



DIAMPHIPNOA COLBERTI, A NEW STONEFLY SPECIES FROM CHILE, AND THE POSSIBLE FEMALE OF *DIAMPHIPNOPSIS BESCHI* ILLIES (PLECOPTERA: DIAMPHIPNOIDAE)

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ABSTRACT

Diamphipnoa colberti is described from a single male specimen recently collected in Maule, Chile. The new species differs from known members of the genus in the bifurcate and slightly expanded epiproct apex. The putative female of *Diamphipnopsis beschi* Illies is also described from a single female collected in Region X, Chile.

Keywords: Plecoptera, Diamphipnoidae, *Diamphipnoa*, Chile, new species, *Diamphipnopsis beschi*, female

INTRODUCTION

Diamphipnoa, an endemic genus of Patagonian stoneflies, includes the world's largest species of stonefly, *D. helgae* Illies (Illies 1960). Females of this species are reported by Illies (1960) to have wingspans of 112 mm, and forewing lengths up to 54 mm. Adults have distinctively mottled wings and legs, and nymphs are easily recognized by the presence of branched gills on the first four abdominal sterna. Three species have been recognized since Illies (1960) reviewed the genus but specimens are relatively uncommon, at least in North American museums. It was therefore, surprising to find among a small collection of South American stonefly material in the University of Guelph Insect Collection, a male specimen of a previously unknown species of *Diamphipnoa*. Because the known species are so well illustrated by Illies (1960), and because no additional specimens are available, I take this occasion to call attention to a remarkable new stonefly. The holotype is deposited in the University of Guelph Insect Collection, Guelph, Ontario, Canada.

When it became apparent the Guelph specimen represented an undescribed species, additional

specimens were sought from recent material collected by W.D. Shepard and colleagues from the University of California, Berkeley during fogging experiments in Chile. Only one diamphipnoid specimen, a female *Diamphipnopsis*, was included in this material and it was forwarded to me by R.W. Baumann, Brigham Young University for study. This specimen may represent the unknown female of *D. beschi* Illies, a species presently known from the holotype collected in 1958.

RESULTS AND DISCUSSION

Diamphipnoa colberti sp. n.

(Figs. 1-6)

Material examined. Holotype ♂ (pinned) from Chile, Maule, Pelluhue, along Rio Curanilahue, 26 November 2006, debu 00279411, S.A. Marshall (temporarily placed in the University of Guelph insect collection until a permanent depository in Chile can be arranged).

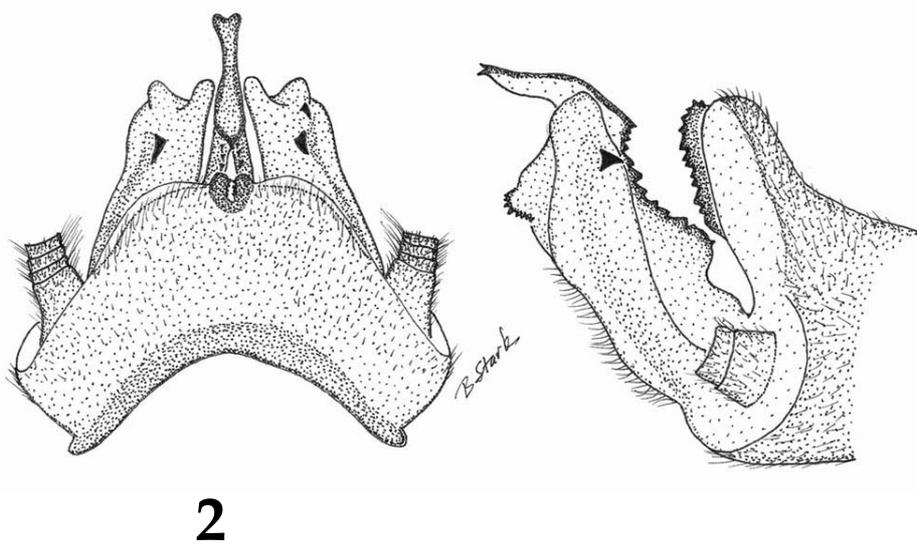
Adult habitus. Occiput and anterior frons dark but pale around eyes and at antennal bases. Pronotum mostly dark but pale marginal areas of thorax with

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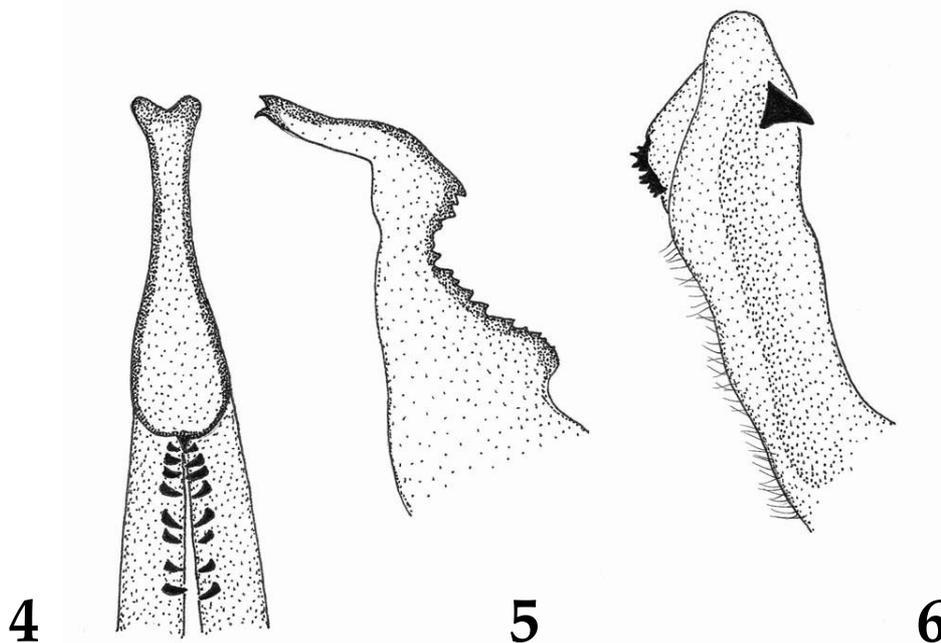
hint of red pigment (Fig. 1). Legs dark but with knee; tarsi black. Wings mottled. Cerci pale basally but dark in apical half.



Fig. 1. *Diamphipnoa colberti*, adult male. Photo by S.A. Marshall.



Figs. 2-3. *Diamphipnoa colberti* structures. 2. Male terminalia, dorsal, 3. Male terminalia, lateral.



Figs. 4-6. *Diamphipnoa colberti* structures. 4. Epiproct, dorsal, 5. Epiproct, lateral, 6. Paraproct, lateral.

Male. Forewing length 37 mm. Median apex of tergum 10 bearing a dark, U-shaped sclerite, prolonged on the caudal margin, and irregularly toothed along margin of tergum (Figs 2-3). Paraprocts apically bilobed and bearing 1 (right side) or 2 (left side) anterior spines (Figs. 2, 6); posterior margin of paraproct with a small, semicircular toothed sclerite bearing ca. 10 minute teeth. Epiproct apex shaped somewhat like the pistil of a flower with tip slightly expanded and notched in dorsal aspect, and bent caudad at a 90° angle in lateral aspect (Figs. 2-5); basal supports bear ca. 8-10 irregular teeth along dorsal margin and base of epiproct apex bears a single, median tooth which projects over basal supports.

Female. Unknown.

Larva. Unknown.

Etymology. I am pleased to honor an entertaining, provocative, former American presidential candidate, Stephen Colbert, of *The Colbert Report* with this patronym.

Diagnosis. This species is distinguished from other *Diamphipnoa* by the enlarged and notched dorsal

aspect of the epiproct apex. All known species have the tips rounded and lateral margins near the tip parallel.

Diamphipnopsis beschi Illies
(Figs. 7-8)

Diamphipnopsis beschi Illies, 1960:695. Holotype ♂ (Limnologische Flusstation, Schlitz). Pillaifa-Bergbach, Province Valdivia, Chile

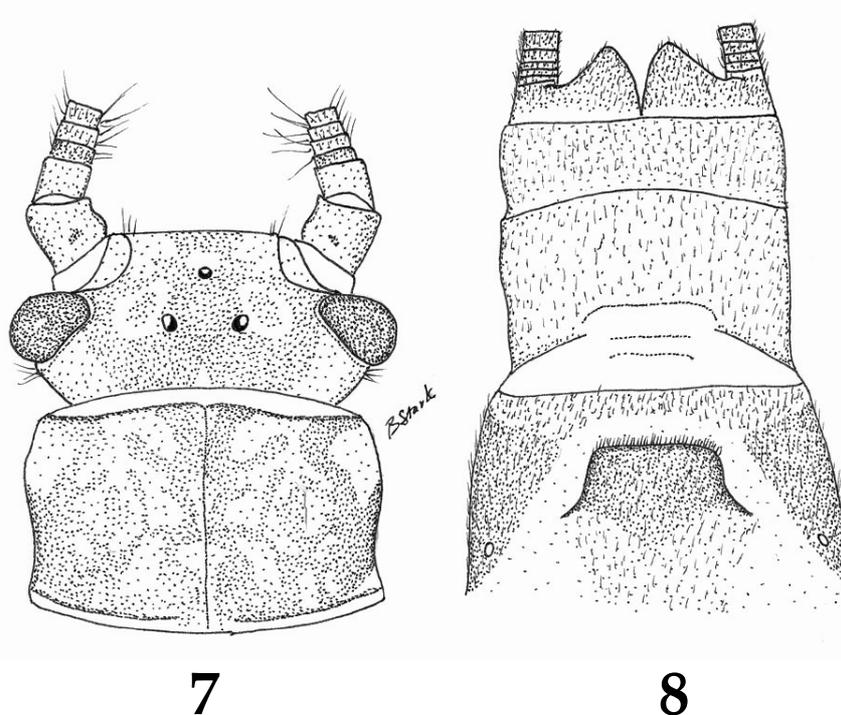
Material examined. Chile: X Region, Oncol P. Boniface Way, 606 m, 39° 41.979' S, 73° 18.938' W, 8 January 2007, Arias et al., 1 ♀ (University of California, Berkeley).

Adult habitus. General color grayish black with greenish background. Head dark over central frons and much of occiput (Fig.7); pronotum greenish with irregular dark markings on disk. Wing membrane pale with greenish tint and brown veins; margins with brown spots at ends of many veins. Legs greenish with scattered dark blotches.

Putative Female. Forewing length 25 mm. Subgenital

plate truncate along posterior margin with no hint of notch. Area surrounding plate membranous and

without setae, but posterior margin of sternum 8 with a sparse field of fine setae (Fig. 8).



Figs. 7-8. *Diamphipnopsis beschi* putative female. 7. Head and pronotum. 8. Female abdominal sterna 8-10.

Remarks. The basis for this species assignment are: 1) the subgenital plate is truncate rather than notched as shown for *D. samali* by Illies (1960), and 2) the forewing length is only 25 mm whereas Illies (1960) reports a range of 36-45 mm for *D. samali*. This specimen may still represent an atypical *D. samali* or an undescribed member of the genus. Additional specimens are needed to allow an evaluation of the status of this population.

ACKNOWLEDGMENTS

I am grateful to E. DeWalt who arranged for the *Diamphipnoa* specimen to be forwarded to me, and to the University of Guelph for their loan of the specimen. I also thank S.A. Marshall for the excellent image of the holotype and my Mississippi College colleague, D. Miller, for suggesting the patronym. I also thank R.W. Baumann, Brigham Young University, for forwarding the *Diamphipnopsis* specimen for my study, and W.D. Shepard and the

University of California, Berkeley for making the specimen available for study.

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Zoologisch-Botanische Datenbank/Zoological-Botanical Database

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