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Biology of the Apionidae (Coleoptera: Curculionoidea) in New Caledonia, a preliminary report

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Abstract

Host records on the weevil family Apionidae in New Caledonia are summarised, based on field observations in 2004–2010, and supplemented with dates of collecting freshly emerged adult specimens obtained from museum collections worldwide. At the genus level, the following generalised host associations of the Apionidae have been documented: *Rhadinocyba* (only the *Rh. singularis*-species group), *Megatracheloides* and *Himantapion* with *Hibbertia* (Dilleniaceae); *Discelapion*, *Thyridapion* and *Pterapion* (*s. str.*) with *Pycnandra*, *Planchonella*, and *Beccariella* (Sapotaceae); *Apterapion* with *Codia* (Cunoniaceae); *Hellerenius* and *Caledonapion* with *Hedycarya* (Monimiaceae); *Anapotapion* with *Piper* and *Macropiper* (Piperaceae), *Sterculapion* with *Commersonia* (Malvaceae). Various species of *Tetrapion* were collected either from *Codia* (Cunoniaceae) or *Guioa*, *Cupaniopsis* (Sapindaceae). Recorded associations of *Diapion* with *Ficus* (Moraceae), and *Zimmius* with *Cryptocarya* (Lauraceae) still need confirmation. Two generations per season are likely in members of at least *Rhadinocyba*, *Megatracheloides*, and *Pterapion*, judging from the extended period of appearance of teneral specimens. The subgenus *Apterapion* Wanat, 2001 of *Pterapion* Faust, 1889 is raised to genus rank, with type-species *Apterapion hamiota* (Wanat, 2001).

Key words: Apioninae, Rhadinocybinae, Australo-Pacific, taxonomy, biology, host plants, phenology

Introduction

New Caledonia is known as one of several important biodiversity hot spots in the world, largely for its enormous floristic richness and rate of endemism (ca. 75%). The fauna, well known for many groups conforming to the Darwinian island concept (Grandcolas *et al.* 2008), remains very unevenly and, in general, scantily studied for invertebrates, particularly the insects. Among beetles, just a few groups can be considered as sufficiently known, meaning that the number of undescribed species is considerably smaller than the number of described species. Examples of such better known groups include the recently studied water beetles (Jäch & Balke 2010), scarabs (Paulian 1991), tiger beetles (Deuve 1981), and the histerid beetle subfamily Chlamydopsinae (Caterino 2006). As for major beetle lineages, including phytophagous taxa, taxonomic work is in progress for some groups such as the leaf beetles (Jolivet & Verma 2008; 2009) and the weevils (Curculionoidea (Kuschel 1994; 2008).

Several smaller orthocerous weevil families and subfamilies from New Caledonia have been recently catalogued and in part taxonomically studied by Kuschel (1994; 1998; 2008). They comprise 71 named species as follows: Nemonychidae—3, Anthribidae—57, Aglycyderinae—3, Rhynchitinae—1, Brentidae—8. Other groups of orthocerous weevils (Belinae, Oxycoryninae, Attelabinae, Caridae, Eurhynchidae) have never been found on New Caledonia, though they selectively occur in proximal lands, like Australia, New Guinea, Sunda Archipelago, or New Zealand. On the other hand, the family Apionidae is by far more diverse on mainland New Caledonia (Grande Terre), but studied to a much lesser extent. With approximately 160 species currently identified in available material by the senior author, of which only 27 have been named, it is the second largest weevil family in