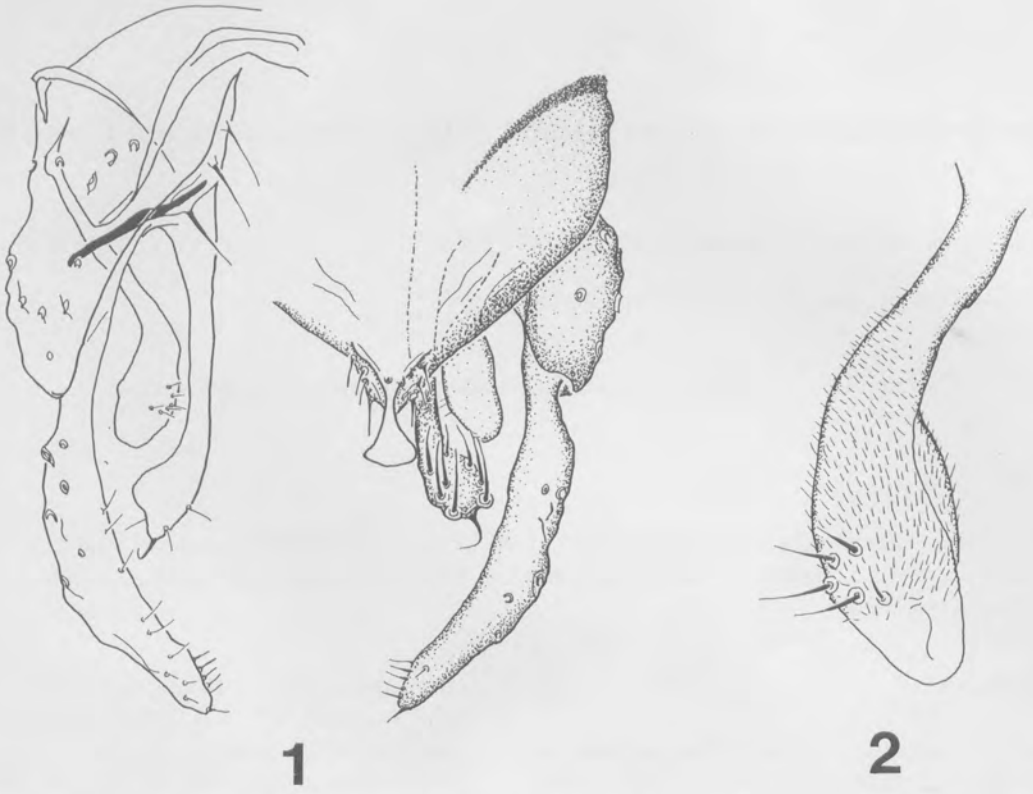
Dicrotendipes baru Epler, sp. nov.

Type locality Río Barú about 1 km north of Dominical.

Type material Holotype: male, COSTA RICA: Provincia Puntarenas, Río Barú about 1 km north of Dominical, 9° 15′ 51″ N, 83° 51′ 47″ W, UV light on Forestal Barú-Teca property, elevation 10 m, 29-V-1988, leg. J. H. Epler. Holotype (D420.1T), mounted on microscope slide in Canada balsam, to be deposited in Florida State Collection of Arthropods Chironomidae collection housed at Florida A & M University, Tallahassee, Florida, USA.

Etymology Named for the Río Barú, the type locality.

Diagnosis *D. baru* is distinguished from other Costa Rican species by its unmarked wings, inferior volsella with simple apex and elongate club-like superior



Figs 1–2. Dicrotendipes baru. Fig. 1: Hypopygium (left, ventral view showing internal apodemes; right, dorsal view). Fig. 2: Superior volsella, ventral view.

volsella with sensilla chaetica located medially.

Male imago ($n = 1$; holotype):

Color. Not noted before slide mounting. Wings immaculate.

Length. Total 3.31 mm; thorax 0.88 mm; abdomen 2.43 mm.

Head. Setae: temporal 15; clypeal 18. Cibarial sensillae 5. Palpomere lengths: 38; 38; 98; 137; 200. Frontal tubercles vestigial. AR 2.03.

Thorax. Scutal tubercle well developed; humeral pit with 2–3 small tubercles. Setae: acrostichals 4; dorsocentrals 8–10; prealars 4; scutellars 12.

Wing. Length 1.48 mm; width 0.44 mm. FCu distal to rm. VR 1.13. Setae: brachiolum 2; squama 4, R 19, R_1 9; R_{4+5} 14.

Legs. Foretarsal beard absent. 7 palmate sensilla chaetica on middle metatarsus, 0 on hind metatarsus. Lengths and proportions of legs:

	P_1	P_2	P_3
femur	800	680	750
tibia	600	610	820
ta_1	1070	330	530
ta_2	470	190	275
ta_3	405	120	205
ta_4	360	70	110
ta_5	160	55	70
LR	1.78	0.54	0.65
BV	1.77	3.72	3.18
SV	1.31	3.91	2.96

Abdomen. 1 ventral accessory seta on S V, 8 ventral accessory setae on S VI.

Hypopygium (Fig. 1). Gonostylus moderate, curved medially, with 5 preapical setae. Superior volsella (Fig. 2) length 70, width 20; elongate club-like; ventrally covered with microtrichia except for apical 1/4, dorsally bare; with 5–6 ventromedial sensilla chaetica. Inferior volsella length 110, apical width 20; simply clubbed; with 3–4 sensilla chaetica in two rows, with 1 well developed ventral preapical seta. Anal point bare

dorsally, deflexed, with 2 dorsobasal setae and 6 lateral basal setae.

Female and immature stages unknown.

Remarks. Dicrotendipes baru will key to couplet 4 in Epler (1988: 59); it can be distinguished by its elongate club-like superior volsella. Without examination of the unknown immature stages, it is not possible to ascertain its relationship to the other members of the genus. Considering the structure of the superior volsella, the species probably belongs in either the *modestus* group or the *nervosus* group (Epler 1988: 202–203).

When the holotype was collected, the area was a nursery for a teak plantation. This area has recently been developed as a resort. It is not known if the single adult that was collected emerged from the Río Barú, the nearby Quebrada Cascante or another water body. Nothing is known of its biology.

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