

THE DISTRIBUTION OF *AMBLYPELTA* Stål SPECIES (HEMIPTERA: COREIDAE) IN PAPUA NEW GUINEA

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ABSTRACT

Amblypelta is a genus of twenty known described species, eight of which occur in Papua New Guinea. As true bugs they have piercing and sucking mouthparts and, in this country, four species are important pests of horticultural crops. Using literature sources and label data from museum specimens, distribution records for *Amblypelta* species within Papua New Guinea were collated. The genus is widely distributed in the lower altitudes of the mainland and parts of the New Guinea islands. It is absent from the highland provinces. The greatest species diversity occurs in Central, Milne Bay and Oro provinces with a high degree of species overlap in these areas. *Amblypelta* from the North Coast provinces and Bougainville province are distinct from the remaining Papua New Guinea fauna. Absence of *Amblypelta* records from Western, West New Britain and Manus provinces may be a result of lack of collection from these areas, rather than a true absence, and further collection in these provinces is warranted.

Keywords: *Amblypelta*, Papua New Guinea, National Agricultural Insect Collection, distribution, locality

INTRODUCTION

Amblypelta (Order: Hemiptera, Family: Coreidae) is a genus of twenty described species, of which seven are represented by subspecies (Ero 2002a). Many species within the genus are serious pests of a range of crops across multiple plant families. The insects are sap feeders with piercing and sucking mouthparts enabling them to pierce fruits and soft stems.

According to Ghauri (1984), Smith (1984) and Ero (2002b), the *Amblypelta* species are widely distributed throughout parts of the Australasian region (Solomon Islands, Vanuatu, New Caledonia, Australia, Papua New Guinea and Indonesia). Eight species of *Amblypelta* species (*A. ardleyi* Brown, *A. bukhari* Ghauri, *A. madagana* Brown and Ghauri, *A. theobromae* Brown, *A. cocophaga cocophaga* China, *A. costalis szentivanyi* Brown, *A. gallegonis bougainvillensis* Brown and *A. lutescens papuensis* Brown) occur in Papua New Guinea (PNG) (Ero 2002b). *Amblypelta cocophaga cocophaga* is a subspecies of *A. cocophaga malaitensis* Brown which occurs in the Solomon Islands; *A. costalis szentivanyi* is a subspecies of *A. costalis costalis* Van Duzee and *A. costalis renellensis* Brown that occur on Bellona Island and Rennel Island respectively; *A. gallegonis bougainvillensis* is a

subspecies of *A. gallegonis gallegonis* Lever that occurs in the Solomon Islands and *A. lutescens papuensis* is a subspecies of *A. lutescens* Distant that occurs in Australia and Indonesia (Ghauri 1984).

The general distribution of *Amblypelta* species in PNG, is considered to cover the lower altitudes of the mainland and parts of the outer islands (Smith 1984, Ero 2002b). However, precise information on the distribution of the PNG *Amblypelta* species is scattered across the literature and further, some species are poorly documented. This paper gives collated distribution records from the literature and collection records from specimens deposited at the National Agricultural Insect Collection (NAIC), Port Moresby. This forms a comprehensive distribution record for *Amblypelta* species in PNG and establishes occurrence records for the pest species.

MATERIALS AND METHODS

The collection data for all identified specimens of *Amblypelta* deposited in the National Agricultural Insect Collection (NAIC) at Kila Kila, Port Moresby, were collated. Regional collections (Forest Research Institute Insect Collection and National Agricultural Research Institute station collections) were searched but no identified *Amblypelta*

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specimens were found. Relevant literature sources were also scanned for records.

RESULTS

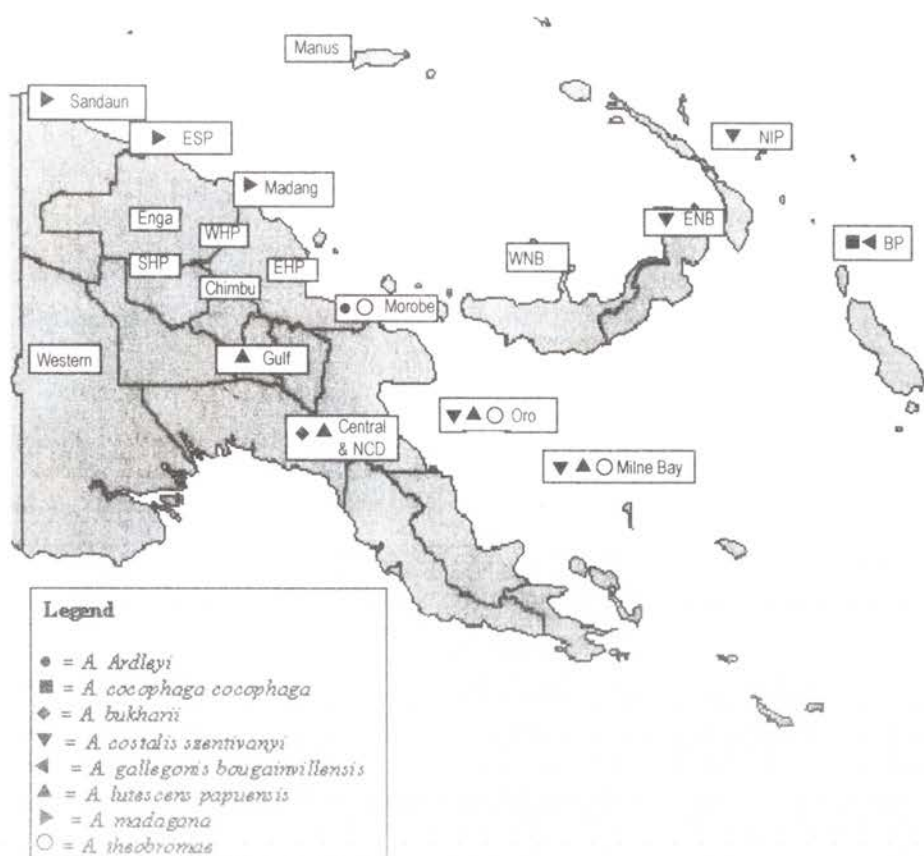
In PNG, the distribution of *Amblypelta* is restricted to the lower altitudes of the mainland and the adjacent islands (Table 1, Figure 1). *Amblypelta gallegonis bougainvillensis* and *A. cocophaga cocophaga* are restricted to the island of

Bougainville, although the latter species also occurs in the neighbouring Solomon Islands from where the type species was described (Brown 1958). Other apparently restricted species include *A. bukharii*, which is known only from the type locality in the Central Province, and *A. ardleyi*, only collected from Morobe Province. *Amblypelta madagana* is restricted to the northern part of the mainland (Madang, East Sepik and Sandaun provinces), while *A. lutescens papuensis* only occurs in the southern region (Central, Gulf, Oro and Milne Bay provinces).

Table 1. Locality records of *Amblypelta* species in Papua New Guinea

[Sources: Brown 1958; Szent-Ivany & Catley 1960; Smith 1984; NAIC label data]

<i>A. ardleyi</i> [Morobe Province: Bubia (6°45'S 146°58'E), Lae (6°44'S 147°00'E)]	<i>A. gallegonis bougainvillensis</i> [Bougainville Province: Numa Numa (5°52'S 155°16'E), Kieta (6°13'S 155°38'E), Buin (6°50'S 155°44'E), Boku (6°34'S 155°21'E), Sevele, Kokorei, Kokure, Mosigeta (6°32'S 155°19'E), Simba, Torokina (6°14'S 155°03'E), Siara]
<i>A. cocophaga cocophaga</i> [Bougainville Province: Gagani (5°14'S 154°37'E), Sohano (5°26'S 154°40'E), Tanaboia, Numa Numa (5°52'S 155°16'E), Aroa]	<i>A. lutescens papuensis</i> [Oro Province: Mt. Lamington (8°56'S 148°10'E); Milne Bay Province: Samarai (10°37'S 150°40'E); Central Province: Bisianumu (8°43'S 147°25'E), Brown River (9°15'S 147°05'E), Baubauguina (10°07'S 148°44'E), Itikinumu (9°25'S 147°31'E), Maraboi, Ninoa (9°28'S 147°28'E), Lolorua (8°57'S 146°57'E), Subitana (9°25'S 147°32'E), Veimauri (9°02'S 147°03'E), Laloki (9°24'S 147°18'E), Kanosia (8°59'S 146°58'E), Sogeri (9°25'S 147°25'E), Doa (8°57'S 146°58'E), Tapini (8°22'S 146°59'E), Hula (10°05'S 147°43'E); National Capital District: Boroko (9°28'S 147°12'E), Konedobu (9°28'S 147°09'E); Gulf Province: Peto (7°57'S 145°45'E), Karaita, Kerema (7°58'S 145°46'E), Murua (7°55'S 145°50'E)]
<i>A. bukharii</i> [Central Province: Brown River (9°15'S 147°05'E)]	<i>A. madagana</i> [East Sepik Province: Magafin; Sandaun Province: Aitape (3°08'S 142°21'E); Madang Province: Bogia (3°08'S 142°21'E), Bogadijim (5°26'S 145°44'E)]
<i>A. costalis szentivanyi</i> [East New Britain Province: Kerevat (4°20'S 152°04'E); Milne Bay Province: Normanby Island (10°00'S 151°00'E), Oro Province: Isaveni (8°45'S 148°08'E), Kokoda (8°54'S 147°47'E), Mt. Lamington (8°56'S 148°10'E), Sangara (8°49'S 148°14'E); New Ireland Province: Gilingili (4°28'S 152°40'E)]	<i>A. theobromae</i> [Morobe Province: Simbang (6°35'S 147°50'E), Kunakumen, Leiwomba, Finschafen (6°27'S 147°47'E), Simbang (6°35'S 147°50'E), Lae (6°44'S 147°00'E), Gabensis (6°43'S 146°46'E), Bubia (6°45'S 146°58'E), Melambi River; Oro Province: Mt. Lamington (8°56'S 148°10'E), Azerita, Sangara (8°49'S 148°14'E), Mamoo, Kokoda (8°54'S 147°47'E), Lego, Sairope (8°55'S 148°02'E), Sairorota, Kepara (8°56'S 147°47'E), Epa (8°40'S 148°05'E), Opi (8°19'S 148°12'E), Seiha, Ioma (8°22'S 147°50'E); Milne Bay: Naura (10°19'S 150°15'E), Normanby Island (10°00'S 151°00'E); Central Province: Brown River (9°15'S 147°05'E); National Capital District: Konedobu (9°28'S 147°09'E)]

Figure 1. Distribution of *Amblypelta* species in Papua New Guinea.

and the National Capital District). *Amblypelta costalis szentivanyi* occurs both on the mainland (Oro Province) and the adjacent islands (New Ireland Province, East New Britain Province and the Normanby Island of the Milne Bay Province). In contrast to other species, *A. theobromae* has an extensive range covering Morobe, Central, Oro and Milne Bay provinces and the National Capital District. Smith (1984) recorded the species also in Madang Province but the basis for this record is unknown and further collections are warranted.

DISCUSSION

Ero (2002b) presents the horticultural crop host list of *Amblypelta* species in PNG and the economic importance of the pest. The most common pest species are *A. lutescens papuensis*, *A. theobromae*, *A. cocophaga cocophaga* and *A. gallegonis bougainvillensis*. The other species produce some degree of damage to the crops they attack but their level of economic importance is not yet established. Based on the present work, it can now be recorded

that most of the pest species occur in the Central, Gulf, Milne Bay, Oro, Morobe and Bougainville provinces.

The richest *Amblypelta* fauna clearly occurs in the neighbouring Central, Oro, Milne Bay and Morobe provinces, which share many species (Figure 1). The north coast fauna and those of Bougainville are distinct from the rest of PNG. The apparent lack of species from Western, West New Britain and Manus provinces needs to be confirmed by further collecting to determine if there is a real absence or if this is an artifact of lack of sampling. The lack of records for the highland provinces is much more likely to represent a true absence of the genus at higher altitudes, rather than the result of a lack of sampling.

CONCLUSION

Further sampling is needed in Manus, West New Britain and Western provinces to determine if *Amblypelta* is genuinely absent from these areas.

Additional sampling is needed in the regions where the species have been recorded to determine the altitudinal distribution range of the genus.

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