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An updated list of scale insects (Hemiptera, Coccoomorpha) from import interceptions and greenhouses in the Netherlands

MAURICE G. M. JANSEN^{1,2} & LUCAS P. ALFERINK^{1,3}

¹Ministry of Agriculture, Nature and Food Quality, The Netherlands Institute for Vectors, Invasive plants and Plant health (NIVIP), Geertjesweg 15, 6706 EA Wageningen, the Netherlands

²[✉ mgmjansen@gmail.com](mailto:mgmjansen@gmail.com); <https://orcid.org/0009-0005-0395-7451>

³[✉ l.p.alferink@nvwa.nl](mailto:l.p.alferink@nvwa.nl); <https://orcid.org/0000-0002-8896-5872>

Abstract

An updated list is given of the scale insect species (Hemiptera: Coccoomorpha) intercepted on plants imported into the Netherlands and detected in greenhouses during the period 1950–2022. Host plants, country of origin and year of first interception are given for intercepted species on imported plants, 234 species in total. A second list of 149 species of Coccoomorpha is presented summarizing the scale insects that were at least once found in greenhouses in the Netherlands during the observation period. The data of each species includes the first year of detection, the host plant on which the species was found and the type of greenhouse in which it was discovered. A group of 29 species has been found in greenhouses but has never been intercepted during import inspections. During the observation period several species were described as new to science e.g. three Rhizoecidae species: *Ripersiella emarai* Jansen, *R. maasbachi* (Jansen) and *R. multiporifera* Jansen, two Pseudococcidae, *Paraputo ensete* (Williams & Matile-Ferrero) and *Phenacoccus emansor* Williams & Kozarzhevskaya, and one Qinoecidae *Jansenus burgeri* Foldi. A small part of the material could not yet be identified to species level with certainty.

Key words: Coccoomorpha, Netherlands, greenhouses, import

Introduction

Scale insects (Coccoomorpha) are a group of phytophagous insects, commonly transported by plant trade. The group of non-native scale insects in Europe account for about 30% of the total scale insect fauna (Pellizzari & Germain 2010) and belong mainly to three families: Coccidae, Diaspididae and Pseudococcidae. During the period 2010–2017 Germain & Pellizzari (2017) recorded 39 new species in a renewed checklist of alien scale species in Europe which is an illustration of the dynamic nature of biological invasions. Seljak (2013) concluded 50% of alien species introduced in Slovenia were discovered during the last two decades. The purpose of this communication is to present an updated list of scale insects from greenhouses and import interceptions in the Netherlands. With a few exceptions these two lists contain non-native species.

In this paper an overview is given of introduced species whether as a result of direct import or found in more or less established or temporary populations in greenhouses at a later moment. It was in 1899 that the introduction and settlement of *Comstockaspis perniciosa* (Comstock) (Diaspididae) in the Netherlands was the motive for the foundation of the Plant Protection Service which is now part of the Netherlands Food and Consumer Product Safety Authority (NVWA-NIVIP). To prevent and diminish the chance of outbreaks of harmful species and new species introductions, samples are taken by phytosanitary inspectors with the use of a randomized protocol for consignments originating from about 220 countries in the world and more than 1700 plant species.

Material and methods

Coccomorpha specimens are collected by inspectors during import inspections, however small numbers may be easily overlooked. After the arrival of plants in greenhouses, small populations are growing in number and discovered more easily. Inspections in greenhouses of growers and suppliers were made on a regularly basis during the period 1950–2022. Trade increased during that period and underwent a change in products, both in number and in commodities. The first decades emphasis was made on field inspections of crops grown outside, but from 1980 there was an increasing number of submissions because of both import and export inspections. With the introduction of the European plant health legislation and EU-regulations inspections increasingly focus on quarantine species listed in Annexes of the Commission implementing regulations 2019/2072, a revision of the Plant Health Regulations from 2000. This regulation together with Regulations (EU) 2016/2031 and the Commission implementing regulations 2019/66 and 2019/2130 provide detailed rules on how to inspect imported plant products, the frequency rate to commodities, specified to plant species on which they are living. Inspection percentages and methodology is regularly adjusted depending on interceptions of economic important species and the results of pest risk assessments. With the emphasis on quarantine species the number of field inspections decreased and came to an end in the Netherlands. The continuous methodological changes influence activities of inspectors and the time available for collecting species of less or unknown economic importance. Not every consignment is subject to inspection, and it is still possible that insect species are brought in and are discovered at a later moment. Jansen (1995, 2005) listed the species based on the findings of the field service of the NPPO (PPS, nowadays NVWA). Since 2007 however, inspections are conducted by the flower bulb inspection service (BKD), the Netherlands Inspection Service for Horticulture (NAKtuinbouw) and the Quality Control Bureau (KCB). An additional but irregular source of submissions of samples are received from private owners, chemical companies, gardeners, traders of biological control agents, extension services, universities, and local authorities.

In the trading circuit there are species waiting for discovery which may cause damage to outdoor crops, the public green or to indoor plantings. Inspectors look for scale insects and other arthropod specimens on various kind of commodities. Examples of those which are of importance for Coccomorpha are pot plants, bonsai plants, bulbs and corms, fruits and vegetables, shrubs and trees. Because of their cryptic lifestyle, scale insect species can only be detected by regular inspections by inspectors who are experienced, well equipped, and well educated. Recognizing the species group in the field and collecting enough specimens of the right developmental stage are a prerequisite for a fast and reliable morphological identification. Therefore, because of these merits, *Ripersiella maasbachi* Jansen and *R. emarai* Jansen are named in honour to the inspectors Koos Maasbach and Atef Emara who played an important role in pest surveillance and detection.

Identifications were carried out predominantly by the first author since 1991 and by the late Herman Burger who was the main diagnostician of Coccomorpha during the period 1950–1990 at what was called at that time the “Plantenziektenkundige Dienst”. In the Netherlands there are two coccidology collections. The smaller one is at the Naturalis Museum in Leiden and predominantly contains the collection of the late Adriaan Reyne (Tammes & van Eyndhoven, 1967) who occasionally helped with the identifications of imported material. The collection of the Dutch NPPO (Wageningen) contains specimens collected in greenhouses and during import inspections. However, this collection also contains European and Dutch Coccomorpha collected during field inspections. Although there is some material from before 1950, the number of regular submissions raised after that year as a result of increased trade. A small part of the collection includes unidentified microscopic slides.

Identifications were carried out using microscopic features of slide-mounted specimens of the slide collection of the Dutch NPPO at Wageningen. For microscopic slides, specimens were cleared in 10% KOH, ethanol 70%, and acetic acid, dewaxed in Decon 90 (Banks & Williams 1972) and Oté Clean 40, stained with a mixture of lignin pink and acid fuchsin, cleared in clove oil and mounted in Canada balsam. Morphological structures were studied using an Olympus (JAPAN) BX50 interference contrast microscope.

Results

During the inspection period starting from 1950 at least 266 species from sixteen families were found which belong to the following three main families: Coccidae (33 species), Diaspididae (121 species) and Pseudococcidae (70 species). Since 2004 at least 63 species were not earlier recorded in the Netherlands. This group can be divided in 42 species found only during import inspections, 10 species observed only in greenhouses and 11 species observed during both import inspections and in greenhouses.

The list of species (Table 1) intercepted at import consists of 234 species whereas Table 2 lists 149 greenhouse species. Twenty-nine species were detected in greenhouses but never on imported plants, an indication that these scale insects remain unseen during import inspections. Historically, during the succeeding decades the number of species gradually increased: during the period 1943–1950 sixteen species were found which were never recorded from greenhouses before whereas in the succeeding decades the number of new observed exotic greenhouse species fluctuated between 27 and 47.

Table 1. List of scale insects (Coccoomorpha) intercepted in the Netherlands on imported products, year of first interception, country of origin and hostplant.

ASTEROLECANIIDAE	
<i>Bambusaspis bambusae</i> (Boisduval) (*)	1987 China (<i>Bambusa ventricosa</i>), Costa Rica (<i>Bambusa vulgaris</i>), Sri Lanka (<i>Bambusa vulgaris</i> [cf])
<i>Bambusaspis cf caudata</i> (Green)	2012 Costa Rica (<i>Bambusa vulgaris</i>)
<i>Russellaspis pustulans</i> (Cockerell)	1966 Netherlands Antilles (<i>Nerium oleander</i>), Gabon (<i>Plectrelminthus</i>), Sri Lanka (<i>Malus</i>)
COCCIDAE	
<i>Ceroplastes ceriferus</i> (Fabricius) (*)	1999 China (<i>Camellia japonica</i>), Taiwan (<i>Ficus</i> , <i>Podocarpus</i>)
<i>Ceroplastes floridensis</i> Comstock (*)	1979 Costa Rica (<i>Phoenix</i>), Dominican Republic (<i>Ficus</i>), Guatemala (<i>Citrus</i> , <i>Schefflera</i>), Honduras (<i>Schefflera</i>), Israel (<i>Citrus</i>), USA (<i>Citrus x microcarpa</i> , <i>Filicium</i>)
<i>Ceroplastes japonicus</i> Green (*)	2003 Japan (<i>Crataegus monogyna</i>)
<i>Ceroplastes rubens</i> Maskell (*)	1978 Costa Rica (<i>Schefflera arboricola</i>), Japan (<i>Acer buergerianum</i>), Sri Lanka (<i>Aglaonema</i>), Taiwan (<i>Podocarpus</i>)
<i>Ceroplastes rusci</i> (Linnaeus) (*)	1970 Canary Islands (<i>Strelitzia</i>), Costa Rica (<i>Phoenix roebelenii</i>), Israel (<i>Diospyros kaki</i>), Italy (<i>Brahea</i> , <i>Nerium oleander</i>), Spain (<i>Phoenix</i> , <i>Pistacia</i> , <i>Strelitzia</i>), South Africa (<i>Chamaerops humilis</i>)
<i>Ceroplastes sinensis</i> Del Guercio (*)	1974 Italy (<i>Chamaerops humilis</i>), Spain (<i>Citrus</i> , <i>Pistacia</i>)
<i>Ceroplastes stellifer</i> Guyana (Westwood) (*)	1985 Costa Rica (<i>Dyopsis</i> , <i>Fatsia</i> , <i>Ixora</i> , <i>Schefflera arboricola</i>), Guyana (<i>Epidendrum</i>), Dominican Republic (<i>Schefflera</i>), Ivory Coast (<i>Schefflera</i>), Suriname (<i>Azadirachta indica</i>)
<i>Coccus hesperidum</i> Linnaeus (*)	1955 Australia (<i>Ficus benjamina</i>), Bali (<i>Nephelium lappaceum</i>), Belgium (<i>Laurus nobilis</i>), Colombia (Orchidaceae), Costa Rica (<i>Phoenix roebelenii</i> , <i>Polyscias</i>), Dominican Republic (<i>Carica papaya</i> , <i>Ficus</i> , <i>Psidium guajava</i>), Guatemala (<i>Polyscias</i>), Honduras (<i>Areca</i>), Indonesia (<i>Nephelium lappaceum</i>), Israel (<i>Nerium oleander</i>), Italy (<i>Citrus</i> , <i>Coffea arabica</i>), Malaysia (<i>Eriocaulon</i>), <i>Nerium oleander</i>), Marocco (unknown plant), South Africa (<i>Punica granatum</i>), South America (<i>Vriesea</i>), Spain (<i>Citrus x limon</i> , <i>Cocos</i> , <i>Phoenix</i>), Suriname (<i>Cestrum latifolium</i> , <i>Melicoccus bijugatus</i>), Thailand (<i>Heptapleurum actinophyllum</i> , <i>Paphiopedilum callosum</i>)
<i>Coccus viridis</i> (Green) (*)	1990 Costa Rica (<i>Polyscias</i>), Indonesia (<i>Garcinia mangostana</i>), Sri Lanka (<i>Ixora</i>) unknown origin (<i>Ixora coccinea</i>), Thailand (<i>Clusia</i>)
<i>Eucalymnatus tessellatus</i> (Signoret) (*)	1999 Costa Rica (<i>Caryota</i>), Guatemala (<i>Rhapis</i>), Honduras (<i>Caryota</i>)
<i>Eulecanium tiliae</i> (Linnaeus) (*)	1960 France (<i>Pyrus</i>)
<i>Kilifia acuminata</i> (Signoret) (*)	2010 USA (<i>Mangifera</i>), Suriname (<i>Azadirachta indica</i>)
<i>Milviscutulus mangiferae</i> (Green) (*)	1980 Costa Rica (<i>Aralia</i>), Ghana (<i>Mangifera indica</i>), India (<i>Cordyline</i>), Indonesia (<i>Cordyline</i>), Ivory Coast (<i>Schefflera</i>), Mexico (<i>Cocos nucifera</i>), Peru (<i>Mangifera indica</i>), Sri Lanka (<i>Cordyline fruticosa</i> , <i>Cordyline terminalis</i>), Suriname (<i>Azadirachta indica</i> , <i>Mangifera indica</i> , <i>Ocimum tenuiflorum</i>)
<i>Parasaissetia nigra</i> (Nietner) (*)	1978 Brazil (<i>Agave</i>), unknown origin (<i>Pandanus</i>), Philippines (<i>Phyllanthus</i>)
<i>Parthenolecanium corni</i> (Bouché) (*)	1968 Germany (<i>Tilia x euchlora</i>), Mexico (<i>Yucca thompsoniana</i>)
<i>Philephedra tuberculosa</i> Nakahara & Gill (*)	2017 Guatemala (<i>Codiaeum</i>)
<i>Prococcus acutissimus</i> (Green)	1983 Borneo (<i>Shorea stenoptera</i>)
<i>Protopulvinaria longivalvata</i> Green (*)	1996 Costa Rica (<i>Schefflera arboricola</i>), Suriname (<i>Ficus</i> , <i>Piper betle</i>)
<i>Protopulvinaria pyriformis</i> (Cockerell) (*)	1996 Costa Rica (<i>Aralia</i> , <i>Fatsia</i> , <i>Phoenix</i> , <i>Schefflera</i>), Cyprus (<i>Hedera helix</i>), Guatemala (<i>Fatsia japonica</i>), India (<i>Cordyline</i>), Israel (<i>Fatsia japonica</i>), Italy (<i>Callistemon</i> , <i>Fatsia japonica</i>), Suriname (unknown plant)
<i>Pulvinaria mesembryanthemi</i> (Vallot) (*)	1954 France (<i>Carpobrotus</i>), Spain (<i>Carpobrotus edulis</i>)

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Table 1. (Continued)

COCCIDAE	
<i>Pulvinaria psidii</i> Maskell (*)	1991 Costa Rica (<i>Ficus</i>), Dominican Republic (<i>Ficus</i>), Indonesia (<i>Nephelium lappaceum</i>), Israel (<i>Litchi chinensis</i> , <i>Melaleuca</i>), USA (<i>Ficus benjamina</i>), Suriname (<i>Mangifera indica</i>)
<i>Saissetia coffeae</i> (Walker) (*)	1957 Brazil (<i>Cyathodes</i> , <i>Mangifera indica</i>), Canary Islands (<i>Cycas</i>), Costa Rica (<i>Aralia</i> , <i>Cycas</i>) unknown origin (<i>Citrus</i>), Dominican Republic (<i>Cycas</i> , <i>Momordica</i>), Honduras (<i>Cycas revoluta</i>), Israel (<i>Phlox</i>), Italy (<i>Aralia</i> , <i>Nerium oleander</i>), <i>Schefflera</i>), South Africa (<i>Litchi chinensis</i>), Switzerland (<i>Nerium oleander</i>), Suriname (<i>Capsicum frutescens</i>), Thailand (<i>Jacaranda</i>), USA (<i>Nephrolepis</i>)
<i>Saissetia miranda</i> (Cockerell & Parrott) (*)	1998 Brasil (<i>Mangifera</i>)
<i>Saissetia neglecta</i> De Lotto (*)	1998 Costa Rica (<i>Polyscias</i>), Thailand (<i>Jacaranda</i>)
<i>Saissetia oleae</i> (Olivier) (*)	1966 China (<i>Ehretia</i> , <i>Serissa</i>), unknown origin (<i>Kalanchoe</i>), Italy (<i>Olea europaea</i>), Spain (<i>Euonymus fortunei</i> , <i>Nerium oleander</i> , <i>Phoenix dactylifera</i> , <i>Yucca</i>), Turkey (<i>Olea europaea</i>), USA (<i>Ficus</i>)
<i>Saissetia cf privigna</i> De Lotto (*)	2016 Israel (<i>Phlox</i>)
CONCHASPIDIDAE	
<i>Conchaspis angraeci</i> Cockerell (*)	2008 Aruba Netherlands Antilles (Orchidaceae)
CRYPTOCOCCIDAE	
<i>Pseudochermes fraxini</i> (Kaltenbach)	1955 unknown origin (<i>Fraxinus</i>)
DACTYLOPIIDAE	
<i>Dactylopius coccus</i> Costa (*)	2002 Canarische Eilanden (Cactaceae)
DIASPIDIDAE	
<i>Acutaspis agavis</i> (Townsend & Cockerell)	1990 USA (<i>Yucca</i>)
<i>Acutaspis albopicta</i> (Cockerell) (*)	1985 Costa Rica (<i>Phoenix roebelenii</i>), Guatemala (<i>Plerandra elegantissima</i>)
<i>Acutaspis decorosa</i> Ferris	1984 Guatemala (<i>Tillandsia</i>)
<i>Aonidia lauri</i> (Bouché)	1971 Greece (<i>Laurus nobilis</i>), Spain (<i>Laurus nobilis</i>)
<i>Aonidiella aurantii</i> (Maskell) (*)	1951 Brazil (<i>Citrus x latifolia</i> , <i>Mangifera indica</i>), China (<i>Ficus</i> , <i>Ficus microcarpa</i> , <i>Podocarpus macrophyllus</i>), Egypt (<i>Citrus x sinensis</i>), unknown origin (<i>Citrus</i> , <i>Citrus x limon</i>), Israel (<i>Citrus</i> , <i>Cocculus laurifolius</i>), Italy (<i>Citrus</i> , <i>Laurus nobilis</i>), Malaysia (<i>Citrus hystrix</i>), Marocco (<i>Citrus</i>), South Africa (<i>Citrus x paradisi</i> , <i>Ravenea rivularis</i>), Suriname (<i>Azadirachta indica</i>), Thailand (<i>Butea</i> , <i>Citrus</i> , <i>Tilia</i>), Turkey (<i>Citrus</i>), USA (<i>Citrus x limon</i> , <i>Cycas revoluta</i> , <i>unknown plant</i>), Zimbabwe (<i>Citrus x sinensis</i>)
<i>Aonidiella citrina</i> (Coquilett) (*)	1986 China (<i>Ficus</i>), Philippines (<i>Osmanthus</i>)
<i>Aonidiella inornata</i> McKenzie	2006 China (<i>Podocarpus</i>)
<i>Aonidiella orientalis</i> (Newstead) (*)	1971 Brazil (<i>Vitis vinifera</i>), Cameroon (<i>Azadirachta indica</i>), Dominican Republic (<i>Bergera koenigii</i> , <i>Dypsis</i>), Iraq (unknown plant), Jamaica (<i>Rosa</i>), Thailand (<i>Musa</i> , <i>Solanum</i>), Venezuela (<i>Rosa</i>)
<i>Aonidiella tinereferensis</i> (Lindinger)	1990 Canary Islands (<i>Dracaena draco</i>)
<i>Aspidiella hartii</i> (Cockerell) (*)	2014 Ghana (<i>Dioscorea batatas</i> , <i>Zingiber officinalis</i>), Thailand (<i>Curcuma longa</i>)
<i>Aspidiotus destructor</i> Signoret(*)	1974 Brazil (<i>Annona x atemoya</i> , <i>Trachycarpus fortunei</i>), China (<i>Ilex crenata</i> , <i>Trachycarpus</i>), Costa Rica (<i>Aglaonema</i> , <i>Dypsis</i> , <i>Hyophorbe</i> , <i>Phoenix roebelenii</i>), Cuba (<i>Dypsis</i>), Dominican Republic (<i>Dypsis lutescens</i>), Honduras (<i>Dypsis</i> , <i>Palmae</i>), Indonesia (<i>Citrus hystrix</i> , <i>Raphis humilis</i>), Ivory Coast (<i>Pandanus</i> , <i>Philodendron laciniatum</i>), Malaysia (<i>Citrus hystrix</i>), Philippines (<i>Calathea picturata</i> , <i>Palmae</i>), Spain (<i>Citrus</i> , <i>Cocos</i> , <i>Dypsis</i> , <i>Phoenix roebelenii</i>), Sri Lanka (<i>Cocos</i> , <i>Licuala grandis</i> , <i>Saribus rotundifolius</i>), Thailand (<i>Cycas</i> , <i>Dypsis</i> , <i>Ficus</i> , <i>Musa</i>), USA (<i>Chamaedorea</i>)
<i>Aspidiotus excisus</i> Green (*)	1978 Costa Rica (<i>Aglaonema</i>), Honduras (<i>Aglaonema</i> , <i>Dypsis</i> , <i>Citrus</i>), Sri Lanka (<i>Jasminum grandiflorum</i>)

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Table 1. (Continued)

DIASPIDIDAE

<i>Aspidiotus nerii</i> Bouché (*)	1951 Australia (<i>Cymbidium</i>), Canary Islands (<i>Pachypodium geayi</i> , <i>Protea cynaroides</i>), Costa Rica (<i>Hydriastele</i>), France (<i>Agathis</i>), unknown origin (<i>Chamaerops humilis</i> , Palmae), Israel (<i>Aspidistra</i> , <i>Nerium oleander</i> , <i>Olea europaea</i>), Italy (<i>Chamaerops humilis</i> , <i>Citrus</i> , <i>Nerium oleander</i> , <i>Ruscus</i>), Portugal (<i>Nerium oleander</i>), South Africa (<i>Protea</i>), Spain (<i>Cycas revoluta</i> , <i>Laurus nobilis</i> , <i>Nerium oleander</i> , <i>Olea europaea</i>), Thailand (<i>Ananas</i>), Turkey (<i>Eucalyptus</i> , unknown plant), Zimbabwe (Cactaceae)
<i>Aulacaspis rosae</i> (Bouché) (*)	1964 Hungary (<i>Rosa</i>), Italy (<i>Rosa</i>), Spain (<i>Rosa</i>)
<i>Aulacaspis tubercularis</i> Newstead (*)	1964 Dominican Republic (<i>Mangifera indica</i>), Ecuador (<i>Mangifera indica</i>), Gambia (<i>Mangifera indica</i>), India (<i>Mangifera indica</i>), Ivory Coast (<i>Mangifera indica</i>), Malaysia (<i>Aglaia odorata</i>), Mexico (<i>Mangifera indica</i>), South Africa (<i>Mangifera indica</i> , <i>Protea</i>), Suriname (<i>Azadirachta indica</i> , <i>Mangifera indica</i>)
<i>Aulacaspis yasumatsui</i> Takagi (*)	1995 Costa Rica (<i>Cycas revoluta</i> , <i>C. rumphii</i>), Honduras (<i>Cycas revoluta</i>), Suriname (<i>Cycas</i>), Taiwan (<i>Cycas</i>), Vietnam (<i>Cycas</i>)
<i>Carulaspis minima</i> (Signoret)	1978 Italy (<i>Hesperocyparis arizonica</i> , <i>Juniperus virginiana</i>)
<i>Carulaspis visci</i> (Schrank)	2014 France (<i>Viscum album</i>)
<i>Chionaspis furfura</i> (Fitch) (*)	1954 USA (<i>Malus</i>)
<i>Chionaspis pinifoliae</i> complex (*)	1999 Mexico (<i>Pinus</i>)
<i>Chionaspis salicis</i> (Linnaeus) (*)	1954 Belgium (<i>Salix</i>), Germany (<i>Populus</i>), USA (<i>Populus</i>)
<i>Chrysomphalus aonidum</i> (Linnaeus) (*)	1950 Costa Rica (<i>Dracaena reflexa</i> var. <i>angustifolia</i> , <i>Dyopsis</i>), Cuba (<i>Citrus</i> , <i>Dyopsis</i>), Egypt (<i>Citrus</i>), Dominican Republic (<i>Dyopsis</i>), Guatemala (<i>Citrus</i>), Honduras (<i>Dracaena reflexa</i> var. <i>angustifolia</i> , <i>Dyopsis</i>), Israel (<i>Citrus</i>), Lebanon (<i>Citrus</i>), Singapore (<i>Ficus benjamina</i>), Suriname (<i>Citrus maxima</i>), Taiwan (<i>Ficus</i>), unknown origin (<i>Citrus</i> , <i>Dracaena reflexa</i> var. <i>angustifolia</i>)
<i>Chrysomphalus bifasciculatus</i> Ferris (*)	1988 unknown origin (<i>Ficus</i> , <i>Ilex crenata</i>)
<i>Chrysomphalus dictyospermi</i> (Morgan) (*)	1953 Canary Islands (<i>Citrus</i>), China (<i>Taxus</i>), Costa Rica (<i>Dracaena reflexa</i> var. <i>angustifolia</i> , <i>Phoenix</i>), Honduras (<i>Dyopsis</i>), Italy (<i>Phoenix</i> , <i>Strelitzia</i>), Ivory Coast (<i>Pandanus</i>), Morocco (<i>Citrus</i>), Spain (<i>Citrus</i> , <i>Phoenix</i> , <i>Rosa</i>), Sri Lanka (<i>Pandanus tectorius</i>), Suriname (<i>Citrus</i>), USA (<i>Saribus</i> , <i>Strelitzia</i>), unknown origin (<i>Citrus</i>)
<i>Chrysomphalus pinnulifer</i> (Maskell) (*)	2008 Brazil (<i>Trachycarpus fortunei</i>)
<i>Comstockaspis perniciosa</i> (Comstock) (*)	1951 Chile (<i>Prunus persica</i>), China (<i>Chaenomeles</i> , France (<i>Prunus domestica</i>), Germany (<i>Pyrus</i>), Hungary (<i>Rosa</i> , <i>Syringa vulgaris</i>), Italy (<i>Populus euphratica</i> , <i>Juglans</i> , <i>Malus</i> , <i>Populus</i> , <i>Prunus domestica</i> , <i>Rosa</i> , <i>Tilia</i> , <i>Ulmus</i>), Japan (<i>Chaenomeles</i> , <i>Malus x kaido</i> , <i>Pyracantha</i>), USA (<i>Malus</i> , <i>Pyrus</i>)
<i>Diaspidiotus armenicus</i> (Borchsenius)	1953 Iran (<i>Populus alba</i>)
<i>Diaspidiotus caucasicus</i> (Borchsenius) (*)	1965 Iran (<i>Populus euphratica</i>)
<i>Diaspidiotus degeneratus</i> (Leonardi) (*)	2016 China (<i>Camellia</i>)
<i>Diaspidiotus forbesi</i> (Johnson) (*)	1951 USA (<i>Malus</i>)
<i>Diaspidiotus gigas</i> (Thiem & Gerneck) (*)	1955 Iran (<i>Populus euphratica</i>), Italy (<i>Salix</i>)
<i>Diaspidiotus juglansregiae</i> (Comstock) (*)	1951 USA (<i>Juglans</i>)
<i>Diaspidiotus ostreaeformis</i> (Curtis) (*)	1951 Belgium (<i>Malus</i> , <i>Prunus</i> , <i>Ribes uva-crispa</i> , <i>Sorbus</i>), Canada (<i>Malus</i> , <i>Prunus armeniaca</i>), unknown origin (<i>Malus</i>)
<i>Diaspidiotus pyri</i> (Lichtenstein) (*)	1952 Belgium (<i>Prunus</i> , <i>Prunus domestica</i> , <i>Sorbus</i>), Germany (<i>Prunus domestica</i>)
<i>Diaspidiotus uvae</i> (Comstock) (*)	1958 USA (<i>Malus</i>)
<i>Diaspidiotus zonatus</i> (Frauenfeld)	1951 Belgium (<i>Quercus</i>)
<i>Diaspis barrancorum</i> Lindinger	1978 Honduras (<i>Euphorbia atropurpurea</i>)
<i>Diaspis boisduvalli</i> Signoret (*)	1956 Belgium (<i>Cattleya</i>), Chile (<i>Juania australis</i>), Costa Rica (<i>Cocos</i> , <i>Dyopsis</i> , <i>Musa spec.</i>), France (<i>Chamaerops humilis</i>), Colombia (Bromeliaceae), Gabon (<i>Tridactyle</i>), Honduras (<i>Dyopsis</i>), Italy (<i>Trachycarpus</i>), Ivory Coast (<i>Ananas</i>), Malaysia (<i>Phoenix</i>), Mexico (<i>Dasyilirion longissimum</i>), unknown origin (Palmae), Spain (<i>Trachycarpus</i>), USA (<i>Saribus rotundifolia</i>)
<i>Diaspis bromeliae</i> (Kerner) (*)	1954 Canada (<i>Bilbergia</i>), Colombia (Bromeliaceae), Germany (<i>Aechmea fasciata</i>), Iran (<i>Aechmea</i>), Ivory Coast (<i>Ananas</i>)
<i>Diaspis echinocacti</i> (Bouché) (*)	1953 Brazil (<i>Melocactus levitestatus</i>), Canary Islands (<i>Echinocereus viridiflorus</i> , <i>Echinocactus</i> , <i>Ferocactus macrodiscus</i> , <i>Gymnocalycium</i> , <i>Opuntia azurea</i>), China (<i>Gymnocalycium</i>), France (<i>Opuntia</i>), Italy (Cactaceae, <i>Opuntia</i>), Japan (<i>Chamaecereus sylvestrii</i>), Mexico (Cactaceae), Morocco (<i>Opuntia</i>), unknown origin (<i>Opuntia</i>)

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Table 1. (Continued)

DIASPIDIDAE	
<i>Dynaspidiotus britannicus</i> (Newstead) (*)	1973 Spain (<i>Chamaerops humilis</i>), Turkey (<i>Eucalyptus</i>)
<i>Dynaspidiotus cf californicus</i> (Coleman)	1999 Mexico (<i>Pinus</i>)
<i>Duplachionaspis divergens</i> (Green)	2021 Dominican Republic (<i>Cymbopogon citratus</i>), Laos (<i>Cymbopogon citratus</i>)
<i>Epidiaspis leperii</i> (Signoret) (*)	1950 Belgium (<i>Malus</i> , <i>Mespilus germanica</i> , <i>Prunus persica</i> , <i>Pyrus</i>), France (<i>Malus</i>)
<i>Epidiaspis tillandsiae</i> Takagi & Tippins	1995 Guatemala (<i>Tillandsia xerographica</i>)
<i>Fiorinia fioriniae</i> (Targioni Tozzetti) (*)	1987 Azores (unknown plant), Brazil (<i>Camellia</i> , <i>Mangifera indica</i>), China (<i>Podocarpus</i>), Costa Rica (<i>Phoenix roebelinii</i>), Ecuador (<i>Dyopsis</i>)
<i>Fiorinia japonica</i> Kuwana (*)	1988 China (<i>Juniperus chinensis</i>)
<i>Fiorinia phantasma</i> (Cockerell & Robinson)	2003 Thailand (<i>Ficus</i> sp., <i>Phoenix roebelinii</i>)
<i>Fiorinia theae</i> Green(*)	1985 Bangla Desh (<i>Citrus medica</i> , <i>Citrus x aurantiifolia</i>), China (<i>Camellia sasanqua</i> , <i>Podocarpus macrophyllus</i>), Hong Kong (<i>Podocarpus</i>), Sri Lanka (<i>Saribus rotundifolius</i>), Suriname (<i>Citrus x aurantium</i> , <i>Citrus x aurantiifolia</i> , <i>Citrus maxima</i> , <i>Citrus x reticulata</i> , <i>Citrus x sinensis</i>), Thailand (“Palms”)
<i>Froggattiella mcclurei</i> Ben-Dov	2018 Thailand (<i>Bambusa ventricosa</i>)
<i>Furcaspis biformis</i> (Cockerell) (*)	1982 Sri Lanka (<i>Oncidium</i>)
<i>Furchadaspis zamiae</i> (Morgan) (*)	1966 Italy (<i>Strelitzia reginae</i>), Spain (<i>Cycas revoluta</i> , <i>Phoenix dactylifera</i>)
<i>Fusilaspis cf phymatodidis</i> (Maskell)	2007 New Zealand (<i>Dicksonia</i>)
<i>Genaparlatoria pseudaspidiotus</i> (Lindinger) (*)	1963 Indonesia (<i>Epidendrum</i> , Orchidaceae)
<i>Gymnaspis aechmeae</i> Newstaed (*)	1954 Germany (<i>Bromelia</i>)
<i>Hemiberlesia cyanophylli</i> (Signoret) (*)	1952 “Africa” (<i>Phoenix</i>), Brazil (Cactaceae, <i>Phoenix roebelinii</i>), Canary Islands (Cactaceae, <i>Hamatocactus setispinus</i> , <i>Pachypodium</i>), Costa Rica (<i>Acoelorrhaphe wrightii</i> , <i>Dyopsis</i> , <i>Ficus benjamina</i> , <i>Phoenix roebelinii</i>), France (Cactaceae, <i>Jasminum</i>), Honduras (<i>Phoenix</i>), Israel (<i>Pittosporum tobira</i>), Japan (<i>Cereus repandus</i>), Kenya (<i>Begonia</i>), Philippines (<i>Calathea picturata</i>), South Africa (<i>Astrophytum</i>), Spain (Cactaceae, <i>Dyopsis</i> , <i>Strelitzia</i>), Tenerife (<i>Pachypodium</i>), Thailand (<i>Ehretia microphylla</i>), unknown origin (<i>Echinocereus</i> , <i>Lithops</i> , <i>Lobivia</i>)
<i>Hemiberlesia lataniae</i> (Signoret) (*)	1952 Argentina (<i>Cycas</i>), Belgium (<i>Hedera</i>), Brazil (<i>Psidium guajava</i>), Canary Islands (<i>Agave</i> , <i>Strelitzia</i>), China (<i>Serissa foetida</i>), Costa Rica (<i>Cycas</i> , <i>Dyopsis lutescens</i> , <i>Fatsia japonica</i> , <i>Heptapleurum arboricola</i> , <i>Schefflera</i>), Cyprus (<i>Citrus</i>), Dominican Republic (<i>Psidium guajava</i> , <i>Yucca</i>), Israel (<i>Myrtus</i> , <i>Olea europaea</i>), Kenya (<i>Hedera helix</i>), Mexico (<i>Persea americana</i>), New Zealand (<i>Acer palmatum</i>), Peru (<i>Mangifera indica</i> , <i>Persea americana</i>), Philippines (<i>Calathea picturata</i>), Rwanda (<i>Euphorbia tirucalli</i>), South Africa (<i>Litchi</i> , <i>Protea</i>), Spain (<i>Olea europaea</i> , <i>Strelitzia</i>), Sri Lanka (<i>Cocos</i>), Suriname (<i>Abelmoschus esculentus</i>), Taiwan (<i>Serissa foetida</i>), unknown origin (<i>Musa</i>)
<i>Hemiberlesia palmae</i> (Cockerell) (*)	1979 Central America (<i>Arecastrum</i>), Costa Rica (<i>Fatsia</i> , <i>Phoenix roebelinii</i>), Honduras (<i>Dyopsis</i>), Ivory Coast (<i>Philodendron laciniatum</i>), Sri Lanka (<i>Licuala grandis</i> , <i>Saribus rotundifolius</i>), USA (<i>Pandanus utilis</i>)
<i>Hemiberlesia rapax</i> (Comstock) (*)	1984 France (<i>Agathis</i>), unknown origin (<i>Citrus</i>), Spain (<i>Citrus</i>), Suriname (<i>Mangifera</i>), USA (<i>Citrus</i>)
<i>Howardia biclavus</i> (Comstock) (*)	1984 Guatemala (<i>Cinchona</i>), Suriname (<i>Citrus maxima</i>)
<i>Ischnaspis longirostris</i> (Signoret) (*)	1976 Canary Islands (<i>Ficus benjamina</i>), Galapagos Islands (Rubiaceae), Peru (<i>Mangifera indica</i>), Singapore (<i>Ficus nitida</i>)
<i>Kuwanaspis pseudoleucaspis</i> (Kuwana) (*)	1988 Japan (<i>Sasa</i>), South Korea (<i>Phyllostachys reticulata</i>), Spain (<i>Pseudosasa japonica</i>)
<i>Lepidosaphes beckii</i> (Newman) (*)	1952 China (<i>Murraya</i>), Costa Rica (<i>Bergera</i> , <i>Codiaeum</i> , <i>Dracaena trifasciata</i>), Cuba (<i>Citrus</i>), Dominican Republic (<i>Citrus</i>), Egypt (<i>Citrus</i>), Indonesia (<i>Citrus hystrix</i>), Marocco (<i>Citrus x reticulata</i> , <i>Citrus x sinensis</i>), Mexico (<i>Citrus x latifolia</i>), Sri Lanka (<i>Croton aucubifolia</i>), Suriname (<i>Citrus x aurantium</i> , <i>Citrus maxima</i> , <i>Codiaeum</i> , <i>Croton</i>), Thailand (<i>Aglaonema</i> , <i>Citrus</i> , <i>Tiliacora triandra</i>), Turkey (<i>Citrus</i>), unknown origin (<i>Citrus</i>)
<i>Lepidosaphes chinensis</i> Chamberlin (*)	2004 China (<i>Dracaena</i> , <i>Dracaena sanderiana</i>)
<i>Lepidosaphes conchiformis</i> (Gmelin) (*)	1953 Italy (<i>Ulmus</i>)
<i>Lepidosaphes cupressi</i> Borchsenius (*)	2000 Japan (<i>Taxus</i>)
<i>Lepidosaphes gloverii</i> (Packard) (*)	1955 Cuba (<i>Citrus maxima</i>), Indonesia (<i>Citrus hystrix</i>), Spain (<i>Citrus</i>) Suriname (<i>Citrus</i>), Thailand (<i>Citrus hystrix</i>), unknown origin (<i>Citrus</i>)
<i>Lepidosaphes juniperi</i> Lindinger (*)	2020 Spain (<i>Juniperus sabina</i>)
<i>Lepidosaphes cf pini</i> (Maskell) (*)	2021 Italy (<i>Pinus thunbergii</i>)

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Table 1. (Continued)

DIASPIDIDAE	
<i>Lepidosaphes laterochitina</i> Green (*)	2003 Bangladesh (<i>Aglaonema</i>), Costa Rica (<i>Aglaonema</i> , <i>Dracaena</i> “ <i>Sansevieria</i> -group”), Sri Lanka (<i>Dracaena</i>)
<i>Lepidosaphes tokionis</i> (Kuwana) (*)	2004 Costa Rica (<i>Codiaeum</i>), Suriname (<i>Croton</i>)
<i>Lepidosaphes ulmi</i> (Linnaeus) (*)	1955 Canada (<i>Malus</i>), China (<i>Ligustrum</i>), Italy (<i>Prunus domestica</i>), Mexico (<i>Citrus x limon</i>), USA (<i>Fraxinus</i> , <i>Populus</i>)
<i>Lindingaspis rossi</i> (Maskell) (*)	2009 Australia (<i>Xanthorrhoea glauca</i>),
<i>Lineaspis striata</i> (Newstead) (*)	2018 Turkey (<i>Juniperus excelsa</i>)
<i>Lopholeucaspis cockerelli</i> (Grandpré & Charmoy) (*)	1993 Costa Rica (<i>Phoenix roebelenii</i>), China (<i>Serissa</i>)
<i>Lopholeucaspis japonica</i> (Cockerell) (*)	1979 China (<i>Wisteria</i> , <i>Zelkova</i>), Japan (<i>Acer palmatum</i> , <i>Malus halliana</i>), Taiwan (<i>Zelkova serrata</i>)
<i>Melanaspis bromiliae</i> (Leonardi) (*)	1968 Ivory Coast (<i>Ananas</i>), Hawaii (<i>Ananas</i>)
<i>Melanaspis elaeagni</i> McKenzie	1986 Costa Rica (<i>Yucca</i>), unknown origin (<i>Yucca</i>)
<i>Melanaspis smilacis</i> (Comstock)	1968 unknown origin (<i>Ananas</i>), Ivory Coast (<i>Ananas</i>), USA (<i>Ananas</i>)
<i>Morganella longispina</i> (Morgan) (*)	1990 China (<i>Aglaia</i>)
<i>Octaspidotus stauntoniae</i> (Takahashi)	1979 China (<i>Hedera</i>)
<i>Odonaspis greeni</i> Cockerell	1993 China (<i>Ficus</i>), Sri Lanka (Bamboo), Thailand (<i>Bambusa ventricosa</i>)
<i>Odonaspis secreta</i> (Cockerell)	1985 Philippines (<i>Bambusa</i>), Thailand (<i>Bambusa</i>)
<i>Opuntiaspis carinata</i> (Cockerell)	1987 Central America (<i>Dasyilirion</i>)
<i>Parlatorespis pyri</i> (Marlatt)	1985 Japan (<i>Acer buergerianum</i>)
<i>Parlatoria camelliae</i> Comstock (*)	1990 Italy (<i>Camellia japonica</i>)
<i>Parlatoria cinerea</i> Hadden (*)	1969 Brazil (<i>Citrus</i>)
<i>Parlatoria crypta</i> McKenzie (*)	1987 Egypt (<i>Mangifera indica</i>), Niger (<i>Azadirachta indica</i>)
<i>Parlatoria fulleri</i> Morrison	1978 Thailand (Orchidaceae)
<i>Parlatoria oleae</i> (Colvée) (*)	1954 China (<i>Camellia</i>), France (<i>Rosa indica</i>), Greece (<i>Prunus armeniaca</i>), Iran (<i>Malus</i>), Spain (<i>Ligustrum ovalifolium</i> , <i>Prunus domestica</i> , <i>Rosa</i>), unknown origin (<i>Prunus domestica</i>)
<i>Parlatoria pergandii</i> Comstock (*)	1951 Costa Rica (<i>Codiaeum</i>), Cuba (<i>Citrus</i>), Egypt (<i>Citrus</i>), unknown origin (<i>Citrus mitis</i> , <i>Citrus x reticulata</i>), Israel (<i>Citrus</i>), Morocco (<i>Citrus</i>), Mexico (<i>Citrus</i> , <i>Citrus x latifolia</i>), Spain (<i>Citrus</i>), Suriname (<i>Citrus maxima</i> , <i>Citrus x aurantium</i>), Thailand (<i>Citrus</i>), Tunisia (<i>Citrus</i>), USA (<i>Citrus maxima</i>)
<i>Parlatoria proteus</i> (Curtis) (*)	1978 Guatemala (<i>Dracaena</i>), Ivory Coast (<i>Dracaena sanderana</i> , <i>Schefflera</i>), Philippines (Palmae), Singapore (<i>Ophiopogon</i>), Sri Lanka (<i>Acorus</i> , <i>Ophiopogon</i>), Thailand (Orchidaceae)
<i>Parlatoria theae</i> Cockerell (*)	1959 China (<i>Buxus microphylla</i>), Japan (<i>Acer</i> , <i>Acer palmatum</i> , <i>Crataegus cuneata</i> , <i>Ilex serrata</i> , <i>Zelkova serrata</i>), South Korea (<i>Acer palmatum</i>)
<i>Parlatoria ziziphi</i> (Lucas) (*)	1956 Brazil (<i>Citrus x latifolia</i>), Cuba (<i>Citrus</i>), Egypt (<i>Citrus</i>), Indonesia (<i>Citrus hystrix</i>), Spain (<i>Citrus</i>), Thailand (<i>Citrus hystrix</i>), Tunisia (<i>Citrus</i>), unknown origin (<i>Citrus</i>)
<i>Pinnaspis aspidistrae</i> (Signoret) (*)	1977 China (<i>Buxus harlandii</i> , <i>Buxus sinica</i> , <i>Trachycarpus</i>), Costa Rica (<i>Aspidistra elatior</i> , <i>Dracaena reflexa</i> var. <i>angustifolia</i> , <i>Dypsis</i> , <i>Liriope muscari</i> , <i>Ophiopogon</i> , <i>Phoenix roebelenii</i> , <i>Veitchia</i>), Dominican Republic (<i>Berbera koenigii</i>), Germany (<i>Phyllostachys aurea</i>), El Salvador (<i>Dypsis lutescens</i>), Honduras (<i>Dypsis</i>), Indonesia (<i>Pandanus</i>), Italy (<i>Aspidistra</i>), Sri Lanka (<i>Cocos</i> , <i>Saribus</i>), Unknown origin (<i>Rhapis humilis</i>), USA (<i>Aspidistra</i>), Vietnam (<i>Aspidistra</i> , <i>Veitchia</i>)
<i>Pinnaspis buxi</i> (Bouché) (*)	1986 China (<i>Buxus</i>), Sri Lanka (<i>Cordyline</i> , <i>Dypsis</i>)
<i>Pinnaspis strachani</i> (Cooley) (*)	1955 Australia (<i>Brachychiton</i>), Brazil (<i>Agave</i>), East Africa (<i>Cocos</i>), Brazil (<i>Phoenix</i>), China (<i>Berbera koenigii</i> , <i>Ehretia</i> , <i>Saribus</i> , <i>Sageretia</i>), Costa Rica (<i>Dracaena reflexa</i> var. <i>angustifolia</i> , <i>Dypsis lutescens</i> , <i>Phoenix roebelenii</i>), Dominican Republic (<i>Annona muricata</i>), Honduras (<i>Dypsis</i>), Ivory Coast (<i>Dracaena</i>), Mexico (<i>Citrus x paradisi</i>), Sri Lanka (<i>Saribus</i>), Suriname (<i>Azadirachta</i>), Thailand (<i>Dracaena bicolor</i> , <i>Dracaena</i> “ <i>Sansevieria</i> group”, <i>Piper</i>), unknown origin (<i>Berbera koenigii</i>)
<i>Pinnaspis theae</i> (Maskell) (*)	1978 Singapore (Orchidaceae)
<i>Pseudaonidia duplex</i> (Cockerell)	1981 China (<i>Sageretia thea</i>), Hong Kong (<i>Acer palmatum</i>), Vietnam (<i>Wrightia religiosa</i>)
<i>Pseudaonidia paeoniae</i> (Cockerell) (*)	1987 Japan (<i>Rhododendron</i> , <i>Stewartia</i>)
<i>Pseudaonidia trilobitiformis</i> (Green) (*)	1987 Brazil (<i>Mangifera indica</i>), China (<i>Ficus thonningii</i>), Taiwan (<i>Ficus</i>), Madagascar (<i>Ficus</i> , <i>Mimusops</i>), Mexico (<i>Mango</i>), Suriname (Rubiaceae), Thailand (<i>Cycas</i> , <i>Eugenia</i> , <i>Ficus</i>)

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Table 1. (Continued)**DIASPIDIDAE**

<i>Pseudaulacaspis brimblecombei</i> Williams (*)	2019 Portugal (<i>Aleurites</i>)
<i>Pseudaulacaspis cockerelli</i> (Cooley) (*)	1977 China (<i>Ilex</i>), Ghana (<i>Mangifera indica</i>), Sri Lanka (<i>Cocos</i>), USA (<i>Chrysalidocarpus lutescens</i> , <i>Magnolia</i> , <i>Phoenix</i> , <i>Magnolia</i>), Indonesia (<i>Phoenix roebelenii</i> , <i>Syzygium polyanthum</i>), Malaysia (<i>Ficus lyrata</i>), South Africa (<i>Protea</i>), Thailand (<i>Eugenia</i>)
<i>Pseudaulacaspis pentagona</i> (Targioni Tozzetti) (*)	1953 Belgium (<i>Actinidia chinensis</i>), China (<i>Actinidia</i> , <i>Ligustrum</i> , <i>Lonicera</i> , <i>Prunus</i> , <i>Salix gracilistyla</i> , <i>Xanthophyllum</i> , <i>Zanthoxylum</i>), Dominican Republic (<i>Psidium guajava</i>), France (<i>Robinia pseudoacacia</i>), Greece (<i>Actinidia chinensis</i> , <i>Prunus armeniaca</i> , <i>Prunus persica</i>), Hungary (<i>Syringa vulgaris</i>), Indonesia (<i>Flacourtia</i> , <i>Manihot utilisima</i>), Italy (<i>Catalpa</i> , <i>Morus alba</i> , <i>Platanus</i> , <i>Populus</i> , <i>Prunus avium</i> , <i>Sophora japonica</i> , <i>Ulmus</i>), Japan (<i>Carpinus japonica</i> , <i>Prunus mume</i> , <i>Prunus x subhirtella</i>), Sri Lanka (<i>Codiaeum variegatum</i> , <i>Plumeria rubra</i>), unknown origin (<i>Juniperus</i>)
<i>Pseudaulacaspis prunicola</i> (Maskell) (*)	1977 China (<i>Ligustrum</i>), Japan (<i>Prunus sargentii</i> , <i>Prunus mume</i>)
<i>Pseudischnaspis bowreyi</i> (Cockerell) (*)	1985 Guatemala (<i>Beaucarnea</i>)
<i>Pseudoparlatoria parlatorioides</i> (Comstock) (*)	2009 Costa Rica (<i>Aglaonema</i> , <i>Phoenix roebelenii</i>), Mexico (<i>Chamaedorea</i>)
<i>Rolaspis lounsburyi</i> (Cooley)	1979 South Africa (<i>Protea</i>)
<i>Selenaspis articulatus</i> (Morgan) (*)	1951 Costa Rica (<i>Phoenix roebelenii</i>), Cuba (<i>Citrus</i>), Dominican republic (<i>Citrus</i>), Guatemala (<i>Beaucarnea guatemalensis</i> , <i>Citrus</i> , <i>Ficus nitida</i>), Honduras (<i>Ardisia</i> , <i>Phoenix</i>), Mexico (<i>Citrus x reticulata</i>), Peru (<i>Citrus x reticulata</i>), Suriname (<i>Citrus maxima</i>)
<i>Sinistraspis unilateralis</i> (Newstead)	2002 Sri Lanka (<i>Saribus rotundifolia</i>)
<i>Unaspis citri</i> (Comstock) (*)	1969 Brazil (<i>Citrus</i>), Cuba (<i>Citrus maxima</i>), Ivory Coast (<i>Citrus</i>)
<i>Unaspis euonymi</i> (Comstock) (*)	1976 Italy (<i>Euonymus japonica</i>)

ERIOCOCCIDAE

<i>Acanthococcus coccineus</i> (Cockerell) (*)	1957 Canary Islands (Cactaceae), Italy (<i>Brasilocactus</i>), Japan (Cactaceae), South Africa (<i>Mammillaria</i>)
<i>Acanthococcus dubius</i> (Cockerell)	2004 Sint Maarten Netherlands Antilles (<i>Hibiscus</i>)
<i>Capulinia linariosae</i> Kondo & Gullan	2021 Colombia (<i>Psidium guajava</i>)
<i>Gossyparia spuria</i> (Modeer) (*)	1958 Turkey (<i>Ulmus</i>)
<i>Ovaticoccus agavium</i> (Douglas)	1975 Canary Islands (<i>Agave</i>), India (<i>Araucaria</i>), Mexico (<i>Yucca filifera</i>), Spain (<i>Araucaria heterophylla</i> , <i>Yucca</i>)
<i>Uhleria araucariae</i> (Maskell) (*)	2009 Azores (<i>Araucaria</i>)

LECANODIASPIDIDAE

<i>Lecanodiaspis yuccae</i> Townsend	2004 USA (<i>Yucca carnerosana</i>)
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MARGARODIDAE

<i>Eurhizococcus brasiliensis</i> (Wille) (*)	1973 Peru (<i>Camellia sinensis</i>)
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MATSUCOCCIDAE

<i>Matsucoccus feytaudi</i> Ducasse (*)	1968 France (<i>Pinus maritima</i>)
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MONOPHLEBIDAE

<i>Icerya purchasi</i> Maskell (*)	1978 Argentina (<i>Vaccinium corymbosum</i>), Canary Islands (unknown plant), Costa Rica (<i>Phoenix roebelenii</i>), El Salvador (<i>Phoenix</i>), Israel (<i>Albizia julibrissin</i> , <i>Rosmarinus</i>), Italy (<i>Acacia dealbata</i> , <i>Citrus x limon</i> , <i>Fatsia japonica</i> , <i>Mimosa</i> , <i>Pittosporum tobira</i>), South Africa (<i>Citrus x limon</i>), Tanzania (<i>Rosa</i>), Thailand (<i>Dictyosperma</i>)
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Table 1. (Continued)

ORTHEZIIDAE

<i>Insignorthezia insignis</i> (Browne) (*)	2008 Uganda (<i>Lantana</i>)
<i>Mixorthezia reynei</i> (Laing)	2006 Costa Rica (<i>Coffea arabica</i>)
<i>Nipponorthezinella guadalcanalia</i> (Morrison)	2006 Costa Rica (<i>Coffea arabica</i>)

PSEUDOCOCCIDAE

<i>Antonina pretiosa</i> Ferris (*)	1997 China (<i>Ficus</i>), Sri Lanka (<i>Bambusa vulgaris</i>)
<i>Chaetococcus bambusae</i> (Maskell)	1993 Costa Rica (<i>Bambusa vulgaris</i>), Sri Lanka (Bamboo)
<i>Chaetococcus phragmitis</i> (Marchal)	1969 Austria (<i>Phragmites</i>), France (<i>Phragmites</i>), Hungary (<i>Phragmites</i>), Romania (<i>Phragmites</i>)
<i>Chorizococcus yuccae</i> McKenzie	1992 USA (<i>Yucca</i>)
<i>Coccidohystrix insolita</i> (Green)	2021 Thailand (<i>Solanum torvum</i>)
<i>Dysmicoccus brevipes</i> (Cockerell) (*)	1968 Canary Islands (<i>Opuntia</i>), Costa Rica (<i>Ananas comosus</i> , <i>Archontophoenix alexandrae</i> , <i>Caryota mitis</i> , <i>Codiaeum variegatum</i> , <i>Dracaena</i> , <i>Dypsis</i> , <i>Phoenix roebelenii</i>), Curacao (<i>Agave</i>), Dominican Republic (<i>Psidium</i>), Ghana (<i>Ananas comosus</i>), Honduras (<i>Dypsis</i>), Indonesia (<i>Phoenix</i> , <i>Rhapis</i>), Israel (<i>Ananas</i>), Ivory Coast (<i>Ananas comosus</i>), Mauretania (<i>Ananas comosus</i>), Mauritius (<i>Ananas comosus</i>), Peru (<i>Mangifera indica</i>), Philippines (<i>Musa</i>), Suriname (<i>Citrus x aurantium</i> , <i>Psidium guajava</i> , <i>Solanum</i> , “Zingiberaceae”), Thailand (<i>Musa</i> , <i>Nephelium lappaceum</i>), Taiwan (<i>Zelkova</i>), Tanzania (<i>Ananas</i> , <i>Saccharum</i>), Uganda (<i>Ananas comosus</i>)
<i>Dysmicoccus cf debregeasiae</i> (Green)	2011 Sri Lanka (<i>Areca catechu</i>), Thailand (<i>Nephelium</i>)
<i>Dysmicoccus neobrevipes</i> Beardsley (*)	1979 Guatemala (<i>Beaucarnea</i>), Malaysia (<i>Averrhoa carambola</i>), Thailand (<i>Garcinia mangostana</i>)
<i>Dysmicoccus texensis</i> (Tinsley) (*)	2014 Ecuador (<i>Selenicereus</i>)
<i>Exallomochlus cf sulawesicus</i> Williams	2016 Indonesia (<i>Garcinia mangostana</i> , <i>Nephelium lappaceum</i>), Thailand (<i>Nephelium lappaceum</i>), Vietnam (<i>Nephelium lappaceum</i>)
<i>Ferrisia malvastra</i> (McDaniel)	1990 Israel (<i>Kochia</i>)
<i>Ferrisia virgata</i> (Cockerell) (*)	1990 Brazil (<i>Mangifera</i>), Canary Islands (<i>Portulacaria</i>), China (<i>Sageretia</i>), Colombia (<i>Manihot</i>), Costa Rica (<i>Codiaeum</i> , <i>Dracaena reflexa</i> var. <i>angustifolia</i> , <i>Pachira aquatica</i>), Dominican Republic (<i>Ficus</i> , <i>Zamia</i>), El Salvador (<i>Cola</i>), Honduras (<i>Dypsis</i>), Guatemala (<i>Nephelium lappaceum</i>), Malaysia (<i>Aquarius grisebachii</i>), Suriname (<i>Cestrum latifolium</i> , <i>Solanum macrocarpon</i>), Thailand (<i>Citrus</i> , <i>Nephelium lappaceum</i>), Vietnam (<i>Nephelium lappaceum</i>)
<i>Hippeococcus wegneri</i> Reyne	1953 Indonesia (<i>Dypsis</i>)
<i>Hypogeococcus pungens</i> Granara de Willink (*)	1991 Canary Islands (<i>Espositoa melanostele</i> , <i>Lobivia</i> , <i>Selenicereus</i> , <i>Trichocereus cardicans</i>), China (<i>Cereus</i>), Spain (<i>Espositoa</i>)
<i>Maconellicoccus hirsutus</i> (Green) (*)	2005 Brazil (<i>Mangifera indica</i>), Suriname (<i>Annona muricata</i>), Thailand (<i>Nephelium lappaceum</i> , <i>Psidium guajava</i>)
<i>Neotrionymus monstatae</i> Borchsenius	2021 China (<i>Phragmites australis</i> , dead stems for roofing)
<i>Nipaecoccus gilli</i> Williams & Granara de Willink	2010 Costa Rica (<i>Dypsis</i>)
<i>Nipaecoccus nipae</i> ((Maskell) (*)	2005 Costa Rica (<i>Dypsis</i> , <i>Howea forsteriana</i> , <i>Phoenix roebelinii</i> , <i>Theobroma</i>), Dominican Republic (<i>Annona</i> , <i>Dypsis</i>), Honduras (<i>Caryota</i>), Indonesia (<i>Raphis</i> , <i>Syngonium</i>), Suriname (unknown plant)
<i>Nipaecoccus viridis</i> (Newstead) (*)	2013 Thailand (<i>Citrus</i>)
<i>Palmicultor browni</i> (Williams)	2015 Costa Rica (<i>Dypsis</i>), USA (<i>Adonidia</i> , <i>Veitchia</i>)
<i>Palmicultor lumpurensis</i> (Takahashi) (*)	2007 China (<i>Bambusa</i>)
<i>Palmicultor</i> sp.	1992 Taiwan (Bambusea)
<i>Paracoccus marginatus</i> Williams & Granara de Willink (*)	2008 Indonesia (<i>Carica papaya</i>), Thailand (<i>Solanum melongena</i>)
<i>Paraputo larai</i> (Williams)	1977 Sri Lanka (<i>Cocos</i> , <i>Manihot manihot</i>)
<i>Paraputo theaeicola</i> (Green)	1994 India (<i>Camellia sinensis</i>)
<i>Phenacoccus avenae</i> Borchsenius (*)	1970 Turkey (<i>Galanthus elwesii</i>)
<i>Phenacoccus emansor</i> Williams & Kozarzhvskaya	1982 Turkey (<i>Iris reticulata</i>)
<i>Phenacoccus herreni</i> Cox & Williams (*)	1993 Colombia (<i>Manihot</i>)

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Table 1. (Continued)

PSEUDOCOCCIDAE	
<i>Phenacoccus madeirensis</i> Green (*)	1993 Colombia (<i>Manihot</i>), Marocco (<i>Capsicum annuum</i>), Zimbabwe (<i>Solidago</i>)
<i>Phenacoccus manihoti</i> Matile-Ferrero (*)	1993 Colombia (<i>Manihot</i>)
<i>Phenacoccus solani</i> Ferris (*)	1999 Brazil (<i>Echeveria</i> sp.), Kenya (<i>Artemisia dracuncululus</i>), South Africa (<i>Protea</i>), Zimbabwe (<i>Aster</i>)
<i>Phenacoccus solenopsis</i> Tinsley (*)	1993 China (<i>Ambrosia</i>), Nigeria (unknown plant), Israel (<i>Ocimum basilicum</i>), Jordania (<i>Ocimum basilicum</i>), Kenya (<i>Ocimum basilicum</i>), South Africa (<i>Solanum melongena</i>), Suriname (<i>Solanum macrocarpon</i>), Turkey (<i>Lantana</i>), Uganda (<i>Ocimum basilicum</i>)
<i>Planococcus citri</i> (Risso) (*)	1962 Brazil (<i>Mangifera indica</i>), Canary Islands (<i>Crassula</i> , <i>Portulacaria</i>), China (<i>Clusia</i>), <i>Ficus nitida</i> , <i>Freycinetia</i> , <i>Lamium</i> , <i>Sageretia thea</i>), Costa Rica (<i>Codiaeum</i> , <i>Dracaena</i> , <i>Phoenix</i> , <i>Schefflera</i>), Dominican Republic (<i>Psidium guajava</i>), Egypt (<i>Annona cherimola</i> , <i>Annona muricata</i> , <i>Ipomoea batata</i> , <i>Psidium guajava</i>), Guatemala (<i>Jatropha podagrica</i>), Honduras (<i>Fortunella mitis</i>), Indonesia (<i>Citrus hystrix</i> , <i>Nephelium</i>), Israel (<i>Clusia</i> , <i>Lamium</i> , <i>Nerium oleander</i> , <i>Ocimum basilicum</i> , <i>Pelargonium</i> , <i>Punica</i> , <i>Solidago</i>), Ivory Coast (<i>Clusia</i>), Kenya (<i>Dipladenia</i> , <i>Rosa</i>), Marocco (<i>Vaccinium corumbosum</i>), Peru (<i>Vaccinium corymbosum</i>), Peru (<i>Vaccinium corymbosum</i>), Poland (<i>Ficus elastica</i>), South-Korea (Cactaceae), South Africa (<i>Citrus x paradisi</i> , <i>Citrus x sinensis</i> , <i>Vaccinium</i> , <i>Vitis vinifera</i>), Spain (<i>Ficus elastica</i> , <i>Mespilus germanica</i>), Sri Lanka (<i>Barringtonia</i>), Suriname (<i>Artocarpus altilis</i> , <i>Codiaeum</i>), Taiwan (<i>Ficus</i>), Thailand (<i>Bauhinia</i> , <i>Clusia</i> , <i>Ficus</i> , <i>Nephelium lappaceum</i>), Tanzania (<i>Kalanchoe</i>), Trinidad en Tobago (<i>Solanum</i>), Turkey (<i>Galanthus elwesii</i>), USA (<i>Ficus altissima</i> , <i>Senna alata</i> , <i>Tabernaemontana</i>), Vietnam (<i>Nephelium lappaceum</i>), Yugoslavia (<i>Campanula pyramidalis</i>), Zimbabwe (<i>Aster</i> , <i>Rosa</i>)
<i>Planococcus ficus</i> (Signoret) (*)	1984 Israel (<i>Ficus</i>)
<i>Planococcus japonicus</i> Cox (*)	2020 Italy (<i>Taxus</i>)
<i>Planococcus lilacinus</i> (Cockerell) (*)	1999 Sri Lanka (<i>Barringtonia</i>), Thailand (<i>Nephelium lappaceum</i> , unknown bulb, <i>Sterculia</i> , <i>Streblus</i>)
<i>Planococcus minor</i> (Maskell) (*)	2003 Bangladesh (<i>Carica papaya</i>), Costa Rica (<i>Clusia</i>), Ethiopia (<i>Rosa</i>), Kenya (<i>Rosa</i>), Libanon (<i>Annona mucosa</i>), Malaysia (<i>Eugenia</i>), Philippines (<i>Ananas</i>), Suriname (<i>Apium graveolens</i> , <i>Cestrum latifolium</i>), Thailand (<i>Eugenia</i>), Trinidad and Tobago (<i>Theobroma</i>)
<i>Pseudococcus cf aurantiacus</i> Williams	2014 Malaysia (<i>Averrhoa carambola</i>)
<i>Pseudococcus baliteus</i> Lit	2003 China (<i>Ficus</i>), Thailand (<i>Ficus</i>), Vietnam (<i>Nephelium lappaceum</i>)
<i>Pseudococcus calceolariae</i> (Maskell) (*)	2004 Australia (<i>Citrus x sinensis</i>)
<i>Pseudococcus comstocki</i> (Kuwana) (*)	2004 China (<i>Ficus</i> , <i>Malus</i> , <i>Pyrus pyrifolia</i>)
<i>Pseudococcus cryptus</i> Hempel (*)	1985 Bali (<i>Nephelium lappaceum</i>), Malaysia (<i>Dyopsis</i>), Sri Lanka (<i>Polyscias balfouriana</i>), Thailand (<i>Nephelium lappaceum</i>)
<i>Pseudococcus concavocerarii</i> James	1978 Kenya (<i>Dracaena fragrans</i>)
<i>Pseudococcus elisae</i> (Borchsenius) (*)	2009 Dominican Republic (<i>Musa</i>), Ecuador (<i>Musa</i>)
<i>Pseudococcus jackbeardsleyi</i> Gimpel & Miller (*)	2006 Brazil (<i>Citrus x latifolia</i>), Costa Rica (<i>Dracaena</i>), Dominican Republic (<i>Echeveria</i>), Guatemala (<i>Schefflera</i>), Sri Lanka (<i>Polyscias</i>), Suriname (<i>Luffa</i> , <i>Mangifera indica</i>), Thailand (<i>Nephelium lappaceum</i> , <i>Psidium guajava</i> , unknown plant, <i>Selenicereus undatus</i>), Vietnam (<i>Selenicereus undatus</i>)
<i>Pseudococcus longispinus</i> (Targioni Tozzetti) (*)	1970 Australia (<i>Araucaria</i>), Brazil (<i>Cordyline</i> , <i>Pandanus</i>), Burkina Fasso (<i>Mangifera</i>), Canary Islands (<i>Chamaedorea</i> , <i>Cycas</i> , <i>Dyopsis</i> , <i>Zamia</i>), China (<i>Ficus thonningii</i> , <i>Podocarpus</i> , <i>Sageretia</i>), Colombia (<i>Musa</i>), Costa Rica (<i>Codiaeum</i> , <i>Dracaena reflexa</i> var. <i>angustifolia</i> , <i>Dracaena surculosa</i> , <i>Hoya</i> , <i>Tillandsia usneoides</i>), Dominican Republic (<i>Dyopsis</i> , <i>Musa</i>), Guatemala (<i>Beaucarnea</i>), Italy (<i>Dregea sinensis</i>), Ivory Coast (<i>Dracaena</i> , <i>Dracaena sanderiana</i>), Indonesia (<i>Cordyline</i>), Kenya (<i>Galium odoratum</i> , <i>Rosa</i>), Puerto Rico (<i>Dracaena fragrans</i>), Spain (<i>Phoenix</i>), Sri Lanka (<i>Cordyline</i> , <i>Saribus rotundifolius</i>), USA (<i>Filicopsida</i>)
<i>Pseudococcus maritimus</i> (Ehrhorn) (*)	1966 Canary Islands (<i>Strelitzia</i>), Germany (Cactaceae), Mexico (<i>Cestrum</i>), Suriname (<i>Solanum quitoense</i>)
<i>Pseudococcus nakaharai</i> Gimpel & Miller	1972 Canary Islands (<i>Coryphanta</i> , <i>Echinocactus</i> , <i>Ferocactus</i> , <i>Opuntia</i> , <i>Myrtillocactus</i> , <i>Polaskia</i>), Germany (Cactaceae)
<i>Pseudococcus cf sociabilis</i> Hambleton	2020 Brazil (<i>Carica papaya</i>)
<i>Pseudococcus viburni</i> (Signoret) (*)	1966 Brazil (<i>Malus</i>), Canary Islands (<i>Aloe brevifolia</i> , <i>Crassula</i> , <i>Ferocactus latispinus</i> , <i>Lemaireocereus</i> , <i>Stenocereus</i> , <i>Strelitzia</i>), Costa Rica (<i>Ficus benjamina</i>), Dominican Republic (<i>Capsicum frutescens</i> , <i>Musa</i>), Hawaii (<i>Dendrobium</i>), Italy (<i>Laurus nobilis</i>), Mexico (<i>Cestrum</i>), Slovenia (<i>Viburnum tinus</i>), Spain (unidentified bulb), Sri Lanka (<i>Aglaonema</i>), Suriname (<i>Solanum melongena</i>)
<i>Rastrococcus iceryoides</i> (Green) (*)	1992 Zanzibar Island (<i>Mangifera indica</i>)

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Table 1. (Continued)

PSEUDOCOCCIDAE	
<i>Rastrococcus invadens</i> Williams (*)	2006 Thailand (<i>Bougainvillea</i>)
<i>Saccharicoccus saccharii</i> (Cockerell) (*)	1968 Tanzania (<i>Saccharum</i>)
<i>Spilococcus mamillariae</i> (Bouché) (*)	1985 Canary Islands (<i>Cactaceae</i> , <i>Melocactus matanzanus</i>), South Africa (<i>Cactaceae</i>)
<i>Trionymus bambusae</i> (Green)	2007 China (<i>Fargesia</i>)
<i>Trionymus diminutus</i> Leonardi (*)	1992 France (<i>Phormium</i>), Guatemala (<i>Phormium</i>)
<i>Erium pygmaeum</i> (De Lotto)	1968 Tanzania (<i>Saccharum</i>)
<i>Vryburgia brevicurris</i> (McKenzie) (*)	1986 Canary Islands (<i>Cactaceae</i>)
<i>Vryburgia trionymoides</i> (De Lotto) (*)	1980 Spain (<i>Aeonium</i>)
PUTOIDAE	
<i>Puto barberi</i> (Cockerell)	2011 Trinidad and Tobago (<i>Ixora</i>)
QINOCOCCIDAE	
<i>Jansenus burgeri</i> Foldi	1989 Thailand (<i>Tamarindus indica</i>)
RHIZOECIDAE	
<i>Geococcus coffeae</i> Green (*)	2000 Costa Rica (<i>Archontophoenix alexandrae</i>), Honduras (<i>Caryota</i> , <i>Dypsisis</i>), Sri Lanka (<i>Areca catechu</i> , <i>Saribus rotundifolius</i>), Thailand (<i>Saribus rotundifolius</i>)
<i>Rhizoecus albidus</i> Goux (*)	2008 China (<i>Eugenia</i>)
<i>Rhizoecus albus</i> James	1969 Tanzania (<i>Saccharum</i>)
<i>Rhizoecus americanus</i> (Hambleton) (*)	2003 Costa Rica (<i>Archontophoenix alexandrae</i> , <i>Dypsisis lutescens</i> , <i>Elaeis</i> , <i>Licuala grandis</i> , <i>Phoenix roebelenii</i>), Dominican Republic (<i>Dypsisis</i>), Honduras (<i>Dypsisis lutescens</i>), Sri Lanka (<i>Saribus rotundifolia</i>)
<i>Rhizoecus amorphophalli</i> Betrem (*)	2000 Thailand (<i>Cycas revoluta</i> , <i>Ficus</i>)
<i>Rhizoecus cacticans</i> (Hambleton) (*)	1971 Canary Islands (<i>Cactaceae</i> , <i>Euphorbia</i>), France (<i>Sempervivum tectorum</i>), Germany (<i>Crassulaceae?</i>), Portugal (<i>Pyracantha</i>), Suriname (<i>Aloe vera</i>)
<i>Rhizoecus dianthi</i> Green (*)	2013 Canary Islands (<i>Agave striata</i> , <i>A. titanota</i> , <i>Euphorbia</i>), Italy (<i>Cereus</i> , <i>Chamaecereus silvestrii</i>)
<i>Rhizoecus keysensis</i> Hambleton	2008 Canary Islands (<i>Mammillaria</i> , <i>Oreocereus</i> , <i>Pleiospilos nelii</i>)
<i>Ripersiella campestris</i> (Hambleton)	2008 Costa Rica (<i>Coffea arabica</i>)
<i>Ripersiella emarai</i> Jansen	2022 Ghana (<i>Ficus benghalensis</i>)
<i>Ripersiella hibisci</i> (Kawai & Takagi) (*)	1989 China (<i>Ehretia</i> , <i>Ficus thonningii</i> , <i>Portulaca</i> , <i>Sageretia thea</i> , <i>Serissa foetida</i> , <i>Syzygium</i> , <i>Trachycarpus</i> , <i>Zelkova serrata</i>), Italy (<i>Callistemon</i> , <i>Chamaerops humilis</i> , <i>Phoenix canariensis</i> , <i>Rhapis excelsa</i> , <i>Trachycarpus fortunei</i>), Taiwan (<i>Ficus benjamina</i> , <i>Ficus thonningii</i>)
<i>Ripersiella maasbachi</i> (Jansen)	1990 Canary Islands (<i>Opuntia</i>), China (<i>Sageretia</i>), Italy (<i>Camellia</i>)
<i>Ripersiella mexicana</i> Hambleton	2003 Canary Islands (<i>Cephalocereus</i> , <i>Cereus repandus</i> , <i>Coleocephalocereus aureus</i> , <i>Crassula</i> , <i>Cypocereus minensis</i> , <i>Espostoa</i> , <i>Lobivia ancistrophora</i> , <i>Lophocereus</i> , <i>Mammillaria spinosissima</i> , <i>Melocactus</i> , <i>Mytillocactus</i> , <i>Opuntia monacantha</i> , <i>Opuntia microdasys</i> , <i>Pachycereus</i> , <i>Parodia</i> , <i>Pilosocereus</i> , <i>Polaskia</i> , <i>Stetsonia</i> , <i>Vatricania</i>), China (<i>Cereus hildmannianus</i>), Spain (<i>Oreocereus</i> , <i>Pilosocereus</i> , <i>Tephrocactus articulatus</i>), Tanzania (<i>Peperomia</i>)
<i>Ripersiella multiporifera</i> Jansen	2003 China (<i>Dracaena trifasciata</i>), Costa Rica (<i>Dracaena</i> “ <i>Sansevieria</i> -group”), Guatemala (<i>Dracaena</i> “ <i>Sansevieria</i> -group”), Indonesia (<i>Dracaena trifasciata</i>), Philippines (<i>Dracaena</i> “ <i>Sansevieria</i> -group”), Spain (<i>Ficus lyrata</i>), Thailand (<i>Dracaena angolensis</i> , <i>Dracaena reflexa</i> var. <i>angustifolia</i> , <i>Dracaena trifasciata</i> , <i>Dracaena zeylanica</i> “ <i>Sansevieria</i> -group” <i>Hoya kerrii</i>)
<i>Ripersiella planetica</i> (Williams)	2003 Canary Islands (<i>Lophocereus</i> , <i>Opuntia monacantha</i> , <i>Parodia warasii</i>), Sri Lanka (<i>Saribus</i>)

(*) species listed as agricultural pest (Kondo & Watson 2022).

Table 2. List of scale insects (Coccoomorpha) found in greenhouses in the Netherlands, year of first record, hostplant, greenhouse type and agricultural pest species status.

ASTEROLECANIIDAE	
<i>Asterolecanium epidendri</i> (Bouché) (*)	1979 <i>Angraecum sesquipedale</i> (Gn), <i>Bulbophyllum grandiflorum</i> (Gn), <i>Dendrochilum</i> (Gc), <i>Epidendrum calanthum</i> (Gn), <i>Kefersteinia graminea</i> (Gn)
<i>Bambusaspis bambusae</i> (Boisduval) (*)	1989 <i>Bambusa ventricosa</i> (Gc), <i>Bambusa vulgaris</i> (Gn, Gc)
<i>Planchonia stentae</i> (Brain) (*)	1996 <i>Hoya</i> (Gn), <i>Justicia brandegeana</i> (Gn)
CEROCOCCIDAE	
<i>Pollinia pollini</i> (Costa) (*)	1993 <i>Olea europaea</i> (Gn)
COCCIDAE	
<i>Ceroplastes ceriferus</i> (Fabricius) (*)	1994 <i>Ficus</i> (Gc), <i>Podocarpus</i> (Gc)
<i>Ceroplastes floridensis</i> Comstock (*)	1974 <i>Cocos</i> (Gc), <i>Dracaena</i> (Gc), <i>Ficus</i> (Gc), <i>Filicium</i> (Gc), <i>Phoenix</i> (Gc), <i>Schefflera</i> (Gc)
<i>Ceroplastes japonicus</i> Green (*)	2000 <i>Dicksonia fibrosa</i> (Gc)
<i>Ceroplastes rubens</i> Maskell (*)	1995 <i>Aglaonema</i> (Gc)
<i>Ceroplastes rusci</i> (Linnaeus) (*)	1993 <i>Cocos</i> (Gn), <i>Ficus benjamina</i> (Gn)
<i>Ceroplastes stellifer</i> (Westwood) (*)	1994 <i>Cinnamomum camphora</i> (Gn), <i>Dypsis</i> (Gc), <i>Licuala</i> (G), <i>Schefflera</i> (Gc)
<i>Coccus hesperidum</i> Linnaeus (*)	1944 (1912, <i>Bouvardia</i> , <i>Citrus</i> , <i>Kentia</i> , <i>Laurus nobilis</i>), <i>Acalypha</i> (G), <i>Acer palmatum</i> (Gn), <i>Actiniopteris australis</i> (Gc), <i>Aloe</i> (Gc), <i>Anthurium andraeanum</i> (G), <i>Bergera koenigii</i> (Gc), <i>Buxus</i> (Gc), <i>Camellia</i> (G), <i>Cirsium</i> (Gn), <i>Citrus</i> (Gn, Gc), <i>Coffea</i> (Gn), <i>Cyclamen</i> (G, Gl), <i>Cymbidium</i> (Gc), <i>Cyrtomium falcatum</i> (G), <i>Dianthus</i> (Gl), <i>Dypsis</i> (Gc), <i>Plerandra elegantissima</i> (G), <i>Fatsihedera</i> (G), <i>Fatsia japonica</i> (Gc), <i>Ficus</i> (Gn), <i>Ficus benjamina</i> (Gc), <i>F. diversifolia</i> (G), <i>F. elastica</i> (G), <i>Fortunella</i> (Gc), <i>Gerbera</i> (Gc), <i>Hedera algeriensis</i> (G), <i>Hedera colchica</i> (Gc), <i>Hedera helix</i> , <i>Hydrocotyle</i> (Gn), <i>Ilex crenata</i> (Gc), <i>Hippeastrum</i> (G), <i>Ilex</i> (G), <i>Laurus</i> (G, Gc), <i>Laurus nobilis</i> (G, Gl), <i>Mangifera indica</i> (Gc), <i>Melaleuca</i> (Gc), <i>Monstera</i> (G, Gl), <i>Musa</i> (G), <i>Nephrolepis</i> (G), <i>Nerium oleander</i> (G, Gc), <i>Orchidaceae</i> (Gc, Gn), <i>Oreopanax capitatum</i> (Gc), <i>Parkinsonia aculeata</i> (Gn), <i>Phalaenopsis</i> (Gc), <i>Pilea</i> (G), <i>Pinus nigra</i> (G), <i>Platynerium</i> (G), <i>Plumeria rubra</i> (G), <i>Podocarpus macrophyllus</i> (Gc), <i>Prunus domestica</i> (G), <i>Sageretia</i> (Gc), <i>Saxifraga stolonifera</i> (G), <i>Schefflera arboricola</i> (Gc), <i>Skimmia</i> (Gc), <i>Streblus</i> (Gc), <i>Trifolium repens</i> (G), unknown plant (Gn), <i>Vinca</i> (Gn), <i>Vriesea</i> (Gc)
<i>Coccus longulus</i> (Douglas) (*)	1986 <i>Anona</i> (Gn), <i>Nepenthaceae</i> (Gn)
<i>Coccus viridis</i> (Green) (*)	1990 <i>Ixora</i> (Gn, Gc), <i>Ixora coccinea</i> (Gc), <i>Polyscias</i> (Gc)
<i>Eucalymnatus tessellatus</i> (Signoret) (*)	2000 (1912, <i>Caryota</i>), <i>Caryota</i> (Gc), <i>Dypsis</i> (Gc), <i>Tabernaemontana</i> (Gn), <i>Taumatococcus</i> (Gn)
<i>Luzulaspis scotica</i> Green	2015 <i>Carex</i> (Gn)
<i>Parasaissetia nigra</i> (Nietner) (*)	1980 <i>Ficus elastica</i> (Gc, Gn), <i>Plumeria</i> (Gc)
<i>Parthenolecanium corni</i> (Bouché) (*)	1976 <i>Actinidia chinensis</i> var. <i>deliciosa</i> (Gc), <i>Ilex verticillata</i>
<i>Parthenolecanium persicae</i> (Fabricius) (*)	1998 <i>Ginkgo biloba</i> (Gc), <i>Vaccinium corymbosum</i> (Gc)
<i>Philephera tuberculosa</i> Nakahara & Gill (*)	2017 <i>Codiaeum</i> (Gc)
<i>Protopulvinaria pyriformis</i> (Cockerell) (*)	1996 <i>Ficus</i> (Gc), <i>Schefflera</i> (Gc)
<i>Pulvinaria floccifera</i> (Westwood) (*)	1991 (1912, <i>Camellia</i>), <i>Ilex</i> (Gc), <i>Taxus</i> (Gc), <i>Vaccinium vitis-idaea</i> (Gc)
<i>Pulvinaria kuwacola</i> Kuwana	2016 <i>Callicarpa</i> (Gc)
<i>Pulvinaria mesembryanthemi</i> (Vallot) (*)	1961 <i>Mesembryanthemum</i> (Gn)
<i>Pulvinaria psidii</i> Maskell (*)	1991 <i>Ficus benjamina</i> (Gc)
<i>Pulvinaria vitis</i> (Linnaeus) (*)	1974 <i>Vitis vinifera</i> (Gn)
<i>Saissetia coffeae</i> (Walker) (*)	1944 (1912, <i>Coffea</i> , <i>Pteris</i>), <i>Agathis</i> (G), <i>Anthurium andraeanum</i> (Gc), <i>Aphelandra</i> (G), <i>Ardisia</i> (Gc), <i>Asparagus plumosus</i> (G), <i>Asplenium nidus</i> (Gc), <i>Blechnum</i> (Gc), <i>Buxus</i> (Gc), <i>Chlorophytum</i> (Gn), <i>Citrus</i> (Gc, Gn), <i>Clusia</i> (Gc), <i>Codiaeum</i> (Gc), <i>Coffea</i> (Gn), <i>Cyathea</i> (Gc), <i>Cycas</i> (Gc), <i>Cycas circinalis</i> (Gl), <i>Eleagnus</i> (Gc), <i>Ficus</i> (G, Gc), <i>Ficus benjamina</i> (Gc), <i>Hemionitis rotundifolia</i> (G), <i>Hoya carnosa</i> (Gl), <i>Laurus</i> (Gc), <i>Myrtus communis</i> (G), <i>Nephrolepis</i> (G, Gc), <i>Nerium oleander</i> (G, Gl), <i>Oncidium</i> (Gc), <i>Palicourea</i> (Gn), <i>Phalaenopsis</i> (Gc), <i>Phlox</i> (Gc), <i>Pilea</i> (G), <i>Platynerium</i> (Gc), <i>Plumeria</i> (Gn), <i>Pseuderanthemum maculatum</i> (Gn), <i>Pteris</i> (Gc), <i>Randia</i> (Gn), <i>Sanchezia oblonga</i> (Gn), <i>Sesamothamnus lugardii</i> (Gc), <i>Stephanotis</i> (G), <i>Yucca</i> (Gc), <i>Zamia</i> (Gc)

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Table 2. (Continued)

COCCIDAE	
<i>Saissetia miranda</i> (Cockerell & Parrott) (*)	1998 <i>Nerium oleander</i> (Gc, Gn)
<i>Saissetia neglecta</i> De Lotto (*)	2020 <i>Codiaeum</i> (Gc)
<i>Saissetia oleae</i> (Olivier) (*)	1975 (1912, unknown plant), <i>Aralia</i> (Gc), <i>Cycas revoluta</i> (Gc), <i>Kalanchoe</i> (Gc), <i>Olea europaea</i> (Gc), <i>Nerium oleander</i> (Gc)
CONCHASPIDIDAE	
<i>Conchaspis angraeci</i> Cockerell	1989 <i>Codiaeum</i> (Gc)
DIASPIDIDAE	
<i>Acutaspis albopicta</i> (Cockerell) (*)	1994 <i>Beaucarnea</i> (Gc), <i>Shorea</i> (Gn), <i>Dipterocarpus</i> (Gn)
<i>Aonidiella aurantii</i> (Maskell) (*)	1988 <i>Citrus</i> (Gn, Gc), <i>Citrus x limon</i> (Gn, Gc), <i>Ficus</i> (Gc), <i>Ravenea rivularis</i> (Gc)
<i>Aonidiella citrina</i> (Coquilett) (*)	1951 <i>Citrus</i> , <i>Ficus</i> (Gn)
<i>Aonidiella orientalis</i> (Newstead) (*)	1990 <i>Kentia</i> (Gc)
<i>Aonidomytilus albus</i> (Cockerell) (*)	1996 <i>Manihot esculenta</i> (Gn)
<i>Aspidiotus destructor</i> Signoret (*)	1993 <i>Aglaonema</i> (Gc), <i>Camellia</i> (Gc), <i>Citrus</i> (Gc), <i>Dypsisis</i> (Gc), <i>Euonymus</i> (Gc), <i>Ilex</i> (Gc), <i>Saribus rotundifolia</i> (Gc), <i>Phoenix roebelenii</i> (Gc), <i>Raphis</i> (Gc), <i>Ravenala</i> (Gc)
<i>Aspidiotus excisus</i> Green (*)	1988 <i>Aglaonema</i> (Gc), <i>Dypsisis</i> (Gc)
<i>Aspidiotus nerii</i> Bouché (*)	1950 (1862: <i>Nerium oleander</i> , <i>Ceratonina siliqua</i> , <i>Lomatia myricoides</i> , 1912: <i>Kentia</i> , <i>Mimosa</i> , <i>Phoenix</i>), <i>Dypsisis</i> (Gc), <i>Asparagus setaceus</i> (Gl), <i>Citrus</i> (Gc), <i>Chamaedorea</i> (Gn), <i>Cycas</i> (Gc), <i>Cymbidium</i> (Gc), <i>Dypsisis</i> (Gc), <i>Fatsihedera</i> (Gl), <i>Howea</i> (Gc, Gl), <i>H. forsteriana</i> (Gn), <i>Nerine</i> (Gl), <i>Nerium oleander</i> (Gn), <i>Pachypodium</i> (Gc), <i>Passiflora</i> (Gl), <i>Olea europaea</i> (Gn), <i>Phoenix</i> (G, Gn), <i>P. canariensis</i> (Gl), <i>Raphis</i> (Gc), <i>Strelitzia</i> (Gn), unknown plant (Gl)
<i>Aulacaspis rosae</i> (Bouché)	2009 <i>Rosa</i> (Gn)
<i>Aulacaspis tubercularis</i> Newstead (*)	2000 <i>Mangifera</i> (G)
<i>Aulacaspis yasumatsui</i> Takagi (*)	2004 <i>Cycas</i> (Gc)
<i>Carulaspis juniperi</i> (Bouché) (*)	1998 <i>Juniperus chinensis</i> (Gn)
<i>Chrysomphalus aonidum</i> (Linnaeus) (*)	1977 <i>Caryota</i> (Gc), <i>Chamearops</i> (Gc), <i>Dracaena bicolor</i> (Gc), <i>Dracaena reflexa</i> var. <i>angustifolia</i> (Gc), <i>Dypsisis</i> (Gc), <i>Epipremnum</i> (Gc), <i>Ficus</i> (Gc), <i>Ravenala madagascariensis</i> (Gc, Gn), <i>Saribus rotundifolius</i> (Gc)
<i>Chrysomphalus bifasciculatus</i> Ferris (*)	1994 <i>Ficus</i> (Gc), <i>Bergera koenigii</i> (Gc)
<i>Chrysomphalus dictyospermi</i> (Morgan) (*)	1978 (1912, <i>Coelogyne</i>), <i>Chamaedorea</i> (Gc), <i>Cycas</i> (Gc), <i>Dendrochilum</i> (G), <i>Ophiopogon japonicus</i> (Gc), <i>Pandanus</i> (G)
<i>Chrysomphalus nulliporus</i> McKenzie	1996 <i>Coelogyne fragrans</i> (Gn)
<i>Contigaspsis</i> sp.	2001 <i>Pachypodium</i> (Gc)
<i>Diaspis boisduvalii</i> Signoret (*)	1957 <i>Ananas</i> (G, Gc), <i>Anguloa uniflora</i> (Gc), <i>Areca</i> (Gc), <i>Bifrenaria harrisoniae</i> (G), <i>Araceae</i> (Gn), <i>Bulbophyllum</i> (Gn), <i>Cattleya</i> (G, Gc), <i>Cocos</i> (G), <i>Cymbidium</i> (Gc), <i>Dendrobium</i> (Gc), <i>Juania australis</i> (Gc), <i>Saribus rotundifolius</i> (Gl), <i>Syagrus</i> (G), <i>Orchidaceae</i> (G, Gn), <i>Phoenix</i> (Gc), <i>Strelitzia</i> (Gc), <i>Trachycarpus</i> (Gc), <i>Vriesea</i> (Gn), <i>Zygopetalum</i> (Gc)
<i>Diaspis bromeliae</i> (Kerner) (*)	1961 <i>Aechmea</i> (G), <i>A. fasciata</i> (Gc), <i>Ananas</i> (G, Gc), <i>Hohenbergia</i> (Gc), <i>Bromeliae</i> (Gc), <i>Nidularium fulgens</i> (G), <i>N. tricolor</i> (Gc), <i>Vriesea splendens</i> (G)
<i>Diaspis echinocacti</i> (Bouché) (*)	1958 (1862, <i>Yucca</i>), <i>Austrocylindropuntia subulata</i> (G), <i>Cactaceae</i> (G), <i>Opuntia monocantha</i> (Gc)
<i>Fiorinia fioriniae</i> (Targioni Tozzetti) (*)	1990 <i>Howeia</i> (Gc), <i>Podocarpus</i> (Gc)
<i>Fiorinia proboscidea</i> Green (*)	2001 <i>Podocarpus macrophyllus</i> (Gc)
<i>Fiorinia theae</i> Green (*)	1995 <i>Podocarpus</i> (Gc)
<i>Furchadaspis zamiae</i> (Morgan) (*)	1951 <i>Cycas revoluta</i> (Gc, Gn), <i>Strelitzia juncea</i> (Gc), <i>Cycas</i> (Gn, Gc), <i>Encephalartos villosus</i> (Gn)
<i>Gymnaspis aechmeae</i> Newstead (*)	1961 <i>Aechmea</i> (Gn), <i>Billbergia nutans</i> (G), <i>Bromelia</i> (Gn)
<i>Hemiberlesia cyanophylli</i> (Signoret) (*)	1977 <i>Acacia mangium</i> (Gn), <i>Beaucarnea</i> (Gc), <i>Bruguiera gymnorhiza</i> (Gn), <i>Cactaceae</i> (Gc, Gn), <i>Chamaecostus cuspidatus</i> (Gc), <i>Crassula</i> (Gn), <i>Cycas revoluta</i> (Gc), <i>Dracaena reflexa</i> var. <i>angustifolia</i> (Gc), <i>Echinocactus grusonii</i> (Gc), <i>Fatsia japonica</i> (Gc), <i>Hymenaea</i> (Gn), <i>Melocactus</i> (Gc), <i>Musa</i> (Gn), <i>Nypa fruticans</i> (Gn), <i>Opuntia</i> (Gc), <i>Pachypodium</i> (Gc), <i>Phoenix</i> (Gc), <i>P. roebelenii</i> (Gc), <i>Protea</i> (Gc), <i>Vriesea</i> (Gc)

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Table 2. (Continued)

DIASPIDIDAE	
<i>Hemiberlesia lataniae</i> (Signoret) (*)	1950 <i>Beaucarnea</i> (Gc, Gn), <i>Dypsisis</i> (Gc), <i>Euphorbia splendens</i> (G), <i>Ficus</i> (G), <i>Heptapleurum arboricola</i> (Gc), <i>Howeia</i> (Gc), <i>Jatropha</i> (Gn), <i>Musa</i> (Gc, Gn), <i>Palmae</i> (Gc, Gn), <i>Persea</i> (Gc), <i>Serissa</i> (Gc), <i>Yucca</i> (Gc)
<i>Hemiberlesia palmae</i> (Cockerell) (*)	1958 <i>Aechmea weilbarchii</i> (Gc), <i>Nidularium</i> (Gc), <i>Saribus rotundifolius</i> (Gc), <i>Vriesea nana</i> (Gc)
<i>Hemiberlesia rapax</i> (Comstock) (*)	1966 (1912, <i>Myrte</i> , <i>Laurus nobilis</i>), <i>Acacia floribunda</i> (G), <i>Cleyera japonica</i> (G)
<i>Howardia biclavis</i> (Comstock) (*)	1998 <i>Rollinia</i> (Gn)
<i>Ischnaspis longirostris</i> (Signoret) (*)	1993 (1912, <i>Elaeis</i>), <i>Dracaena</i> (Gn), <i>Ficus</i> (G), <i>Taumatococcus</i> (Gn)
<i>Kuwanaspis pseudaulacaspis</i> Kuwana (*)	2013 <i>Phyllostachys aureosulcatus</i> (Gc)
<i>Lepidosaphes beckii</i> (Newman) (*)	1995 <i>Citrus x reticulata</i> (G), <i>Citrus x sinensis</i> , <i>Bergera koenigii</i> (Gc)
<i>Lepidosaphes conchiformis</i> (Gmelin) (*)	2010 <i>Ficus carica</i> (Gc)
<i>Lepidosaphes pinnaeformis</i> (Bouché)	1961 (1912, <i>Vanda</i>), <i>Cymbidium</i> (G, Gn)
<i>Lepidosaphes ulmi</i> (Linnaeus) (*)	1992 <i>Buxus</i> (Gc), <i>Crataegus</i> (Gc), <i>Ligustrum</i> (Gc), <i>Malus</i> (Gc)
<i>Lindingaspis rossi</i> (Maskell) (*)	1984 <i>Araucaria</i> (Gc)
<i>Lopholeucaspis cockerelli</i> (Grandpré & Charmoy) (*)	1993 <i>Bulbophyllum</i> (Gn), <i>Guzmania</i> (Gc), <i>Serissa</i> (Gc), <i>Zelkova</i> (Gc)
<i>Melanaspis bromiliae</i> (Leonardi) (*)	1973 <i>Ananas</i> (Gc)
<i>Melanaspis smilacis</i> (Comstock)	1998 <i>Dasylyrion</i> (Gn)
<i>Mycetaspis personata</i> (Comstock) (*)	1994 (1912, Bromeliaceae), <i>Phoenix</i> (Gc)
<i>Odonaspis greeni</i> Cockerell	1992 Bamboo (Gc), <i>Bambusa ventricosa</i> (Gc)
<i>Opuntiaspis carinata</i> (Cockerell)	1990 <i>Yucca</i> (Gc)
<i>Parlagena buxi</i> (Takahashi)	1998 <i>Buxus</i> (Gc)
<i>Parlatoria pergandii</i> Comstock (*)	1990 <i>Citrus x aurantiifolia</i> (Gn), <i>Dischidia bengalensis</i> (Gn), <i>Hoya australis</i> (Gn)
<i>Parlatoria proteus</i> (Curtis) (*)	1996 <i>Ficus</i> (Gn)
<i>Parlatoria theae</i> Cockerell (*)	2000 <i>Acer palmatum</i> (Gc)
<i>Parlatoria ziziphi</i> (Lucas) (*)	1998 <i>Citrus hystrix</i> (Gc), <i>Citrus x sinensis</i> (Gc)
<i>Pinnaspis aspidistrae</i> (Signoret) (*)	1954 (1912, unknown plant), <i>Areca</i> (Gc), <i>Aspidistra</i> (G, Gc), <i>Dypsisis</i> (Gc), <i>Codiaeum</i> (Gc), <i>Cycas circinalis</i> (G), <i>Cycas rumphii</i> (Gn), <i>Dracaena reflexa</i> var. <i>angustifolia</i> (Gc), <i>Filicopsida</i> (Gc), <i>Nephrolepis</i> (Gc), <i>Palmae</i> (G), <i>Platyserium</i> (G, Gl), <i>Rhapis excelsa</i> (Gc), <i>Dracaena</i> ("Sansevieria-group") (Gc), <i>Saribus rotundifolius</i> (Gc)
<i>Pinnaspis buxi</i> (Bouché) (*)	1986 <i>Areca</i> (Gc), <i>Coelogyne</i> (Gn)
<i>Pinnaspis strachani</i> (Cooley) (*)	1956 <i>Codiaeum</i> (Gc), <i>Dracaena deremensis</i> (Gc), <i>Dracaena fragrans</i> , <i>Dracaena reflexa</i> var. <i>angustifolia</i> (Gc), <i>Dracaena trifasciata</i> (G), <i>Dypsisis lutescens</i> , <i>Hibiscus</i> (Gc), <i>Liriope</i> (Gc), <i>Bergera koenigii</i> (Gc), <i>Sageretia</i> (Gc)
<i>Pseudaonidia paeoniae</i> (Cockerell) (*)	1977 <i>Rhododendron</i> (Gc)
<i>Pseudaulacaspis cockerelli</i> (Cooley) (*)	1978 <i>Chamaerops humilis</i> (Gc), <i>Dypsisis</i> (Gc), <i>Ficus</i> (Gc), <i>Ficus benjamina</i> (Gc), <i>Ravenala</i> (Gc), <i>Ravenea</i> (Gc), <i>Sageretia</i> (Gc), <i>Xanthorrhoea</i> (Gc)
<i>Pseudaulacaspis pentagona</i> (Targioni Tozzetti) (*)	1990 <i>Actinidia</i> (G), <i>Adenium</i> (Gc), <i>Anisodonteia capensis</i> (Gc), <i>Catalpa</i> (Gc), <i>Codiaeum</i> (Gc), <i>Croton aucubifolia</i> (Gc), <i>Cycas</i> (Gc), <i>Ginkgo biloba</i> (Gc), <i>Morus alba</i> (Gc), <i>Morus rubra</i> (Gn), <i>Plumeria</i> (Gc), <i>Prunus</i> (Gc), <i>Rosaceae</i> (Gc)
<i>Pseudaulacaspis prunicola</i> (Maskell) (*)	1977 <i>Ligustrum</i> (Gc), <i>Prunus</i> (Gc), unknown bonsai plant (Gc)
<i>Pseudoparlatoria parlatorioides</i> (Comstock)	1981 <i>Paphiopedilum</i> (G, Gc)
<i>Selenaspis articulatus</i> (Morgan) (*)	1993 <i>Citrus</i> (G), <i>Dypsisis</i> , <i>Phoenix</i> (Gc)
<i>Situlaspis yuccae</i> (Cockerell)	2001 <i>Yucca</i> (Gc)
<i>Unaspis citri</i> (Comstock) (*)	1976 <i>Citrus</i> (Gc)
<i>Unaspis euonymi</i> (Comstock) (*)	2001 <i>Euonymus japonicus</i> (Gc, Gn)
ERIOCOCCIDAE	
<i>Acanthococcus coccineus</i> (Cockerell) (*)	1968 Cactaceae (G), <i>Mammillaria</i> (G)
<i>Ovaticoccus agavium</i> (Douglas)	1976 <i>Agave americana</i> (Gc), <i>Agave parryi</i> (Gc), <i>Yucca</i> (Gc, Gn), <i>Yucca rostrata</i> (Gc)
<i>Uhleria araucariae</i> (Maskell)	1989 <i>Araucaria</i> (Gc)
MONOPHLEBIDAE	
<i>Icerya purchasi</i> Maskell (*)	1971 <i>Chamaedorea</i> (G), <i>Citrus</i> (Gc), <i>Dypsisis lutescens</i> (Gc), <i>Euonymus</i> (Gc), <i>Mimosa</i> (Gn), <i>Pittosporum</i> (Gc), <i>Zamia</i> (Gc)

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Table 2. (Continued)

PSEUDOCOCCIDAE

<i>Antonina pretiosa</i> Ferris (*)	1994 <i>Bambusa</i> (Gn)
<i>Atrococcus paludinus</i> (Green)	2011 <i>Ribes</i> (Gn)
<i>Chaetococcus bambusae</i> Maskell	1993 <i>Bambusa</i> (Gc)
<i>Dysmicoccus brevipes</i> (Cockerell) (*)	1993 <i>Ananas comosus</i> (Gc), <i>Heliconia</i> (Gc), <i>Hoya</i> (Gc), <i>Musa</i> (Gl), <i>Phalaenopsis</i> (Gc), <i>Phoenix</i> (Gc), <i>Solanum lycopersicum</i> (Gc)
<i>Dysmicoccus mackenziei</i> Beardsley	1992 <i>Tillandsia</i> (Gc), <i>Vriesea albofasciata</i> (Gc)
<i>Dysmicoccus neobrevipes</i> Beardsley (*)	1988 <i>Beaucarnea</i> (Gl), <i>Dracaena reflexa</i> var. <i>angustifolia</i> , (Gl), <i>Yucca</i> (Gc)
<i>Dysmicoccus texensis</i> (Tinsley) (*)	2010 <i>Beaucarnea</i> (Gc, Gn)
<i>Ferrisia virgata</i> (Cockerell) (*)	1999 <i>Codiaeum</i> (Gc), <i>Dracaena</i> (Gc), <i>Dypsis lutescens</i> (Gc), <i>Ficus</i> (Gc), <i>Psidium guajava</i> (Gn)
<i>Hypogeoecoccus pungens</i> Granara de Willink (*)	1996 Cactaceae (Gc), <i>Coryphanta elephantidens</i> (Gc)
<i>Nipaecoccus</i> cf. <i>gilli</i> Williams & Granara de Willink	2019 <i>Dypsis</i> (Gc)
<i>Nipaecoccus nipae</i> (Maskell) (*)	1957 (1912, <i>Kentia</i>) <i>Archontophoenix</i> (Gc), <i>Dieffenbachia</i> (Gc), <i>Dypsis</i> (Gn), <i>Howea forsteriana</i> (Gn), <i>Raphis</i> (Gc), <i>Vriesea splendens</i> (Gc)
<i>Nipaecoccus</i> sp.	2021 <i>Raphis</i> (Gc), <i>Bromelia</i> (Gc), <i>Strelitzia</i> (Gc)
<i>Palmicultor</i> sp.	2007 <i>Phoenix roebelenii</i> (Gc)
<i>Palmicultor lumpurensis</i> (Takahashi) (*)	2007 <i>Phyllostachys</i> (Gc)
<i>Paracoccus burnerae</i> (Brain) (*)	2021 <i>Nerium oleander</i> (Gn)
<i>Paraputo ensete</i> (Williams & Matile-Ferrero)	1997 <i>Ensete ventricosum</i> (Gn)
<i>Phenacoccus avenae</i> Borchsenius (*)	1967 <i>Brodiaea</i> (Gc), <i>Freesia refracta</i> (Gc), <i>Iris</i> (Gc), <i>Narcissus tazetta</i> (Gc)
<i>Phenacoccus emansor</i> Williams & Kozarzhevskaya	1982 <i>Crocus zonatus</i> (Gc), <i>Freesia</i> (Gc), <i>Iris reticulata</i> (Gc)
<i>Phenacoccus madeirensis</i> Green (*)	1993 <i>Capsicum annuum</i> (Gc), <i>Gerbera</i> (Gc), <i>Lantana camara</i> (Gc), <i>Solanum</i> (Gn)
<i>Phenacoccus solani</i> Ferris (*)	2000 <i>Echeveria</i> (Gc)
<i>Phenacoccus solenopsis</i> Tinsley (*)	1993 <i>Ocimum</i> (Gc), <i>Solanum</i> (Gn)
<i>Planococcus citri</i> (Risso) (*)	1963 (1912), <i>Adenium</i> (Gc), <i>Aglaonema</i> (G, Gc), <i>Alisma</i> (Gn), <i>Alternanthera</i> (Gc), <i>Anubias barteri</i> (Gc), <i>Astrophytum asterias</i> (Gc), <i>Berberis</i> (Gc), <i>Blechnum</i> (Gc), <i>Capsicum annuum</i> (Gc), <i>Cardamine lyrata</i> (Gc), <i>Carissa</i> (Gc), <i>Cecropia</i> (Gn), <i>Citrus</i> (Gc), <i>Clereodendrum</i> (Gc), <i>Clusia</i> (Gc), <i>Codiaeum</i> (G, Gc), <i>Coffea</i> (Gn), <i>Cossia alba</i> (Gc), <i>Croton</i> (Gc), <i>Ctenanthe</i> (Gc), <i>Cucumis sativus</i> (Gc), <i>Dendrocnide moroidea</i> (Gc), <i>Dieffenbachia</i> (Gc), <i>Dracaena</i> (G, Gc), <i>Echeveria</i> (Gc), <i>Echinodorus</i> (Gc), <i>Echinops</i> (Gc), <i>Euphorbia lactea</i> (Gc), <i>Ficus benjamina</i> (Gc), <i>Ficus elastica</i> (Gc), <i>Ficus pumila</i> (Gc), <i>Fittonia</i> (Gc), <i>Gerbera</i> (Gc, Gn), <i>Hippeastrum</i> (Gc, Gn), <i>Hydrocotyle sibthorpioides</i> (Gn), <i>Ixora</i> (Gc), <i>Kalanchoe</i> (Gl), <i>Laportea moroides</i> (Gn), <i>Lithops</i> (Gc), <i>Mandevilla</i> (Gc), <i>Mangifera indica</i> (Gc), <i>Melaleuca leucadendra</i> (Gc), <i>Microsorium</i> (Gc), <i>Mimosa</i> (Gn), <i>Nerium oleander</i> (Gc), <i>Nomaphila siamensis</i> (Gc), <i>Pachystachys</i> (Gc), <i>Passiflora</i> (Gc), <i>Portulacaria</i> , <i>Premna</i> (Gc), <i>Psidium guajava</i> (Gn), <i>Pteridophyta</i> (Gc), <i>Punica granata</i> (Gc), <i>Rauwolfia verticillata</i> (Gc), <i>Rosa</i> (Gc), <i>Saribus rotundifolius</i> (Gc), <i>Schefflera</i> (Gc), <i>Sedum krvillei</i> (Gn), <i>Sessilis</i> (Gc), <i>Solanum tuberosum</i> (Gc, Gn), <i>Streblus</i> (Gc), <i>Strelitzia</i> (Gn), <i>Syngonium</i> (Gc), <i>Syzygium jambos</i> (Gn), <i>Thalia</i> (Gc), <i>Tolmiea menziesii</i> (Gl), <i>Vinca minor</i> (Gl)
<i>Planococcus litchi</i> Cox	2006 <i>Pachira</i> (Gc)
<i>Planococcus japonicus</i> Cox	2020 <i>Taxus</i> (Gc)
<i>Planococcus minor</i> (Maskell) (*)	2003 <i>Annona muricata</i> (Gn), <i>Bursera</i> (Gc), <i>Citrus</i> (Gn), <i>Coffea</i> (Gn), <i>Dracaena muricata</i> (Gn), <i>Eugenia</i> (Gc), <i>Ficus stuhlmannii</i> (Gn), <i>Megaskepasma erythrochlamys</i> (Gn), <i>Monstera</i> (Gn)
<i>Pseudococcus calceolariae</i> (Maskell) (*)	1968 <i>Coffea</i> (Gn), <i>Hymenosporum</i> (Gn), <i>Laurus nobilis</i> (Gl), unknown plant (G, Gc)
<i>Pseudococcus importatus</i> McKenzie (*)	2000 <i>Maxillaria splendens</i> (Gn)
<i>Pseudococcus jackbeardsleyi</i> Gimpel & Miller (*)	2020 <i>Aglaonema</i> (Gn), <i>Hibiscus</i> (Gn)
<i>Pseudococcus longispinus</i> (Targioni Tozzetti) (*)	1968 <i>Alisma</i> (Gn), <i>Alocasia</i> , <i>Artabotrys hexapetalus</i>

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Table 2. (Continued)**PSEUDOCOCCIDAE**

	(Gn), <i>Bacopa</i> , <i>Beaucarnea</i> (Gc), <i>Calanthe</i> (Gc), <i>Cissus antartica</i> (G), <i>Colocasia</i> (Gn), <i>Cordyline</i> (Gc), <i>Crassula</i> (Gc), <i>Cycas revoluta</i> (Gc), <i>Cyperus haspan</i> (Gn), <i>Cyperus papyrus</i> (Gc), <i>Dracaena reflexa</i> var. <i>angustifolia</i> , (Gc), <i>Dendrobium</i> (Gc), <i>Dracaena reflexa</i> var. <i>angustifolia</i> (Gc), <i>Dracaena surculosa</i> (Gc), <i>Ficus thonningii</i> (Gc), <i>Ilex crenata</i> (Gn, Gc), <i>Nerium oleander</i> (Gn), <i>Nephrolepis</i> (Gc), <i>Olea europaea</i> (Gc), <i>Oncidium</i> (Gc), <i>Phalaenopsis</i> (Gc), <i>Pyracantha</i> (Gn), <i>Sarracenia</i> (Gn), <i>Strelitzia</i> (Gc), <i>Tillandsia</i> , <i>Zamia</i> (Gc), unknown plant (Gc)
<i>Pseudococcus maritimus</i> (Ehrhorn) (*)	1992 <i>Aglaonema</i> (Gc), <i>Bacopa</i> (Gc), <i>Ficus benamina</i> (Gc)
<i>Pseudococcus microcirculus</i> McKenzie (*)	1989 <i>Epidendrum stamfordianum</i> (Gn)
<i>Pseudococcus nakaharai</i> Gimpel & Miller	1974 <i>Astrophytum asterias</i> (Gc), <i>Coryphanta</i> (Gc), Cactaceae (Gl), <i>Echinocactus</i> (Gc), <i>Euphorbia tirucalli</i> (Gc), <i>Ferocactus schwarzii</i> (Gc), <i>Melocactus</i> (Gc), <i>Neoraimondia herzogiana</i> (Gc), <i>Opuntia microdasys</i> (Gc)
<i>Pseudococcus viburni</i> (Signoret) (*)	1959 <i>Aeonium</i> (Gc), <i>Beaucarnea</i> (Gc), <i>Begonia rex</i> (Gn), <i>Bauhinia</i> (Gn), <i>Bougainvillea</i> (Gc), Cactaceae (G, Gc), <i>Capsicum annum</i> (Gc), <i>Cestrum latifolium</i> (Gc), <i>Clivia</i> (Gc), <i>Clematis</i> (G), <i>Codiaeum</i> , <i>Crassula</i> (Gc), <i>Cyclamen</i> (Gl), <i>Cyperus</i> (Gl), <i>Dionaea muscipula</i> (Gc), <i>Dioscorea elephantipes</i> (Gc), <i>Echeveria</i> (Gc), <i>Ensete ventricosum</i> (Gn), <i>Epiphyllum</i> (G), <i>Eugenia</i> (Gn), <i>Euphorbia</i> (Gl), <i>Faucaria</i> (Gc), <i>Ficus</i> (Gc), <i>Ficus benamina</i> (Gc), <i>Fremontodendron</i> (Gc), <i>Gloxinia</i> (G), <i>Hibiscus</i> (Gc), <i>Hoya carnosa</i> (G), <i>Kalanchoe</i> (Gc, Gl), <i>Laurus nobilis</i> , <i>Megaphrynium</i> (Gn), <i>Musa</i> (Gc), <i>Opuntia</i> (Gc), <i>Passiflora</i> (G), <i>Physalis philadelphica</i> (Gc), <i>Polyscias</i> (Gc), <i>Rhododendron</i> (Gc), <i>Rosa</i> (Gc), <i>Solanum esculentum</i> (Gc), <i>Streptocarpus</i> (G), <i>Syzygium jambos</i> (Gn), <i>Uncaria</i> (Gc), unknown plant (Gc), <i>Vitis vinifera</i> (Gn)
<i>Saccharicoccus sacchari</i> (Cockerell)	2000 <i>Ensete ventricosum</i> (Gn)
<i>Spilococcus mamillariae</i> (Bouché) (*)	1972 <i>Astrophytum asterias</i> (Gc), Cactaceae (Gc, Gn), <i>Cereus</i> (Gc), <i>Echinocactus</i> (G), <i>Mammillaria</i> (Gc), <i>Myrtillocactus geometrizans</i> (Gc), <i>Pilocereus</i> (Gc)
<i>Trionymus bambusae</i> (Green)	1999 <i>Fargesia</i> (Gc), <i>Pseudosasa japonica</i> (Gn), <i>Semiarundinaria fastuosa</i> (Gc)
<i>Trionymus diminutus</i> (Leonardi)	1989 <i>Phormium</i> (Gc)
<i>Trochiscococcus speciosus</i> (De Lotto)	2005 <i>Aloe variegata</i> (Gc), <i>Gasteria</i> (Gc), <i>Haworthia</i> (Gc), x <i>Gasterhaworthia</i> (Gc)
<i>Vryburgia amaryllidis</i> (Bouché) (*)	1954 <i>Agapanthus orientalis</i> (Gn), <i>Amaryllis</i> (G, Gc), <i>Clivia</i> (Gc, Gn), <i>Crassula</i> (Gc), <i>Dracaena reflexa</i> var. <i>angustifolia</i> (Gn), <i>Hippeastrum</i> (G, Gc, Gl), <i>Nerine</i> (Gc), <i>Scilla</i> (Gc), <i>Tulipa</i> (G, Gc), <i>Vallota</i> (Gc)

RHIZOECIDAE

<i>Geococcus coffeae</i> Green (*)	1967 <i>Aechmea luddemanniana</i> (Gn), <i>Aglaonema modestum</i> (Gn), <i>Burbridgea schizocheila</i> (Gn), <i>Chamaedorea elegans</i> (Gc), <i>Cissus lecococcinea</i> (Gc), <i>Citrus</i> (Gc), <i>Clusia grandiflora</i> (Gn), <i>Codiaeum variegatum</i> (Gn), <i>Coffea</i> (Gl), <i>Dieffenbachia</i> (Gc), <i>Dypsis</i> (Gc), <i>Hedera canariensis</i> (Gc), <i>Serissa</i> (Gc), <i>Washingtonia filifera</i> (Gn)
<i>Rhizoecus albidus</i> Goux (*)	1967 <i>Crassula arborescens</i> (G), <i>Pelargonium odoratissimum</i> (G), <i>Silene dioica</i> (Gn)
<i>Rhizoecus americanus</i> (Hambleton) (*)	1990 <i>Areca</i> (Gc), <i>Parodia lutescens</i> (Gc), <i>Howea forsteriana</i> (Gc), <i>Licuala</i> (Gc), <i>Phoenix roebelenii</i> (Gc), <i>Saribus rotundifolius</i> (Gc)
<i>Rhizoecus amorphophalli</i> Betrem (*)	1994 <i>Ficus</i> (Gc), <i>Ficus benamina</i> (Gc)
<i>Rhizoecus cacticans</i> (Hambleton) (*)	1960 <i>Begonia</i> (G), Cactaceae (G, Gc), <i>Cereus</i> (G), <i>Crassula</i> (Gc), <i>Crassula perforata</i> (Gc), <i>Cyperus</i> (Gc), <i>Echinocactus</i> (Gc), <i>Echinopsis</i> (Gc), <i>Epiphyllum</i> (G), <i>Guzmania minor</i> (Gc), <i>Kalanchoe</i> (G), <i>Lophophora williamsii</i> (Gc), <i>Mammillaria longimamma</i> (G, Gc), <i>Myriophyllum</i> (Gc), <i>Nerium oleander</i> , <i>Ehretia</i> (Gc), <i>Pelargonium</i> (G, Gn), <i>Schlumbergera</i> (Gl, Gc), <i>Soleirolia soleirolii</i> (Gc), <i>Streptocarpus</i> (Gl), <i>Strobilanthes reptans</i> (G), <i>Veronica</i> (Gc), <i>Vitis vinifera</i> (Gc), <i>Vriesea</i> (G, Gc, Gn)
<i>Rhizoecus dianthi</i> Green (*)	1961 <i>Aloe</i> (Gl), Cactaceae (Gc), <i>Aeonium</i> (Gc), <i>Dianthus</i> (G), <i>Euphorbia</i> (Gc), <i>Ficus</i> (Gc), <i>Fragaria vesca</i> (G), 'ground' (G), <i>Gynura</i> (Gl), <i>Ixora</i> (Gc), <i>Nautilocalyx</i> (G), <i>Opuntia subulata</i> (Gc), <i>Streptocarpus</i> (' <i>Saintpaulia</i> ') (G, Gl)
<i>Rhizoecus elongatus</i> Green	1955 <i>Aloe</i> (G)
<i>Rhizoecus falcifer</i> Kunckel	(1912, <i>Pteris</i>) d'Herculis (*)
<i>Rhizoecus keysensis</i> Hambleton	2007 Cactaceae (Gc), <i>Mammillaria decipiens</i> (Gc)
<i>Rhizoecus cf nemoralis</i> (Hambleton)	2012 <i>Agave</i> (Gc)
<i>Ripersiella emarai</i> Jansen	2006 <i>Dieffenbachia</i> (Gc), <i>Ficus cyathistipula</i> (Gc), <i>Ficus lyrata</i> (Gc)
<i>Ripersiella hibisci</i> (Kawai & Takagi) (*)	1995 <i>Acer palmatum</i> (Gc), <i>Celtis</i> (Gc), <i>Chamaerops</i> (Gc), <i>Ehretia</i> (Gc), <i>Ficus</i> (Gc), <i>Serissa foetida</i> (Gc), <i>Zelkova serrata</i> (Gc)
<i>Ripersiella maasbachi</i> (Jansen)	1998 <i>Sageretia</i> (Gc), <i>Serissa</i> (Gc)

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Table 2. (Continued)

RHIZOECIDAE

<i>Ripersiella mexicana</i> Hambleton	1976 <i>Austrocylindropuntia subulata</i> (Gc), Cactaceae (Gc), <i>Cereus</i> (Gc), <i>Cereus jamacura</i> (Gn), <i>Pilosocereus pachycladus</i> (Gc), <i>Rhipsalis burchellii</i> (Gc)
<i>Ripersiella multiporifera</i> Jansen	2005 <i>Dracaena</i> (“Sansevieria group”) <i>trifasciata</i> (Gc), <i>Dracaena reflexa</i> (Gc), <i>Ficus cyathistipula</i> (Gc), <i>Pleomele</i> (Gc)
<i>Ripersiella planetica</i> (Williams)	2018 <i>Schlumbergera</i> (Gc)

Gc: commercial greenhouse (grower, propagator), Gl: living-room, Gn: non-commercial greenhouse (e.g. zoological and botanical gardens, research institutes), G: unknown category, (1912, *Myrte*): old record, the collection material is lost (van der Goot 1912; de Graaf et al. 1862), (*) species listed as agricultural pest (Kondo & Watson 2022).

Discussion

Most of the species can only survive indoors and don't occur in the public green or in the open. An exception is the exotic non-native soft scale *Coccus hesperidum* Linnaeus (Coccidae) which can occur in the open and can survive Dutch winters with average higher temperatures. There are also species imported from other European countries and native to the Dutch fauna (Jansen 2001) such as *Pseudochermes fraxini* (Kaltenbach) (Cryptococcidae), *Gossyparia spuria* (Modeer) (Eriococcidae) and the armoured scales *Epidiaspis leperii* (Signoret), *Chionaspis salicis* (Linnaeus), *Aulacaspis rosae* (Bouché) and *Lepidosaphes ulmi* (Linnaeus). The mealybug *Chaetococcus phragmitis* (Marchall) is a common species on *Phragmites australis* in Central and Eastern Europe and this plant is imported in high numbers for roofing since decades, however this mealybug has never been found in the open in The Netherlands. Because of changes in the quality of both Dutch and European reed stems, importers are constantly looking for reed originating from new areas such as Turkey and China. This import is not without the risk of the introduction of new pest species: an invasion in the USA of *Nipponaclerda biwakoensis* (Kuwana) (Acleridae) caused die-back and decimating thousands of acres of *Phragmites australis* in the Mississippi River Delta (Knight et al. 2018). Its possible introduction into Europe is of concern and may depend on the transportation route. Up to now samples taken from imported reed stems revealed only dead specimens of the mealybug *Neotrionymus monstata* Borchsenius.

Many species of both lists were submitted only a few times and might be of (potential) economic importance. Occasionally there is limited knowledge concerning their biology, the number of host plants, potential economic risks, and natural enemies. Another category are specimens which represented new species to science e.g. the Pseudococcid *Paraputo ensete* (Williams & Matile-Ferrero) on *Ensete ventricosum* in a greenhouse of a research institute originating from Ethiopia (Williams & Matile-Ferrero 1999), the Rhizoecidae *Rhizoeus planetica* Williams on Cactaceae originating from the Canary Islands (Williams, 2004), *Ripersiella emarai* Jansen on *Dieffenbachia* and *Ficus* in Dutch greenhouses (Jansen & Westenberg 2015), *R. maasbachi* Jansen on *Sageretia* and *Serissa* bonsai plants originating from China (Jansen 2003), *R. multiporifera* Jansen in Dutch greenhouses on e.g. several *Dracaena* species, “Sansevieria type “ (Jansen 2008; Jansen & Westenberg 2015) and the imported Qinoecid *Jansenus burgeri* Foldi in the bark of *Tamarindus indica* originating from Thailand (Foldi 1997). Most species of both lists are of tropical and subtropical origin and pose a potential threat for countries with a subtropical climate in which they can build up high populations in greenhouses or survive out of doors. Examples are *Diaspis boisduvalii* Signoret (Diaspididae), *Nipaecoccus nipae* (Maskell) (Pseudococcidae) and *Eucalymnatus tessellatus* (Signoret) (Coccidae) in Italy (Longo et al. 1995; Pellizzari & Dalla Montà 1997).

Each imported plant species and commodity accommodates their own scale insect fauna. In the soil at least sixteen Rhizoecidae were found on the roots whereas several Pseudococcidae such as the polyphagous species *Planococcus citri* (Risso) and *Dysmicoccus brevipes* (Cockerell) were occasionally found on root collars. Bonsai or penjing plants are woody plants which are imported in large numbers from East Asia on which not only Rhizoecidae but also representatives of other Cocomorpha families are found. Examples are the Diaspididae *Fiorinia japonica* Kuwana, *F. theae* Green, *Pseudaulacaspis pentagona* (Targioni Tozzetti), *P. prunicola* (Maskell) and the Coccidae *Ceroplastes ceriferus* (Fabricius) and *Coccus hesperidum* Linnaeus.

Most greenhouse species have a restricted distribution, were not regularly observed or found once, during a certain period or in the cultivation of a single plant species. Most common are the Pseudococcidae *P. citri*, *Pseudococcus longispinus* (Targioni Tozzetti) and *Pseudococcus viburni* (Signoret) and the Diaspididae *D. boisduvalii* and *Aspidiotus nerii* Bouché (Messelink 2014). In contrast with these cosmopolitan species many other species have only been accidentally found. New infestations are mainly due to new introductions after starting new pathways. Repeated

outbreaks of old infestations may occur if populations cannot be treated adequately if natural enemies are not available for biological control or if a chemical treatment is not effective because of their cryptic life habit.

Kondo & Watson (2022) list all scale insect species documented as pests, numbering 640 species of which 180 species have been found both in greenhouses and on imported products. From the list given by Kondo & Watson 27 species are native to the Netherlands and seven others are acclimatized species. Examples of native species are the pit scale *Asterodiaspis variolosa* (Ratzeburg), the soft scale *Eulecanium ciliatum* (Douglas) and the armoured scales *Carulaspis juniperi* (Bouché) and *Lepidosaphes ulmi* (Linnaeus). The soft scales *Pulvinaria regalis* Canard and *Coccus hesperidum* Linnaeus are examples of acclimatized exotic species.

Names of plants used in this overview remain sometimes provisional because incorrect labelling of plants in trade and misidentification are widespread (van Valkenburg *et al.* 2023). An example is the use of *Echinodorus bleheri* instead of *E. bleherae* (= *Aquarius grisebachii*). In trade old names are frequently used, and their author names are rarely used in the communication with consumers. An example of this uncertainty is *Syzygium polyanthum* (Wight) Walp and *S. polyanthum* Thwaites, the last name being a synonym of *S. nervosum*. As a result, the actual name of the host plant remains occasionally unknown.

Findings abroad elucidate that more species may enter the Netherlands unseen in trade flows. Examples are the first incursions of *Parthenolecanium fletcheri* (Cockerell) (Malumphy 2011), *Phenacoccus peruvianus* Granara de Willink (Malumphy & Eyre 2011), *Chryseococcus areae* (Maskell) (Malumphy *et al.* 2014), and the armored scales *Pseudoparlatoria ostreata* Cockerell (Malumphy & Redstone 2012) and *Duplachionaspis exalbida* (Cockerell) (Malumphy 2012). These are examples of species recorded from the UK which have not been found in the Netherlands so far. Besides the ongoing and increasing international trade, climate change can also contribute to the establishment of species of tropical and subtropical origin. Climate change may have contributed to the establishment of *Icerya purchasi* Maskell (Monophlebidae) in London (Watson & Malumphy 2004) and the presence of *Aspidiotus hedericola* Lindinger in the Netherlands (Jansen & Den Hartog 2020) and Germany (Schmutterer & Hoffmann 2016). However, there is a decrease in the numbers of three exotic *Pulvinaria*-species in the Netherlands which were introduced during the last two decades of the 20th century in the public green: *Pulvinaria floccifera* (Westwood), *P. hydrangea* Steinweden and *P. regalis* Canard. This might be due to the impact of natural enemies or unknown environmental factors such as the use of pesticides because next to other insect orders like Coleoptera and Lepidoptera, also the numbers of common native species such as the soft scale *Parthenolecanium corni* (Bouché) and the mealybug *Trionymus perrisii* (Signoret) seem to decrease during the last decades.

Preventing new introductions of populations of exotic species is only possible with regular and targeted inspections whereas ineffective and irregular sampling may contribute to their introduction. Introductions may change due to a changing fashion of plant products or seasonal products which popularity changes over time. An example are some mealybug species imported on bulbs during the last decades of the twentieth century such as *Phenacoccus emansor* Williams & Kozarzhevskaya, *P. avenae* Borchsenius and *Vryburgia amaryllidis* (Bouché). An example of a seasonal product are Christmas wreaths from Turkey on which the diaspid *Lineaspis striata* (Newstead) was detected.

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