

New and less observed scale insect species for the Dutch fauna (Hemiptera: Coccoidea)

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KEYWORDS

Coccidae, Diaspididae, dopluis, Eriococcidae, faunistics, introduced species, Kermesidae, Pseudococcidae, schildluis, The Netherlands, wolluis

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An overview is given of outdoor scale insect species that are only rarely observed or that can be reported as new to the native fauna. There is a relationship between the number of introduced species and new species occurring outdoors. With an increase in transportation of all sorts of goods, the rate of species introductions and establishments will also increase. This is confirmed by the discovery of five exotic species new for the Dutch fauna: the mealybug *Trionymus bambusae* (Green), the soft scales *Coccus hesperidum* (Linnaeus) and *Parthenolecanium persicae* (Fabricius), the armoured scale *Unaspis euonymi* (Comstock) and possibly also for *Eriococcus danzigae* (Miller & Gimpel). The mealybug *Trionymus thulensis* Green is also reported as new for the Dutch fauna, but was found in a nature reserve, without any indication of a possible introduction by men. In addition, recent findings of six less observed native species are described.

Introduction

Scale insects (Coccoidea) and related groups are one of the arthropod groups commonly transported by commodities for commercial and tourist purposes. Many of these species are regularly introduced and dispersed among countries and continents as a consequence of international trade. This way, they are also one of the most successful groups in terms of invading new geographical areas (Pellizzari & Dalla Montá 1997) and an increasing number of species have become cosmopolitan due to such anthropogenic activities. This worldwide phenomenon enlarges the composition of the 'native' species list through the establishment of species originating from other parts of the world.

This paper deals with native and introduced species living outdoors which are new and less observed. The status of 'less observed species' remains unknown because of the small number of observers, the cryptic life habits and the specialized knowledge one needs to recognize the different species. Six species are mentioned as new for the Dutch fauna which should be added to the first updated list in which 66 native species were recorded (Jansen 2001). Roughly, these six species belong to two categories:

1. Species living in the public green and in nature reserves, which were probably already present and native since a long time, but were overlooked in the past. Based on the knowledge of the faunistics of Belgium, Luxemburg, England, Germany and Northern France, about 100-150 species are to be expected.
2. The second group concerns introduced species living on traded ornamental plants like bonsai-plants, pot flowers, bedding plants, cut flowers, trees and shrubs for common gardening and orangery plants. These invasive or alien

species are spreading their range in other continents not hampered by any natural dispersal barrier. The spread of Mediterranean species to the north is much faster than one would expect if it would be based on natural conditions alone. Newcomers may survive by permanent introductions due to regular import of new plants and their related insect populations. The future will learn to which extent these species will escape from greenhouses, establish outdoors, find new hosts, and are able to adapt to our climate.

During quarantine inspections, inspectors from the Dutch Plant Protection Service (PPS) in Wageningen surveyed consignments with plants originating from countries outside the European Union or other parts of the world. During these import inspections, at least 174 exotic scale insect species were ascertained. More than 125 species were encountered in greenhouses which are partly the same species as those found during import inspections, but also with some exotic species which have never been intercepted (Jansen 2005). After 1980, trade increased and as a result an increasing number of species could be added to one of these species lists suggesting a direct relationship with the increase of exotic species outdoors.

Material and methods

Scale insects were collected by inspectors of the General Inspection Service (NAK) and the PPS or submitted for identification by private persons who are experienced field workers interested in the local insect fauna and who recognize representatives of this species group on the plant outdoors. The specimens were studied using the procedure of the Dutch PPS. For microscopic slides, specimens were macerated in 10% KOH, cleaned in



1. *Coccus hesperidum* at Capelle aan de IJssel on *Laurus nobilis*, 25.iv.2003, leg. M. Jansen. Female of the soft scale, length about 4 mm. The dark brown or olive mottling in young females to a uniform brown colour in older females is characteristic. Photo M. Jansen

1. De dopluis *Coccus hesperidum* te Capelle aan de IJssel op *Laurus nobilis*, 25.iv.2003, leg. M. Jansen. Wijfje, lengte ongeveer 4 mm. Jonge wijfjes hebben donkerbruine of olijfgleurige vlekken en oudere wijfjes zijn meer egaal olijfgbruin gekleurd.



2. Female of the soft scale *Parthenolecanium persicae* on *Ginkgo biloba* bonsai. Length 5-10 mm, body shape more elongate than the related *Parthenolecanium corni*. Eggs are hidden in a cavity under the body. Photo: G. Vos

2. Wijfje van de dopluis *Parthenolecanium persicae* op een *Ginkgo biloba* bonsai. Deze dopluis van 5-10 mm lang is langgerechter dan de bij ons soms talrijk voorkomende gewone dopluis (*Parthenolecanium corni*). De eieren zitten verborgen in een holte onder het lichaam.

ethanol 70%, stained in a mixture of lignin pink, Essig's aphid fluid and acid fuchsin, dehydrated in acetic acid and clove oil and mounted in Canada balsam. Slide-mounted and dry specimens have been deposited at the collection of the PPS.

Species account

Coccidae or soft scales

Coccus hesperidum (Linnaeus) New for the Dutch fauna (figure 1)

Wageningen, Province Gelderland, in a private garden, 27.vi.1995 on *Hedera helix*, leg. A. van Frankenhuijzen; Wageningen, in a private garden, 5.xii. 2005 on *Cirsium arvense*, leg. E. Dijkstra; Capelle aan de IJssel, Province Zuid-Holland, in private gardens, 25.iv.2003, a moderate infestation on *Laurus nobilis*, leg. M. Jansen.

The discovery on ivy *Hedera helix* in 1995 was the result of an introduction in the garden at the beginning of the season of an indoor ivy plant followed by a rapid spread to outdoor *Hedera*. The soft scale *C. hesperidum* is native in Southern Europe and very common in greenhouses in the temperate zone where it sustains due to its extreme polyphagous nature. At present, it is a cosmopolitan species present in almost all parts of the world as a result of continuing spread of plant material by trade and tourist activities. It was considered for a long time that new populations cannot survive the Dutch climate when introduced outdoors. Further inquiries from the owners of the *Laurus nobilis* plant revealed that it had survived at least five successive winters in a small protected garden sheltered from the wind, indicating that this species can benefit from local suitable microclimatically conditions.

Eriopeltis lichtensteinii Signoret

Sint Annaland, Province Zeeland, in tidal litter alongside the sea dike of the salt marsh, 15.ix. 1998, one nymph, leg. M. Jansen; Munnekezijl, Lauwersmeer, Province Friesland, Kollumerwaard, 31.viii.1994, many thousands on *Calamagrostis epigejos*, leg. J. Meijer; Terschelling, Province Friesland, between Water- en Sterneplak, 26.ix.1997, many thousands on *Ammophila arenaria*, leg. M. Jansen.

During the last century *E. lichtensteinii* was found on thirteen locations which were all situated at or near the coast of The Netherlands (Reyne 1957, and collection material of the PPS). Most specimens of this species were usually found in the dunes of the northern part of our country. The species is known from ten grass species (Gramineae) from different genera and also from *Luzula pilosa* (Ben-Dov 1993). Most often, the species was found on *C. epigejos* and once on *A. arenaria*. The specimens found at Sint Annaland were observed in the tidal litter zone alongside the salt marsh, which was covered with a vegetation consisting of *Atriplex littoralis*, *A. prostrata* and *Elytrigia atherica*. *Eriopeltis lichtensteinii* occurs in most European countries but is absent in Norway, England, Ireland and the Mediterranean countries. The adult was described again and illustrated by Kosztarab and Kozár (1988). Adults of the species are easy to find by the presence of the white ovisacs which are occasionally present in a row on the leaves.

Parthenolecanium persicae (Fabricius) New for the Dutch fauna (figure 2)

Well, Province Limburg, a high infestation on a firm in a culture of *Vaccinium corymbosum*, 10.vi.2005, leg. E. Schriks.

This species has an almost worldwide distribution and is widely distributed around the Mediterranean Sea and in the southern half of Central Europe. The species is a pest on the location at Well where it was present in high numbers by which



3. Female of the soft scale with ovisac of *Lichtensia viburni* at Ede on *Hedera helix*, 25.v.2005, leg. B. de Hoop. Length 6 mm. Photo: M. Jansen
3. Wijfje van de dopluis met eizak van *Lichtensia viburni* te Ede op *Hedera helix*, 25.v.2005, leg. B. de Hoop. Lengte 6 mm.

the bark of infested branches was hardly visible any more. The species is polyphagous and a potential pest for other crops and the public green and recorded from e.g., *Clematis*, *Fraxinus*, *Malus*, *Mespilus*, *Prunus*, *Pyrus*, *Ribes* and *Vitis* (Kosztarab & Kozar 1988). Inquiries revealed that infested plants were taken over from the Experimental station at Horst by PPO at Randwijk on 24.vi.2003, which is an indication of its longer presence in The Netherlands. One annual generation is present in The Netherlands and Central Europe and adults can be observed on the branches during April and May (Kosztarab & Kozar 1988).

Hoffmann & Schmutterer (1999) recorded *P. persicae* for the first time in Germany on grapevine (*Vitis vinifera*) probably as a result of natural spread from Switzerland into the Rhine valley. The species was introduced into Western Australia around 1901, where it became a serious pest of vines and plums (Bartlett 1978). An identification key to the species with details about the distribution and biology is given by Kosztarab & Kozár (1988).

Lecanopsis formicarum Newstead

Groet, Province Noord-Holland, duinen van Schoorl, *Festuca filiformis*, 20.v.2000, 1 adult female, leg. M. Jansen.

The species was previously only found in The Netherlands at Rockanje and Wageningen (Reyne 1957) and at Loon op Zand in 1972 (unpublished record). An identification key to the genus *Lecanopsis* is given by Kosztarab & Kozár (1988). A more recent description of the genus and key to the species are given by Fontana (1998) and Pellizzari and Fontana (2002). The species lives on the root crown and is known from eight grass species (Gramineae, including *Festuca ovina*) and occurs in many Palaeo-arctic countries including Mongolia, China, Russia, Ukraine, Sweden, Spain and Ireland. There is one annual generation and adult females are present in the second half of April and May (Kosztarab & Kozár 1988).



4. Scales of the armoured scale *Unaspis euonymi* at Eijsden on *Euonymus fortunei*, 14.xii.2008, leg. W. Duijsens. The small white scales are the nymphal stage of males whereas the dark grey scales represent the nymphal and adult females. The insect itself lives hidden under the scale which is formed of wax filaments secreted by glands. Photo: M. Jansen

4. Schildjes van de schildluis *Unaspis euonymi* te Eijsden op *Euonymus fortunei*, 14.xii.2008, leg. W. Duijsens. De kleine witte schildjes zijn onvolwassen mannetjes, de donkergrijze schildjes zijn de onvolwassen en volwassen wijfjes. Het insect zelf leeft onder het schildje dat bestaat uit was dat door klieren wordt afgescheiden.

Lichtensia viburni Signoret (figure 3)

Ede, Province Gelderland, 25.v.2005, moderate infestations on *Hedera helix* in a few private gardens and in the public green, leg. B. de Hoop & M. Jansen; Ede, 20.v.2005 and 20.vi.2008, in private garden, leg. J. Meffert; Wageningen, Province Gelderland, 3.vi.2005, leg. A. Tonkens; Wageningen, 27.iii.2008, 30 nymphs, leg. M. Jansen.

The last few years *L. viburni* was present in the region Ede-Wageningen in the public green and in private gardens on *H. helix*, sometimes in high numbers with a maximum of ten adults per leaf. Before this outbreak the only two known observations were in the western part of The Netherlands at Haarlem in 1988 and Scheveningen Meijendel in 1978 (Van Rossem et al. 1979) both from ivy. The species is described by Kosztarab & Kozár (1988) and Hodgson (1994). Ben-Dov (1975) described the taxonomic differences with the related *Filippia follicularis* (Targioni Tozzetti). The Netherlands are on the northern border of the present geographical distribution: it is recorded from most countries in the southern half of Europe, and also in Ireland, Wales and Southern England. Although it seems confined to *H. helix* in The Netherlands, elsewhere it is recorded from representatives of fourteen plant families including *Viburnum tinus*, *Olea europaea* and *Euonymus japonicus*. There is one annual generation and adults are present on the leaves of its host in May and June. Remnants of the white cottony ovisacs and a thin 4-7 mm long and oval shaped wax imprint, where the ovisacs used to be attached to the leaf, may be found a long time after the presence of the adults.

Diaspididae or armoured scales

Unaspis euonymi (Comstock) New for the Dutch fauna (figure 4)

Sint Oedenrode, Province Noord-Brabant, 25.iv.2008, a high infestation on *Euonymus japonicus*, leg. A. Sonnemans (NAK); Haarlem, Province Noord-Holland, in a private garden, 8.ix.2008, a high infestation on one *Euonymus fortunei* shrub, leg. T. Litjens, (collection number: PD 3601899); Eijsden, Province Limburg, 14.xii.2008 a heavy infestation on *Euonymus fortunei*, leg. W. Duijsens.

The trees at Sint Oedenrode were originating from Italy and imported two years before the discovery, single infested tree at Haarlem has been suffering for at least five years by the presence of this armoured scale insect, and the *Euonymus* shrub at Eijsden has been suffering a heavy infestation since a couple of years as well (pers. comm. W. Duijsens).

Unaspis euonymi can be recognized by the longitudinal whitish scales of the male and the almost circular female scale which have a dark brown centre with grey margin. However, a reliable identification can only be made after a study of the microscopic structures, which were described by Kosztarab & Kozár (1988) and Miller & Davidson (2005).

This armoured scale has an almost world wide distribution and is present on the whole northern hemisphere. From the southern hemisphere it is recorded from several South American countries (Ben-Dov et al. 2006a), but not from Australia (Kosztarab & Kozár 1988). The species is polyphagous and present on the representatives of twelve plant families (Ben-Dov et al. 2006b). In Central and South-Europe it is especially found on *Euonymus*-species, but it has been observed on several other woody plants growing in the public green and in private gardens including *Hibiscus*, *Ilex*, *Jasminum*, *Ligustrum*, *Olea*, *Pachysandra*, *Prunus* and *Syringa*. Although it has a wide host plant range and therefore may settle on native woody plants, this has not yet been reported from other European countries. Big infestations cause honeydew in which a sooty mould develops. Sap sucking and sooty mould cause less respiration and a reduced assimilation and therefore may cause plant weakening. Dieback has been observed on several species of *Euonymus* but only *E. japonica* cultivars are consistently killed by the pest, whereas *E. fortunei* sustains severe damage in experiments. However *E. kiautschovica* shows no sign of damage and only light infestations (Miller & Davidson 2005).

The combination of a wide ecological range and the constant supply by trade of ornamentals may contribute to its establishment.

Eriococcidae or felt scales

Eriococcus danzigae (Miller & Gimpel) New for the Dutch fauna

Wageningen, Province of Gelderland, in the public green, 30.v.1999, more than 100 adult females on *Lonicera nitida*, leg. A. van Frankenhuijzen.

The host plant *L. nitida* is fairly common planted in the public green in most of the towns and villages in The Netherlands and is an exotic species originating from the western part of China which seldom run wild.

The species was described and illustrated by Danzig (1962) as *Rhizococcus confusus*, recognized as a junior secondary homonym with *Acanthococcus danzigae* as replacement name (Miller & Gimpel 1996) and then placed into the genus *Eriococcus* (Miller & Gimpel 1999). The reason for these nomenclatorial changes was



5. Female of the gall-like scale *Kermes roboris* at Lottum on *Quercus robur*, 20.vi.2008, leg. G. Vullings. Diameter of this specimen 7 mm. The related *Kermes quercus* is 2-4 mm and generally lives in bark crevices. Photo: G. Vullings

5. Wijfje van *Kermes roboris* te Lottum op *Quercus robur*, 20.vi.2008, leg. G. Vullings. Diameter 7 mm. De verwante soort *Kermes quercus* is 2-4 mm en zit doorgaans in schorsspleten.

a better understanding of the morphology of this difficult group in relation to the existing genera.

Eriococcus danzigae is only known from *Pinus* and an unidentified grass species (Köhler 1998) and its known distribution is restricted to Poland (Lagowska & Koteja 1996 as *Anophococcus confusus*) and Russia. The species resembles *E. podhalensis* Dziedzicka & Koteja (= *Rhizococcus palustris* Dziedzicka & Koteja) and the Dutch specimens have recently been identified by F. Kozár (Plant Protection Institute, Budapest). Little is known about its natural geographical range although it may have had a restricted distribution formerly. Populations of native scale insects regularly are small and due to their cryptic habits and the low number of observers they are easily overlooked. Therefore it might be possible that the species was always present in many European countries, including The Netherlands, but the host plant suggests that it should be considered an exotic species, introduced from East-Europe.

Kermesidae or gall-like scales

Kermes roboris (Fourcroy) (figure 5)

Lottum, Province Limburg, in nature reserve Het Schuitwater, 20.vi.2008, on a young *Quercus robur* tree, 2 adult females, leg. G. Vullings.

This is probably the second discovery of *Kermes roboris* in The Netherlands. The first specimens of this species were collected on the trunk of a *Quercus*-tree by T. Buisman on July 1921 at Wolfheze (Reyne 1957, Oudemans 1922). Unfortunately, the material is probably lost.

Two specimens with a size of about 8 mm were found on a young tree of about one meter height. At first, the collector was thinking to have found some galls. A picture was taken and the specimen was recognized to belong to the Coccoidea. For absolute certainty, the collector went back and collected one specimen which is placed in the dry collection of the Plant



6. Females of the mealybug *Trionymus bambusae* at Valkenswaard between stem and leaf sheaths of *Fargesia*-bamboo, 22.ii.2007, leg. A. Sonnemans. Photo: M. Jansen

6. Wijfjes van de wolluis *Trionymus bambusae* te Valkenswaard achter de bladscheden van *Fargesia*-bamboe, 22.ii.2007, leg. A. Sonnemans.



7. Adult females of the pseudococcid *Trionymus bambusae*, Valkenswaard on *Fargesia*-bamboo, 22.ii.2007 leg. A. Sonnemans. Max. length 5 mm. Males are much smaller and winged, but not yet described. Photo: M. Jansen

7. Volwassen wijfjes van de wolluis *Trionymus bambusae*, Valkenswaard op *Fargesia*-bamboe, 22.ii.2007 leg. A. Sonnemans; max. lengte 5 mm. Mannetjes zijn veel kleiner en gevleugeld, maar nog niet beschreven.

Protection Service. Like most other representatives of the family Kermesidae the body shape has great resemblance with a gall and hence has probably been overlooked in the past.

The representatives of this family are restricted to *Quercus*-species and Ben-Dov *et al.* (2006d) listed *Quercus ilex*, *Q. pedunculata*, *Q. pubescens*, *Q. robur* and *Q. sessiliflora* as hosts. The specimens are especially located on the bark, in bark crevices and on branches.

Kosztarab & Kozár (1988) recorded the distribution of *K. roboris* in Europe below 60° North latitude. The species is also present in Northern-Africa, Russia and China (Ben-Dov *et al.* 2006c). Although it is native in almost the whole of Europe the term 'common' is relative because it is usually found in small numbers.

Pseudococcidae or mealybugs

Trionymus bambusae (Green) (figure 6 & 7) New for the Dutch fauna

Hazerswoude, Province Zuid-Holland, many specimens in a cold greenhouse, 1.vii.1999 on *Semiarundinaria fastuosa* (collection numbers: PD 99908127, PD 99910002, PD 99910413 and PD 20000378), leg. W. Windhorst; Asten, Province Limburg, a high infestation in a plastic tunnel greenhouse, on *Fargesia*-bamboo, originating from China (collection number: PD 3497171), 22.ii.2007, leg. A. Sonnemans (NAK); Venray, Province Limburg, 13.vi.2007, on *Pseudosasa japonica*, 1 adult female (collection number: PD 3240536), leg. H. Lemmen; Valkenswaard, Province Noord-Brabant, in a private garden of a grower, one male, three females and two nymphs, 1.vii.2008, leg. M. Jansen.

Specimens submitted for identification to the PPS found outdoors at Rijktevoersel in 2008 revealed that *T. bambusae* is present in Belgium as well (Casteels *et al.* 2009). After its first discovery in 1999, specimens were tentatively identified as *Trionymus cf. isfarensis*. The species was redescribed by Williams (2004) who revised the Southeast Asian Pseudococcidae and studied the original material described by Green. The species is recorded

from Bangladesh, India, and Sri Lanka whereas Ben-Dov (1994) recorded Taiwan as well. *T. bambusae* has been spread via traded plants by garden suppliers. Inquiries made about the observations in the open at Valkenswaard revealed that the species was observed since the last few years.

Williams (2004) recorded *Arundinaria* and *Bambusa vulgaris* as host plants and the species may accept most bamboo species especially those with well developed leaf sheaths, like in the genus *Fargesia*. Specimens living on representatives of this plant genus are better protected against predacious earwigs because they hide behind leaf sheaths. This scale species cause a lot of damage to its host and may even kill it. It is unknown what amount of commercial damage exists in East Asia. Little is known about its biology including the number of eggs, the number of generations and whether the species reproduces bisexual or parthenogenetically. From the related *Trionymus perrisii* (Signoret) an average of 100-150 eggs was observed and the species has two generations in one year in Central Europe (Schmutterer 1952).

Dozens of Coccoidea-species are living on bamboos hidden under the leaf sheaths worldwide. Therefore outbreaks of new scale species can only be avoided if after the first import inspection a second inspection at a later moment will be carried out. The coming years will indicate to which extent *T. bambusae* is able to establish in The Netherlands.

Rhizoecus albidus Goux

Burgsluis, Province Zeeland, sea wall, 16.iv.2003, 15 adult females and nymphs on the roots of *Puccinellia maritima*, leg. M. Jansen.

The collected colony of *R. albidus* represents the second observation of this root mealybug in The Netherlands. The first specimens were collected on the roots of *Ballota nigra* by the late Hille Ris Lambers on 2.x.1982 at Rhenen, alongside the Grebberberg. All members of the tribe Rhizoecini are white, 1-2 mm long and live exclusively subterranean on all kinds of herbs and shrubs. Therefore, representatives of this group are easily

overlooked and it is to be expected that the species is much more common. The last decades, at least fifteen root mealybug species were found during import inspections of imported plants and in greenhouses and living rooms. To what extent these species are able to survive and to establish in our climate is unknown. *Rhizoecus albidus* was only found in greenhouses on *Crassula arborescens*, *Pelargonium odoratissimum* and *Silene dioica* (Jansen 2005) and never intercepted during import inspections. Kozár & Konczné Benedicty (2007) recorded *R. albidus* from an additional fifteen plant species from six families especially Gramineae including *Holcus lanatus*, *Arrhenatherum elatius*, *Festuca ovina* and *Corynephorus canescens*. Schmutterer (1952) recorded the ant species *Lasius flavus* (Fabricius) and *L. niger* (Linnaeus) to occasionally visit the mealybugs for collection of honey dew. Schmutterer (1952) described details of the life-cycle: males do occur in this species, females are ovoviviparous and all stages overwinter, except first instars. There are two generations: the adults of the first generation are present in spring from April up to the end of May and the adults of the second generation can be found in August and September.

Rhodania occulta Schmutterer

Brunssum, Province Limburg, Brunssumer heide, 1 ex. 2.vi.2005, on *Festuca filiformis* (= *F. ovina* s.l.), 1 adult female, leg. M. Jansen. The specimen found from Brunssum was found alongside a path at the border of a heather and wood. It is the second observation of this species in The Netherlands. The first specimen was recorded by Reyne (1957) from *Corynephorus canescens* at

Bennekom on 12.v.1950. The species has one annual generation and the adult is present during the second half of April and the first half of May. The host plants are *Corynephorus canescens*, *Agrostis capillaris* and *Festuca* sp. and the known distribution is restricted to Germany, The Netherlands and Poland (Veilleux et al. 2008).

Trionymus thulensis Green New for the Dutch fauna

Vlodrop-Station, Province Limburg, at the border of the nature reserve De Meinweg, 17.iv.2004, on *Calamagrostis canescens*, 1 adult female, leg. M. Jansen.

The species is previously recorded from China, England, France, Hungary, Iceland, Poland, Sweden and Wales (Ben-Dov et al. 2006e). Adults and nymphs are living on grass stems, behind the leaf sheaths of its host or hidden in a lower part of a clump near the roots. Host plants are *Phragmites australis*, *Holcus mollis*, *Trisetum flavescens*, *Festuca rubra*, *Triticum aestivum* and *Elytrigia* sp. (Ben-Dov 1994). The species has one annual generation and adults are present from May through September (Kosztarab & Kozár 1988). The microscopic characteristics are described by Williams (1962) and Kosztarab and Kozár (1988).

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Samenvatting

Nieuwe en minder waargenomen dop-, wol- en schildluizen voor de Nederlandse fauna (Hemiptera: Coccoidea)

Een overzicht wordt gegeven van bijzondere en nieuwe inheemse soorten dop-, wol- en schildluizen sinds het verschijnen van de laatste soortenoverzichten van de inheemse Nederlandse soorten en de soorten die tijdens importinspecties en in kassen werden gevonden. Er is een relatie tussen geïmporteerde soorten die in kassen of bij importen gevonden worden en de soorten die buiten voorkomen. Naarmate meer soorten met planten vanuit de hele wereld naar Nederland worden versleept, wordt de kans dat sommige zich buiten zullen vestigen groter. Dat geldt in ieder geval voor de volgende soorten die hier nieuw voor de Nederlandse fauna worden vermeld en die verzameld zijn door particulieren en inspecteurs van de Nederlandse Algemene Keuringsdienst en de Plantenziektenkundige Dienst: de wolluis *Trionymus bambusae* (Green), de dopluizen *Coccus hesperidum* (Linnaeus) en *Parthenolecanium persicae* (Fabricius), de schildluis *Unaspis euonymi* (Comstock) en mogelijk ook *Eriococcus danzigae* (Miller & Gimpel). De wolluis *Trionymus thulensis* Green is eveneens nieuw voor de Nederlandse fauna, maar het betreft hier een vondst in een natuurgebied en daarom een natuurlijke vindplaats. Naast deze zes soorten worden ook waarnemingen aan zes minder algemene soorten beschreven.



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