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Soo-Jung Suh

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Host plant list of the scale insects
(Hemiptera: Coccoomorpha)
in South Korea

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Host plant list of the scale insects (Hemiptera: Coccoomorpha) in South Korea

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Abstract. The scale insects (Hemiptera: Coccoomorpha) are one of the most successful groups of plant-feeding arthropods. Most species of shade trees, fruit trees and ornamental shrubs are subject to scale insect attacks. Based on the review of the literature and survey results, the host plant list of the scale insects in South Korea was developed and updated. Herein, an updated list of 253 species of host plants in 71 families associated with scale insects is provided and 162 species in 15 scale insect families are listed.

Key words. Coccoidea, coccids, pests, host range, native.

Introduction

Scale insects (Hemiptera: Coccoomorpha) are a peculiar group and look quite different from typical insects. Small, immobile, with no visible legs or antennae, some species resemble individual fish scales pressed tightly against the plant on which they are feeding (Day 2008). There are over 204 different species of scale insects in the entire Korean Peninsula (García Morales et al. 2019; Lee 2019). Some of them are common and serious pests of trees, shrubs and greenhouse plants. Scale insects feed on plant sap with their long, threadlike mouthparts (stylets). Feeding by scale insects slowly reduces plant vigor. Heavily infested plants grow poorly and may suffer dieback of twigs and branches. Occasionally, an infested host will be so weakened that it dies, although in general, complete loss of the plant is rare (Day 2008; Batsankalashvili et al. 2017). They pose serious problems when introduced into new areas of the world without natural enemies due to the increasing international plant trade (Miller et al. 2005; Suh et al. 2013). Therefore, there is an urgent need to investigate and update the host-plant range of the scale insects present in Korea and establish an appropriate management strategy.

In South Korea, the first study about scale insects was published in 1928 by Machida and Aoyama. The basis for the study of scale insect fauna in South Korea was provided mainly by Nakayama (1933), Paik (1978), Paik (2000) and Kwon et al. (2003a, b). The latest publications on armored scales and soft scales in South Korea were published by Suh (2017), and Choi and Lee (2017a, b). Based on a review of the literature and survey results, the following host plant list of the scale insects in South Korea was developed and updated. Korean scale insects occur on various host plants encompassing 253 species in 71 families. The purpose of this paper is to provide an updated host plant list of the scale insect species of South Korea, considering current taxonomic changes.

Materials and Methods

Information on the number of host plant of the scale insects known to occur in South Korea and in all zoogeographic regions was gathered from published literature reporting South Korea's scale insects (Shiraki 1952; Borchsenius 1955; Paik 1978; Paik 2000; Kwon et al. 2003a, b; Choi and Lee 2017a, b, 2018; Suh 2017) and the scale insect database ScaleNet (García Morales et al. 2019), a website that includes information on species of scale insects that have been published worldwide. The author has excluded scale insect species that were discovered in nurseries or greenhouses and ultimately were eradicated, or species that were taken in quarantine. Also scale insects intercepted on plants being imported were excluded from the host plant list. A host plant is therefore defined as a plant on which the scale insect is able to complete its development in an exterior environment. In this study, 162 species in 15 families

of scale insects are reported in South Korea. The nomenclature for the host plants follows that of the national species list of Korea (Gim 2018). The host plants are listed alphabetically by genus with the plant family in brackets after the species name. The nomenclature used for the scale insects follows that of the ScaleNet database (García Morales et al. 2019). The scale insects that have been reported from the plant host are listed under each plant species name with the reference of each record in brackets after the family name of the scale species.

Results

The scale insects are one of the most successful groups of plant-feeding arthropods. Most species of shade trees, fruit trees and ornamental shrubs are subject to scale insect attacks. Based on the review of the literature and survey results, South Korea's scale insects are reported to occur on various host plants encompassing 253 species in 71 families (Fig. 1–12). The most prevalent host plant families are: Rosaceae with 126 species of scale insects, Fagaceae with 49 species, Rutaceae with 40 species and Poaceae with 36 species. Of these, 166 host plant species (65.6%) are associated with just one or two scale insect species. Whereas the following scale insects show a broad host-plant range: *Ceroplastes ceriferus* (Fabricius) (Coccidae) with 52 species of host plants, *Pseudococcus comstocki* (Kuwana) (Pseudococcidae) with 38 species and *Ceroplastes japonicus* Green (Coccidae) with 33 species. About 68% of the scale insects occur on one or two host plant species.

List of host plants for scale insects

1. *Abies firma* Siebold and Zucc. (Pinaceae)

Aspidiotus cryptomeriae Kuwana (Diaspididae) [Paik 1978]

Lepidosaphes okitsuensis Kuwana (Diaspididae) [Paik 1978]

2. *Abies holophylla* Maxim. (Pinaceae)

Dynaspidiotus tsugae (Marlatt) (Diaspididae) [Paik 1978]

Parlatoria pergandii Comstock (Diaspididae) [Paik 1978]

3. *Abies koreana* E. H. Wilson (Pinaceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

4. *Acer buergerianum* Miq. (Sapindaceae)

Crisicoccus matsumotoi (Siraiwa) (Pseudococcidae) [Paik 1978]

5. *Acer negundo* L. (Sapindaceae)

Acanthococcus tokaedae (Kuwana) (Eriococcidae) [Paik 1978]

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Chionaspis acer (Takagi and Kawai) (Diaspididae) [Suh 2016b]

Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]

Comstockaspis perniciosus (Comstock) (Diaspididae) [Paik 1978]

Eulecanium cerasorum (Cockerell) (Coccidae) [Paik 1978]

Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]

Phenacoccus aceris (Signoret) (Pseudococcidae) [Paik 1978]

Pulvinaria nishigaharae (Kuwana) (Coccidae) [Paik 1978]

Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]

6. *Acer palmatum* Thunb. (Sapindaceae)

Acanthococcus tokaedae (Kuwana) (Eriococcidae) [Paik 1978]

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Ceroplastes japonicus Green (Coccidae) [Paik 1978]

Crisicoccus matsumotoi (Siraiwa) (Pseudococcidae) [Paik 1978]

Lepidosaphes towadensis Takagi and Kawai (Diaspididae) [Paik 1978]

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]

Spilococcus pacificus (Borchsenius) (Pseudococcidae) [Kwon et al. 2003b]

7. ***Acer pictum* Thunb. var. *mono* (Maxim.) Franch. (Sapindaceae)**
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
8. ***Acer pseudosieboldianum* (Pax) Kom. (Sapindaceae)**
Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]
9. ***Acer* sp. (Sapindaceae)**
Chionaspis acer (Takagi and Kawai) (Diaspididae) [Suh 2016b]
Parlatoria theae Cockerell (Diaspididae) [Paik 1978]
Phenacoccus aceris (Signoret) (Pseudococcidae) [Paik 1978]
10. ***Acer ukurunduense* Trautv. and C. A. Mey. (Sapindaceae)**
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
11. ***Actinidia arguta* (Siebold and Zucc.) Planch. ex Miq. (Actinidiaceae)**
Planococcus kraunhiae (Kuwana) (Pseudococcidae) [Kwon and Han 2003b]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Kwon and Han 2003b]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Kwon and Han 2003b]
12. ***Agave americana* L. (Asparagaceae)**
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
13. ***Akebia quinata* (Thunb. ex Houtt.) Decne. (Lardizabalaceae)**
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
14. ***Albizia julibrissin* Durazz. (Fabaceae)**
Kermes vastus Kuwana (Kermesidae) [Paik 1978]
15. ***Alnus hirsuta* Turcz. ex Rupr. (Betulaceae)**
Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]
16. ***Alnus japonica* (Thunb.) Steud. (Betulaceae)**
Chionaspis alnus (Takagi) (Diaspididae) [Paik 1978]
Heliococcus bohemicus Sulc (Pseudococcidae) [Kwon et al. 2003a]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
17. ***Alnus* sp. (Betulaceae)**
Phenacoccus aceris (Signoret) (Pseudococcidae) [Kwon et al. 2003a]
Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]
18. ***Aphananthe aspera* (Thunb.) Planch. (Cannabaceae)**
Coccus malloti (Takahashi) (Coccidae) [Choi and Lee 2018]
19. ***Ardisia crenata* Sims (Primulaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
20. ***Ardisia japonica* (Thunb.) Blume (Primulaceae)**
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
21. ***Ardisia pusilla* A. DC. (Primulaceae)**
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
22. ***Artemisia capillaris* Thunb. (Asteraceae)**
Orthezia urticae (Linnaeus) (Ortheziidae) [Paik 1978]
23. ***Artemisia dubia* Wall. (Asteraceae)**
Orthezia urticae (Linnaeus) (Ortheziidae) [Paik 1978]
24. ***Artemisia princeps* Pamp. (Asteraceae)**
Atrococcus altaicus Matesova (Pseudococcidae) [Kwon et al. 2003b]
Orthezia urticae (Linnaeus) (Ortheziidae) [Paik 1978]

25. *Artemisia* sp. (Asteraceae)*Atrococcus altaicus* Matesova (Pseudococcidae) [Kwon et al. 2003b]*Rhizaspidotus canariensis* (Lindinger) (Diaspididae) [Suh 2017]**26. *Arundinaria simonii* (Carrière) Rivi  re and C. Rivi  re (Poaceae)***Antonina nakaharai* Williams and Miller (Pseudococcidae) [Lee and Suh 2011]*Kuwanaspis hikosani* (Kuwana) (Diaspididae) [Suh and Hodges 2007]**27. *Aspidistra elatior* Blume (Asparagaceae)***Pinnaspis aspidistrae* (Signoret) (Diaspididae) [Paik 1978]**28. *Aster lautureanus* Franch. (Asteraceae)***Orthezia urticae* (Linnaeus) (Ortheziidae) [Paik 1978]**29. *Aucuba japonica* Thunb. (Garryaceae)***Pseudaulacaspis cockerelli* (Cooley) (Diaspididae) [Paik 1978]*Pseudococcus cryptus* Hempel (Pseudococcidae) [Kwon et al. 2002]**30. *Berberis koreana* Palib. (Berberidaceae)***Pseudaulacaspis cockerelli* (Cooley) (Diaspididae) [Paik 1978]**31. *Betula pendula* Roth (Betulaceae)***Comstockaspis perniciosus* (Comstock) (Diaspididae) [Paik 1978]**32. *Broussonetia kazinoki* Siebold ex Siebold and Zucc. (Moraceae)***Crisicoccus matsumotoi* (Siraiwa) (Pseudococcidae) [Paik 1978]*Pseudaulacaspis pentagona* (Targioni-Tozzetti) (Diaspididae) [Paik 1978]**33. *Buxus koreana* (Nakai ex Rehder) T. H. Chung, P. S. Toh, D. B. Lee and F. J. Lee (Buxaceae)***Acanthococcus lagerstroemiae* (Kuwana) (Eriococcidae) [Paik 1978]*Ceroplastes ceriferus* (Fabricius) (Coccidae) [Paik 1978]*Ceroplastes japonicus* Green (Coccidae) [Paik 1978]*Chrysomphalus bifasciculatus* Ferris (Diaspididae) [Paik 1978]**34. *Calamagrostis arundinacea* (L.) Roth (Poaceae)***Eriopeltis festucae* (Boyer de Fonscolombe) (Coccidae) [Paik 1978]**35. *Callicarpa dichotoma* (Lour.) K. Koch (Lamiaceae)***Ceroplastes ceriferus* (Fabricius) (Coccidae) [Paik 1978]**36. *Camellia japonica* L. (Theaceae)***Aspidiotus destructor* Signoret (Diaspididae) [Kwon et al. 2005]*Asterococcus muratae* (Kuwana) (Cecococcidae) [Paik 1978]*Ceroplastes ceriferus* (Fabricius) (Coccidae) [Paik 1978]*Ceroplastes japonicus* Green (Coccidae) [Paik 1978]*Ceroplastes rubens* Maskell (Coccidae) [Paik 1978]*Chrysomphalus bifasciculatus* Ferris (Diaspididae) [Paik 1978]*Coccus hesperidum* Linnaeus (Coccidae) [Paik 1978]*Diaspidiotus degeneratus* (Leonardi) (Diaspididae) [Paik 1978]*Lepidosaphes gloverii* (Packard) (Diaspididae) [Kwon et al. 2005]*Lepidosaphes kamakurensis* (Kuwana) (Diaspididae) [Suh 2016a]*Metacaronema japonica* (Maskell) (Coccidae) [Paik 1978]*Parlatoria camelliae* Comstock (Diaspididae) [Kwon et al. 2005]*Parlatoria pergandii* Comstock (Diaspididae) [Paik 1978]*Phenacoccus aceris* (Signoret) (Pseudococcidae) [Kwon et al. 2005]*Pseudaonidia duplex* (Cockerell) (Diaspididae) [Paik 1978]*Pseudaonidia paeoniae* (Cockerell) (Diaspididae) [Kwon et al. 2005]*Pseudococcus comstocki* (Kuwana) (Pseudococcidae) [Paik 1978]*Pulvinaria floccifera* (Westwood) (Coccidae) [Kwon et al. 2005]

- 37. *Camellia sinensis* (L.) Kuntze (Theaceae)**
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Comstockaspis perniciosus (Comstock) (Diaspididae) [Paik 1978]
- 38. *Carpinus laxiflora* (Siebold and Zucc.) Blume (Betulaceae)**
Pseudaulacaspis latiloba (Takagi and Kawai) (Diaspididae) [Suh 2015]
- 39. *Carpinus turczaninowii* Hance (Betulaceae)**
Lepidosaphes ussuriensis (Borchsenius) (Diaspididae) [Suh 2017]
- 40. *Castanea crenata* Siebold and Zucc. (Fagaceae)**
Comstockaspis perniciosus (Comstock) (Diaspididae) [Paik 1978]
Diaspidiotus cryptoxanthus (Cockerell) (Diaspididae) [Paik 1978]
Eulecanium kunoense (Kuwana) (Coccidae) [Paik 1978]
Eulecanium takachihoi (Kuwana) (Coccidae) [Paik 2000]
Kermes nawae Kuwana (Kermesidae) [Paik 2000]
Psoraleococcus quercus (Cockerell) (Lecanodiaspididae) [Paik 1978]
- 41. *Castanopsis cuspidata* (Thunb.) Schottky (Fagaceae)**
Hypaspidiotus jordani (Kuwana) (Diaspididae) [Suh 2016a]
Lepidosaphes crawii (Cockerell) (Diaspididae) [Suh 2011]
- 42. *Castanopsis sieboldii* Hatus. ex T. Yamaz. and Mashiba (Fagaceae)**
Pseudaulacaspis kiushiuensis (Kuwana) (Diaspididae) [Suh 2015]
- 43. *Cedrus deodara* (Roxb. ex D. Don) G. Don (Pinaceae)**
Aspidiotus cryptomeriae Kuwana (Diaspididae) [Paik 1978]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
- 44. *Celastrus orbiculatus* Thunb. (Celastraceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
- 45. *Celtis sinensis* Pers. (Cannabaceae)**
Acanthococcus lagerstroemiae (Kuwana) (Eriococcidae) [Paik 1978]
Acanthococcus tokaedae (Kuwana) (Eriococcidae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]
Phenacoccus aceris (Signoret) (Pseudococcidae) [Kwon et al. 2003a]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 46. *Celtis* sp. (Cannabaceae)**
Coccus pseudomagnoliarum (Kuwana) (Coccidae) [Paik 1978]
- 47. *Centipeda minima* (L.) A. Braun and Asch. (Asteraceae)**
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
- 48. *Cephalotaxus harringtonia* (Knight ex J. Forbes) K. Koch (Taxaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
- 49. *Chaenomeles sinensis* (Thouin) Koehne (Rosaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Comstockaspis perniciosus (Comstock) (Diaspididae) [Paik 1978]
Phenacoccus aceris (Signoret) (Pseudococcidae) [Paik 1978]
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 50. *Chamaecyparis obtusa* (Siebold and Zucc.) Endl. (Cupressaceae)**
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
Dynaspidiotus pseudomeyeri (Kuwana) (Diaspididae) [Paik 1978]

Pinnaspis chamaecyparidis Takagi (Diaspididae) [Suh 2014]

Pulvinaria torreyae Takahashi (Coccidae) [Paik 1978]

51. *Chamaecyparis pisifera* (Siebold and Zucc.) Endl. (Cupressaceae)

Dynaspidotus pseudomeyeri (Kuwana) (Diaspididae) [Paik 1978]

Lepidosaphes japonica (Kuwana) (Diaspididae) [Paik 1978]

52. *Chrysanthemum morifolium* Ramat. (Asteraceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Orthezia urticae (Linnaeus) (Ortheziidae) [Kwon et al. 2005]

Orthezia yashushii Kuwana (Ortheziidae) [Kwon et al. 2005]

Peliococcus chersonensis (Kiritshenko) (Pseudococcidae) [Kwon et al. 2005]

Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]

53. *Cinnamomum camphora* (L.) J. Prel (Lauraceae)

Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]

54. *Cinnamomum loureiroi* Nees (Lauraceae)

Ceroplastes rubens Maskell (Coccidae) [Paik 1978]

55. *Citrus junos* Siebold ex Tanaka (Rutaceae)

Aonidiella citrina (Coquillett) (Diaspididae) [Kwon and Han 2003b]

Ceroplastes japonicus Green (Coccidae) [Kwon and Han 2003b]

Icerya purchasi Maskell (Monophlebidae) [Kwon and Han 2003b]

Lepidosaphes gloverii (Packard) (Diaspididae) [Kwon and Han 2003b]

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Kwon and Han 2003b]

Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]

Planococcus kraunhiae (Kuwana) (Pseudococcidae) [Kwon and Han 2003b]

Pseudaonidia duplex (Cockerell) (Diaspididae) [Kwon and Han 2003b]

Pseudococcus cryptus Hempel (Pseudococcidae) [Kwon and Han 2003b]

Unaspis yanonensis (Kuwana) (Diaspididae) [Kwon and Han 2003b]

56. *Citrus natsudaidai* Hayata (Rutaceae)

Unaspis yanonensis (Kuwana) (Diaspididae) [Paik 1978]

57. *Citrus* sp. (Rutaceae)

Aspidiotus destructor Signoret (Diaspididae) [Paik 1978]

Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]

Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]

Pseudococcus cryptus Hempel (Pseudococcidae) [Kwon et al. 2002]

58. *Citrus unshiu* (Swingle) Marcow. (Rutaceae)

Aonidiella citrina (Coquillett) (Diaspididae) [Paik 1978]

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Ceroplastes rubens Maskell (Coccidae) [Paik 1978]

Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]

Diaspidiotus degeneratus (Leonardi) (Diaspididae) [Kwon and Han 2003b]

Icerya purchasi Maskell (Monophlebidae) [Kwon and Han 2003b]

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Kwon and Han 2003b]

Octaspidotus stauntoniae (Takahashi) (Diaspididae) [Kwon and Han 2003b]

Parlatoria pergandii Comstock (Diaspididae) [Kwon and Han 2003b]

Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]

Pseudaonidia duplex (Cockerell) (Diaspididae) [Kwon and Han 2003b]

Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]

Pseudococcus cryptus Hempel (Pseudococcidae) [Kwon et al. 2002]

Unaspis yanonensis (Kuwana) (Diaspididae) [Kwon and Han 2003b]

59. ***Cleyera japonica* Thunb. (Pentaphylacaceae)**
Pinnaspis uniloba (Kuwana) (Diaspididae) [Suh 2014]
60. ***Clivia miniata* Regel (Amaryllidaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
61. ***Conyza canadensis* (L.) Cronquist (Asteraceae)**
Atrococcus paludinus (Green) (Pseudococcidae) [Kwon et al. 2003b]
Ceroputo pilosellae Šulc (Pseudococcidae) [Kwon et al. 2003a]
62. ***Cornus controversa* Hemsl. (Cornaceae)**
Lepidosaphes yanagicola Kuwana (Diaspididae) [Paik 1978]
63. ***Corylus sieboldiana* Blume (Betulaceae)**
Lepidosaphes tubulorum Ferris (Diaspididae) [Paik 1978]
64. ***Crataegus pinnatifida* Bunge (Rosaceae)**
Eulecanium kunoense (Kuwana) (Coccidae) [Paik 1978]
65. ***Crinum japonicum* (Baker) L. S. Hannibal (Amaryllidaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
Planococcus kraunhiae (Kuwana) (Pseudococcidae) [Paik 1978]
66. ***Cryptomeria japonica* (Thunb. ex L. f.) D. Don (Cupressaceae)**
Aspidiotus cryptomeriae Kuwana (Diaspididae) [Paik 1978]
Parlatoria leucaspis (Lindinger) (Diaspididae) [Suh 2012]
Spilococcus flavidus (Kanda) (Pseudococcidae) [Kwon et al. 2003b]
67. ***Cucumis melo* L. var. *makuwa* Makino (Cucurbitaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
68. ***Daphniphyllum macropodum* Miq. (Daphniphyllaceae)**
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
69. ***Dendranthema indicum* (L.) Des Moul. (Asteraceae)**
Orthezia urticae (Linnaeus) (Ortheziidae) [Paik 1978]
Peliococcus chersonensis (Kiritshenko) (Pseudococcidae) [Kwon et al. 2003a]
70. ***Dendranthema zawadskii* (Herbich) Tzvelev (Asteraceae)**
Orthezia urticae (Linnaeus) (Ortheziidae) [Paik 1978]
71. ***Dendrobium* sp. (Orchidaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
72. ***Desmodium caudatum* (Thunb.) DC. (Fabaceae)**
Icerya purchasi Maskell (Monophlebidae) [Paik 1978]
73. ***Deutzia parviflora* Bunge (Hydrangeaceae)**
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
74. ***Diospyros kaki* Thunb. (Ebenaceae)**
Asiacornococcus kaki (Kuwana) (Eriococcidae) [Kwon and Park 2002]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Lepidosaphes conchiformis (Gmelin) (Diaspididae) [Paik 1978]
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]
Phenacoccus aceris (Signoret) (Pseudococcidae) [Paik 1978]
Pseudaonidia duplex (Cockerell) (Diaspididae) [Paik 1978]

Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Kwon and Han 2003b]

Takahashia japonica (Cockerell) (Coccidae) [Kwon and Han 2003b]

75. *Diospyros lotus* L. (Ebenaceae)

Asiacornococcus kaki (Kuwana) (Eriococcidae) [Han et al. 2002]

Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]

76. *Distylium racemosum* Siebold and Zucc. (Hamamelidaceae)

Aspidiotus destructor Signoret (Diaspididae) [Paik 1978]

Aulacaspis distylii Takahashi (Diaspididae) [Paik 1978]

Aulacaspis latissima (Cockerell) (Diaspididae) [Suh 2013]

Ceroplastes rubens Maskell (Coccidae) [Paik 1978]

Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]

77. *Elaeagnus glabra* Thunb. (Elaeagnaceae)

Aulacaspis difficilis (Cockerell) (Diaspididae) [Suh 2013]

78. *Elaeagnus umbellata* Thunb. (Elaeagnaceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Ceroplastes japonicus Green (Coccidae) [Paik 1978]

Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]

Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]

79. *Elaeocarpus sylvestris* (Lour.) Poir. var. *ellipticus* (Thunb.) H. Hara (Elaeocarpaceae)

Ceroplastes rubens Maskell (Coccidae) [Paik 1978]

80. *Elymus tsukushiensis* Honda var. *transiens* (Hack.) K. Osada (Poaceae)

Kaweckia glyceriae (Green) (Eriococcidae) [Kwon and Han 2003a]

Trionymus perrisii (Signoret) (Pseudococcidae) [Kwon et al. 2003b]

81. *Eriobotrya japonica* (Thunb.) Lindl. (Rosaceae)

Ceroplastes japonicus Green (Coccidae) [Paik 1978]

Pseudococcus cryptus Hempel (Pseudococcidae) [Kwon et al. 2002]

82. *Euonymus alatus* (Thunb.) Siebold (Celastraceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Lepidosaphes yanagicola Kuwana (Diaspididae) [Paik 1978]

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]

Parlatoria theae Cockerell (Diaspididae) [Paik 1978]

Pseudaulacaspis nishikigi (Kanda) (Diaspididae) [Paik 2000]

Unaspis euonymi (Comstock) (Diaspididae) [Paik 1978]

83. *Euonymus fortunei* (Turcz.) Hand.-Mazz. var. *radicans* (Siebold and Miq.) Rehder (Celastraceae)

Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]

Unaspis euonymi (Comstock) (Diaspididae) [Paik 1978]

84. *Euonymus japonicus* Thunb. (Celastraceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Ceroplastes japonicus Green (Coccidae) [Paik 1978]

Ceroplastes rubens Maskell (Coccidae) [Paik 1978]

Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]

Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]

Eulecanium kunoense (Kuwana) (Coccidae) [Paik 1978]

Lepidosaphes conchiformis (Gmelin) (Diaspididae) [Paik 1978]

Lepidosaphes ulmi (Linnaeus) (Diaspididae) [Kwon et al. 2005]

Lepidosaphes yanagicola Kuwana (Diaspididae) [Paik 1978]

- Lopholeucaspis japonica* (Cockerell) (Diaspididae) [Paik 1978]
Parlatoria theae Cockerell (Diaspididae) [Paik 1978]
Parthenolecanium persicae (Fabricius) (Coccidae) [Kwon et al. 2005]
Pseudaonidia duplex (Cockerell) (Diaspididae) [Paik 1978]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Kwon et al. 2005]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
Unaspis euonymi (Comstock) (Diaspididae) [Paik 1978]
- 85. *Euphorbia pulcherrima* Willd. ex Klotzsch (Euphorbiaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
- 86. *Eurya emarginata* (Thunb.) Makino (Pentaphylacaceae)**
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
- 87. *Eurya japonica* Thunb. (Pentaphylacaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
Metacaronema japonica (Maskell) (Coccidae) [Paik 1978]
Phenacoccus aceris (Signoret) (Pseudococcidae) [Paik 1978]
- 88. *Eurya japonica* Thunb. for. *integra* (Nakai) T. B. Lee (Pentaphylacaceae)**
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Metacaronema japonica (Maskell) (Coccidae) [Paik 1978]
- 89. *Eurya* sp. (Pentaphylacaceae)**
Leptopulvinaria kawaii Tanaka and Amano (Coccidae) [Choi and Lee 2017a]
- 90. *Fatsia japonica* (Thunb.) Decne. and Planch. (Araliaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 91. *Festuca arundinacea* Schreb. (Poaceae)**
Saccharicoccus isfarensis (Borchsenius) (Pseudococcidae) [Kwon et al. 2003b]
- 92. *Ficus carica* L. (Moraceae)**
Planococcus kraunhiae (Kuwana) (Pseudococcidae) [Paik 1978]
- 93. *Ficus elastica* Roxb. (Moraceae)**
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
- 94. *Ficus oxyphylla* Miq. ex Zoll. (Moraceae)**
Lecanodiaspis takagii Howell and Kosztarab (Lecanodiaspididae) [Paik 1978]
Pseudaonidia duplex (Cockerell) (Diaspididae) [Paik 1978]
- 95. *Firmiana simplex* (L.) W. Wight (Malvaceae)**
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
- 96. *Forsythia koreana* (Rehder) Nakai (Oleaceae)**
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]

- Pseudaulacaspis cockerelli* (Cooley) (Diaspididae) [Paik 1978]
Pseudaulacaspis forsythiae (Kanda) (Diaspididae) [Paik 2000]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
Unaspis euonymi (Comstock) (Diaspididae) [Paik 1978]
- 97. *Fraxinus rhynchophylla* Hance (Oleaceae)**
Phenacoccus aceris (Signoret) (Pseudococcidae) [Paik 1978]
- 98. *Gardenia jasminoides* J. Ellis (Rubiaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 99. *Gardenia* sp. (Rubiaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
- 100. *Ginkgo biloba* L. (Ginkgoaceae)**
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 101. *Gleditsia japonica* Miq. (Fabaceae)**
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
- 102. *Glycine soja* Siebold and Zucc. (Fabaceae)**
Rhizococcus sojae (Kuwana) (Eriococcidae) [Kwon and Han 2003a]
- 103. *Hedera rhombea* (Miq.) Bean (Araliaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
Octaspidiotus stauntoniae (Takahashi) (Diaspididae) [Paik 1978]
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]
- 104. *Hibiscus mutabilis* L. (Malvaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Paik 1978]
- 105. *Hibiscus syriacus* L. (Malvaceae)**
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
Parlatoria theae Cockerell (Diaspididae) [Paik 1978]
Pseudaonidia duplex (Cockerell) (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
Pulvinaria nipponica Lindinger (Coccidae) [Choi and Lee 2017a]
- 106. *Ilex cornuta* Lindl. and Paxton (Aquifoliaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Coccus malloti (Takahashi) (Coccidae) [Choi and Lee 2018]
Leptopulvinaria kawaii Tanaka and Amano (Coccidae) [Choi and Lee 2017a]
Parlatoria theae Cockerell (Diaspididae) [Paik 1978]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
Unaspis euonymi (Comstock) (Diaspididae) [Paik 1978]
- 107. *Ilex crenata* Thunb. var. *microphylla* Maxim. ex Matsum. (Aquifoliaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]

- Chrysomphalus bifasciculatus* Ferris (Diaspididae) [Paik 1978]
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
Pseudaonidia duplex (Cockerell) (Diaspididae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 108. *Ilex integra* Thunb. (Aquifoliaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
- 109. *Juniperus chinensis* L. (Cupressaceae)**
Aspidiotus cryptomeriae Kuwana (Diaspididae) [Paik 1978]
Lepidosaphes pallida (Maskell) (Diaspididae) [Paik 1978]
Pinnaspis chamaecyparidis Takagi (Diaspididae) [Suh 2014]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]
- 110. *Lagerstroemia indica* L. (Lythraceae)**
Acanthococcus lagerstroemiae (Kuwana) (Eriococcidae) [Paik 1978]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 111. *Laurus nobilis* L. (Lauraceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
Planococcus citri (Risso) (Pseudococcidae) [Paik 1978]
- 112. *Lespedeza bicolor* Turcz. (Fabaceae)**
Icerya purchasi Maskell (Monophlebidae) [Paik 1978]
Orthezia urticae (Linnaeus) (Ortheziidae) [Paik 1978]
Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]
- 113. *Lespedeza cuneata* (Dum. Cours.) G. Don. (Fabaceae)**
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
- 114. *Ligustrum japonicum* Thunb. (Oleaceae)**
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
Ericerus pela (Chavannes) (Coccidae) [Paik 1978]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 115. *Ligustrum obtusifolium* Siebold and Zucc. (Oleaceae)**
Acanthococcus lagerstroemiae (Kuwana) (Eriococcidae) [Kwon and Han 2003a]
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
Ericerus pela (Chavannes) (Coccidae) [Paik 1978]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
- 116. *Litsea japonica* (Thunb.) Juss. (Lauraceae)**
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 117. *Lonicera japonica* Thunb. (Caprifoliaceae)**
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]
- 118. *Lycium chinense* Mill. (Solanaceae)**
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
- 119. *Machilus thunbergii* Siebold and Zucc. (Lauraceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
Lepidosaphes pinnaeformis (Bouché) (Diaspididae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]

120. *Magnolia denudata* Desr. (Magnoliaceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Icerya purchasi Maskell (Monophlebidae) [Paik 1978]
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
Pseudaonidia duplex (Cockerell) (Diaspididae) [Paik 1978]

121. *Magnolia grandiflora* L. (Magnoliaceae)

Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
Planococcus kraunhiae (Kuwana) (Pseudococcidae) [Paik 1978]

122. *Magnolia kobus* DC. (Magnoliaceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Kwon et al. 2005]
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Kwon et al. 2005]
Parthenolecanium persicae (Fabricius) (Coccidae) [Kwon et al. 2005]
Phenacoccus aceris (Signoret) (Pseudococcidae) [Kwon et al. 2005]
Pseudaonidia duplex (Cockerell) (Diaspididae) [Kwon et al. 2005]
Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]

123. *Magnolia quinquepeta* (Buc'hoz) Dandy (Magnoliaceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

124. *Magnolia* sp. (Magnoliaceae)

Phenacoccus aceris (Signoret) (Pseudococcidae) [Kwon et al. 2003a]

125. *Mallotus japonicus* (L. f.) Müll. Arg. (Euphorbiaceae)

Acanthococcus lagerstroemiae (Kuwana) (Eriococcidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]

126. *Malus asiatica* Nakai (Rosaceae)

Acanthococcus tokaedae (Kuwana) (Eriococcidae) [Paik 1978]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Comstockaspis perniciosus (Comstock) (Diaspididae) [Paik 1978]
Dysmicoccus wistariae (Green) (Pseudococcidae) [Paik 1978]
Eulecanium cerasorum (Cockerell) (Coccidae) [Paik 1978]
Lepidosaphes conchiformis (Gmelin) (Diaspididae) [Paik 1978]
Nipponpulvinaria horii (Kuwana) (Coccidae) [Paik 1978]
Parthenolecanium glandi (Kuwana) (Coccidae) [Paik 1978]
Parthenolecanium persicae (Fabricius) (Coccidae) [Paik 1978]
Phenacoccus aceris (Signoret) (Pseudococcidae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]

127. *Malus pumila* Mill. (Rosaceae)

Comstockaspis perniciosus (Comstock) (Diaspididae) [Kwon and Han 2003b]
Crisicoccus matsumotoi (Siraiwa) (Pseudococcidae) [Kwon et al. 2003b]
Dysmicoccus wistariae (Green) (Pseudococcidae) [Paik 1978]
Lepidosaphes ulmi (Linnaeus) (Diaspididae) [Kwon and Han 2003b]
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Kwon and Han 2003b]

- Parthenolecanium corni* (Bouché) (Coccidae) [Kwon and Han 2003b]
Phenacoccus aceris (Signoret) (Pseudococcidae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Kwon and Han 2003b]
Pseudaulacaspis prunicola (Maskell) (Diaspididae) [Kwon and Han 2003b]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
Takahashia japonica (Cockerell) (Coccidae) [Kwon and Han 2003b]
- 128. *Melia azedarach* L. (Meliaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
- 129. *Miscanthus sinensis* Andersson (Poaceae)**
Duplachionaspis divergens (Green) (Diaspididae) [Yu and Suh 2013]
Spilococcus jejuensis Kwon, Danzig and Park (Pseudococcidae) [Kwon et al. 2003b]
- 130. *Miscanthus* sp. (Poaceae)**
Balanococcus tangi (Wu) (Pseudococcidae) [Kwon et al. 2003b]
Spilococcus jejuensis Kwon, Danzig and Park (Pseudococcidae) [Kwon et al. 2003b]
- 131. *Morus alba* L. (Moraceae)**
Acanthococcus tokaedae (Kuwana) (Eriococcidae) [Paik 1978]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]
- 132. *Morus bombycis* Koidz. (Moraceae)**
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
- 133. *Musa basjoo* Siebold and Zucc. ex Iinuma (Musaceae)**
Planococcus kraunhiae (Kuwana) (Pseudococcidae) [Paik 1978]
- 134. *Nandina domestica* Thunb. (Berberidaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
- 135. *Neolitsea aciculata* (Blume) Koidz. (Lauraceae)**
Aulacaspis yabunikkei Kuwana (Diaspididae) [Paik 1978]
- 136. *Neolitsea sericea* (Blume) Koidz. (Lauraceae)**
Aulacaspis yabunikkei Kuwana (Diaspididae) [Paik 1978]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
Lepidosaphes pinnaeformis (Bouché) (Diaspididae) [Paik 1978]
Parlatoria theae Cockerell (Diaspididae) [Paik 1978]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
Selenomphalus distylii Takagi (Diaspididae) [Suh 2016a]
- 137. *Nerium indicum* Mill. (Apocynaceae)**
Icerya purchasi Maskell (Monophlebidae) [Paik 1978]
Planococcus citri (Risso) (Pseudococcidae) [Paik 1978]
- 138. *Oenanthe* sp. (Apiaceae)**
Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]
- 139. *Opuntia ficusindica* (L.) Mill. (Cactaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]

140. ***Opuntia* sp. (Cactaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
141. ***Orixa japonica* Thunb. (Rutaceae)**
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
142. ***Osmanthus fragrans* Lour. (Oleaceae)**
Pseudaonidia duplex (Cockerell) (Diaspididae) [Paik 1978]
143. ***Osmanthus heterophyllus* (G. Don) P. S. Green (Oleaceae)**
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Comstockaspis perniciosus (Comstock) (Diaspididae) [Paik 1978]
Parlatoria pergandii Comstock (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
144. ***Paeonia lactiflora* Pall. var. *trichocarpa* (Bunge) Stern (Paeoniaceae)**
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
145. ***Panax ginseng* C. A. Mey. (Araliaceae)**
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]
146. ***Parthenocissus tricuspidata* (Siebold and Zucc.) Planch. (Vitaceae)**
Acanthococcus tokaedae (Kuwana) (Eriococcidae) [Paik 1978]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]
Pseudococcus cryptus Hempel (Pseudococcidae) [Kwon et al. 2002]
Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]
147. ***Paulownia coreana* Uyeki (Paulowniaceae)**
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]
148. ***Phellodendron amurense* Rupr. (Rutaceae)**
Lepidosaphes tubulorum Ferris (Diaspididae) [Paik 1978]
149. ***Photinia glabra* (Thunb.) Maxim. (Rosaceae)**
Aulacaspis spinosa (Maskell) (Diaspididae) [Kwon et al. 2003c]
150. ***Phragmites australis* (Cav.) Trin. ex Steud. (Poaceae)**
Mirococcopsis orientalis (Maskell) (Pseudococcidae) [Kwon et al. 2003b]
151. ***Phyllostachys bambusoides* Siebold and Zucc. (Poaceae)**
Antonina crawi Cockerell (Pseudococcidae) [Kwon et al. 2003a]
Bambusaspis bambusicola (Kuwana) (Asterolecaniidae) [Paik 2000]
Kuwanaspis pseudoleucaspis (Diaspididae) [Paik 1978]
152. ***Phyllostachys edulis* (Carrière) J. Houz. (Poaceae)**
Antonina nakaharai Williams and Miller (Pseudococcidae) [Lee and Suh 2011]
153. ***Phyllostachys nigra* (Lodd. ex Lindl.) Munro (Poaceae)**
Acanthococcus onukii (Kuwana) (Eriococcidae) [Paik 1978]
Antonina crawi Cockerell (Pseudococcidae) [Paik 1978]
Kuwanaspis howardi (Cooley) (Diaspididae) [Paik 1978]
Unachionaspis tenuis (Maskell) (Diaspididae) [Paik 1978]
154. ***Phyllostachys nigra* (Lodd. ex Lindl.) Munro var. *henonis* (Mitford) Stapf ex Rendle (Poaceae)**
Kuwanaspis howardi (Cooley) (Diaspididae) [Paik 1978]
Odonaspis secreta (Cockerell) (Diaspididae) [Paik 1978]

155. *Phyllostachys* sp. (Poaceae)

Antonina crawi Cockerell (Pseudococcidae) [Kwon et al. 2003a]

Antonina nakaharai Williams and Miller (Pseudococcidae) [Lee and Suh 2011]

156. *Picea jezoensis* (Siebold and Zucc.) Carrière (Pinaceae)

Aspidiotus cryptomeriae Kuwana (Diaspididae) [Paik 1978]

157. *Pinus densiflora* Siebold and Zucc. (Pinaceae)

Crisicoccus pini (Kuwana) (Pseudococcidae) [Paik 1978]

Lepidosaphes japonica (Kuwana) (Diaspididae) [Paik 1978]

Lepidosaphes pini (Maskell) (Diaspididae) [Paik 1978]

Matsucoccus matsumurae (Kuwana) (Matsucoccidae) [Paik 1978]

158. *Pinus koraiensis* Siebold and Zucc. (Pinaceae)

Crisicoccus pini (Kuwana) (Pseudococcidae) [Paik 1978]

159. *Pinus thunbergii* Parl. (Pinaceae)

Crisicoccus pini (Kuwana) (Pseudococcidae) [Paik 1978]

Drosicha pinicola (Kuwana) (Monophlebidae) [Paik 1978]

Lepidosaphes pini (Maskell) (Diaspididae) [Paik 1978]

Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]

160. *Pittosporum tobira* (Thunb.) W. T. Aiton (Pittosporaceae)

Ceroplastes japonicus Green (Coccidae) [Paik 1978]

Icerya purchasi Maskell (Monophlebidae) [Paik 1978]

Planococcus citri (Risso) (Pseudococcidae) [Paik 1978]

161. *Platanus orientalis* L. (Platanaceae)

Ceroplastes japonicus Green (Coccidae) [Paik 1978]

162. *Platyclusus orientalis* (L.) Franco (Cupressaceae)

Parthenolecanium fletcheri (Cockerell) (Coccidae) [Choi and Lee 2017b]

163. *Platycarya strobilacea* Siebold and Zucc. (Juglandaceae)

Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]

164. *Poaceae* sp. (Poaceae)

Trionymus perrisii (Signoret) (Pseudococcidae) [Kwon et al. 2003b]

Trionymus radicum (Newstead) (Pseudococcidae) [Kwon et al. 2003b]

165. *Podocarpus macrophyllus* (Thunb.) Sweet var. *maki* Siebold and Zucc. (Podocarpaceae)

Aonidiella taxus Leonardi (Diaspididae) [Paik 1978]

Diaspidiotus makii (Kuwana) (Diaspididae) [Paik 1978]

166. *Poncirus trifoliata* (L.) Raf. (Rutaceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Ceroplastes japonicus Green (Coccidae) [Paik 1978]

Comstockaspis perniciosa (Comstock) (Diaspididae) [Paik 1978]

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]

Unaspis yanonensis (Kuwana) (Diaspididae) [Paik 1978]

167. *Populus alba* L. (Salicaceae)

Comstockaspis perniciosa (Comstock) (Diaspididae) [Paik 1978]

168. *Populus maximowiczii* A. Henry (Salicaceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Chrysomphalus bifasciculatus Ferris (Diaspididae) [Paik 1978]

Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]

Parthenolecanium persicae (Fabricius) (Coccidae) [Paik 1978]

169. *Portulaca oleracea* L. (Portulacaceae)

- Planococcus citri* (Risso) (Pseudococcidae) [Kwon et al. 2003b]
Planococcus kraunhiae (Kuwana) (Pseudococcidae) [Paik 1978]

170. *Prunus × yedoensis* Matsum. (Rosaceae)

- Comstockaspis perniciosa* (Comstock) (Diaspididae) [Paik 1978]
Eulecanium kunoense (Kuwana) (Coccidae) [Paik 1978]
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]

171. *Prunus armeniaca* L. (Rosaceae)

- Ceroplastes japonicus* Green (Coccidae) [Paik 1978]
Comstockaspis perniciosa (Comstock) (Diaspididae) [Paik 1978]
Parthenolecanium persicae (Fabricius) (Coccidae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]

172. *Prunus glandulosa* Thunb. (Rosaceae)

- Takahashia japonica* (Cockerell) (Coccidae) [Paik 1978]

173. *Prunus glandulosa* Thunb. for. *albiplena* Koehne (Rosaceae)

- Lepidosaphes conchiformis* (Gmelin) (Diaspididae) [Paik 1978]

174. *Prunus mandshurica* (Maxim.) Koehne (Rosaceae)

- Comstockaspis perniciosa* (Comstock) (Diaspididae) [Paik 1978]

175. *Prunus mume* (Siebold) Siebold and Zucc. (Rosaceae)

- Ceroplastes ceriferus* (Fabricius) (Coccidae) [Paik 1978]
Parthenolecanium persicae (Fabricius) (Coccidae) [Paik 1978]
Pseudaulacaspis prunicola (Maskell) (Diaspididae) [Kwon and Han 2003b]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]

176. *Prunus persica* (L.) Batsch (Rosaceae)

- Coccus hesperidum* Linnaeus (Coccidae) [Paik 1978]
Comstockaspis perniciosa (Comstock) (Diaspididae) [Paik 1978]
Eulecanium kunoense (Kuwana) (Coccidae) [Paik 1978]
Lepidosaphes conchiformis (Gmelin) (Diaspididae) [Paik 1978]
Lepidosaphes ulmi (Linnaeus) (Diaspididae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Kwon and Han 2003b]
Parthenolecanium persicae (Fabricius) (Coccidae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
Pseudaulacaspis prunicola (Maskell) (Diaspididae) [Kwon and Han 2003b]

177. *Prunus salicina* Lindl. (Rosaceae)

- Comstockaspis perniciosa* (Comstock) (Diaspididae) [Paik 1978]
Eulecanium cerasorum (Cockerell) (Coccidae) [Paik 1978]
Eulecanium kunoense (Kuwana) (Coccidae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Kwon and Han 2003b]
Parthenolecanium persicae (Fabricius) (Coccidae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
Pseudaulacaspis prunicola (Maskell) (Diaspididae) [Kwon and Han 2003b]

178. *Prunus serrulata* Lindl. var. *sontagiae* (Koehne) Nakai (Rosaceae)

- Ceroplastes ceriferus* (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Comstockaspis perniciosa (Comstock) (Diaspididae) [Paik 1978]
Dysmicoccus wistariae (Green) (Pseudococcidae) [Paik 1978]
Eulecanium cerasorum (Cockerell) (Coccidae) [Paik 1978]
Eulecanium kunoense (Kuwana) (Coccidae) [Paik 1978]

- Kuwanina parva* (Maskell) (Eriococcidae) [Paik 1978]
Lepidosaphes ulmi (Linnaeus) (Diaspididae) [Paik 1978]
Phenacoccus aceris (Signoret) (Pseudococcidae) [Kwon et al. 2003a]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
- 179. *Prunus* sp. (Rosaceae)**
Didesmococcus koreanus Borchsenius (Coccidae) [Borchsenius 1955]
Sphaerolecanium prunastri (Boyer de Fonscolombe) (Coccidae) [Shiraki 1952]
- 180. *Prunus tomentosa* Thunb. (Rosaceae)**
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]
- 181. *Prunus verecunda* (Koidz.) Koehne (Rosaceae)**
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
- 182. *Pseudosasa japonica* (Siebold and Zucc. ex Steud.) Makino ex Nakai (Poaceae)**
Trionymus hamberdi (Borchsenius) (Pseudococcidae) [Kwon et al. 2003b]
- 183. *Pueraria lobata* (Willd.) Ohwi (Fabaceae)**
Heliococcus bohemicus Sulc (Pseudococcidae) [Kwon et al. 2003a]
- 184. *Punica granatum* L. (Lythraceae)**
Acanthococcus lagerstroemiae (Kuwana) (Eriococcidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]
- 185. *Pyrus pyrifolia* (Burm. f.) Nakai var. *cultiva* (Makino) Nakai (Rosaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Comstockaspis perniciosa (Comstock) (Diaspididae) [Paik 1978]
Crisicoccus matsumotoi (Siraiwa) (Pseudococcidae) [Kwon and Han 2003b]
Drosicha corpulenta (Kuwana) (Monophlebidae) [Kwon and Han 2003b]
Dysmicoccus wistariae (Green) (Pseudococcidae) [Paik 1978]
Lepidosaphes conchiformis (Gmelin) (Diaspididae) [Paik 1978]
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
Nipponpulvinaria horii (Kuwana) (Coccidae) [Paik 1978]
Parlatoria theae Cockerell (Diaspididae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Kwon and Han 2003b]
Parthenolecanium glandi (Kuwana) (Coccidae) [Paik 1978]
Parthenolecanium persicae (Fabricius) (Coccidae) [Paik 1978]
Planococcus citri (Risso) (Pseudococcidae) [Kwon and Han 2003b]
Planococcus kraunhiae (Kuwana) (Pseudococcidae) [Kwon and Han 2003b]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 186. *Pyrus ussuriensis* Maxim. (Rosaceae)**
Crisicoccus matsumotoi (Siraiwa) (Pseudococcidae) [Kwon et al. 2003b]
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]
- 187. *Quercus acuta* Thunb. (Fagaceae)**
Psoraleococcus quercus (Cockerell) (Lecanodiaspididae) [Paik 1978]
- 188. *Quercus acutissima* Carruth. (Fagaceae)**
Beesonina napiformis (Kuwana) (Beesoniidae) [Paik 1978]
Ceroplastes japonicus Green (Coccidae) [Paik 1978]
Drosicha corpulenta (Kuwana) (Monophlebidae) [Paik 2000]

- Eulecanium takachihoi* (Kuwana) (Coccidae) [Paik 2000]
Kermes miyasakii Kuwana (Kermesidae) [Paik 1978]
Kermes nakagawae Kuwana (Kermesidae) [Paik 1978]
Kermes vastus Kuwana (Kermesidae) [Paik 1978]
Kuwania quercus (Kuwana) (Kuwanidae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]
Pseudaulacaspis kiushiuensis (Kuwana) (Diaspididae) [Suh 2015]
Psoraleococcus quercus (Cockerell) (Lecanodiaspididae) [Paik 1978]
- 189. *Quercus aliena* Blume (Fagaceae)**
Kermes miyasakii Kuwana (Kermesidae) [Paik 1978]
Kermes vastus Kuwana (Kermesidae) [Paik 1978]
- 190. *Quercus dentata* Thunb. (Fagaceae)**
Nidularia japonica Kuwana (Kermesidae) [Suh and Son 2017]
- 191. *Quercus glauca* Thunb. (Fagaceae)**
Lepidosaphes kashicola Takahashi (Diaspididae) [Suh 2011]
Lepidosaphes recurrens Takagi and Kawai (Diaspididae) [Suh 2016a]
Pseudaulacaspis kiushiuensis (Kuwana) (Diaspididae) [Suh 2015]
- 192. *Quercus myrsinifolia* Blume (Fagaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Ceroplastes rubens Maskell (Coccidae) [Paik 1978]
Kuwania quercus (Kuwana) (Kuwanidae) [Paik 2000]
Lepidosaphes kashicola Takahashi (Diaspididae) [Suh 2011]
Psoraleococcus quercus (Cockerell) (Lecanodiaspididae) [Paik 1978]
- 193. *Quercus phillyraeoides* A. Gray (Fagaceae)**
Drosicha corpulenta (Kuwana) (Monophlebidae) [Paik 2000]
Drosicha howardi (Kuwana) (Monophlebidae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
- 194. *Quercus rubra* L. (Fagaceae)**
Pseudaulacaspis kiushiuensis (Kuwana) (Diaspididae) [Suh 2015]
- 195. *Quercus serrata* Murray (Fagaceae)**
Asterodiaspis japonica (Cockerell) (Asterolecaniidae) [Paik 2000]
Chionaspis saitamaensis Kuwana (Diaspididae) [Paik 2000]
Comstockaspis perniciosa (Comstock) (Diaspididae) [Paik 1978]
Kermes miyasakii Kuwana (Kermesidae) [Paik 1978]
Kermes vastus Kuwana (Kermesidae) [Paik 1978]
Pseudaulacaspis kiushiuensis (Kuwana) (Diaspididae) [Suh 2015]
- 196. *Quercus* sp. (Fagaceae)**
Asterodiaspis luteola (Russell) (Asterolecaniidae) [Suh and Son 2017]
Crisicoccus coreanus (Kanda) (Pseudococcidae) [Paik 1978]
Drosicha corpulenta (Kuwana) (Monophlebidae) [Paik 1978]
Kuwania quercus (Kuwana) (Kuwanidae) [Paik 1978]
Pseudaulacaspis kiushiuensis (Kuwana) (Diaspididae) [Suh 2015]
Psoraleococcus quercus (Cockerell) (Lecanodiaspididae) [Paik 1978]
- 197. *Raphanus sativus* L. (Brassicaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
- 198. *Rhaphiolepis indica* (L.) Lindl. var. *umbellata* (Thunb.) Ohashi (Rosaceae)**
Ceroplastes japonicus Green (Coccidae) [Paik 1978]

199. *Rhododendron indicum* (L.) Sweet (Ericaceae)

Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]

200. *Rhododendron mucronulatum* Turcz. (Ericaceae)

Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]

Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]

201. *Rhododendron schlippenbachii* Maxim. (Ericaceae)

Ceroplastes ceriferus (Fabricius) (Coccidae) [Kwon et al. 2005]

Dysmicoccus wistariae (Green) (Pseudococcidae) [Kwon et al. 2005]

Phenacoccus azaleae Kuwana (Pseudococcidae) [Kwon et al. 2005]

Planococcus kraunhiae (Kuwana) (Pseudococcidae) [Kwon et al. 2005]

Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]

Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2005]

Puto orientalis Danzig (Putoidae) [Kwon et al. 2003a]

Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]

202. *Rhus javanica* L. (Anacardiaceae)

Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]

203. *Robinia pseudoacacia* L. (Fabaceae)

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]

Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]

Parthenolecanium persicae (Fabricius) (Coccidae) [Paik 1978]

204. *Rohdea japonica* Roth (Asparagaceae)

Coccus hesperidum Linnaeus (Coccidae) [Paik 1978]

205. *Rosa chinensis* Jacq. (Rosaceae)

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]

206. *Rosa multiflora* Thunb. (Rosaceae)

Aulacaspis rosae (Bouché) (Diaspididae) [Kwon et al. 2003c]

Dysmicoccus wistariae (Green) (Pseudococcidae) [Kwon et al. 2003b]

207. *Rosa multiflora* Thunb. var. *platyphylla* Thory (Rosaceae)

Acanthococcus tokaedae (Kuwana) (Eriococcidae) [Paik 1978]

Aulacaspis rosae (Bouché) (Diaspididae) [Kwon et al. 2005]

Aulacaspis rosarum Borchsenius (Diaspididae) [Kwon et al. 2005]

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

Comstockaspis perniciosus (Comstock) (Diaspididae) [Kwon et al. 2005]

Lepidosaphes ulmi (Linnaeus) (Diaspididae) [Paik 1978]

Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]

Parlatoria theae Cockerell (Diaspididae) [Kwon et al. 2005]

Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2005]

208. *Rosa rugosa* Thunb. (Rosaceae)

Aulacaspis rosae (Bouché) (Diaspididae) [Paik 1978]

Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]

209. *Rosa* sp. (Rosaceae)

Aulacaspis rosae (Bouché) (Diaspididae) [Paik 1978]

210. *Rosa wichuraiana* Crép. (Rosaceae)

Aulacaspis rosae (Bouché) (Diaspididae) [Kwon et al. 2003c]

211. *Rubus crataegifolius* Bunge (Rosaceae)

Aulacaspis rosae (Bouché) (Diaspididae) [Kwon et al. 2003c]

Aulacaspis rosarum Borchsenius (Diaspididae) [Kwon et al. 2003c]

- Coccura comari* (Kunow) (Pseudococcidae) [Kwon et al. 2003a]
Heliococcus kurilensis Danzig (Pseudococcidae) [Kwon et al. 2003a]
Phenacoccus rubicola Kwon, Danzig and Park (Pseudococcidae) [Kwon et al. 2003a]
- 212. *Rubus hirsutus* Thunb. (Rosaceae)**
Aulacaspis rosae (Bouché) (Diaspididae) [Paik 1978]
- 213. *Rubus parvifolius* L. (Rosaceae)**
Aulacaspis rosae (Bouché) (Diaspididae) [Kwon et al. 2003c]
- 214. *Salix pseudolasiogyne* H. Lév. (Salicaceae)**
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
- 215. *Salix* sp. (Salicaceae)**
Acanthococcus tokaedae (Kuwana) (Eriococcidae) [Paik 1978]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Chionaspis salicis (Linnaeus) (Diaspididae) [Paik 2000]
Comstockaspis perniciosus (Comstock) (Diaspididae) [Paik 1978]
Lepidosaphes conchiformis (Gmelin) (Diaspididae) [Paik 1978]
Lepidosaphes yanagicola Kuwana (Diaspididae) [Paik 1978]
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]
- 216. *Sapindus mukorossi* Gaertn. (Sapindaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
- 217. *Sasa borealis* (Hack.) Makino and Shibata (Poaceae)**
Antonina crawi Cockerell (Pseudococcidae) [Paik 1978]
Kuwanaspis pseudoleucaspis (Diaspididae) [Paik 1978]
Nipponaclerda biwakensis (Kuwana) (Acleridae) [Paik 2000]
Odonaspis secreta (Cockerell) (Diaspididae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 218. *Sasa* sp. (Poaceae)**
Brevinnia pulveraria (Newstead) (Pseudococcidae) [Paik 2000]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Paik 1978]
- 219. *Sciadopitys verticillata* (Thunb.) Siebold and Zucc. (Sciadopityaceae)**
Lepidosaphes pallida (Maskell) (Diaspididae) [Paik 1978]
- 220. *Smilax china* L. (Smilacaceae)**
Aulacaspis spinosa (Maskell) (Diaspididae) [Kwon et al. 2003c]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
- 221. *Smilax sieboldii* Miq. (Smilacaceae)**
Aulacaspis spinosa (Maskell) (Diaspididae) [Kwon et al. 2003c]
- 222. *Solanum tuberosum* L. (Solanaceae)**
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
- 223. *Spiraea prunifolia* Siebold and Zucc. var. *simpliciflora* (Nakai) Nakai (Rosaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
- 224. *Spiraea salicifolia* L. (Rosaceae)**
Comstockaspis perniciosus (Comstock) (Diaspididae) [Paik 1978]
- 225. *Spiraea thunbergii* Siebold ex Blume (Rosaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
- 226. *Staphylea bumalda* DC. (Staphyleaceae)**
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]

227. ***Styrax japonicus* Siebold and Zucc. (Styracaceae)**
Pinnaspis hikosana Takagi (Diaspididae) [Suh 2014]
228. ***Styrax obassia* Siebold and Zucc. (Styracaceae)**
Pulvinaria photiniae Kuwana (Coccidae) [Choi and Lee 2017a]
229. ***Symplocos coreana* (H. Lév.) Ohwi (Symplocaceae)**
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
230. ***Syringa oblata* Lindl. var. *dilatata* (Nakai) Rehder (Oleaceae)**
Lopholeucaspis japonica (Cockerell) (Diaspididae) [Paik 1978]
231. ***Syringa vulgaris* L. (Oleaceae)**
Pseudaulacaspis pentagona (Targioni-Tozzetti) (Diaspididae) [Paik 1978]
232. ***Taxodium distichum* (L.) Rich. (Cupressaceae)**
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
233. ***Taxus cuspidata* Siebold and Zucc. (Taxaceae)**
Aonidiella taxus Leonardi (Diaspididae) [Paik 1978]
Dynaspidiotus tsugae (Marlatt) (Diaspididae) [Paik 1978]
Dysmicoccus wistariae (Green) (Pseudococcidae) [Paik 1978]
Icerya purchasi Maskell (Monophlebidae) [Paik 1978]
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
Pseudococcus comstocki (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]
Pulvinaria torreyae Takahashi (Coccidae) [Paik 1978]
234. ***Taxus cuspidata* Siebold and Zucc. var. *latifolia* (Pilg.) Nakai (Taxaceae)**
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
235. ***Ternstroemia gymnanthera* (Wight and Arn.) Sprague (Pentaphylacaceae)**
Asterococcus muratae (Kuwana) (Cercococcidae) [Paik 1978]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
Planococcus citri (Risso) (Pseudococcidae) [Kwon et al. 2003b]
236. ***Thuja occidentalis* L. (Cupressaceae)**
Carulaspis juniperi (Bouché) (Diaspididae) [Suh and Evans 2016]
Ceroplastes ceriferus (Fabricius) (Coccidae) [Paik 1978]
237. ***Tilia amurensis* Rupr. for. *grosserrata* Nakai (Malvaceae)**
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
238. ***Torreya nucifera* (L.) Siebold and Zucc. (Taxaceae)**
Dysmicoccus wistariae (Green) (Pseudococcidae) [Paik 1978]
Fiorinia japonica Kuwana (Diaspididae) [Suh 2012]
Lepidosaphes pallida (Maskell) (Diaspididae) [Paik 1978]
239. ***Toxicodendron trichocarpum* (Miq.) Kuntze (Anacardiaceae)**
Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]
240. ***Trachelospermum asiaticum* (Siebold and Zucc.) Nakai (Apocynaceae)**
Pseudaulacaspis cockerelli (Cooley) (Diaspididae) [Paik 1978]
241. ***Tsuga sieboldii* Carrière (Pinaceae)**
Dynaspidiotus pseudomeyeri (Kuwana) (Diaspididae) [Paik 1978]
Dynaspidiotus tsugae (Marlatt) (Diaspididae) [Paik 1978]
242. ***Ulmus davidiana* Planch. var. *japonica* (Rehder) Nakai (Ulmaceae)**
Parthenolecanium corni (Bouché) (Coccidae) [Paik 1978]
Takahashia japonica (Cockerell) (Coccidae) [Paik 1978]

243. *Viburnum dilatatum* Thunb. (Adoxaceae)*Parthenolecanium corni* (Bouché) (Coccidae) [Paik 1978]**244. *Viburnum odoratissimum* Ker Gawl. var. *awabuki* (K. Koch) Zabel ex Rümpler (Adoxaceae)***Asterococcus muratae* (Kuwana) (Cerococcidae) [Paik 1978]*Ceroplastes ceriferus* (Fabricius) (Coccidae) [Paik 1978]*Ceroplastes japonicus* Green (Coccidae) [Paik 1978]*Chrysomphalus bifasciculatus* Ferris (Diaspididae) [Paik 1978]*Parlatoria theae* Cockerell (Diaspididae) [Paik 1978]*Phenacoccus aceris* (Signoret) (Pseudococcidae) [Kwon et al. 2003a]*Pseudococcus comstocki* (Kuwana) (Pseudococcidae) [Paik 1978]**245. *Vitis vinifera* L. (Vitaceae)***Parthenolecanium corni* (Bouché) (Coccidae) [Paik 1978]*Parthenolecanium persicae* (Fabricius) (Coccidae) [Paik 1978]*Pseudaulacaspis pentagona* (Targioni-Tozzetti) (Diaspididae) [Paik 1978]**246. *Weigela* sp. (Caprifoliaceae)***Pulvinaria hydrangeae* Steinweden (Coccidae) [Choi and Lee 2017a]**247. *Wisteria floribunda* (Willd.) DC. (Fabaceae)***Chionaspis wistariae* Cooley (Diaspididae) [Suh 2016b]*Drosicha howardi* (Kuwana) (Monophlebidae) [Paik 1978]*Parthenolecanium corni* (Bouché) (Coccidae) [Paik 1978]*Pseudaulacaspis cockerelli* (Cooley) (Diaspididae) [Paik 1978]*Pseudococcus comstocki* (Kuwana) (Pseudococcidae) [Kwon et al. 2003b]**248. *Yucca gloriosa* L. (Asparagaceae)***Ceroplastes ceriferus* (Fabricius) (Coccidae) [Paik 1978]*Ceroplastes japonicus* Green (Coccidae) [Paik 1978]*Coccus hesperidum* Linnaeus (Coccidae) [Paik 1978]**249. *Zanthoxylum ailanthoides* Siebold and Zucc. (Rutaceae)***Pseudaulacaspis pentagona* (Targioni-Tozzetti) (Diaspididae) [Paik 1978]**250. *Zanthoxylum schinifolium* Siebold and Zucc. (Rutaceae)***Pseudaulacaspis pentagona* (Targioni-Tozzetti) (Diaspididae) [Paik 1978]**251. *Zelkova serrata* (Thunb.) Makino (Ulmaceae)***Crisicoccus seuratus* (Kanda) (Pseudococcidae) [Paik 1978]*Drosicha corpulenta* (Kuwana) (Monophlebidae) [Paik 1978]*Drosicha howardi* (Kuwana) (Monophlebidae) [Paik 1978]*Eulecanium cerasorum* (Cockerell) (Coccidae) [Paik 1978]*Pseudaulacaspis pentagona* (Targioni-Tozzetti) (Diaspididae) [Paik 1978]*Pseudaulacaspis ulmicola* Tang (Diaspididae) [Suh 2015]**252. *Ziziphus jujuba* Mill. (Rhamnaceae)***Ceroplastes ceriferus* (Fabricius) (Coccidae) [Kwon and Han 2003b]*Lopholeucaspis japonica* (Cockerell) (Diaspididae) [Kwon and Han 2003b]*Parthenolecanium corni* (Bouché) (Coccidae) [Kwon and Han 2003b]*Planococcus kraunhiae* (Kuwana) (Pseudococcidae) [Kwon and Han 2003b]**253. *Zoysia japonica* Steud. (Poaceae)***Aspidiella phragmitis* (Takahashi) (Diaspididae) [Paik 1978]*Balanococcus takahashii* McKenzie (Pseudococcidae) [Kwon et al. 2003b]*Heliococcus zoysiae* Kwon, Danzig and Park (Pseudococcidae) [Kwon et al. 2003a]

Discussion

The purpose of the present study is to provide an updated host-plant list of the scale insects in South Korea. This information will aid in the recognition and the identification of scale insect species which is essential for assessing the threat that each species poses and the management strategy that is to be taken. Scale insects have received much attention throughout the world due to the damage they cause to economically important crops and ornamental plants. Due to their frequent association on plant material in international trade, they have been transported to other countries around the world and have often become invasive species in their new environment, thriving in the absence of their natural enemies.

To date, 253 species of host plants in 71 families associated with scale insects have been updated from South Korea. However, it can be expected that more species of scale insects are likely to be found in South Korea if taxonomic studies continue to be performed.

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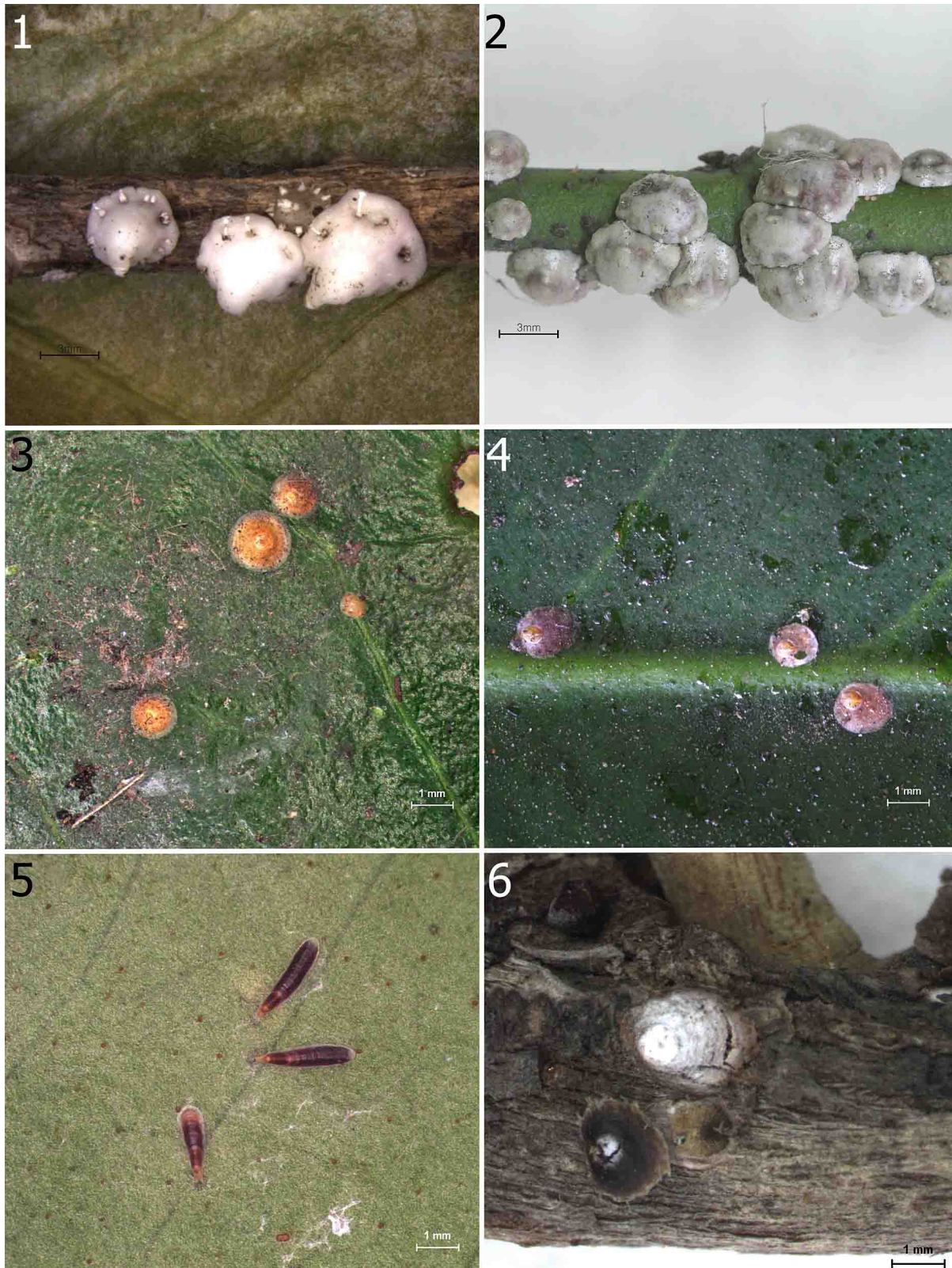
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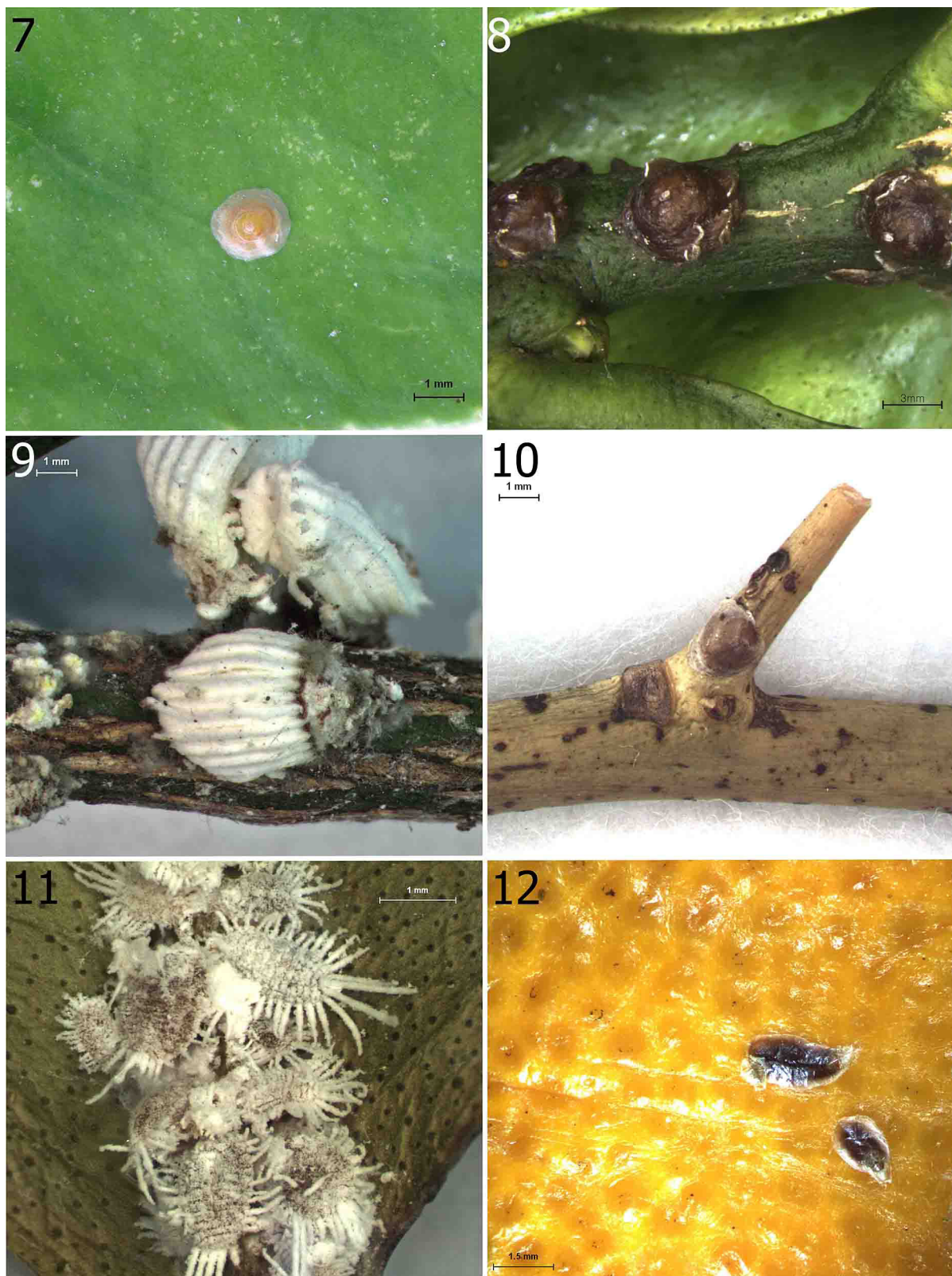
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Figures 1–6. Six scale insects on *Camellia japonica* L. in South Korea. 1) *Ceroplastes ceriferus* (Fabricius), female. 2) *Ceroplastes japonicus* Green, female. 3) *Chrysomphalus bifasciculatus* Ferris, female. 4) *Diaspidiotus degeneratus* (Leonardi), female. 5) *Lepidosaphes kamakurensis* (Kuwana), female. 6) *Pseudonidia paeoniae* (Cockerell), female.



Figures 7–12. Six scale insects on *Citrus unshiu* (Swingle) Marow. in South Korea. **7)** *Aonidiella citrina* (Coquillett), female. **8)** *Ceroplastes rubens* Maskell, female. **9)** *Icerya purchasi* Maskell, female. **10)** *Pseudanidia duplex* (Cockerell), female. **11)** *Pseudococcus cryptus* Hempel, female. **12)** *Unaspis yanonensis* (Kuwana), female.