



Revision, phylogeny and natural history of *Cotithene* Voss (Coleoptera: Curculionidae)

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Abstract

Cotithene Voss, a previously monotypic genus of Neotropical derelomine flower weevils (Curculionidae: Derelomini), is revised, with provision of a key to the species, cladistic analysis and notes on its natural history. The following six new species are described: *C. anaphalanta* (Costa Rica), *C. dicranopygia* (Costa Rica), *C. leptorhamphis* (Costa Rica, Panama), *C. melanoptera* (Venezuela), *C. stratiotricha* (Costa Rica) and *C. trigaea* (Costa Rica). The monophyly of *Cotithene* is supported by the characters of a dorsomedially expanded, carinate rostrum, ventrally angulate head, long and anteriorly directed setation on the anterior margin of the prosternum and an apicodorsally expanded aedeagus with paired sclerites in the male, and subcontiguous to separated procoxal cavities in the female. Particularly the males of several species have intriguing and allometrically scaled modifications on the head (triangular projections, long setae) and pronotum (expansion, tumescences), which possibly play a role in male-to-male conflicts. *Cotithene* species are specialized to visit and reproduce on a narrow range of typically closely related species of Cyclanthaceae. The adults do not function as pollinators, and the herbivorous larvae develop in the fruiting organs of their hosts, frequently triggering the abortion of infructescences. An analysis of 12 taxa (5 outgroup, 7 ingroup) and 32 morphological characters yielded a single most parsimonious cladogram (L = 38, CI = 89, RI = 93) with the topology (*C. dicranopygia*, (*C. stratiotricha*, ((*C. leptorhamphis*, *C. trigaea*), (*C. globulicollis* Voss, (*C. anaphalanta*, *C. melanoptera*))))). The evolution of morphological traits and host shifts is examined in light of the proposed phylogeny.