Abstract
Copulatory linking of male and female genitalic structures in 11 Neotropical species of Chrysomelidae and one species of Megalopodidae was studied by freezing and then dissecting pairs of beetles in copula. In Megalopus armatus (Megalopodidae) the male has a long endophallus with complex membranous protuberances and a terminal flagellum that probably reaches the spermatheca. In the subfamily Eumolpinae the females have telescoping ovipositors through which the male endophalli pass, reaching to or near the mouth of the spermathecal duct. A long thin flagellum is probably inserted into the spermathecal duct. The male endophalli are braced inside the female using various structures, including two pairs of lateral appendages and apical appendages (both lateral pairs sclerotized in Colaspis sanjoseana and only the basal pair in Brachypnoea irazuensis), a pair of membranous swellings (in Metaxyonycha amasia), and apical microspicules on the endophallus (in Xanthonia). In the subfamily Galerucinae, males of Metrioidea and Diabrotica (tribe Galerucini) have relatively short endophalli ornamented with sclerotized hooks, spines and needles. In Metrioidea elongata the long needle-like endophallic spines of the male were erected inside the female and penetrated the wall of her bursa. In the tribe Alticini, the male endophallus is very short and does not enter the female in two species, Alagoasa gemmata and Walterianella sp. Instead, the apical parts of the female bursae were everted, and were clamped by sclerites of the male median lobe. The male genitalia of Plectrotetra hirsuta reached deep into the female, to the median oviduct, far beyond the mouth of the spermathecal duct. Both rigid and membranous structures meshed in complex ways. When these observations are combined with published descriptions of mating in other Chrysomelidae, the great diversity of copulatory morphology in these families comes into sharper focus

Keywords
Genitalia, sexual selection, copulation, Chrysomelidae, Megalopodidae