Status of *Calyptodesmus schubarti* Causey, 1960, a myrmecophilous milliped (Polydesmida: Pyrgodesmidae)

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Abstract

Calyptodesmus schubarti Causey, 1960, associated with the Imported Fire Ant in Florida, is considered to be a junior subjective synonym of *C. sanctus* Schubart, 1944, described from Sao Paulo, Brasil. The name *Anartiodesmus myrmophilus* Silvestri, 1947, based on material from Argentina, is likewise considered to be a synonym of *C. sanctus*.

Introduction

In a short paper devoted to "The Neotropical Millipeds in Florida" (but considering only polydesmoid species), Nell B. Causey (1960) described a supposedly new species of pyrgodesmid under the name *Calyptodesmus schubarti*, with the qualification that it, as well as several other local pyrgodesmids "...cannot be regarded as indigenous to Florida." No attempt was made to identify a possible country of origin aside from the observation that the only other species of the genus had been described from Sao Paulo, Brazil.

Having only a very marginal interest in pyrgodesmids, my own position vis-à-vis this situation was chiefly one of benign neglect until July, 1990, when I received from Dr. Daniel P. Wojcik a manuscript summarizing research conducted by him on the biology of *C. schubarti* as one aspect of his overall investigations of the Imported Fire Ant, *Solenopsis invicta* Buren. Being placed in the position of reviewer of his work more or less compelled a personal involvement with the case of *schubarti*, and this led at once to some interesting findings which are here briefly summarized. No attempt was made to reexamine type material of the names considered, since material submitted by Dr. Wojcik agreed in every detail with the drawings and description published by Causey as well as with similar information provided for the species (under a different name) by Silvestri (1947).

Causey's generic assignment of the Floridian material she studied to *Calyptodesmus* cannot be faulted, even though Schubart's description of his *C. sanctus* (1944) is not as precise as might be wished. She was, however, apparently unaware of Silvestri's 1947 work on South American termitophilous millipeds or of a subsequent paper by Schubart (1954) which noted that one of Silvestri's new genera was an obvious synonym of *Calyptodesmus*. Comparison of her account (and Floridian specimens) of *C. schubarti* with Silvestri's long description and superb drawings of his *Anartiodesmus myrmophilus* (1947: 2628, fig. XIII, 114) shows beyond any question that the two names are indeed based on the same species.

In showing that *Anartiodesmus* was a junior synonym of *Calyptodesmus*, Schubart (1954: 349) also considered the possibility that the two type species might also be synonymous but decided against it ("Pero las pequenas diferencias morpologicas existentes indican tal vez una diferencia mejor en los gonopodios"). It is not easy to identify these "small differences" from published accounts, as Schubart's drawings are quite schematic. I am in fact unable to find anything outside the range of individual variability or slight differences in artistic rendition, and suggest the following synonymy to encapsulate the taxonomy of the situation:

Calyptodesmus sanctus Schubart

Calyptodesmus sanctus Schubart, 1944, Acta Zool. Lilloana, 2: 368, fig. 38. Female holotype (Mus. Zool. Univ. Sao Paulo) from Cachoeira, Mun. Pirassanunga, Edo. Sao Paulo, Brasil.

Anartiodesmus myrmophilus Silvestri, 1947, Boll. Lab. ent. agr. Portici, 8: 27, fig. XIII, 114. Female holotype (Lab. ent. agr. Portici) from La Plata, Argentina. **New Synonymy.**

Calyptodesmus myrmecophilus [sic!]: Schubart, 1954, Notas Mus. Fac. Cienc. nat. Univ. nac. E. Peron [Zool.] 17: 349 [unintentional misspelling].

Calyptodesmus schubarti Causey, 1960, Florida Ent., 43: 148, fig. 1. Female holotype (Amer. Mus. Nat. Hist.) from Lake City, Columbia Co., Florida. **New Synonymy.**

The sole character adduced by Causey to support specific status for *schubarti* was the presence of three small tubercles on caudal margin of the metaterga, between the enlarged paramedian tubercle series. Such tubercles are not shown on her drawing, however, only a small, vague median tubercle which is also shown in Silvestri's drawings for *myrmophilus*, and which may be seen on Floridian specimens of *Calyptodesmus*. In view of the near total agreement in all details described or depicted for these three nominal species, I must conclude that (1) Schubart's drawing for *sanctus* is imprecise, (2) no convincing differences can be detected between any of them, and therefore (3) all three names are based upon a single species.

It is the more compelling that neither Schubart, Silvestri, nor Causey found males among their material, nor have any been found in the extensive series assembled by Dr. Wojcik. The species is obviously parthenogenetic and is readily transported, doubtless in soil with living plant material.

Silvestri (1947: 28) mentioned specimens from La Plata and Tucuman, Argentina, Puerto Bertoni, Paraguay, and Santa Maria (Edo. Sta. Catharina) Brasil. Schubart's material (1944: 369) was taken in Mun. Pirassanunga and Mun. Porto Ferreira (Edo. Sao Paulo), Brasil. Collectively, these records depict a rather extensive range for a small pyrgodesmid and perhaps imply passive, anthropochoric dispersal. Such a possibility must be taken as confirmed for the Floridian populations. Neither Causey nor Schubart mentioned association with ants, but Silvestri's specimens from Tucuman were found in the nests of an unidentified species of *Solenopsis*, and Dr. Wojcik finds a pervasive relationship between *C. sanctus* and *S. invictus* during his studies in Florida (in press).

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