

Review of the biology and host plants of several species of *Pterolophia* Newman, 1842 (Coleoptera: Cerambycidae) from Papua New Guinea and the Solomon Islands

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Abstract: The biology and host plants of 5 identified species and several unidentified species of the genus *Pterolophia* Newman, 1842 (Coleoptera: Cerambycidae: Lamiinae) from Papua New Guinea and the Solomon Islands are reviewed in this paper. Data for most species are rather limited but the genus as a whole appears to be polyphagous. *Pterolophia* species appear to be of generally minor economic importance, at least in Papua New Guinea and the Solomon Islands.

Key words: *Pterolophia*, Cerambycidae, Coleoptera, host plants, Papua New Guinea, Solomon Islands.

Introduction

The genus *Pterolophia* Newman, 1842 (Coleoptera: Cerambycidae: Lamiinae; type species *Mesosa biggibera* Newman, 1842) is a relatively large group of over 100 species of small to medium-sized mostly brown and often lightly patterned longicorn beetles with a distribution centering in the Papuan-Oriental/South-east Asian-Pacific regions of the world (e.g. Cherepanov, 1990; Monné & Giesbert, 1995; Nishida, 2002). Very little has been described previously on the biology of the various species and the taxonomy of the group is also poorly known. Vitali & Casadio (2007) have recently provided a key to the species of *Pterolophia* from the Solomon Islands. A review of the published literature of the biology and larval host plants and general biology of several species of *Pterolophia* from Papua New Guinea and the Solomon Islands are provided below for the first time.

Biological Review

Pterolophia arrowiana Breuning, 1938

Distribution: Papua New Guinea.

Host-plant: (?) *Cocos nucifera* L. (Arecaceae)(Anon., 1971).

Biology: Anon (1971) noted an adult resting on coconut fronds but there appeared to be no indication of any strong association with this plant (see below).

Life-stages: The egg, larva and pupa have not been described.

Published collection records with biological data: Dagi, West New Britain Province, May 1967, (collector not cited), resting on fronds of coconut trees [*Cocos nucifera* L., Arecaceae](Anon., 1971: 184).

Pterolophia duplicata (Pascoe, 1865)

Distribution: Papua New Guinea, Solomon Islands.

Host-plants: (?) *Populus* sp. (Salicaceae) and *Araucaria cunninghamii* Ait. ex D. Don (Araucariaceae)(Gray & Wylie, 1974).

Biology: Gray & Wylie (1974: 72) noted that several scattered young Hoop Pine (*A. cunninghamii*) in a plantation near Bulolo, Morobe Province, had exhibited dieback of one or two branches, which was usually due to the beetle and other insects boring along the pith; several adults were also collected from a moribund *Populus* sp. tree (see below) which was infested with the fungus *Fomes noxious* (Polyporaceae).

Life-stages: The egg, larva and pupa have not been described.

Published collection records with biological data: Nauwata Banda Logging Area, Bulolo, Morobe Province, 15 Sept. 1967, B. Wills, larvae boring up branch of *Araucaria cunninghamii* Ait. ex G. Don. (Araucariaceae)(Gray & Wylie, 1974: 72); Bulolo, Morobe Province, 12 Nov. 1967, B. Gray, attracted to house light (Gray & Wylie, 1974: 72); Forest Research Station garden, Bulolo, Morobe Province, 28 Sept. 1970, B. Gray, on branch of moribund *Populus* sp. (Salicaceae)(Gray & Wylie, 1974: 72).

Pterolophia mediochracea Breuning, 1938

Distribution: Papua New Guinea.

Host-plants: (?) *Coffea arabica* L. (Rubiaceae)(Szent-Ivany, 1958); *Theobroma cacao* L. (Sterculiaceae)(Szent-Ivany, 1961; Van Greve & Ismay, 1983).

Biology: Szent-Ivany (1958: 434) noted that this species was found in various coffee (*Coffea arabica* L.) plantations in the Eastern Highlands Province and that the larva was a suspected stem borer of young coffee trees. Szent-Ivany (1961: 137) further noted that this species was one of a number of Cerambycidae which invaded cacao plantations (*Theobroma cacao* L.) in Papua New Guinea during the Second World War but provided no other details. Van Greve & Ismay (1983: 10) observed an adult of the species chewing on a leaf and the main stem of *Theobroma*, on Goodenough Island, Milne Bay Province (see also below).

Life-stages: The egg, larva and pupa have not been described.

Published collection records with biological data: Nuatutu Plantation, Goodenough Island, Milne Bay Province, Dec. 1971, (collector not cited), chewing on leaf and main stem of *Theobroma cacao* L. (Sterculiaceae)(Van Greve & Ismay, 1983: 10).

Pterolophia subsellata (Pascoe, 1865)

Distribution: Papua New Guinea.

Host-plant: (?) *Citrus aurantiifolia* (Christm.) Swingle (Rutaceae)(Anon., 1969).

Biology: Anon (1969: 60) noted an association with lime trees (see below) but it is not clear whether this should be regarded as an adult or larval host plant record or just an incidental perching observation.

Life-stages: The egg, larva and pupa have not been described.

Published collection records with biological data: Popondetta, Northern Province, Feb. 1967, (collector not cited), from lime trees [*Citrus aurantiifolia* (Christm.) Swingle] (Rutaceae)](Anon., 1969: 60).

Pterolophia variabilis (Pascoe, 1859)

Distribution: Papua New Guinea.

Host-plant: (?) *Citrus aurantiifolia* (Christm.) Swingle (Rutaceae)(Anon., 1969).

Biology: Anon (1969: 60) noted an association with lime trees (see below) but it is not clear whether this should be regarded as an adult or larval host plant record or just an incidental perching observation.

Life-stages: The egg, larva and pupa have not been described.

Published collection records with biological data: Popondetta, Northern Province, Feb. 1967, (collector not cited), from lime trees [*Citrus aurantiifolia* (Christm.) Swingle](Rutaceae)](Anon., 1969: 60).

Pterolophia sp. 1.

Distribution: Papua New Guinea.

Host-plant: (?) *Saccharum officinarum* L. (Poaceae)(Anon., 1969).

Biology: Anon (1969: 63) noted that an adult of an unidentified species of *Pterolophia* was collected on sugar cane (*Saccharum officinarum* L.) at Popondetta, Northern Province, but that its relationship with sugar cane was not known for certain.

Life-stages: The egg, larva and pupa have not been described.

Published collection records with biological data: None available.

Pterolophia sp. 2.

Distribution: Solomon Islands.

Host-plant: *Camptosperma brevipetiolata* Volk. (Anacardiaceae)(Bigger, 1982).

Biology: Bigger (1982: 254) briefly noted that larvae of an unidentified species of *Pterolophia* bored into dead shoots of *Camptosperma brevipetiolata* that had been killed by the bug *Amblypelta cocophaga cocophaga* China (Hemiptera: Coreidae) in the northern Solomon Islands.

Life-stages: The egg, larva and pupa have not been described.

Published collection records with biological data: None available.

Pterolophia sp. 3.

Distribution: Papua New Guinea.

Host-plant: *Araucaria cunninghamii* Ait. ex D. Don (Araucariaceae)(Wylie & Shanahan, 1976).

Biology: Wylie & Shanahan (1976: 379) noted that two fire-scorched *Araucaria cunninghamii* trees were attacked by an unidentified species of *Pterolophia* and that the tunnelling by the larvae caused grooving of the outer sapwood of both trees and that a pupal chamber was found just below the sapwood surface; an exit hole about 4.0 mm in diameter was noted 6 months after the fire and two adults were collected on the bark of another tree in the research plot at Bulolo, Morobe Province.

Life-stages: The egg, larva and pupa have not been described.

Published collection records with biological data: None available.

Discussion

The genus *Pterolophia*, as previously mentioned, is very widespread with numerous species, many of which remain undescribed. The available literature (mostly reviewed here) indicates that the genus is polyphagous in the larval state and that a wide variety of economic species are attacked. However, generally *Pterolophia* appear to be mostly minor pests of agriculture and their outbreaks are easily controlled. In Papua New Guinea, *P. duplicata* (Pascoe) and *Pterolophia* species no. 3 appear to be closely associated with *Araucaria* (Araucariaceae), causing localized dieback of trees (Gray & Wylie, 1974; Wylie & Shanahan, 1976). Since Bigger's (1982) record of *Camptosperma* being attacked by an unidentified species of *Pterolophia*, there appear to be no further records of this host relationship. There have also been no additional published records of *P. mediochracea* Breuning attacking cacao (*Theobroma cacao* L.) since the earlier observations of Szent-Ivany (1958, 1961). For all of the other species and records from Papua New Guinea reviewed here, there have also been no verifications of these tenuous observations. In more recent years, there have been a few studies/records on the biology and host plants of *Pterolophia* species found elsewhere, e.g. Desmier de Chenon, Asj'ari & Kitu (1990, 1991), Zhan, Yin & Gui (1996) and Yamazaki & Takakjura (2002). There is obviously an almost unlimited amount of biological research yet to be undertaken on these cryptically-coloured cerambycids.

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