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A checklist of Indonesian scale insects (Hemiptera: Coccoomorpha)

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Abstract

Scale insects (Hemiptera: Sternorrhyncha: Coccoomorpha) are a very important insect group containing numerous pests of woody and herbaceous plants worldwide. The only complete study of any scale insects in Indonesia was by D.J. Williams in the mealybugs (Pseudococcidae: *ceryx* fauna), published in 2004; the other scale insect families have only been documented in various small publications. Here we provide a complete checklist of the scale insects of Indonesia, which now contains 364 species belonging to 136 genera in 16 families. The family Diaspididae is the most diverse with 158 species belonging to 44 genera, followed by Pseudococcidae with 105 species belonging to 22 genera, and Coccidae with 63 species belonging to 22 genera. The other families are, in order of size: Monophlebidae (26 species belonging to 9 genera), Rhizoecidae (12 species belonging to 4 genera), Asterolecaniidae (11 species belonging to 5 genera), Lecanodactylidae (7 species belonging to 3 genera), Ctenoscelidae (5 species belonging to 2 genera), Xenosaccidae (2 species belonging to 2 genera), Orthozetidae (4 species belonging to 3 genera), Entosaccidae (4 species belonging to 2 genera), Acleridae (2 species belonging to 1 genus), and Kermesidae (1 species belonging to 1 genus).

Key words: alien species, Coccoidea, Indonesia, Sternorrhyncha, systematic list

Introduction

Indonesia is the largest archipelago ecoregion in the world, consisting of about 17,504 islands spread across 1,910,531 km² (CBD Secretariat 2021). As one of the twelve “mega-diverse countries”, Indonesian biodiversity has been measured mostly for higher plants, exotic tropical fruits, vertebrates, and invertebrates (including insects (McNeely et al. 1990). Indonesian floral diversity represents 10% of the world’s flowering plants, estimated at 25,000 species of which about 55% are indigenous. For faunal diversity, Indonesia has 12% of the world’s mammals (about 515 species), 16% of the world’s reptiles (78 species), and 15 species of primates. Further, 17% of the world’s birds (about 1,392 species) and 270 species of amphibians live in Indonesia (CBD Secretariat 2021). This high species diversity is the result of an unique geological and evolutionary history combined with the wide variety of habitats associated with over 17,000 islands, large and small (Arifin & Nikaposthi 2013).

The documentation of insect species in Indonesia started in the British, Dutch and Japan colonial eras, respectively, resulting in the description of many Indonesian native species as new to science. Later, Dammernan (1929) described many species in “The agricultural zoology of the Malay Archipelago”, and Wirjati (1958; 1959) published small papers on Indonesian scale insects. Kabshoven (1981) published a monumental textbook “Pests of Crops in Indonesia” that listed almost all the pest insect species living in Indonesia, including Scale Insect Pests (Hemiptera: Sternorrhyncha: Coccoomorpha). Although listing of the Indonesian insect fauna was started by foreign scientists a long time ago, it is still incomplete. In the last five years, more than a hundred new insect species were identified in

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1 Abstract

Scale insects (Hemiptera: Sternorrhyncha: Coccoomorpha) are a very important insect group containing numerous pests of woody and herbaceous plants worldwide. The only complete study of any scale insects in Indonesia was by D.J. Williams on the mealybugs (*Pseudococcidae sensu lato*), published in 2004; the other scale insect families have only been documented in various small publications. Here we provide a complete checklist of the scale insects of Indonesia, which now contains 364 species belonging to 136 genera in 16 families. The family Diaspididae is the most diverse, with 158 species belonging to 44 genera, followed by Pseudococcidae with 105 species belonging to 32 genera, and Coccidae with 65 species belonging to 22 genera. The other families are, in order of size: Monophlebidae (26 species belonging to 9 genera), Rhizoecidae (12 species belonging to 4 genera), Asterolecaniidae (11 species belonging to 5 genera), Leconodiaspididae (7 species belonging to 3 genera), Cerococcidae (5 species belonging to 3 genera), Xenococcidae (5 species belonging to 2 genera), Ortheziidae (4 species belonging to 3 genera), Eriococcidae (4 species belonging to 2 genera), Aclerididae (2 species belonging to 1 genus), and Kermesidae (1 species belonging to 1 genus).

Key words: alien species, Coccoidea, Indonesia, Sternorrhyncha, systematic list

22 Introduction

Indonesia is the largest archipelago country in the world, consisting of about 17,504 islands spread across 1,910,931 km² (CBD Secretariat 2021). As one of the twelve “mega-diverse countries”, Indonesian biodiversity has been measured mostly for higher plants, exotic tropical fruits, vertebrates, and invertebrates including insects (McNeely *et al.* 1990). Indonesian floral diversity represents 10% of the world’s flowering plants, estimated at 25,000 species of which about 55% are indigenous. For faunal diversity, Indonesia has 12% of the world’s mammals (about 515 species), 16% of the world’s reptiles (781 species), and 35 species of primate. Further, 17% of the world’s birds (about 1,592 species) and 270 species of amphibians live in Indonesia (CBD Secretariat 2021). This high species diversity is the result of a unique geological and evolutionary history combined with the wide variety of habitats associated with over 17,000 islands, large and small (Arifin & Nakagoshi 2011).

The documentation of insect species in Indonesia started in the British, Dutch and Japan colonial eras, respectively, resulting in the description of many Indonesian native species as new to science. Later, Dammerman (1929) described many species in “The agricultural zoology of the Malay Archipelago”, and Wirjati (1958; 1959) published small papers on Indonesian scale insects. Kalshoven (1981) published a monumental textbook “Pests of Crops in Indonesia” that listed almost all the pest insect species living in Indonesia, including Scale Insect Pests (Hemiptera: Sternorrhyncha; Coccoomorpha). Although listing of the Indonesian insect fauna was started by foreign scientists a long time ago, it is still incomplete. In the last five years, more than a hundred new insect species were identified in

Indonesia (Riedel & Narakusumo 2019). The geographic dimension of Indonesian biodiversity, particularly species endemism across geographical gradients, is not well accounted for. There are many new species and new distribution records that have not been investigated yet.

For Indonesia, the only comprehensive review made of any scale insect family is for the mealybugs (family Pseudococcidae *sensu lato*), which were documented in the large monograph on southern Asia by Williams (2004). The monograph described 354 species in 62 genera of Pseudococcidae *sensu lato*, including all the valid species names recorded from Indonesia. Other contributions on the scale insect fauna of Indonesia have been made by Reyne (1954; 1957; 1961; 1965), Muniappan *et al.* (1999; 2011; 2012), Sartiami *et al.* (2016), Gavrilov-Zimin (2012; 2013; 2016; 2017; 2018a, b; 2019; 2020; 2021) and Zarkani *et al.* (2020), which recorded several dozen additions to the fauna. To date, the documentation of scale insect species has been continued sporadically and incompletely, as for most other countries in the world.

Most slide mounts of scale insects from Indonesia in major world museums were collected from Java Island. However, the scale insect fauna of the other large islands like Kalimantan, New Guinea, Sulawesi and Sumatra are only fragmentarily represented in these collections. In addition, the scale insects of most of the numerous small Indonesian islands have never been studied.

Here we have explored the literature and listed the scale insect species recorded living in Indonesia to date.

Material and methods

In this study, the scale insect taxa recorded from Indonesia and their distributions have been listed and arranged as a systematic catalog in alphabetical order, taking into account recent taxonomic changes. The species listed are based on the published literature. Species recorded as plant quarantine interceptions are indicated with a plus mark (+), whilst species native to Indonesia according to the original publications listed in the references are indicated by an asterisk (*) after the species name. Furthermore, the unknown locations of species that were first found in Indonesia are indicated with a question mark (?). In cases where no information was given about the species, this is indicated by a dash (-). The distribution information for the species is given according to the best documented Indonesian islands.

Results and discussion

In this study we update the list of Coccoomorpha for Indonesia, which now contains 364 species belonging to 136 genera in 16 families. The number of species in Indonesia has increased slowly in the last 16 years, by 53 species (one-sixth of the previous list). Although the species listed mostly have an Indo-Malayan distribution, 111 are regarded as cosmopolitan species. The family Diaspididae is the most diverse, with 158 species belonging to 44 genera, followed by Pseudococcidae with 105 species belonging to 32 genera, and Coccidae with 65 species belonging to 22 genera. The other families covered are: Monophlebidae (26 species belonging to 9 genera), Rhizoecidae (12 species belonging to 4 genera), Asterolecaniidae (11 species belonging to 5 genera), Lecanodiaspididae (7 species belonging to 3 genera), Cerococcidae (5 species belonging to 3 genera), Xenococcidae (5 species belonging to 2 genera), Ortheziidae (4 species belonging to 3 genera), Eriococcidae (4 species belonging to 2 genera), Aclerididae (2 species belonging to 1 genus), and Kermesidae (1 species belonging to 1 genus) (Table 1).

Study of the checklist revealed that about 122 of the scale insect species are endemic to Indonesia. Some species described by Gavrilov-Zimin (2018), such as *Buchnericoccus reynei* Gavrilov-Zimin, *Crambostoma largecaticricosum* Gavrilov-Zimin and *Icerya oculicatricata* Gavrilov-Zimin were recorded from Malaysian Borneo (Sabah), a part of Kalimantan Is, so they probably also occur in Indonesia and Brunei. The list reflects Indonesia's biodiversity, which has a large number of indigenous medicinal plants, flowering plants, mammals, reptiles and birds (CBD Secretariat 2021). In terms of Indonesian insect diversity, however, this biodiversity has not been thoroughly documented. The high species richness of both flora and fauna in Indonesia is affected by the geographical location of the islands, astride major sea lanes connecting East Asia, South Asia and Oceania, with altitudes between 0 and 5000 meters above sea level. Indonesia is also split by the equator; almost all of it has a tropical climate classified as Af, a hot, humid climate with the minimum and maximum temperatures averaging 23–28°C and a relative humidity of

70–90% (Kottek *et al.* 2006). As a transcontinental country, Indonesia consists of islands geologically considered as part of either Asia or Australia. At the beginning of the last ice age (around 20,000–10,000 years ago), the western part of Indonesia (including Bali, Java, Kalimantan and Sumatra) merged with the Asian continent, while the eastern part of Indonesia (the Sahul Plain) was integrated with the Australian continent (Lohman *et al.* 2011).

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TABLE 1. A checklist of scale insect species of Indonesia. Symbols used: intercepted species (+); native species (*); unknown location (?); and no information available (-). The distribution information is based on the islands in Indonesia.

Taxon	Host plant	World distribution	Distribution in Indonesia
ACLERIDIDAE			
<i>Aclerda</i> Signoret			
<i>Aclerda pseudozostae</i> Gavrilov*	Poaceae sp.	Indonesia	Irian Jaya (Gavrilov-Zimin 2012, 2013)
<i>Aclerda takahashii</i> (Hempel)	<i>Miscanthus</i> sp., <i>Saccharum</i> sp., <i>S. arundinaceum</i> , <i>S. officinarum</i> , <i>S. spontaneum</i> , <i>Thysanolaena latifolia</i>	Brazil, China, Egypt, Guam, Haiti, India, Indonesia, Malaysia, Mauritius, Pakistan, Philippines, Reunion, Taiwan, United States	Sulawesi (Gavrilov-Zimin 2013)
ASTEROLECANIIDAE Cockerell			
<i>Asterolecanium</i> Targioni Tozzetti			
<i>Asterolecanium borneense</i> Russell*	<i>Lithocarpus niauvenhuisii</i>	Indonesia	Kalimantan (Russell 1941)
<i>Asterolecanium garciniae</i> Russell*	<i>Garcinia mangostana</i>	Indonesia	Java (Russell 1941)
<i>Asterolecanium javae</i> Russell*	<i>Ficus ampelas</i> , <i>F. montana</i>	Indonesia	Java (Russell 1941)
<i>Asterolecanium litseae</i> Kuwana	<i>Litsea caulocarpa</i> , <i>L. luzonica</i> , <i>Neolitsea sericea</i> , <i>Psychotria arborescens</i>	Indonesia, Japan, Malaysia, Philippines	? (Kuwana 1916)
<i>Asterolecanium unguatum</i> Russell	<i>Durio zibethinus</i>	Indonesia, Singapore	Java (Russell 1941)
<i>Bambusaspid</i> Cockerell			
<i>Bambusaspid amboinae</i> (Russell)*	<i>Neololeba atra</i>	Indonesia	Maluku (Russell 1941)
<i>Bambusaspid bambusae</i> (Boisduval)	<i>Acalypha</i> sp., <i>A. wilkesiana</i> , <i>Dianthus</i> sp., <i>Diospyros</i> sp., Orchidaceae sp., <i>Persea americana</i> , <i>Platyeladus orientalis</i> , Poaceae sp.	Cosmopolitan, in 74 countries	Sumatra (Gavrilov-Zimin 2019)
<i>Hyalococcus</i> Russell			
<i>Hyalococcus striatus</i> (Russell)	<i>Citrus</i> sp.	Indonesia, Singapore	Java (Russell 1941)
<i>Pauroaspis</i> Tang			
<i>Pauroaspis daedalea</i> Gavrilov	<i>Bambusa</i> sp.	Indonesia, Thailand	Irian Jaya, Sumatra (Gavrilov-Zimin 2013, 2019)
<i>Russellaspis</i> Bodenheimer			
<i>Russellaspis pustulans</i> (Cockerell)	Polyphagous on ornamentals and fruits in 67 families and 156 genera	Cosmopolitan, in 75 countries	Irian Jaya (Williams & Watson 1990)

TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Russellaspis sumatrae</i> (Russell)*	<i>Lihocarpus hystrix</i>	Indonesia	Sumatra (Russell 1941)
CEROCOCCIDAE Balachowsky			
<i>Antecrococcus Green</i>			
<i>Antecrococcus albospicatus</i> (Green)	<i>Canellia</i> sp., <i>Symplocos</i> sp., <i>S. obtusa</i>	Indonesia, Sri Lanka	Java (Lambdin & Kosztarab 1977)
<i>Antecrococcus ornatus</i> (Green)	<i>Canthium coromandelicum</i> , <i>Carissa</i> sp., <i>C. carandas</i> , <i>Coffea arabica</i> , <i>Co. canephora</i> , <i>Dovyalis caffra</i> , <i>Isora coccinea</i> , <i>Psychotria</i> sp., <i>P. elliptica</i>	India, Pakistan, Singapore, South Africa, Sri Lanka, Taiwan	? (Hua 2000)
<i>Cerochiton Balachowsky</i>			
<i>Cerochiton bernardi</i> Hodgson & Williams*	Theaceae sp.	Indonesia	Java (Hodgson & Williams 2016)
<i>Cerochiton javanensis</i> (Lambdin & Kosztarab)*	<i>Grewia ferruginea</i>	Indonesia	Java (Lambdin & Kosztarab 1977)
<i>Cerococcus Maskell</i>			
<i>Cerococcus indonesiensis</i> Lambdin & Kosztarab*	<i>Piper nigrum</i>	Indonesia	? (Lambdin & Kosztarab 1977)
COCCIDAE Fallén			
<i>Ceroplastes Gray</i>			
<i>Ceroplastes actiniformis</i> Green	Polyphagous on ornamentals and fruits in 13 families and 17 genera	Brazil, Canary Is, China, Egypt, Hong Kong, India, Indonesia, Israel, Sri Lanka	Java (Green 1930; Ali 1971), Sumatra (Ali 1971)
<i>Ceroplastes ceriferus</i> (Fabricius)	Polyphagous on ornamentals and fruits	Cosmopolitan, in 45 countries	Java (Krakatau) (Beardsley 1986; Williams & Miller 2010)
<i>Ceroplastes cirripediformis</i> Comstock	Polyphagous on ornamentals and fruits in 65 families and 132 genera	Cosmopolitan, in 32 countries	Java (Green 1904)
<i>Ceroplastes floridensis</i> Comstock	Polyphagous on ornamentals and fruits in 67 families and 153 genera	Cosmopolitan, in 71 countries	Irian Jaya (Ben-Dov 1993), Java (Green 1904; Mamet 1943), Sulawesi (CABI 2019)
<i>Ceroplastes magnificus</i> (Green)*	<i>Mangifera odorata</i> , <i>Syzygium aqueum</i>	Indonesia	Sumatra (Green 1930; Ali 1971)
<i>Ceroplastes rubens</i> Maskell	Polyphagous on ornamentals and fruits in 82 families and 186 genera	Cosmopolitan, in 47 countries	Java (Hamon & Williams 1984)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Ceroplastes rusci</i> (Linnaeus)	Polyphagous on ornamentals and fruits in 46 families and 74 genera	Cosmopolitan, in 57 countries	Irian Jaya (Ben-Dov 1993)
<i>Ceroplastes sinensis</i> Del Guercio	Polyphagous on ornamentals and fruits in 82 families and 186 genera	Cosmopolitan, in 47 countries	Sulawesi (Gavrilov-Zimin 2013)
<i>Ceroplastes stellifer</i> (Westwood)	Polyphagous on ornamentals and fruits in 22 families and 44 genera	Cosmopolitan, in 58 countries	Irian Jaya (Kalshoven 1981)
<i>Ceroplastes sunatrensis</i> Reyne*	Dicotyledonous shrub or tree	Indonesia	Sumatra (Ali 1971)
Coccus Linnaeus			
<i>Coccus caviramicolus</i> Morrison	<i>Macaranga</i> sp., <i>M. bancana</i> , <i>M. griffithiana</i>	Indonesia, Malaysia, Singapore	? (Ben-Dov 1993)
<i>Coccus celatus</i> De Lotto	Polyphagous on ornamentals and fruits in 10 families and 17 genera	Cosmopolitan, in 17 countries	Irian Jaya, Sulawesi (Gavrilov-Zimin 2013)
<i>Coccus discrepans</i> (Green)	Polyphagous on ornamentals and fruits in 9 families and 11 genera	India, Indonesia, Japan, Pakistan, Singapore, Sri Lanka, Taiwan	Sumatra (Ali 1971)
<i>Coccus formicarii</i> (Green)	Polyphagous on ornamentals and fruits in 30 families and 44 genera	Cosmopolitan, in 11 countries: China, Ethiopia, Hong Kong, India, Laos, Madagascar, Malaysia, Nepal, Sri Lanka, Taiwan, Thailand	? (Ben-Dov 1993)
<i>Coccus heckrothi</i> Gullan & Kondo	<i>Macaranga aetheadentia</i> , <i>M. bancana</i> , <i>M. hosei</i> , <i>M. indistincta</i> , <i>M. nufescens</i> , <i>M. trachyphylla</i>	Indonesia, Malaysia	Kalimantan (Gullan <i>et al.</i> 2018)
<i>Coccus hesperidum hesperidum</i> (Linnaeus)	Polyphagous on ornamentals and fruits in 124 families and 362 genera	Cosmopolitan, in 142 countries	Irian Jaya (Ben-Dov 1993), Sulawesi (Watson <i>et al.</i> 2014), Sumatra (Ali 1971)
<i>Coccus hesperidum javanensis</i> (Newstead)*	<i>Coffea liberica</i>	Indonesia	Java (Newstead 1908)
<i>Coccus longulus</i> (Douglas)	Polyphagous on ornamentals and fruits in 54 families and 139 genera	Cosmopolitan, in 70 countries	Sumatra (Ali 1971)
<i>Coccus opimus</i> (Green)	<i>Cassia fistula</i>	Indonesia	Java (Sasscer 1915)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Coccus penangensis</i> Morrison	<i>Macaranga angulata</i> , <i>M. bancana</i> , <i>M. glandibracteolata</i> , <i>M. hillebrandii</i> , <i>M. indica</i> , <i>M. petanostyla</i> , <i>M. trachyphylla</i> , <i>M. trioba</i>	Brunei, Indonesia, Malaysia, Singapore	Sumatra (Gullan <i>et al.</i> 2018)
<i>Coccus sulawesicus</i> Gavrilov*	Dicoyledonous shrub	Indonesia	Sulawesi (Gavrilov-Zimin 2013)
<i>Coccus tenebricophilus</i> (Green)*	<i>Erythrina variegata</i>	Indonesia	Java (Green 1904)
<i>Coccus viridis</i> (Green)	Polyphagous on ornamentals and fruits in 61 families and 144 genera	Cosmopolitan, in 93 countries	Bali (Gavrilov-Zimin 2017), Irian Jaya (Kondo 2013), Java (Ali 1971; Kondo 2013), Sulawesi (Gavrilov-Zimin 2013), Sumatra (Ali 1971)
Ctenochiton Maskell			
<i>Ctenochiton carinatus</i> Takahashi*	Host plant not indicated	Indonesia	Riau Is (Kempang) (Takahashi 1951)
<i>Ctenochiton formicophilus</i> Green*	Collected from nest of anis	Indonesia	Sumatra (Green 1930; Ali 1971)
<i>Ctenochiton inclusus</i> Green*	Collected from nest of anis	Indonesia	Sumatra (Green 1930)
Discochiton Hodgson & Williams			
<i>Discochiton cocophyllae</i> (Banks)	<i>Colamus</i> sp., <i>Cocos nucifera</i> , <i>Dillenia philippinensis</i> , <i>Dyopsis lutescens</i> , <i>Rhapis excelsa</i> , <i>R. humilis</i> , <i>Sabal minor</i>	Cambodia, Japan, Indonesia, Malaysia, Philippines, Singapore, Thailand	Sulawesi (Hodgson & Williams 2018)
<i>Discochiton expansum</i> (Green)	<i>Amona reticulata</i> , <i>Dalbergia</i> sp., <i>Dendrothe frutescens</i> , <i>Drypetes</i> sp., <i>Ficus macrophylla</i> , <i>F. microcarpa</i> , <i>F. pumila</i> , <i>F. retusa</i> , <i>Gynnacantha</i> sp., <i>Litsea glutinosa</i> , <i>Mimusops</i> sp., <i>Morella rubra</i> , <i>Machilus ihunbergii</i> , <i>Myristica fragrans</i> , <i>Neolusea zeylandica</i> , <i>Polyalthia longifolia</i> , <i>Viscum orientale</i> , Zingiberaceae sp.	Australia, Hong Kong, India, Indonesia, Japan, Laos, Papua New Guinea, Taiwan, Thailand, Vietnam	Java (Green 1904)
<i>Discochiton javanicum</i> (Green)*	<i>Anonanthus heterocarpus</i>	Indonesia	Java (Hodgson & Williams 2018)
<i>Discochiton metallicum</i> (Green)	<i>Amona muricata</i> , <i>Durio zibethinus</i> , <i>Myristica</i> sp., <i>M. fragrans</i>	Indonesia, Malaysia, Philippines, Singapore, Thailand	Java (Green 1904; Ali 1971)
<i>Discochiton milleri</i> (Takahashi)	<i>Amona muricata</i> , <i>Cocos nucifera</i> , <i>Elaeis</i> sp., <i>Ficus religiosa</i> , <i>Mangifera indica</i>	Brunei, Indonesia, Malaysia, Vietnam	Java (Hodgson & Williams 2018)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Discocochiton papillatum</i> Hodgson	<i>Coelegyne prolifera</i> , <i>Elaeis guineensis</i> , <i>Piper nigrum</i>	Brunei, India, Indonesia, Malaysia, Thailand	Sumatra (Hodgson & Williams 2018)
<i>Discocochiton quadratum</i> (Green)	<i>Calophyllum inophyllum</i> , <i>Diplodiscus paniculatus</i> , <i>Garcinia</i> sp., <i>Myristica fragrans</i> , <i>Scolopia oldhamii</i>	Indonesia, Japan, Laos, Philippines, Sri Lanka, Taiwan	Java (Ali 1971)
<i>Discocochiton rotundum</i> (Green)	<i>Rhizophora mucronata</i>	Indonesia, Malaysia	Java (Green 1904)
<i>Discocochiton trifasciatum</i> (Green)	<i>Drypetes sumatrana</i> , <i>Michelia</i> sp., <i>Piper nigrum</i>	Indonesia, Malaysia, Sri Lanka	Java (Hodgson & Williams 2018)
<i>Discocochiton vacuatum</i> (Morrison)	<i>Annona muricata</i> , <i>Cinnamomum verum</i> , <i>Cocos nucifera</i> , <i>Ficus</i> sp., <i>F. karzi</i> , <i>Rhizophora</i> sp.	Brunei, Indonesia, Malaysia, Singapore, Taiwan	Riau Is (Rempang) (Takahashi 1950)
Drepanococcus Williams & Watson			
<i>Drepanococcus chiton</i> (Green)	<i>Alcaurites</i> sp., <i>Annona muricata</i> , <i>Calophyllum inophyllum</i> , <i>Camellia sinensis</i> , <i>Carica papaya</i> , <i>Citrus aurantiifolia</i> , <i>Colubrina</i> sp., Fabaceae, <i>Ficus benjamina</i> , <i>F. retusa</i> , <i>Grevillea papuana</i> , <i>Litsea</i> sp., <i>Semecarpus</i> sp., <i>Solanum melongena</i> , <i>Theobroma cacao</i> , <i>Thespesia populnea</i>	Andaman Is, China, India, Indonesia, Laos, Malaysia, Papua New Guinea, Solomon Is, Sri Lanka, Taiwan, Thailand, Vietnam	Irian Jaya (Williams & Watson 1990; Cavilov-Zimin 2013), Java (Ali 1971)
Eucalymnatus Cockerell & Parrott			
<i>Eucalymnatus tessellatus</i> (Signoret)	Polyphagous on ornamentals and fruits in 55 families and 110 genera	Cosmopolitan, in 77 countries	Java (Green 1904; Ali 1971)
Inglisia Maskell			
<i>Inglisia speciosa</i> Takahashi*	Host plant not indicated	Indonesia	Riau Is (Rempang) (Takahashi 1951)
Kilifia De Lotto			
<i>Kilifia deltoides</i> De Lotto	<i>Adiantum</i> sp., <i>Anacardium occidentale</i> , <i>Callistemon</i> sp., <i>Camellia</i> sp., <i>Eugenia</i> sp., <i>Cinnamomum</i> sp., <i>Mangifera indica</i> , <i>Psidium guajava</i>	China, Comoros, Indonesia, Kenya, Malaysia, Reunion, Tanzania, Zanzibar	Java (Ben-Dov 1993)
Luzulaspis Cockerell			

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Luzulaspis australis</i> (Maskell)	<i>Aristida ramosa</i> , <i>Eragrostis australasica</i> , Poaceae sp., <i>Saccharum officinarum</i> , <i>Yakirra majuscula</i>	Australia, Indonesia	Flores (Gavrillov-Zimin 2017), Irian Jaya (Gavrillov-Zimin 2013)
Megaloeryptes Takahashi			
<i>Megaloeryptes bambusicola</i> (Green)	<i>Bambusa multiplex</i>	Indonesia, Vietnam	Sumatra (Green 1930; Ali 1971)
<i>Megapubivinarina Yang</i>			
<i>Megapubivinarina maxima</i> (Green)	Polyphagous on ornamentals and fruits in 15 families and 24 genera: Anacardiaceae, Annonaceae, Euphorbiaceae, Fabaceae, Malvaceae, Melastomataceae, Meliaceae, Moraceae, Nyctaginaceae, Phyllanthaceae, Piperaceae, Rhamnaceae, Rubiaceae, Ruta- ceae, Urticaceae	Federated States of Micronesia, India, Indonesia, Laos, Papua New Guinea, Philippines, Sri Lanka, Taiwan, Thailand, Vietnam	Java (Green, 1904; Ali 1971; Hodgson 1994)
Miviscutulus Williams & Watson			
<i>Miviscutulus mangiferae</i> (Green)	Polyphagous on ornamentals and fruits in 42 families and 82 genera	Cosmopolitan, in 63 countries	Bali (Gavrillov-Zimin 2017), Irian Jaya (Gavrillov-Zimin 2013), Java (Green 1904), Sulawesi (Gavrillov-Zimin 2013)
<i>Miviscutulus spiculatus</i> Williams & Watson	<i>Epppremmum</i> sp., <i>Ficus sepiica</i> , <i>F. theo- phrastoides</i> , <i>Gyrocarpus</i> sp., <i>Mangifera indica</i> , <i>Persea americana</i> , <i>Rhizophora apiculata</i> , <i>Timontius</i> sp.	Indonesia, Papua New Guinea, Solomon Is	Irian Jaya (Williams & Watson 1990)
Paralecanium Cockerell			
<i>Paralecanium acinaces</i> Hodgson*	On leaf of unidentified tree	Indonesia	Bali (Hodgson & Williams 2018)
<i>Paralecanium claviseta</i> Hodgson*	<i>Banksia</i> sp.	Indonesia	Sulawesi (Hodgson & Williams 2018)
<i>Paralecanium maculatum</i> Takahashi*	Host plant not indicated	Indonesia	Riau Is (Rempang) (Takahashi 1950; Hodgson & Williams 2018)
<i>Paralecanium minutum</i> Takahashi*	Host plant not indicated	Indonesia	Riau Is (Rempang) (Takahashi 1950)
<i>Paralecanium neomaritimum</i> Takahashi,	<i>Avicennia</i> sp., <i>Rhizophora</i> sp., <i>Syzygium calubcob</i>	Brunei, Indonesia, Malaysia	Sulawesi (Hodgson & Williams 2018)
<i>Paralecanium ovatum</i> Morrison	<i>Cyrtostachys renda</i> , <i>Pandanus</i> sp.	Indonesia, Malaysia, Papua New Guinea, Singapore	Riau Is (Rempang) (Takahashi 1950)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Parasaissetia</i> Takahashi			
<i>Parasaissetia nigra</i> (Nietner)	Polyphagous on ornamentals and fruits in 95 families and 261 genera	Cosmopolitan, in 125 countries	Irian Jaya (Gavrillov-Zimin 2013), Java (CABI 1997), Sumatra (Ali 1968, 1971)
<i>Platylectanium</i> Cockerell & Robinson			
<i>Platylectanium cocotis</i> Laing	<i>Alpinia purpurata</i> , <i>Cocos nucifera</i>	Indonesia, Papua New Guinea, Solomon Is, Vanuatu	Irian Jaya (Gavrillov-Zimin 2013)
<i>Platylectanium elongatum</i> Takahashi*	Arecaceae sp.	Indonesia	Riau Is (Rempang) (Takahashi 1951)
<i>Platylectanium riouwense</i> Takahashi*	Host plant not indicated	Indonesia	Riau Is (Rempang) (Takahashi 1951)
<i>Prococcus</i> Avasthi			
<i>Prococcus acutissimus</i> (Green)	Polyphagous on ornamentals and fruits in 29 Families and 42 Genera	Cosmopolitan, in 22 countries	Sumatra (Ben-Dov 1993)
<i>Pulvinaria</i> Targioni Tozzetti			
<i>Pulvinaria cacao</i> Williams & Watson	<i>Theobroma cacao</i>	Indonesia, Papua New Guinea	Irian Jaya (Gavrillov-Zimin 2013)
<i>Pulvinaria psidii</i> Maskell	Polyphagous on ornamentals and fruits in 67 families and 141 genera	Cosmopolitan, in 98 countries	Flores (Gavrillov-Zimin 2017), Irian Jaya (Ben-Dov 1993; CABI 1994), Java (Green 1904; CABI 1994), Sulawesi (CABI 1994), Sumatra (CABI 1994)
<i>Saccharolecanium</i> Williams			
<i>Saccharolecanium brageri</i> (Zehntner)	<i>Saccharum</i> sp., <i>S. officinarum</i>	India, Indonesia, Malaysia, Sri Lanka	Java (Hodgson 1994)
<i>Saissetia</i> Déplanche			
<i>Saissetia coffeae</i> (Walker)	Polyphagous on ornamentals and fruits in 107 families and 294 genera	Cosmopolitan, in 119 countries	Irian Jaya (Kalshoven 1981), Java (Green 1904), Sulawesi (Watson <i>et al.</i> 2014), Sumatra (Ali 1971; Watson <i>et al.</i> 2014)
<i>Saissetia miranda</i> (Cockerell & Parrott in Cockerell)	Polyphagous on ornamentals and fruits in 26 families and 58 genera	Cosmopolitan, in 36 countries	Irian Jaya (Ben-Dov 1993)
<i>Saissetia oleae oleae</i> (Olivier)	Polyphagous on ornamentals and fruits in 77 families and 217 genera	Cosmopolitan, in 104 countries	Java (Green 1904)
<i>Takahashilecanium</i> Kondo			
<i>Takahashilecanium rotundatum</i> (Takahashi)	Host plant not indicated	Brunei, Indonesia	Riau Is (Rempang) (Takahashi 1951)
<i>Tectopulvinaria</i> Hempel			

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Tectopuhvinaria latidigitata</i> Gavrilov-Zimin*	On twig of unidentified tree	Indonesia	Bali (Gavrilov-Zimin 2017)
<i>Xenolecanium Takahashi</i>	<i>Eugenia</i> sp.	Indonesia	Riau Is (Rempang) (Kondo <i>et al.</i> 2005)
<i>Xenolecanium takahashii</i> Kondo*			
COELOSOTOMIIDAE			
<i>Eremostoma Gavrilov-Zimin</i>	Unidentified host plant	Indonesia	Java (Gavrilov-Zimin 2018)
<i>Eremostoma klugei</i> (Gavrilov-Zimin)			
DIASPIDIIDAE Targioni Tozzetti			
<i>Acanthaspidotus Borchsenius & Williams</i>			
<i>Acanthaspidotus pustulans</i> (Green)*	<i>Erythrina variegata</i>	Indonesia	Java (Green 1905; Sanders 1906)
<i>Allantomytilus Leonardi</i>	On unidentified tree	Indonesia	Irian Jaya (Williams & Watson 1988a)
<i>Allantomytilus dacryoides</i> Williams & Watson*			
Aonidiella Berlese & Leonardi			
<i>Aonidiella aurantii</i> (Maskell)	Polyphagous on ornamentals and fruits in 84 families and 178 genera	Cosmopolitan, in 88 countries	Java (Green 1904; Kalshoven 1981; Dao <i>et al.</i> 2018)
<i>Aonidiella citrina</i> (Coquillett)*	Polyphagous on ornamentals and fruits in 26 families and 42 genera	Cosmopolitan, in 53 countries	? (Nakahara 1982)
<i>Aonidiella inornata</i> McKenzie	Polyphagous on ornamentals and fruits in 24 families and 32 genera	Cosmopolitan, in 26 countries	Irian Jaya (Williams & Watson 1988a)
Aspidiella Leonardi			
<i>Aspidiella sacchari</i> (Cockerell)*	<i>Alouatta</i> sp., <i>Cinnna</i> sp., <i>Casuarina aculeata</i> , <i>Cocos nucifera</i> , <i>Coffea Iacryma-jobi</i> , <i>Costus</i> sp., <i>Saccharum officinarum</i> , various grasses.	Cosmopolitan, in 37 countries	Java (Nakahara 1982)
Aspidiotus Bouché			
<i>Aspidiotus destructor</i> Signoret	Polyphagous on ornamentals and fruits in 71 families and 130 genera	Cosmopolitan, in 96 countries	Irian Jaya (Williams & Watson 1988a), Java (Green 1904)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Aspidiotus exivius</i> Green	Polyphagous on ornamentals and fruits in 24 families and 27 genera	Cosmopolitan, in 47 countries	Java, Sumatra (Kalshoven 1981)
<i>Aspidiotus nerii</i> Bouché	Polyphagous on ornamentals and fruits in 120 families and 329 genera	Cosmopolitan, in 74 countries	? (Suh 2016)
<i>Aspidiotus rigidus</i> (Reyne)	<i>Cocos nucifera</i> , <i>Dyopsis lutescens</i> , <i>Chrysalidocarpus lutescens</i> , <i>Garcinia mangostana</i> , <i>Musa</i> sp., <i>Nypa fruticans</i>	Indonesia, Palau, Philippines	Bali (Kalshoven 1981), Flores (Watson <i>et al.</i> 2015), Java (Kalshoven 1981), Sulawesi (Reyne 1947, 1948; Watson <i>et al.</i> 2014)
<i>Aulacaspis</i> Cockerell			
<i>Aulacaspis depressa</i> (Zehntner)	<i>Saccharum bengalense</i>	China, India, Philippines	Java (Zehntner 1897)
<i>Aulacaspis hecvioidis</i> (Green)	<i>Durio zibethinus</i> , <i>Hedyotis lawsoniae</i> , <i>Mallotus</i> sp., <i>Mangifera</i> sp., <i>Oldenlandia auricularia</i> , <i>Pleiocraterium verticillare</i>	India, Indonesia, Malaysia, Pakistan, Sri Lanka, Taiwan	Java (Green 1905)
<i>Aulacaspis javanensis</i> Newstead*	Ericaceae sp.	Indonesia	Java (Newstead 1906b)
<i>Aulacaspis madiunensis</i> (Zehntner)	<i>Arundo</i> sp., <i>Cycas</i> sp., <i>Cymbopogon</i> sp., <i>Cyperus papyrus</i> , <i>Ischaemum</i> sp., <i>Opilismenus</i> sp., <i>Pandanus</i> sp., <i>Phragmites</i> sp., <i>Saccharum arundinaceum</i> , <i>S. officinarum</i> , <i>S. spontaneum</i>	Cosmopolitan, in 21 countries	Java (Zehntner 1898; Kalshoven 1981), Sumatra (Beardsley 1966)
<i>Aulacaspis marina</i> Takagi & Williams	<i>Xylocarpus</i> sp., <i>Bruguiera</i> sp., <i>Rhizophora apiculata</i> , <i>R. mucronata</i>	Indonesia, Malaysia, Philippines	Bali (Takagi & Williams 1998)
<i>Aulacaspis penzigi</i> (Leonardi)*	<i>Ilex</i> sp.	Indonesia	Java (Leonardi 1907)
<i>Aulacaspis robusta</i> Takahashi	<i>Aegle marmelos</i> , <i>Ardisia</i> sp., <i>A. sieboldii</i>	Hongkong, Indonesia, Taiwan	Kalimantan (Takagi 2018)
<i>Aulacaspis sumatrensis</i> Green	<i>Cocos nucifera</i> , <i>Mangifera indica</i> , <i>M. odorata</i> , <i>Nypa fruticans</i>	Indonesia, New Caledonia, Philippines, Mindanao, Vanuatu	Sumatra (Green 1930)
<i>Aulacaspis tegalensis</i> (Zehntner)	<i>Cymbidium</i> sp., <i>Phoebe</i> sp., <i>Pluchea indica</i> , <i>Saccharum</i> sp., <i>S. arundinaceum</i> , <i>S. bengalense</i> , <i>S. officinarum</i> , <i>S. spontaneum</i> , <i>Sorghum halepense</i> , <i>Smilax china</i> , <i>Trachycarpus fortunei</i>	Cosmopolitan, in 218 countries	Java (Zehntner 1898)
<i>Aulacaspis thornoni</i> Williams & Miller	<i>Calophyllum inophyllum</i> , <i>Barringtonia</i> sp.	Indonesia, Malaysia	Java (Williams & Miller 2010)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Aulacaspis tubercularis</i> Newstead ²⁸	Polyphagous on ornamentals and fruits in 18 families and 30 genera	Cosmopolitan, in 69 countries	Java (Newstead 1906b; Williams & Miller 2010)
<i>Aulacaspis vitis</i> (Green)	Polyphagous on ornamentals and fruits in 12 families and 14 genera	India, Indonesia, Japan, Peru, South Africa, Sri Lanka, Taiwan, Thailand, Vietnam	Java (Green 1905), Sumatra (Green 1899)
<i>Aulacaspis yabunikket</i> Kuwana	Polyphagous on ornamentals and fruits in 6 families and 12 genera	China, Hongkong, Indonesia, Japan, Ryukyu Is., South Korea, Taiwan	Java (Tao 1999)
<i>Aulacaspis yasumatsui</i> Takagi ³³	Polyphagous on ornamentals and fruits in 3 families and 8 genera	Cosmopolitan, in 39 countries	Java (Muniappan <i>et al.</i> 2012), Sulawesi (Watson <i>et al.</i> 2014)
Bayuraspis Takagi			
<i>Bayuraspis javanensis</i> (Williams)	<i>Pterospermum</i> sp., <i>P. javanicum</i>	Indonesia, Malaysia	Java (Williams 1963)
Chionaspis Signoret			
<i>Chionaspis compy</i> Williams & Watson*	Undetermined tree	Indonesia	Irian Jaya (Williams & Watson 1988a)
Chrysomphalus Ashmead			
<i>Chrysomphalus aonidium</i> (Linnaeus)	Polyphagous on ornamentals and fruits in 73 families and 170 genera	Cosmopolitan, in 85 countries	Java (Green 1904; Suh 2016)
<i>Chrysomphalus dictyospermi</i> (Morgan)	Polyphagous on ornamentals and fruits in 80 families and 192 genera	Cosmopolitan, in 102 countries	Irian Jaya (Williams & Watson 1988a), Java (Green 1904)
<i>Chrysomphalus propinquus</i> Banks	<i>Calamus spectabilis</i> , <i>Cocos nucifera</i> , <i>Carypha utan</i> , <i>Metroxylon</i> sp., <i>Pandanus</i> sp., <i>P. utilis</i>	Hawaiian Is, Indonesia, Malaysia, Philippines, Tuvalu	Sumatra (Malenotti 1916; McKenzie 1939)
Clavaspidotus Takagi & Kawai			
<i>Clavaspidotus apicalis</i> Takagi†	<i>Citrus</i> sp., <i>C. aurantium</i> , <i>C. limon</i> , <i>C. mexima</i> , <i>Litsea glutinosa</i> , <i>Pongium</i> sp.	Egypt, Indonesia, Philippines, Singapore	Java (Takagi 1974), Sulawesi (Nommark <i>et al.</i> 2019), Sumatra (Watson <i>et al.</i> 2014)
Diaspis Costa			
<i>Diaspis boisduvalii</i> (Signoret)†	Polyphagous on ornamentals and fruits in 34 families and 136 genera	Cosmopolitan, in 82 countries	? (Suh 2016)
<i>Diaspis bromeliae</i> (Kerner)†	Polyphagous on ornamentals and fruits in 10 families and 26 genera	Cosmopolitan, in 74 countries	? (Suh 2016)
Duylachionaspis MacGillivray			

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Duplacionaspis saccharifolii</i> (Zehntner)	<i>Phragmites australis</i> , <i>Saccharum officinarum</i>	China, Indonesia, Philippines	Java (Zehntner 1897)
Duplaspidiotus MacGillivray			
<i>Duplaspidiotus tesseraatus</i> Grandpré & Charmoy	Polyphagous on ornamentals and fruits in 14 families and 19 genera	Cosmopolitan, in 24 countries	Java (Ferris 1938)
Fiorinia Targioni Tozzetti			
<i>Fiorinia biakana</i> Williams & Watson*	Unidentified tree	Indonesia	Irian Jaya (Williams & Watson 1988a)
<i>Fiorinia fioriniae</i> (Targioni Tozzetti)†	Polyphagous on ornamentals and fruits in 47 families and 93 genera	Cosmopolitan, in 157 countries	? (Suh 2016)
<i>Fiorinia iavanica</i> (Leonardi)*	<i>Ilex</i> sp.	Indonesia	Java (Leonardi 1907)
<i>Fiorinia macroprocta</i> (Leonardi)*	<i>Rhapis excelsa</i>	Indonesia	Java (Leonardi 1907; Ali 1969)
<i>Fiorinia phantasma</i> Cockerell & Robinson	Polyphagous on ornamentals and fruits in 24 families and 52 genera	Cosmopolitan, in 23 countries	Irian Jaya (Williams & Watson 1988a)
<i>Fiorinia proboscidiaria</i> Green	Polyphagous on ornamentals and fruits in 11 families and 11 genera	Cosmopolitan, in 20 countries	Java, Sumatra (Clausen 1933)
<i>Fiorinia reducta</i> Williams & Watson*	Unidentified tree	Indonesia	Irian Jaya (Williams & Watson 1988a)
<i>Fiorinia theae</i> Green	Polyphagous on ornamentals and fruits in 12 families and 14 genera	Cosmopolitan, in 19 countries	Irian Jaya (Reyne 1961)
Fraggatiella Leonardi			
<i>Fraggatiella meclurei</i> Ben-Dov	<i>Bambusa</i> sp., <i>B. multiplex</i>	China, Hong Kong, Indonesia, Philippines	Java (Ben-Dov 1988)
Furcaspis Lindinger			
<i>Furcaspis bififormis</i> (Cockerell)	<i>Aechmea magdalenae</i> , <i>Agave</i> sp., <i>Aloe</i> sp., <i>Brassavola</i> sp., <i>Brassia</i> sp., <i>Bromelia</i> sp., <i>Cattleya</i> sp., <i>Euphorbia tithymalooides</i> , <i>Hoya</i> sp., <i>Melocactus</i> sp., <i>Musa</i> sp., Orchidaceae sp., <i>Piper</i> sp., <i>Psychotria</i> sp., <i>Strelitzia</i> sp., <i>Syzygium</i> sp., <i>Yucca</i> sp.	Cosmopolitan, in 43 countries	Java (Kuwana & Muramatsu 1931; Williams <i>et al.</i> 2006)
Genapatoria MacGillivray			

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Genaparatoria pseudapidiotus</i> (Lindinger)	<i>Aerides</i> sp., <i>Cattleya</i> sp., <i>Commiphora berryi</i> , <i>Cymbidium</i> sp., <i>Cyrtopodium punctatum</i> , <i>Dendrobium</i> sp., <i>Euphorbia antiquorum</i> , <i>Mangifera indica</i> , <i>Papilionanthe hookeriana</i> , <i>P. teres</i> , <i>Pithecellobium dulce</i> , <i>Trichoglottis philippinensis</i> , <i>Vanda</i> sp.	Cosmopolitan, in 38 countries	Java (Merrill 1953)
Greeniella Cockerell			
<i>Greeniella calophylli</i> Williams & Miller*	<i>Calophyllum inophyllum</i>	Indonesia	Java (Williams & Miller 2010)
<i>Greeniella javanensis</i> (Green)	<i>Eugenia</i> sp., <i>Myristica fragrans</i>	Indonesia, Philippines	Java (Green 1905; Sanders 1906)
Hemiberlesia Cockerell			
<i>Hemiberlesia cyanophylli</i> (Signoret) ¹²	Polyphagous on ornamentals and fruits in 73 families and 141 genera	Cosmopolitan, in 71 countries	Java (Green 1904; Kalshoven 1981), Sumatra (Green 1937)
<i>Hemiberlesia lataniae</i> (Signoret) ¹²	Polyphagous on ornamentals and fruits in 114 families and 323 genera	Cosmopolitan, in 112 countries	Irian Jaya (Williams & Watson 1988a)
<i>Hemiberlesia palmae</i> (Cockerell)	Polyphagous on ornamentals and fruits in 54 families and 94 genera	Cosmopolitan, in 67 countries	Java (Kuwana & Muramatsu 1931), Sulawesi (Wason <i>et al.</i> 2014), Sumatra (Green 1930)
<i>Hemiberlesia rapax</i> (Comstock) ¹²	Polyphagous on ornamentals and fruits in 79 families and 189 genera	Cosmopolitan, in 71 countries	? (Suh 2016)
Howardia Bertles & Leonardi			
<i>Howardia biclavata</i> (Comstock)	Polyphagous on ornamentals and fruits in 69 families and 196 genera	Cosmopolitan, in 71 countries	Java (Clausen 1933; Nakahara 1982)
Ischnaspis Douglas			
<i>Ischnaspis longirostris</i> (Signoret)	Polyphagous on ornamentals and fruits in 50 families and 145 genera	Cosmopolitan, in 93 countries	Java (Leonardi 1901)
Kiwanaspis MacGillivray			
<i>Kiwanaspis bambusicola</i> (Cockerell)	<i>Bambusa</i> sp., <i>B. bambos</i> , <i>B. blumeana</i> , <i>B. multiplex</i> , <i>Dendrocalamus</i> sp., <i>D. macculmii</i> , <i>D. strictus</i> , <i>Drepanostachyum falcatum</i> , <i>Phyllostachys aurea</i>	Algeria, Azores, Brazil, Indonesia, Sao Paulo, China, Nepal, Singal, Taiwan	Sumatra (Green 1930)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Lepidosaphes</i> Shimer			
<i>Lepidosaphes beckii</i> (Newman)	Polyphagous on ornamentals and fruits in 40 families and 56 genera	Cosmopolitan, in 121 countries	Java (Kalshoven 1981), Sulawesi (Normark <i>et al.</i> 2019), Sumatra (Kalshoven 1981; Watson <i>et al.</i> 2014)
<i>Lepidosaphes corrugata</i> Green*	<i>Coffea arabica</i>	Indonesia	Java (Green 1904)
<i>Lepidosaphes crawii</i> (Cockerell)	<i>Elaeagnus</i> sp., <i>Casianopsis</i> sp., <i>C. cuspidata</i> , <i>C. faberi</i> , <i>Lithocarpus uraiianus</i> , <i>Pteropermium javanicum</i>	Indonesia, Japan, Taiwan	Java (Green 1905)
<i>Lepidosaphes eurychlidonis</i> Williams & Watson	<i>Hibiscus</i> sp.	Indonesia, Vanuatu	Irian Jaya (Williams & Watson 1988a)
<i>Lepidosaphes gloverii</i> (Packard)	Polyphagous on ornamentals and fruits in 27 families and 38 genera	Cosmopolitan, in 82 countries	Irian Jaya (Reyne 1961), Java (Watson <i>et al.</i> 2014)
<i>Lepidosaphes lasianthi</i> (Green)	<i>Codiaeum variegatum</i> , <i>Croton</i> sp., <i>Cr. humilis</i> , <i>Lastianthus strigosus</i>	Bermuda, Guyana, India, Indonesia, Puerto Rico & Vieques, Sri Lanka, United States	Java (Green 1905)
<i>Lepidosaphes laterochitimsa</i> Green	Polyphagous on ornamentals and fruits in 28 families and 38 genera	Cosmopolitan, in 18 countries	? (Suh 2016)
<i>Lepidosaphes puniceae</i> Laing	<i>Artocarpus</i> sp., <i>A. ditilis</i> , <i>Ficus</i> sp., <i>Litchi</i> sp., <i>L. chinensis</i> , <i>Macaranga</i> sp., <i>Nephelium</i> , <i>Plumeria</i> sp., <i>Psittacanthus</i> sp., <i>Punica granatum</i> , <i>Rosa</i> sp., <i>Solanum</i> sp., <i>Vanilla</i> sp., <i>Yucca</i> sp.	Cosmopolitan, in 15 countries	? (Suh 2016)
<i>Lepidosaphes rubrovittata</i> (Cockerell)	Polyphagous on ornamentals and fruits in 12 families and 14 genera	Cosmopolitan, in 18 countries	Irian Jaya (Williams & Watson 1988a)
<i>Lepidosaphes tapleyi</i> Williams	Polyphagous on ornamentals and fruits in 19 families and 26 genera	Cosmopolitan, in 17 countries	Irian Jaya (Williams & Watson 1988a)
<i>Lepidosaphes tokionis</i> (Kuwana)	<i>Anthurium</i> sp., <i>Citrus maxima</i> , <i>Capsicum</i> sp., <i>Codiaeum</i> sp., <i>Co. variegatum</i> , <i>Cordyline fruticosa</i> , <i>Croton</i> sp., <i>Cr. tiglium</i> , <i>Draecena</i> sp., <i>Gossypium</i> sp., <i>Sansevieria</i> sp.	Cosmopolitan, in 30 countries	Java (Ali 1969), Sulawesi (Watson <i>et al.</i> 2014)
<i>Lepidosaphes unguolata</i> Green*	<i>Syzygium pseudojambolana</i>	Indonesia	Java (Green 1905)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
Lopholeucaspis Balachowsky			
<i>Lopholeucaspis cockerelli</i> (Grandpré & Charmoy) [†]	Polyphagous on ornamentals and fruits in 33 families and 63 genera	Cosmopolitan, in 54 countries	? (Nakahara 1982)
Loranthuspis Cockerell & Bueker			
<i>Loranthuspis microconcha</i> Cockerell & Bueker*	<i>Canarium</i> sp., <i>Dendrophloe pentandra</i>	Indonesia	Java (Cockerell & Bueker 1930)
Microparlatoria Takahashi			
<i>Microparlatoria ficti</i> (Takahashi)	<i>Ficus retusa</i>	Indonesia, Taiwan, Thailand	Sulawesi (Suh & Ji 2009; Normark <i>et al.</i> 2019)
Mongrovaspis Bodenheimer			
<i>Mongrovaspis quadrispinosa</i> (Green)	<i>Avicennia marina</i> , <i>A. officinalis</i>	Egypt, Indonesia, Iran, Philippines	Lombok (Takagi 2002)
Morganella Cockerell			
<i>Morganella longispina</i> (Morgan) [†]	Polyphagous on ornamentals and fruits in 22 families and 36 genera	Cosmopolitan, in 42 countries	? (Nakahara 1982)
Mycetaspis Cockerell			
<i>Mycetaspis personata</i> (Comstock) [†]	Polyphagous on ornamentals and fruits in 19 families and 30 genera	Cosmopolitan, in 44 countries	? (Nakahara 1982)
Odonaspis Leonardi			
<i>Odonaspis greenii</i> (Cockerell)	<i>Arundinaria</i> sp., <i>Bambusa</i> sp., <i>B. disse-mulata</i> , <i>B. multiplex</i> , <i>B. pervariabilis</i> , <i>B. vulgaris</i> , Poaceae sp., <i>Dimochloa scandens</i> , <i>Gigantochloa</i> sp., <i>G. verticillata</i> , <i>Miscanthus</i> sp., <i>M. sinensis</i> , <i>Schizostachyum diffusum</i>	Cosmopolitan, in 23 countries	? (MacGillivray 1921; Ben-Dov 1988)
<i>Odonaspis ingranii</i> Ferris	<i>Bambusa multiplex</i> , <i>B. vulgaris</i>	China, Indonesia, Malaysia	? (Ben-Dov 1988)
<i>Odonaspis saccharicaulis</i> (Zehntner)	<i>Halimona</i> sp., <i>Mangifera</i> sp., Poaceae sp., <i>Scleria canescens</i>	Cosmopolitan, in 35 countries	Java (Merrill 1953; Ben-Dov 1988), Sumatra (Green 1930)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Odonaspis secreta</i> (Cockerell)	<i>Arundinaria</i> sp., <i>A. chino</i> , <i>A. sinoni</i> , <i>Bambusa</i> sp., <i>B. bambos</i> , <i>B. blumeana</i> , <i>Indocalamus tessellatus</i> , <i>Miscanthus</i> sp., <i>Phyllostachys</i> sp., <i>Pleioblastus</i> sp., <i>Pseudosasa japonica</i> , <i>Sasa</i> sp., <i>S. palmata</i> , <i>S. senanensis</i> , <i>S. veitchii</i> , <i>Schizostachyum</i> <i>glaucofolium</i> , <i>Semiarundinaria fastuosa</i>	Cosmopolitan, in 23 countries	Java (MacGillivray 1921; Borchsenius 1937)
<i>Opuntiaspis</i> Cockerell			
<i>Opuntiaspis javanensis</i> Green	<i>Agave</i> sp., <i>A. decipiens</i> , <i>A. fourcroydes</i> , <i>A.</i> <i>sisalana</i> , <i>A. vera-eriz</i> , <i>A. xylonacantha</i> , <i>Beaucarnea</i> sp.	Indonesia, Mexico, United States	Java (Green 1905)
<i>Parlatoria</i> Colvée			
<i>Parlatoria camelliae</i> (Comstock)	Polyphagous on ornamentals and fruits in 25 families and 40 genera	Cosmopolitan, in 31 countries	Java (Merrill 1953)
<i>Parlatoria cinerea</i> Hadden in Doane & Hadden	<i>Annona muricata</i> , <i>Citrus</i> sp., <i>C. aurant-</i> <i>ifolia</i> , <i>C. aurantium</i> , <i>C. aurantium</i> , <i>C. aurantium</i> , <i>C. limon</i> , <i>C. maxima</i> , <i>C.</i> <i>reticulata</i> , <i>Gardenia</i> sp., <i>Grewia asiatica</i> , <i>Hibiscus</i> sp., <i>Jasminum</i> sp., <i>J. sambac</i> , <i>Malus pumila</i> , <i>M. sylvestris</i> , <i>Mangifera in-</i> <i>dica</i> , <i>Melia azedarach</i> , <i>Nerium indicum</i> , <i>N.</i> <i>oleander</i> , <i>Rosa</i> sp., <i>Smilax</i> sp., <i>Stephanotis</i> sp., <i>Vitis vinifera</i>	Cosmopolitan, in 50 countries	Java (Morrison 1939)
<i>Parlatoria citri</i> McKenzie	<i>Citrus</i> sp., <i>C. aurantium</i>	Cook Is., India, Indonesia, Nigeria, Thai- land	Java (McKenzie 1943)
<i>Parlatoria crotonis</i> (Douglas)	<i>Citrus aurantium</i> , <i>C. medica</i> , <i>Cocos</i> <i>nucifera</i> , <i>Codiaeum</i> sp., <i>Co. variegatum</i> , <i>Croton</i> sp., <i>C. scouleri</i> , <i>Dendrobium</i> sp., <i>D.</i> <i>moschatum</i> , <i>Dermacentor marginatus</i> , <i>Fi-</i> <i>cus</i> sp., <i>F. cirrifolia</i> , <i>Illicium philippinense</i> , <i>I. tashiroi</i> , <i>Inocarpus fagifer</i> , <i>Laurus</i> sp., <i>Magnolia</i> sp., <i>Pandanus utilis</i> , <i>Pinus</i> sp.	Cosmopolitan, in 50 countries	Irian Jaya (Williams & Watson 1988a), Java (Williams & Miller 2010)
<i>Parlatoria flava</i> Takahashi*	Unidentified host	Indonesia	Sumatra (Takahashi 1951)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Parlatoria hastata</i> (Lindinger)*	<i>Gnetum</i> sp.	Indonesia	Kalimantan (Lindinger 1911)
<i>Parlatoria pergandii</i> Comstock	Polyphagous on ornamentals and fruits in 53 families and 153 genera	Cosmopolitan, in 71 countries	Java (Morrison 1939; Kalshoven 1981) Sumatra (Morrison 1939)
<i>Parlatoria proteus</i> (Curtis)	Polyphagous on ornamentals and fruits in 53 families and 153 genera	Cosmopolitan, in 71 countries	Java (Newstead 1908), Kalimantan (Fleury 1935), Sumatra (Clausen 1933)
<i>Parlatoria ziziphi</i> (Lucas)	Polyphagous on ornamentals and fruits in 12 families and 16 genera: Apocynaceae, Arecaceae, Euphorbiaceae, Moraceae, Myrtaceae, Oleaceae, Orchidaceae, Rhamnaceae, Rubiaceae, Rutaceae, Sapindaceae, Theaceae	Cosmopolitan, in 93 countries	Java (Morrison 1939; Kalshoven 1981), Sumatra (Clausen 1933)
<i>Pinnaspis</i> Cockerell			
<i>Pinnaspis aspidistrae</i> aspidistrae (Signoret)	Polyphagous on ornamentals and fruits in 71 families and 133 genera	Cosmopolitan, in 89 countries	Java (Green 1905)
<i>Pinnaspis buxi</i> (Bouché)	Polyphagous on ornamentals and fruits in 53 families and 153 genera	Cosmopolitan, in 71 countries	Irian Jaya (Williams & Watson 1988a), Java (Williams & Miller 2010)
<i>Pinnaspis diasporiformis</i> (Newstead)*	<i>Bambusa</i> sp., <i>Piper</i> sp.	Indonesia	Java (Newstead 1906a, b)
<i>Pinnaspis dracaenae</i> (Cooley)	<i>Areca catechu</i> , <i>Dracaena cinnabari</i> , <i>Hevea</i> sp., <i>H. brasiliensis</i> , <i>Pachira aquatica</i>	India, Indonesia, Sri Lanka, Yemen	Java (Green 1905)
<i>Pinnaspis javanensis</i> (Kuwana in Kuwana & Muramatsu)*	<i>Cocos</i> sp.	Indonesia	Java (Kuwana & Muramatsu 1931a)
<i>Pinnaspis longula</i> (Leonardi)*	<i>Persea</i> sp.	Indonesia	Java (Leonardi 1907)
<i>Pinnaspis rombica</i> Leonardi*	<i>Persea</i> sp.	Indonesia	Java (Leonardi 1907)
<i>Pinnaspis strachani</i> (Cooley)	Polyphagous on ornamentals and fruits in 74 families and 244 genera	Cosmopolitan, in 114 countries	Irian Jaya (Reyne 1961; Williams & Watson 1988a), Java (Ali 1969)
<i>Pseudanotia</i> Cockerell			
<i>Pseudanotia curculiginis</i> (Green)	<i>Corypha utan</i> , <i>Gardenia</i> sp., <i>Molineria capitulata</i>	Indonesia, Malaysia, Mongolia, Philippines, Singapore, Thailand, Vanuatu, Vietnam	Java (Green 1904; Sanders 1906; Marlatt 1908)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Pseudantonidia duplex</i> Fernald	Polyphagous on ornamentals and fruits in 21 families and 32 genera	China, Georgia, Guam, Hawaiian Is, Hong Kong, India, Indonesia, Iran, Japan, South Korea, Sri Lanka, Taiwan, United States	Java (Balachowsky 1951)
<i>Pseudantonidia greeni</i> Marlatt*	<i>Mangifera indica</i>	Indonesia	Java (Marlatt 1908; Sanders 1909)
<i>Pseudantonidia trilobitiformis</i> (Green)	Polyphagous on ornamentals and fruits in 46 families and 107 genera	Cosmopolitan, in 78 countries	Java (Marlatt 1908)
<i>Pseudaulacaspis MacGillivray</i>			
<i>Pseudaulacaspis cockerelli</i> (Cooley)	Polyphagous on ornamentals and fruits in 84 families and 152 genera	Cosmopolitan, in 53 countries	Java (Green 1905), Sulawesi (Watson <i>et al.</i> 2014)
<i>Pseudaulacaspis multidentata</i> Williams & Watson*	Unidentified dicotyledonous plant	Indonesia	Irian Jaya (Williams & Watson 1988a)
<i>Pseudaulacaspis papulosa</i> Williams & Watson*	<i>Castuarina</i> sp.	Indonesia	Irian Jaya (Williams & Watson 1988a)
<i>Pseudaulacaspis pentagona</i> (Targioni Tozzetti)	Polyphagous on ornamentals and fruits in 85 families and 221 genera	Cosmopolitan, in 111 countries	Java (Dammerman 1929; Balachowsky 1954; Suh 2016)
<i>Pseudaulacaspis papayae</i> (Takahashi)	<i>Carica</i> sp., <i>Musa</i> sp.	Indonesia, Thailand	Sumatra (Takagi 1960)
<i>Pseudaulacaspis varicosa</i> (Green)	<i>Suregada lanceolata</i> , <i>Litsea</i> sp., <i>Loranthus</i> sp., <i>Piper</i> sp., <i>P. nigrum</i>	India, Indonesia, Myanmar, Sri Lanka	Java (Green 1905)
<i>Radionaspis Ferris</i>			
<i>Radionaspis indica</i> (Marlatt)*	<i>Mangifera indica</i>	British Virgin Is, Cape Verde, Cuba, Dominican Republic, Ecuador, Federated States of Micronesia, Hawaiian Is, India, Indonesia, Jamaica, Mexico, Palau, Panaman, Puerto Rico, Saint Lucia, United States	Java (Nakahara 1982)
<i>Rutherfordia MacGillivray</i>			
<i>Rutherfordia major</i> (Cockerell)	<i>Amona muricata</i> , <i>Cordia curassavica</i> , <i>C. lutea</i> , <i>C. myxa</i> , <i>Heliotropium</i> sp., <i>Vateria indica</i>	Cosmopolitan, in 26 countries	Java (Merrill 1953)
<i>Schizentaspis Mamet</i>			
<i>Schizentaspis loranthi</i> Mamet*	<i>Amaranthus</i> sp.	Indonesia	Maluku (Mamet 1958; Borchsenius 1966)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
Sclopetaspis MacGillivray			
<i>Sclopetaspis damonensis</i> Takagi*	<i>Elipeta</i> sp.	Indonesia	Kalimantan (Takagi 2000)
Selenidiella Mamet			
<i>Selenidiella mckenziei</i> (Takahashi)*	Unknown	Indonesia	Riau Is (Rempang) (Takahashi 1951; Mamet 1958; Borchsenius 1966)
Semelaspidae MacGillivray			
<i>Semelaspis antocarpus</i> (Green)	<i>Cinnamomum</i> sp., <i>Artocarpus</i> sp., <i>Piper nigrum</i>	India, Indonesia, Sri Lanka	Java (Green 1905)
Sivestraspis Bellio			
<i>Sivestraspis ubertifera</i> (Lindinger)	<i>Artocarpus</i> sp., <i>Cinnamomum verum</i> , <i>Machilus japonica</i> , <i>Magnolia ashtonii</i> , <i>Mallothus philippe</i> , <i>Mussaendopsis beccariana</i> , <i>Syzygium hancei</i> , <i>S. jambos</i> , <i>S. kwangtungense</i>	China, Hong Kong, Cambodia, Indonesia, Malaysia, Philippines, Taiwan	Irian Jaya (Williams & Watson 1988a)
Simistraspis MacGillivray			
<i>Simistraspis unilateralis</i> (Newstead)	Polyphagous on ornamentals and fruits in 10 families and 15 genera	Barbados, India, Indonesia, Malaysia, Philippines	Kalimantan (Takagi 2000)
Unaspis MacGillivray			
<i>Unaspis cibri</i> (Comstock)	Polyphagous on ornamentals and fruits in 14 families and 18 genera	Cosmopolitan, in 96 countries	Java (Kalshoven 1981), Kalimantan (Cill-omec 1966)
<i>Unaspis yanonensis</i> (Kuwana)	<i>Citrus</i> sp., <i>C. japonica</i> , <i>C. maxima</i> , <i>C. reticulata</i> , <i>C. trifoliata</i> , <i>Damnoacanthus</i> sp.	Cosmopolitan, in 20 countries	? (Blackburn & Miller 1984)
ERIOCOCCIDAE Cockerell			
Gossyparia Signoret			
<i>Gossypariella sulawesi</i> Kozár & Martin*	<i>Elnervillia ovalis</i>	Indonesia	Sulawesi (Kozár <i>et al.</i> 2007)
Sangiooccus Reyne			
<i>Sangiooccus obusisipinus</i> (Reyne)*	<i>Cocos nucifera</i>	Indonesia	Irian Jaya (Reyne 1961)
<i>Sangiooccus reynoi</i> Kozár & Konezné Benedicý*	Areaceae sp.	Indonesia	Sulawesi (Kozár <i>et al.</i> 2009)
<i>Sangiooccus truncatispinus</i> (Reyne)	<i>Cocos nucifera</i> , <i>Nypa</i> sp.	Indonesia, Papua New Guinea, Philippines	Sulawesi (Reyne 1961)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
HALIMOCOCCIDAE			
<i>Thysanococcus stickneyi</i>	<i>Calamus</i> sp.	Indonesia	Java (Stickney 1934)
<i>Thysanococcus calami</i> Stickney*	<i>Pandanus</i> sp.	Indonesia	Java (Stickney 1934)
<i>Thysanococcus pandani</i> Stickney*			
KERMESIDAE			
<i>Reynvauania</i> Reyne	<i>Quercus lineata</i>	Indonesia	Java (Reyne 1954b), Sumatra (Reyne 1954b)
<i>Reynvauania gallicola</i> Reyne*			
KERRIIDAE			
<i>Kerria</i> Targioni Tozzetti	<i>Durio zibethinus</i> , <i>Ficus</i> sp., <i>F. fistulosa</i> , <i>F. variegata</i> , <i>Hevea brasiliensis</i> , <i>Macaranga confjera</i> , <i>M. populifolia</i> , <i>M. gigantea</i> , <i>M. megalophylla</i> , <i>Mallotus paniculatus</i> , <i>Ma cochinchinensis</i> , <i>Theobroma cacao</i>	Indonesia, Malaysia	Java (Chamberlin 1925)
<i>Kerria (Chamberliniella) rangoonensis</i> (Chamberlin)	<i>Casuarina</i> sp., <i>Combretum</i> sp., <i>Camellia sinensis</i>	Burma, India, Indonesia	Sumatra (Green 1930)
<i>Paratatchardina Balachowsky</i>	<i>Morella rubra</i>	Indonesia	Java (Kondo <i>et al.</i> 2011)
<i>Paratatchardina javanensis</i> Kondo & Gulilan*			
<i>Tachardina Cockerell</i>	<i>Acacia auriculiformis</i> , <i>Acacia sphaerocephala</i> , <i>Cajanus cajan</i> , <i>Chloroleucon</i> sp., <i>Inocarpus fagifer</i> , <i>Milletia pinnata</i> , <i>Ficus</i> sp., <i>Averrhoa carambola</i> , <i>Ziziphus jujuba</i> , <i>Z. mauritiana</i> , <i>Ixora macrohyrsa</i> , <i>Citrus</i> sp., <i>C. aurantium</i> , <i>C. paradisi</i> , <i>Flacourtia</i> sp.	Christmas Is, Indonesia, Malaysia, Maldives, Singapore, Thailand	Java (Cockerell 1903)
<i>Tachardina auranitaca</i> (Cockerell)			
LECANODIASPIDIDAE			
<i>Lecanodiaspis Targioni Tozzetti</i>			

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Lecanodiaspis baculifera</i> Leonardi*	<i>Mangifera</i> sp., <i>Viscum album</i>	Indonesia	Java (Leonardi 1907; Howell & Kosztarab 1972)
<i>Lecanodiaspis greeni</i> Takahashi*	Unidentified plant	Indonesia	Riau Is (Rempang) (Takahashi 1950; Howell & Kosztarab 1972)
Psoraleococcus Borchsenius			
<i>Psoraleococcus lombokanus</i> Lambdin & Kosztarab*	<i>Annona muricata</i>	Indonesia	Lombok (Lambdin & Kosztarab 1973)
<i>Psoraleococcus morrisoni</i> (Takahashi)*	On an unidentified plant	Indonesia	Riau Is (Rempang) (Takahashi 1950; Howell & Kosztarab 1972; Lambdin <i>et al.</i> 1976)
<i>Psoraleococcus multibratus</i> Lambdin & Kosztarab*	<i>Piper nigrum</i>	Indonesia	Sumatra (Lambdin & Kosztarab 1973)
<i>Psoraleococcus multipori</i> (Morrison)	Dipterocarpaceae sp., <i>Nephelium lappaceum</i> , <i>Oncosperma horridum</i>	Indonesia, Philippines, Singapore	Sulawesi (Gavrillov-Zimin 2013; 2018b), Sumatra (Green 1930)
Stictacanthus Lambdin & Kosztarab			
<i>Stictacanthus azadirachtae</i> (Green)	<i>Azadirachta indica</i> , <i>Derris elliptica</i> , <i>D. malaccensis</i>	India, Indonesia, Sri Lanka	Sumatra (Reyne 1954a; Howell & Kosztarab 1972)
MONOPHLEBIDAE Signoret			
Buchnericoccus Reyne			
<i>Buchnericoccus javanus</i> Reyne*	Unidentified tree	Indonesia	Java (Reyne 1965a)
Drosicha Walker			
<i>Drosicha minor</i> Reyne*	Host plant not indicated	Indonesia	Java (Reyne 1965a)
<i>Drosicha saundersii</i> (Westwood)*	Host plant not indicated	Indonesia	? (Westwood 1845)
<i>Drosicha sumatrensis</i> Green*	Host plant not indicated	Indonesia	Sumatra (Green 1930)
<i>Drosicha townsendi</i> (Cockerell)	<i>Albizia saman</i> , <i>Cassia</i> sp., <i>Ficus nota</i> , <i>Gymnosporia emarginata</i> , <i>Hibiscus</i> sp., <i>Ipomoea</i> sp., <i>Syzygium aqueum</i>	Indonesia, Philippines	Flores (Gavrillov-Zimin 2017)
Drosichoides Morrison			
<i>Drosichoides haematoptera</i> (Cockerell)*	Host plant not indicated	Indonesia	Java (Reyne 1965a), Kalimantan (Cockerell 1919)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Etopera</i> Bhatti & Gullan			
<i>Etopera papuensis</i> Bhatti & Gullan	<i>Terminalia kaerhachii</i>	Indonesia, Papua New Guinea	Irian Jaya (Gavrilov-Zimin 2013)
<i>Hemaspidoproctus</i> Morrison			
<i>Hemaspidoproctus cinereus</i> (Green)	<i>Acacia nilotica</i> , <i>Citrus</i> sp., <i>Grevillea</i> sp., <i>Lawsonia inermis</i> , <i>Liquidambar excelba</i> , <i>Manilkara zapota</i> , <i>Punica granatum</i> , <i>Terminalia</i> sp., <i>Thespesia</i> sp., <i>Yachellia</i> sp.	Costa Rica, India, Indonesia, Sri Lanka	Java (Reyne 1965a)
<i>Hemaspidoproctus tosarientis</i> (Reyne)*	<i>Casuarina junghuhniana</i>	Indonesia	Java (Reyne 1957)
<i>Icerya</i> Signoret			
<i>Icerya aegyptiaca</i> (Douglas)	Polyphagous on ornamentals and fruits in 59 families and 113 genera	Cosmopolitan, in 27 countries	Kalimantan (Williams & Miller 2010), Sulawesi (Watson <i>et al.</i> 2014)
<i>Icerya japoniana</i> Gavrilov*	Dicotyledonous tree	Indonesia	Irian Jaya (Gavrilov-Zimin 2013)
<i>Icerya imperatae</i> Rao	<i>Bambusa bambos</i> , <i>Brachiaria decumbens</i> , <i>Chloris barbata</i> , <i>Imperata</i> sp., <i>I. conferta</i> , <i>Oryza sativa</i> , <i>Ottochloa nodosa</i> , <i>Paspalum conjugatum</i> , <i>P. notatum</i> , <i>Pennisetum</i> sp., <i>Saccharum spontaneum</i> , <i>Sorghum</i> sp.	Australia, Brunai, Fiji, Indonesia, Malaysia, Palau, Philippines	Irian Jaya (Gavrilov-Zimin 2013)
<i>Icerya jacobsoni</i> Green	<i>Canarium kippella</i> , <i>Casilloa elastica</i> , <i>Citrus</i> sp., <i>Dipterocarpaceae</i> sp., <i>Dombeya acutangula</i> , <i>Eucalyptus</i> sp., <i>Leucaena leucocephala</i> , <i>Lencosyke capitellata</i> , <i>Litsea glutinosa</i> , <i>Macaranga carolinensis</i> , <i>M. tanarius</i> , <i>Neonauclea calycina</i> , <i>Oreocnide rubescens</i> , <i>Psidium guajava</i>	China, Federated States of Micronesia, Hongkong, Indonesia, Myanmar, Philippines, Thailand	Java (Green 1913; Prabhaker Rao 1951)
<i>Icerya mida</i> Green*	<i>Dendrocalamus asper</i>	Indonesia	Sumatra (Green 1930)
<i>Icerya pulchra</i> (Leonardi)	<i>Calophyllum inophyllum</i> , <i>Citrus</i> sp., <i>Cocos nucifera</i> , <i>Croton</i> sp., <i>Ilex</i> sp., <i>Magnolia champaca</i> , <i>Mangifera</i> sp., <i>M. indica</i> , <i>Rhopaloblaste</i> sp., <i>Rosa</i> sp., <i>Theobroma cacao</i>	India, Indonesia, Japan, Philippines, Singapore	Java (Leonardi 1907; Prabhaker Rao 1951), Sulawesi (Watson <i>et al.</i> 2014), Sumatra (Prabhaker Rao 1951)
<i>Icerya purchasi</i> Maskell	Polyphagous on ornamentals and fruits in 68 families and 167 genera	Cosmopolitan, in 127 countries	Irian Jaya (CABI 2019), Java, Sulawesi, Sumatra (CABI 1971)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Icerya samarita</i> (Morrison)	Polyphagous on ornamentals and fruits in 25 families and 40 genera	Federated States of Micronesia, Indonesia, New Caledonia, Palau, Papua New Guinea, Solomon Is	Bali (Gavrillov-Zimin 2017), Irian Jaya (Williams & Watson 1990; Gavrillov-Zimin 2013), Java (Reyne 1965b), Sulawesi (Gavrillov-Zimin 2013; Watson <i>et al.</i> 2014), Kalimantan (Gavrillov-Zimin 2020)
<i>Icerya seychelliarum</i> (Westwood)	Polyphagous on ornamentals and fruits in 58 families and 128 genera	Cosmopolitan, in 48 countries	Irian Jaya (Williams & Watson 1990), Java, Sumatra (CABI 1955)
<i>Icerya sumatrana</i> Rao*	<i>Citrus</i> sp., <i>Erythrina</i> sp.	Indonesia	Java, Sumatra (Prabhaker Rao 1951)
<i>Icerya zimmermanni</i> Green	<i>Citrus</i> sp., <i>Ficus religiosa</i> , <i>Macaranga tanarius</i> , <i>Melastoma</i> sp.	India, Indonesia, Thailand	Java (Prabhaker Rao 1951)
Miscococcus Rao			
<i>Miscococcus serrei</i> (Vayssièrè)*	Host plant not indicated	Indonesia	Java (Vayssièrè 1914; Vayssièrè 1926)
Monophlebus Guérin-Ménéville			
<i>Monophlebus atripennis</i> Burmeister*	Host plant not indicated	Indonesia	Java (Signoret 1876; Gavrillov-Zimin 2018a, 2021)
<i>Monophlebus fabricii</i> Targioni Tozzetti*	Host plant not indicated	Indonesia	Sumatra (Fabricius 1805)
<i>Monophlebus neglectus</i> Gavrillov-Zimin*	Host plant not indicated	Indonesia	Java (Gavrillov-Zimin 2018)
Monophlebulus Cockerell			
<i>Monophlebulus enarotalicus</i> Bhatti & Gullan*	Host plant not indicated	Indonesia	Irian Jaya (Bhatti & Gullan 1990)
<i>Monophlebulus gressitti</i> Bhatti & Gullan*	Host plant not indicated	Indonesia	Irian Jaya (Bhatti & Gullan 1990)
ORTHEZIIDAE Amyot & Serville			
Insignorthezia Kozár			
<i>Insignorthezia insignis</i> (Browne)	Polyphagous on ornamentals and fruits in 45 families and 120 genera	Cosmopolitan, in 79 countries	Bali (Gavrillov-Zimin 2017), Java (Morrison 1925)
Nipponorthezinella Kozár			
<i>Nipponorthezinella guadalcanalia</i> (Morrison)	<i>Alpinia purpurata</i> , <i>Gardenia</i> sp.	Cosmopolitan, in 18 countries	Java (Williams & Miller 2010)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Ortheziola</i> Šulc			
<i>Ortheziola hauseri</i> Konezné Benedicý & Kaydan	Host plant not indicated	Indonesia, Malaysia	Sumatra, Java (Kaydan <i>et al.</i> 2014) ³²
<i>Ortheziola peregrinasi</i> Kozár & Konezné Benedicý	<i>Quercus</i> sp.	Indonesia, Malaysia, Philippines, South Korea	Sumatra (Kaydan <i>et al.</i> 2014)
PSEUDOCOCCIDAE Cockerell			
<i>Antonina</i> Signoret			
<i>Antonina grantinis</i> (Maskell)	Polyphagous on ornamentals and fruits in 4 families and 63 genera: Cyperaceae, Euphorbiaceae, Orchidaceae, Poaceae	Cosmopolitan, in 98 countries	Irian Jaya (Williams & Watson 1988b), Java (Ali 1970; Williams 1970; 2004), Sulawesi (Williams 2004), Sumatra (Giliomee 1966; Ali 1970; Williams 1970)
<i>Antonina mileri</i> Williams	<i>Bambusa</i> sp., <i>B. blumeana</i> , <i>B. emeiensis</i> , <i>B. pervariabilis</i> , <i>B. tuldoides</i> , <i>Dendrocalamus latiflorus</i> , <i>Fargesia nitida</i> , <i>Indocalamus</i> sp., <i>Phyllostachys bambusoides</i> , <i>P. edulis</i> , <i>P. glauca</i> , <i>P. heteroclada</i> , <i>P. nigra</i> , <i>P. proppingua</i> , <i>Pleioblastus amarus</i> , <i>Sasa</i> sp., <i>S. sinica</i>	China, Indonesia, Malaysia, Philippines, Vietnam	Sumatra (Williams 2004)
<i>Antonina pretiosa</i> Ferris ³	<i>Arundinaria gigantea</i> , <i>Bambusa</i> sp., <i>B. multiplex</i> , <i>B. textilis</i> , <i>B. tuldoides</i> , <i>B. vulgaris</i> , <i>Indocalamus tessellatus</i> , <i>Oryza azicoronni</i> , <i>Phyllostachys aurea</i> , <i>Pseudosasa disticha</i> , <i>P. disticha</i>	China, Cuba, Hawaiian Is, Hong Kong, Indonesia, Malaysia, Singapore, Taiwan, United States	Irian Jaya (Gavrilov-Zimin 2013)
<i>Antonina thaisensis</i> Takahashi	<i>Bambusa</i> sp., <i>Bambusa vulgaris</i> , <i>Phragmites</i> sp.	Indonesia, Malaysia, Philippines, Sri Lanka, Thailand	Java (Sartiami <i>et al.</i> 2016)
<i>Antonina zonata</i> Green	<i>Acidosasa nanunica</i> , <i>A. venusta</i> , <i>Arundinaria</i> sp., <i>Bambusa</i> sp., <i>B. blumeana</i> , <i>Davidsea attenuata</i> , <i>Sasa sinica</i>	China, India, Indonesia, Malaysia, Philippines, Sri Lanka	Sumatra (Green 1930)
<i>Archeomyrmococcus</i> Williams			
<i>Archeomyrmococcus dolichoderi</i> Williams*	<i>Coffea</i> sp.	Indonesia	Sumatra (Williams 2002, 2004)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
Brevemia Goux			
<i>Brevemia (Brevemia) rehi</i> (Lindinger)	Arecaceae sp., <i>Cyperus</i> sp., <i>C. iria</i> , <i>C. michellianus</i> , <i>C. rotundus</i> , <i>C. serotinus</i> , <i>Fimbristylis argentea</i> , <i>F. quinqueangulata</i> , <i>F. tenera</i> , Poaceae sp.	Cosmopolitan, in 28 countries	Java (Van Heurn 1923; Williams 1970)
Chaetococcus Maskell			
<i>Chaetococcus bambusae</i> (Maskell)	<i>Arundinaria</i> sp., <i>Bambusa</i> sp., <i>B. blumeana</i> , <i>B. multiplex</i> , <i>B. textilis</i> , <i>B. vulgaris</i> , <i>Dendrocalamus</i> sp., <i>D. asper</i> , <i>D. brandisii</i> , <i>D. giganteus</i> , <i>D. latiflorus</i> , <i>D. minor</i> , <i>D. strictus</i> , <i>Gigantochloa</i> sp., <i>G. verticillata</i> , <i>G. verticillata</i> , <i>Indosasa shibataeoides</i> , <i>Lingnania chungii</i> , <i>L. chungii</i> , <i>Miscanthus</i> sp., <i>Phyllostachys</i> sp., <i>P. nigra</i> , <i>Schizostachyum</i> sp.	Cosmopolitan, in 45 countries	Flores (Gavrilo-Zimin 2017), Irian Jaya (Gavrilo-Zimin 2013), Java (Williams 2004; Sartiami <i>et al.</i> 2016)
Cristococcus Ferris			
<i>Cristococcus cambodiensis</i> (Takahashi)	On undetermined host	Cambodia, Indonesia	Bali (Gavrilo-Zimin 2017)
<i>Cristococcus kimanisicus</i> Williams	On undetermined host	Indonesia, Malaysia	Irian Jaya (Gavrilo-Zimin 2017)
<i>Cristococcus strigilis</i> Gavrilo	On twigs of dicotyledonous tree		Irian Jaya (Gavrilo-Zimin 2013)
<i>Cristococcus theobromae</i> Williams & Watson	<i>Neonuclea cyrtopoda</i> , <i>Nepheleum lappaceum</i> , <i>Punica granatum</i> , <i>Theobroma cacao</i>	Indonesia, Malaysia, Papua New Guinea, Philippines	Sulawesi (Williams 2004), Sumatra (Williams 2004)
Dieranococcus Williams			
<i>Dieranococcus montanus</i> (Reyne)*	In the nest of <i>Dolichoderus</i> sp. ant that lives on unidentified tree	Indonesia	Java (Reyne 1954a; Ben-Dov 1994; Williams 1978; Williams 2004)
Dorsoceraticoccus Dong & Wu			
<i>Dorsoceraticoccus muajatae</i> (Williams)*	Pteridaceae sp.	Indonesia	Sulawesi (Williams 2004)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Dysmicoccus Ferris</i>			
<i>Dysmicoccus boninensis</i> (Kuwana)	Polyphagous on ornamentals and fruits in 12 families and 63 genera: Arecaeae, Arecaceae, Ateraceae, Cannaceae, Convulvulaceae, Cupressaceae, Iridaceae, Pandanaceae, Poaceae, Rutaceae, Solanaceae, Vitaceae	Cosmopolitan, in 60 countries	Sumatra (Williams 2004)
<i>Dysmicoccus brevipes</i> (Cockerell)	Polyphagous on ornamentals and fruits in 62 families and 147 genera	Cosmopolitan, in 126 countries	Irian Jaya (Williams & Watson 1988a), Java (Betrem 1937; Ben-Dov 1994; Williams 2004; Sartiami <i>et al.</i> 2016), Sumatra (Williams 2004)
<i>Dysmicoccus comitatus</i> Williams & Watson*	In ants' nest	Indonesia	Irian Jaya (Williams & Watson 1988a; Ben-Dov 1994)
<i>Dysmicoccus debregasiae</i> (Green)	Polyphagous on ornamentals and fruits in 15 families and 18 genera: Asteraceae, Euphorbiaceae, Fabaceae, Lauraceae, Loranthaceae, Malvaceae, Moraceae, Myrtaceae, Polygonaceae, Rosaceae, Rubiaceae, Rutaceae, Sapotaceae, Urticaceae, Zingiberaceae	Bangladesh, Guadeloupe, India, Indonesia, Malaysia, Nepal, Sri Lanka	Java, Sulawesi, Sumatra (Williams 2004)
<i>Dysmicoccus finitimus</i> Williams	<i>Areca catechu</i> , <i>Cocos nucifera</i> , <i>Coryph utan</i>	Adam ls, Christmas I., Cocos Is, India, Indonesia, Malaysia, Maldives, Philippines, Sri Lanka	Java, Sumatra (Williams 2004)
<i>Dysmicoccus lepellei</i> (Betrem)	Polyphagous on ornamentals and fruits in 17 families and 25 genera: Anacardiaceae, Annonaceae, Arecaceae, Asparagaceae, Clusiaceae, Euphorbiaceae, Fagaceae, Malvaceae, Meliaceae, Moraceae, Muscaceae, Myrtaceae, Rubiaceae, Rutaceae, Sapindaceae, Sapotaceae, Zingiberaceae	Cambodia, Indonesia, Malaysia, Singapore, Thailand, Vietnam	Java (Betrem 1937; Ben-Dov 1994; Williams 2004), Lombok, Sumatra (Williams 2004)
<i>Dysmicoccus maclayi</i> Gavrilov*	Dicotyledonous tree	Indonesia	Irian Jaya (Gavrilov-Zimin 2013)
<i>Dysmicoccus neobrevipes</i> Beardsley	Polyphagous on ornamentals and fruits in 39 families and 63 genera	Cosmopolitan, in 41 countries	Flores (Gavrilov-Zimin 2017)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Dymicoccus orchidum</i> Williams	<i>Bulbophyllum</i> sp., <i>Cymbidium finlaysonianum</i> , <i>Dendrobium</i> sp., <i>D. decretii</i> , <i>D. heterocarpum</i> , <i>D. schuetzei</i> , <i>D. warltianum</i> , <i>Grammatophyllum scriptum</i> , <i>Phaius flavus</i> , <i>Phalaenopsis</i> sp., <i>P. amabilis</i> , <i>P. aphrodite</i> , <i>P. lueddemanniana</i> , <i>P. sandertiana</i> , <i>P. schilleriana</i> , <i>Spathoglottis</i> sp., <i>Vanda</i> sp., <i>V. coerulea</i> , <i>V. lamellata</i> , <i>V. limbata</i>	India, Indonesia, Malaysia, Philippines, Singapore, Thailand	? (Williams 2004)
Exallomochlus Williams			
<i>Exallomochlus hispidus</i> (Morrison)	Polyphagous on ornamentals and fruits in 27 families and 40 genera	Indonesia, Italy, Malaysia, Philippines, Singapore, Thailand, Vietnam	Java (Betrem 1937; Wijati 1958; Ben-Dov 1994; Williams 1970, 2004), Sumatra (Green 1930; Williams 1970, 2004), Sumba (Williams 2004)
<i>Exallomochlus sulawesicus</i> Williams*	<i>Aglaia</i> sp., <i>Bruguiera</i> sp., <i>Ficus</i> sp., <i>Neonauclea lanceolata</i> , <i>Sapindaceae</i> sp., <i>Theobroma cacao</i> , <i>Urticaceae</i> sp.	Indonesia	Sulawesi (Williams 2004; Gavrilov-Zimin 2013)
Extantococcus Williams			
<i>Extantococcus javanensis</i> Williams*	<i>Bambusa</i> sp.	Indonesia	Java (Williams 2004)
Ferrisia Fullaway			
<i>Ferrisia dasytirii</i> (Cockerell)	<i>Polyphagous on ornamentals and fruits in 23 families and 52 genera</i>	Cosmopolitan, in 23 countries	Sumatra (Zarkani <i>et al.</i> 2020)
<i>Ferrisia virgata</i> (Cockerell)	<i>Polyphagous on ornamentals and fruits in 78 families and 207 genera</i>	Cosmopolitan, in 101 countries	Irian Jaya (Williams & Watson 1988b; Gavrilov-Zimin 2013), Java (Keuchenius 1915; Betrem 1937; Ali 1968; Ben-Dov 1994; Williams 2004), Sulawesi (Williams 2004)
Formicococcus Takahashi			
<i>Formicococcus dispersus</i> Williams*	<i>Neonauclea</i> sp.	Indonesia	Sumatra (Williams 2004)
<i>Formicococcus lngnani</i> (Ferris)	<i>Areca catechu</i> ; <i>Cyperus rotundus</i> ; <i>Oryza sativa</i> ; <i>Saccharum officinarum</i> ; <i>Sorghum bicolor</i>	China, India, Indonesia, Malaysia, Thailand	Java (Williams 2004)
<i>Formicococcus sibilangiticus</i> Williams*	<i>Neonauclea</i> sp.	Indonesia	Sumatra (Williams 2004)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
Hippeococcus Reyne			
<i>Hippeococcus bundericus</i> Williams*	On undetermined host	Indonesia	Java (Williams 2002, 2004)
<i>Hippeococcus ruppardi</i> Reyne*	Burseraeae sp., <i>Eugenia</i> sp., <i>Eupatorium</i> sp., <i>Ficus variegata</i> , <i>Litsea confusa</i> , <i>Rubus</i> sp.	Indonesia	Java (Reyne 1954a; Ben-Dov 1994)
<i>Hippeococcus wegnerti</i> Reyne*	<i>Asparagus aethiopicus</i> , <i>Cyclanthera brachystachya</i> , <i>Diospyros kaki</i> , <i>Piper</i> sp.	Indonesia	Java (Reyne 1954a; Ben-Dov 1994; Williams 2004)
Hordeolicoccus Williams			
<i>Hordeolicoccus eugeniae</i> (Takahashi)	<i>Eugenia</i> sp., <i>Nephelium lappaceum</i> , <i>Suraca thai pingensis</i>	Indonesia, Malaysia, Singapore	Java (Williams 2004)
<i>Hordeolicoccus heterotrichus</i> Williams	Burseraeae sp., <i>Crypteronia griffithii</i> , <i>Eugenia</i> , <i>Garcinia mangostana</i> , <i>Krema</i> sp., <i>Neonuclea</i> sp., <i>Nephelium lappaceum</i> , <i>Saraca thai pingensis</i>	Cambodia, Indonesia, Malaysia, Singapore, Thailand, Vietnam	Sulawesi (Williams 2004)
<i>Hordeolicoccus nephelii</i> (Takahashi)	<i>Artocarpus heterophyllus</i> , <i>Bambusa</i> sp., <i>Crypteronia</i> sp., <i>Cynomeira cauliflora</i> , <i>Durio zibethinus</i> , <i>Garcinia mangostana</i> , <i>Nephelium lappaceum</i> , <i>N. mutabile</i> , <i>Rhizophora apiculata</i> , <i>Theobroma cacao</i> .	Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam	Java (Sartiami <i>et al.</i> 2016)
Lanceococcus Williams			
<i>Lanceococcus australasiacus</i> Williams*	<i>Bryonia cernua</i>	Indonesia	Java, Sulawesi (Williams 2004)
Konodesia Gavrilov-Zimin			
<i>Konodesia circuliphurima</i> (Gavrilov-Zimin)*	Poaceae sp.	Indonesia	Flores (Gavrilov-Zimin 2016)
Leptococcus Reyne			
<i>Leptococcus metroxyli</i> Reyne	<i>Ananas</i> sp., <i>Cocos nucifera</i> , <i>Metroxylon</i> sp.	Indonesia, Papua New Guinea	Irian Jaya (Williams & Watson, 1988b)
<i>Leptococcus sakai</i> (Takahashi)	<i>Gnetum tenuifolium</i> , <i>Nipa</i> sp.	Malaysia	Sulawesi (Williams 2004)
Maonelliococcus Ezzat			

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Macronellicoccus hirsutus</i> (Green)	Polyphagous on ornamentals and fruits in 78 families and 222 genera.	Cosmopolitan, in 79 countries	Bali (Williams 2004), Flores (Gavrilov-Zimin 2017), Irian Jaya (Williams 1996), Java (Betrem 1937; Ben-Dov 1994; Williams 2004), Lombok (Williams 1996, 2004), Sulawesi (Williams 1996; Watson <i>et al.</i> 2014), Sumatra (Williams 1996)
<i>Macronellicoccus multipori</i> (Takahashi)	<i>Alectryon</i> sp., <i>Averrhoa carambola</i> , <i>Crypteronia griffithii</i> , <i>Daemonorops</i> sp., <i>Durio</i> sp., <i>Endospermum diadenum</i> , <i>Garcinia</i> sp., <i>Girardinia parvifolia</i> , <i>Shorea</i> sp., <i>Macaranga confera</i> , <i>M. gigantea</i> , <i>M. hillebrandii</i> , <i>M. hypoleuca</i> , <i>M. trilobata</i> , <i>Neonuclea</i> sp., <i>Nephelium lappaceum</i> , <i>Piper</i> beetle, <i>P. nigrum</i> , <i>Poikilospermum</i> sp., <i>Theobroma cacao</i>	India, Indonesia, Malaysia, Nepal, Philippines, Singapore, Thailand	Sumatra (Williams 2004)
Mollicoccus Williams			
<i>Mollicoccus guadalcanalensis</i> Williams ⁴	<i>Pipturus</i> sp.	Indonesia, Solomon Is	Irian Jaya (Gavrilov-Zimin 2013)
Malaiococcus Takahashi			
<i>Malaiococcus ritauwensis</i> Takahashi*	<i>Piper</i> sp.	Indonesia	Sumatra (Ben-Dov 1994; Takahashi 1950; Williams, 1978, 2004)
<i>Malaiococcus sumatranus</i> Williams*	<i>Poikilospermum</i> sp.	Indonesia	Sumatra (Williams 2002)
Mutabilicoccus Williams			
<i>Mutabilicoccus vanheurni</i> (Reyne)	<i>Ariocarpus</i> sp., <i>Theobroma cacao</i>	Indonesia, Papua New Guinea	Irian Jaya (Williams & Watson 1988b)
Nipaeococcus Sulc			
<i>Nipaeococcus nipae</i> (Maskell) ²	Polyphagous on ornamentals and fruits in 49 families and 106 genera	Cosmopolitan, in 59 countries	Java (Williams 2004)
<i>Nipaeococcus pseudo filamentosus</i> (Betrem)*	<i>Citrus</i> sp., <i>Coffea arabica</i> , <i>Erythrina</i> sp.	Indonesia	Java (Betrem 1937; Ben-Dov 1994) ⁶
<i>Nipaeococcus viridis</i> (Newstead)	Polyphagous on ornamentals and fruits in 45 families and 114 genera	Cosmopolitan, in 63 countries	Irian Jaya (CABI 1983; Ben-Dov 1994), ⁶ Java (CABI 1983; Ben-Dov 1994; Williams 2004), Sulawesi (Williams 2004)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Palmicultor</i> Williams			
<i>Palmicultor lumpurensis</i> (Takahashi):	<i>Arundinaria</i> sp., <i>Bambusa</i> sp., <i>B. blumeana</i> , <i>B. multiplex</i> , <i>B. ventricosa</i> , <i>B. vulgaris</i> , <i>Bashania yongdeensis</i> , <i>Chimonobambusa</i> sp., <i>Dendrocladus hamiltonii</i> , <i>Gigantochloa arrovifolia</i> , <i>Guadua angustifolia</i> , <i>Lingnania cerosissima</i> , <i>L. chungii</i> , <i>Phyllostachys edulis</i> , <i>P. glauca</i> , <i>P. pubescens</i> , <i>P. nigra</i> , <i>Pseudosasa japonica</i> , <i>Sphaerobambos philippinensis</i>	Australia, China, France, Hongkong, Indonesia, Malaysia, Philippines, South Korea, United States, Vietnam	Bali (Gavrillov-Zimin 2017), Irian Jaya (Gavrillov-Zimin 2013)
<i>Palmicultor palmarum</i> (Ehrhorn)	<i>Acacia usak</i> , <i>Areca catechu</i> , <i>Borassus flabellifer</i> , <i>Caryota mitis</i> , <i>Cocos nucifera</i> , <i>Dypsis lutescens</i> , <i>Elaeis guineensis</i> , <i>Freyinetia</i> sp., <i>Hypophorbe indica</i> , <i>Licuala</i> sp., <i>Phoenix roebelenii</i> , <i>Phyllostachys</i> sp., <i>Rovstonia regia</i> , <i>Thrinax</i> sp., <i>Washingtonia filifera</i>	Cosmopolitan, in 30 countries	Java, Sulawesi, Sumatra (Williams 2004)
<i>Paracoccus</i> Ezzat & McConnell			
<i>Paracoccus evae</i> Williams*	<i>Eupatorium</i> sp., Poaceae sp.	Indonesia	Java (Williams 2004)
<i>Paracoccus interceptus</i> Lit	<i>Annona cherimola</i> , <i>Artocarpus</i> sp., <i>Bambusa</i> sp., <i>Citrus aurantifolia</i> , <i>Cynometra cauliflora</i> , <i>Dendrobium</i> sp., <i>Dumocarpus longan</i> , <i>Durio</i> sp., <i>Ficus</i> sp., <i>Garcinia mangostana</i> , <i>Hoya pachyclada</i> , <i>Lansium domesticum</i> , <i>Litchi chinensis</i> , <i>Mangifera indica</i> , <i>Melastoma</i> sp., <i>Neonauclea</i> sp., <i>Nephelium lappaceum</i> , <i>Piper nigrum</i> , <i>Platonia esculenta</i> , <i>Psidium guajava</i> , <i>Rhynchosyris retusa</i> , <i>Spondias dulcis</i> , <i>Strychnos vanprukii</i> , Zingiberaceae sp.	Indonesia, Benin, Brunei, India, Cambodia, Indonesia, Malaysia, Philippines, Sri Lanka, Thailand, Vietnam	Irian Jaya (Williams 2004; Gavrillov-Zimin 2013)
<i>Paracoccus marginatus</i> Williams & Grana de Willink	Polyphagous on ornamentals and fruits in 49 families and 136 genera	Cosmopolitan, in 51 countries	Bali (Ahmed <i>et al.</i> 2015), Java, Sulawesi (Muniappan <i>et al.</i> 2008)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
Paraputo laing			
<i>Paraputo acehicus</i> Williams*	<i>Neonauclea</i> sp.	Indonesia	Sumatra (Williams 2004)
<i>Paraputo corbeti</i> (Takahashi)	<i>Mangifera indica</i>	Indonesia, Malaysia	Java (Williams 2004)
<i>Paraputo errabundus</i> Williams	<i>Neonauclea</i> sp., <i>Rhizophora</i> sp., <i>Xylocarpus</i> sp.	Andaman Is, Brunei, Indonesia	Sulawesi (Williams 2004)
<i>Paraputo leverii</i> (Green)	<i>Balanophora</i> sp., <i>Bischofia javanica</i> , <i>Cocos nucifera</i> , <i>Coffea arabica</i> , <i>C. canephora</i> , <i>Colocasia esculenta</i> , <i>Ficus</i> sp., <i>F. septica</i> , <i>Inocarpus fagifer</i> , <i>Mangifera indica</i> , <i>Syzygium aromaticum</i> , <i>Tiils vinifera</i>	American Samoa, Federated States of Micronesia, Fiji, Indonesia, Malaysia, Papua New Guinea, Solomon Is., Thailand, Tonga, Vanuatu, Western Samoa	Java (Williams 2004)
<i>Paraputo mangiferae</i> (Betrem)* ⁴	<i>Mangifera indica</i>	Indonesia ⁶⁰	Java (Betrem 1937; Ben-Dov 1994) ²
<i>Paraputo martini</i> Williams*	<i>Pathos</i> sp.	Indonesia	Sulawesi (Williams 2004)
<i>Paraputo maschwitzii</i> Williams*	<i>Neonauclea</i> sp.	Indonesia	Sumatra (Williams 2004)
<i>Paraputo moogi</i> Williams*	<i>Neonauclea</i> sp.	Indonesia	Sumatra (Williams 2004)
<i>Paraputo neonaucleae</i> Williams*	<i>Neonauclea</i> sp.	Indonesia	Sumatra (Williams 2004)
<i>Paraputo odontomachi</i> (Takahashi)	<i>Bischofia</i> sp., <i>Crypteronia griffithii</i> , <i>C. macrophylla</i> , <i>Elaeocarpus petiolatus</i> , <i>Garcinia mangostana</i> , <i>Neonauclea</i> sp.	India, Malaysia, Philippines, Singapore, Vietnam	Sumatra (Williams 2004)
<i>Paraputo palmicola</i> Williams*	Arecaceae sp.	Indonesia	Sulawesi (Williams 2004)
<i>Paraputo pandanicola</i> Williams**	<i>Pandanus</i> sp.	Indonesia	? (Williams 2004)
<i>Paraputo riparius</i> Williams*	Sapindaceae sp.	Indonesia	Sulawesi (Williams 2004)
Pedrococcus Mamet			
<i>Pedrococcus glandulitubulatus</i> Gavrilov-Zimin*	On leaf of undetermined tree	Indonesia	Bali (Gavrilov-Zimin 2017b)
Phenacoccus Cockerell			
<i>Phenacoccus manihoti</i> Matile-Ferrero	<i>Boerhavia diffusa</i> , <i>Citrus</i> sp., <i>Cyperus</i> sp., <i>Glycine max</i> , <i>Manihot esculenta</i> , <i>Ocimum</i> sp., <i>Sida rhombifolia</i> , <i>Solanum</i> sp., <i>Talinum triangulare</i>	Cosmopolitan, in 37 countries	Java (Muniappan <i>et al.</i> 2011), Bali (Supartha <i>et al.</i> 2020)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Phenacoccus parvus</i> Morrison	Polyphagous on ornamentals and fruits in 27 families and 59 genera	Cosmopolitan, in 45 countries	Sumatra (Williams 2004)
<i>Phenacoccus solenopsis</i> Tinsley	Polyphagous on ornamentals and fruits in 64 families and 204 genera	Cosmopolitan, in 49 countries	Bali (Gavrillov-Zimin 2017), Irian Jaya (Gavrillov-Zimin 2013)
<i>Planococcus Ferris</i>			
<i>Planococcus angkorensis</i> (Takahashi) [†]	Polyphagous on ornamentals and fruits in 17 families and 23 genera: Anacardiaceae, Apocidae, Daphniphyllaceae, Dioscoreaceae, Euphorbiaceae, Fabaceae, Loganiaceae, Lythraceae, Meliaceae, Moraceae, Myrtaceae, Piperaceae, Primulaceae, Rubiaceae, Sapindaceae, Scrophulariaceae, Urticaceae	China, India, Indonesia, Cambodia, Malaysia, Philippines, Taiwan, Thailand, Vietnam	Lombok, Sumatra (Williams 2004)
<i>Planococcus citri</i> (Risso) [†]	Polyphagous on ornamentals and fruits in 83 families and 196 genera	Cosmopolitan, in 161 countries	Java (Betrem 1937; Ben-Dov 1994; Williams 2004), Kalimantan, Sulawesi (CABI 1995), Sumatra (Green 1930)
<i>Planococcus dischidiae</i> (Takahashi)	<i>Dischidia</i> sp.	Indonesia, Malaysia	Sulawesi (Cox 1989; Ben-Dov 1994; Williams 2004)
<i>Planococcus lilacinus</i> (Cockerell)	Polyphagous on ornamentals and fruits in 36 families and 71 genera	Cosmopolitan, in 34 countries	Bali (CABI 1995), Flores (Gavrillov-Zimin 2017), Irian Jaya (Williams & Watson 1988b; Ben-Dov 1994), Java (Newstead 1908; Betrem 1937; Williams 2004), Kalimantan (Cox 1989; Ben-Dov 1994), Lombok (CABI 1995), Sulawesi (Gavrillov-Zimin 2013), Sumatra (Williams 2004)
<i>Planococcus minor</i> (Maskell) [†]	Polyphagous on ornamentals and fruits in 73 families and 196 genera	Cosmopolitan, in 64 countries	Irian Jaya (Ben-Dov 1994) (Williams & Watson 1988b), Java (Williams 2004), Kalimantan (Cox 1989; Ben-Dov, 1994), Lombok, Sulawesi (Williams, 2004), [‡] Sumatra (Cox 1989; Ben-Dov, 1994; Williams 2004)
<i>Planococcus sulawesi</i> Cox*	<i>Ficus</i> sp., Urticaceae sp.	Indonesia	Sulawesi (Cox 1989; Ben-Dov 1994; Williams 2004)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Pseudococcus</i> Westwood			
<i>Pseudococcus aurantiacus</i> Williams	<i>Averrhoa carambola</i> , <i>Callerya nienwenhuisii</i> , <i>Crypteronia griffithii</i> , <i>Garcinia mangostana</i> , <i>Lansium domesticum</i> , <i>Neonauclea</i> sp., <i>Nephelium lappaceum</i> , <i>Ryparosa fasciculata</i> , <i>Schefflera</i> sp., <i>Strychnos vanprukii</i>	Brunei, Indonesia, Malaysia, Singapore, Thailand, Vietnam	Sumatra (Williams 2004)
<i>Pseudococcus baliteus</i> Lit	<i>Artocarpus odoratissimus</i> , <i>Citrus aurantium</i> , <i>Dimocarpus longan</i> , <i>Dracaena</i> sp., <i>Durio zibathinus</i> , <i>Ficus elastica</i> , <i>Garcinia mangostana</i> , <i>Litchi chinensis</i> , <i>Nephelium lappaceum</i> , <i>Osbornia octodonta</i> , <i>Pakidispermum suaveolens</i> , <i>Pouteria</i> sp., <i>Psidium guajava</i> , <i>Syzygium</i> sp.	Cambodia, China, India, Indonesia, Myanmar, Philippines, Singapore, Thailand, Vietnam	Sulawesi (Williams 2004)
<i>Pseudococcus calceolariae</i> (Maskell)	Polyphagous on ornamentals and fruits in 44 families and 81 genera	Cosmopolitan, in 34 countries	Java (Betrem 1937; Ben-Dov 1994)
<i>Pseudococcus comstocki</i> (Kuwana)	Polyphagous on ornamentals and fruits in 43 families and 67 genera	Cosmopolitan, in 34 countries	Java (Betrem 1937; Ben-Dov 1994)
<i>Pseudococcus cryptus</i> Hempel	Polyphagous on ornamentals and fruits in 42 families and 73 genera	Cosmopolitan, in 42 countries	Java (Sartiami <i>et al.</i> , 2016), Lombok (Williams 2004), Sulawesi (Williams 2004; Watson <i>et al.</i> 2014), Sumatra (Williams 2004)
<i>Pseudococcus dendrobiorum</i> Williams	<i>Ascoglossum calopterum</i> , <i>Cymbidium</i> sp., <i>Dendrobium</i> sp., <i>D. bigibbum</i> , <i>D. canaliculatum</i> , <i>D. discolor</i> , <i>D. johnstoniae</i> , Orchidaceae sp., <i>Phalaenopsis sanderiana</i> , <i>P. schilleriana</i> , <i>Pholidota</i> sp., <i>Pomatocalpa spicata</i>	Australia, Guam, Hawaiian Is, India, Indonesia, Malaysia, Papua New Guinea, Philippines, South Korea, Sri Lanka, Thailand, United States	? (Ben-Dov 1994; Williams 1985, 2004)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Pseudococcus gilbertensis</i> Beardsley [†]	<i>Asparagus cochinchinensis</i> , <i>Bischofia javanica</i> , <i>Calophyllum</i> sp., <i>C. inophyllum</i> , <i>Citrus</i> sp., <i>Cl. japonica</i> , <i>Chrysophyllum cainito</i> , <i>Ligustrum sinense</i> , <i>Lycium</i> sp., <i>Mangifera indica</i> , Fabaceae sp., <i>Ficus</i> sp., <i>Gnetum gnemon</i>	Bonin Is, Indonesia, Kiribati, Philippines	Sulawesi (Williams 2004)
<i>Pseudococcus jackbeardsleyi</i> Gimpel & Miller	Polyphagous on ornamentals and fruits in 52 families and 112 genera	Cosmopolitan, in 52 countries	Flores (Gavrilo-Zimin 2017), Irian Jaya (Gavrilo-Zimin 2013), Java (Williams 2004)
<i>Pseudococcus longispinus</i> (Targioni Tozzetti)	Polyphagous on ornamentals and fruits in 84 families and 167 genera	Cosmopolitan, in 115 countries	Irian Jaya (Ben-Dov 1994; Williams & Watson 1988b), Java (Beitem 1937; Ben-Dov 1994), Lombok (Williams 2004), Sulawesi (Waisson <i>et al.</i> 2014), Sumatra (Green 1930)
<i>Pseudococcus maritimus</i> (Ehhorn)	Polyphagous on ornamentals and fruits in 44 families and 71 genera	Argentina, Armenia, Bermuda, Brazil, Canada, Chile, Colombia, French Guiana, Georgia, Guadeloupe, Guatemala, Indonesia, Madeira Is, Mexico, Poland, Puerto Rico & Vieques, United States Indonesia	Java (Beitem 1937; Ben-Dov 1994)
<i>Pseudococcus pseudocitricitius</i> Beitem	<i>Coffea canephora</i> , <i>Sonchus arvensis</i> , <i>Tephrosia vogelii</i>	Indonesia	Java (Beitem 1937; Ben-Dov 1994)
<i>Pseudococcus saccharicola</i> Takahashi	<i>Arundo donax</i> , <i>Brachiaria mutica</i> , <i>Chloris barbata</i> , <i>C. radiata</i> , <i>Cynodon dactylon</i> , <i>Eriochloa polystachya</i> , <i>Imperata</i> , <i>Oryza sativa</i> , Poaceae sp., <i>Saccharum bengalense</i> , <i>S. officinarum</i> , <i>S. robustum</i> , <i>S. spontaneum</i> , <i>Sorghum halepense</i>	Andaman Is, Bangladesh, British Virgin Is, India, Indonesia, Malaysia, Pakistan, Papua New Guinea, Philippines, Sri Lanka, Taiwan, Thailand	Java (Wirjati 1959; Ben-Dov 1994; Williams 2004)
<i>Pseudococcus viburni</i> (Signoret)	Polyphagous on ornamentals and fruits in 88 families and 242 genera	Cosmopolitan, in 59 countries	Java (Williams 2004)
Rastrococcus Ferris			
<i>Rastrococcus balinensis</i> Buchner [*]	Host plant not indicated	Indonesia	Bali (Buchner 1957)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
<i>Rastrococcus biggieri</i> Williams & Watson	<i>Ficus</i> sp., <i>Isonia spectabilis</i> , <i>Macaranga tanarius</i> , Poaceae sp.	Indonesia, Philippines, Solomon Is	Irian Jaya (Ben-Dov 1994; Williams 1989, 2004)
<i>Rastrococcus chinensis</i> Ferris	<i>Alouasia</i> sp., <i>Ardisia lindleyana</i> , <i>Eugenia</i> sp., <i>Melastoma malabathricum</i> , <i>Morinda umbellata</i> , <i>Psychotria asiatica</i> , <i>Syzygium</i> sp., <i>S. anomalum</i> , <i>S. hancei</i> Sapotaceae sp.	Brunei, China, Indonesia, Malaysia	Java (Ben-Dov 1994; Williams 1989, 2004)
<i>Rastrococcus expeditionis</i> Williams*	Host plant not indicated	Indonesia	Irian Jaya (Gavrilo-Zimin 2013), Sulawesi (Ben-Dov 1994; Williams 1989, 2004)
<i>Rastrococcus franzenii</i> Buchner*	Polyphagous on ornamentals and fruits in 29 families and 54 genera	Indonesia	Java (Buchner 1957)
<i>Rastrococcus invadens</i> Williams	<i>Clausena excavata</i> , <i>Ficus ampelas</i> , <i>Nepentium lappaceum</i> , <i>Sandoricum</i> sp.	Cosmopolitan, in 32 countries	Bali, Java (Ben-Dov 1994; Williams 1989, 2004)
<i>Rastrococcus tabadii</i> Williams	On leaf of dicotyledonous tree	Indonesia, Philippines, Singapore, Thailand	Java (Bogor) (Williams 1989, 2004)
<i>Rastrococcus kendariensis</i> Gavrilo*	<i>Cocos nucifera</i> , <i>Ficus</i> sp., <i>Harpullia</i> sp., <i>Heritiera littoralis</i>	Indonesia	Sulawesi (Gavrilo-Zimin 2013)
<i>Rastrococcus neoguineensis</i> Williams & Watson	<i>Ficus</i> sp.	Papua New Guinea	Irian Jaya (Williams & Watson 1988b; Ben-Dov 1994)
<i>Rastrococcus pseudospinosus</i> Buchner*	<i>Citrus aurantium</i> , <i>C. maxima</i> , <i>C. microcarpa</i> , <i>Mangifera indica</i> , <i>Mallotus</i> sp., <i>M. paniculatus</i> , <i>Plumeria rubra</i>	Indonesia	Java (Buchner 1957)
<i>Rastrococcus rubellus</i> Williams	Polyphagous on ornamentals and fruits in 19 families and 24 genera	Hong Kong, Indonesia, Laos, Malaysia, Sri Lanka	Java (Williams 2004)
<i>Rastrococcus spinosus</i> (Robinson)		Bangladesh, Brunei, Cambodia, India, Indonesia, Laos, Malaysia, Pakistan, Philippines, Singapore, Taiwan, Thailand, Vietnam	Bali (Williams 1989, 2004), Java (Green 1922; Betrem 1937; Williams 2004), Lombok (Williams 2004), Sulawesi (Williams 1989, 2004), Sumatra (Williams 2004)
<i>Rastrococcus vicorum</i> Williams & Watson	<i>Citrus</i> sp., <i>C. aurantium</i> , <i>C. limon</i> , <i>C. maxima</i> , <i>C. reticulata</i> , <i>Coffea</i> sp., <i>Plumeria rubra</i> , <i>Psidium guajava</i>	Indonesia, Malaysia, Papua New Guinea	Sulawesi (Ben-Dov 1994; Williams 1989, 2004)
<i>Rastrococcus wilsoni</i> Williams*	On stem of young tree	Indonesia	Sumatra (Williams 2004)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
Saccharicoccus Ferris			
<i>Saccharicoccus sacchari</i> (Cockerell)	<i>Cocos nucifera</i> , <i>Cortaderia</i> sp., <i>Cymbopogon caesius</i> , <i>Imperata cylindrica</i> , <i>Miscanthus floridulus</i> , <i>M. sinensis</i> , <i>Oryza sativa</i> , <i>Phragmites</i> sp., <i>Saccharum</i> sp., <i>S. officinarum</i> , <i>S. sinense</i> , <i>S. spontaneum</i> , <i>Sorghum bicolor</i> , <i>So. halepense</i>	Cosmopolitan, in 78 countries	Java (CABI 1959; Ben-Dov 1994; Williams 2004)
RHIZOECIDAE Williams			
Geococcus Green			
<i>Geococcus coffeae</i> Green	Polyphagous on roots of ornamentals and fruits in 30 families and 56 genera	Cosmopolitan, in 58 countries	Java (Williams 1969; Ben-Dov 1994), Sulawesi (Williams 2004)
<i>Geococcus hauseri</i> Williams	In forest soil	Indonesia, Malaysia	Sumatra (Williams 2004)
Leptorhizococcus Williams*			
<i>Leptorhizococcus deharvengi</i> Williams*	<i>Hevea</i> sp.	Indonesia	Sumatra (Williams 1998, 2004)
Ripersiella Tinsley			
<i>Ripersiella bedosae</i> (Williams)*	Leaf litter	Indonesia	Sumatra (Williams 2004)
<i>Ripersiella multiporifera</i> Jansen	<i>Dracaena</i> sp., <i>D. angustifolia</i> , <i>D. surcu-losa</i> , <i>Hoya kerrii</i> , [<i>Sansevieria</i>] = <i>Dracaena</i> sp.	China, Indonesia, Malaysia, Thailand, Vietnam	? (Jansen 2008)
<i>Ripersiella sumatrensis</i> (Williams)*	Primary forest soil, extracted by Berlese apparatus	Indonesia	Sumatra (Williams 2004)
Rhizococcus Künckel d'Herculais			
<i>Rhizococcus amorphophalli</i> Betrem	<i>Amorphophallus</i> sp., <i>A. variabilis</i> , <i>Asplenium</i> sp., <i>Colocasia esculenta</i> , <i>Cordyline fruticosa</i> , <i>Curcuma longa</i> , <i>Dioscorea eliphanthropes</i> , <i>Kaempferia galanga</i> , <i>Zingiber officinale</i> , <i>Z. zerumbet</i>	Federated States of Micronesia, Guadeloupe, Hawaiian Is, India, Indonesia, Malaysia, Philippines, Thailand, United Kingdom, Vietnam	Java (Betrem 1940; Ben-Dov 1994; Williams 2004), Sumatra (Williams 2004)
<i>Rhizococcus pignerator</i> Williams*	Extracted from soil by Berlese apparatus	Indonesia	Sumatra (Williams 2004)

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TABLE 1. (Continued)

Taxon	Host plant	World distribution	Distribution in Indonesia
XENOCOCCIDAE			
<i>Eumymnococcus Silvestri</i>			
<i>Eumymnococcus falciculatus</i> (Williams)*	Primary forest litter	Indonesia	Sumatra (Williams 1998)
<i>Eumymnococcus kratensis</i> Williams*	In soil of dammar plantation	Indonesia	Sumatra (Williams 1998)
<i>Eumymnococcus latuginosus</i> Williams*	In the nest of unidentified ant	Indonesia	Sumatra (Williams 1998)
<i>Eumymnococcus sulawesicus</i> Williams*	Toraat forest	Indonesia	Sulawesi (Williams 1998)
<i>Xenococcus Silvestri</i>			
<i>Xenococcus acropygae</i> Williams	<i>Cocos nucifera</i> , <i>Vitis vinifera</i>	Australia, India, Indonesia, Malaysia, Papua New Guinea, Philippines, Singapore, Solomon Is, Vietnam	Java (Williams 2004), Sulawesi (Williams 1998; Williams 2004)

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PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9

PAGE 10

PAGE 11

PAGE 12

PAGE 13

PAGE 14

PAGE 15

PAGE 16

PAGE 17

PAGE 18

PAGE 19

PAGE 20

PAGE 21

PAGE 22

PAGE 23

PAGE 24

PAGE 25

PAGE 26

PAGE 27

PAGE 28

PAGE 29

PAGE 30

PAGE 31

PAGE 32

PAGE 33

PAGE 34

PAGE 35

PAGE 36

PAGE 37

PAGE 38

PAGE 39

PAGE 40

PAGE 41

PAGE 42

PAGE 43

PAGE 44

PAGE 45
