

NEW DATA ON SEVERAL SPECIES OF SCALE INSECT (HEMIPTERA: COCCOIDEA) FROM SOUTHERN SPAIN

Yair Ben-Dov¹ & Iñigo Sánchez-García²

¹ Department of Entomology, Agricultural Research Organization, The Volcani Center, P.O. Box 6, Bet Dagan, 50250 Israel — yairbd@netvision.net.il

² Zoobotánico de Jerez. c./ Madreselva s/n. 11404 Jerez de la Frontera, Spain — bioinigo@gmail.com

Abstract: New data are provided on the distribution and host plants of 21 species of scale insects from Cádiz Province in southern Spain. Four of these species, namely *Dactylopius opuntiae*, *Coccidohystrix insolita*, *Dysmicoccus grassii* and *Vryburgia amaryllidis*, are recorded for the first time from Spain. Excluding *D. grassii*, these species are regarded as invasive in the Iberian Peninsula. Also a list of scale insects recorded from the Iberian Peninsula and the Balearic Islands is presented.

Key words: Hemiptera, Coccoidea, new records, Spain.

Nuevos datos sobre diversas especies de cochinillas (Hemiptera: Coccoidea) del sur de España

Resumen: Se aportan datos sobre la distribución y plantas huésped de 21 especies de cochinillas presentes en la provincia de Cádiz, en el sur de España. Cuatro de ellas, *Dactylopius opuntiae*, *Coccidohystrix insolita*, *Dysmicoccus grassii* y *Vryburgia amaryllidis*, se citan por primera vez para España. Excepto *D. grassii*, son especies invasoras que han colonizado recientemente la Península Ibérica. Además se actualiza la lista de los cóccidos citados de la Península Ibérica e islas Baleares.

Palabras clave: Hemiptera, Coccoidea, nuevas citas, España.

Published records of the scale insects fauna (Hemiptera: Coccoidea) of Spain comprises 218 species belonging to the following 18 families: Acleridae (2 species), Asterolecaniidae (7 species), Coccidae (31 species), Diaspididae (102 species), Eriococcidae (13 species), Kermesidae (5 species), Lecanodiaspididae (1 species), Margarodidae (2 species), Matsucoccidae (2 species), Monophlebidae (3 species), Ortheziidae (5 species), Phoenicococcidae (1 species), Pseudococcidae (39 species), Putoidae (1 species), Rhizococcidae (1 species), and Xylococcidae (1 species) (Ben-Dov et al. 2014). The above-mentioned information for Spain has been contributed mainly in numerous publications by Juan Gómez-Menor Ortega (1903-1983), as well as by Pablo Colvée (1849-1903), Ricardo García Mercet (1860-1932), Filippo Silvestri (1873-1949) and Alfred Serge Balachowsky (1901-1983). The ulterior literature concerning this group has been very disperse so we include a complete updated checklist of the Iberian Coccidae (249 species) in the Annexe 1.

In this note we present information on 21 species of scale insects which have been collected in recent years by the junior author in Spain. Species that are recorded here for the first time from Spain are indicated with asterisks **.

We also mention new records of scale insects on new host using as a reference the worldwide database available at ScaleNet <http://www.sel.barc.usda.gov/scalenet/htm> were all the host recorded for every scale insect has been registered.

Voucher specimens of the species recorded here are deposited (under the reference C-number which is indicated here at the end of each record) in the Coccoidea collection, Department of Entomology, Agricultural Research Organization, The Volcani Center, Bet Dagan, Israel.

COCCIDAE

• *Coccus hesperidum* L.

This soft scale insect ranks among the most widely-distributed and highly-polyphagous species. It is recorded here from a new host plant, namely *Rhamnus alaternus* L.

MATERIAL EXAMINED: *Rhamnus alaternus* (Rhamnaceae), Zoobotánico Jerez, Jerez de la Frontera (Cádiz), 03.x.2012, C-5491; *Hedera helix* L. (Araliaceae), Grazalema (Cádiz), 21.ii.2014, C-5493.

• *Pulvinaria floccifera* (Westwood)

The cottony camellia scale is distributed in all zoogeographical regions being recorded from various host plants that belong to about 40 plant families (Ben-Dov et al. 2014). The present record on *Hedera helix* is a new host plant for Spain.

MATERIAL EXAMINED: *Hedera helix*, Venta El Cortijo, Algodonales (Cádiz), 21.ix.2013, C-5496.

• *Pulvinariella mesembryanthemi* (Vallot)

This soft scale is widely distributed in the Afrotropical, Australasian, Nearctic, Neotropical and the Palaearctic regions, where it develops exclusively on plants of the family Aizoaceae. Gómez-Menor Ortega (1946) first recorded this coccid from the Mediterranean regions of Spain. The present record was taken at Chiclana at Cádiz Province. MATERIAL EXAMINED: *Carpobrotus edulis* (L.) N. E. Br. (Aizoaceae), La Barrosa, Chiclana de la Frontera (Cádiz), 2.viii.2012, C-5168.

DACTYLOPIIDAE

• *Dactylopius opuntiae* (Cockerell) **

This record from Spain is a new distribution record of that dactylopiid scale in the Palaearctic region. Previous Palaearctic records were only from Israel (Spodek et al., 2014) and France (Foldi, 2001).

MATERIAL EXAMINED: *Opuntia maxima* Mill. (Cactaceae), Jimena de la Frontera (Cádiz), 03.v.2013, C-5483.

DIASPIDIDAE

• *Abgrallaspis cyanophylli* (Signoret)

The present record indicates a new host plant record for this highly-polyphagous diaspidid.

MATERIAL EXAMINED: *Globularia alypum* L. (Globulariaceae), Jerez de la Frontera (Cádiz), 20.v.2010, C-5155.

• *Aspidiotus nerii* Bouché

The records on *Cistus ladanifer* L., *Stauracanthus boivinii* (Webb.) Samp., *Osyris lanceolata* Hochst. & Steud., *Globularia alypum* and *Juniperus phoenicea* L., are new host-plant records for this widely-distributed and highly-polyphagous armoured scale insect.

MATERIAL EXAMINED: *Cistus ladanifer* (Cistaceae), Pinar de las Yeguas, Puerto Real (Cádiz), 09.iii.2012, C-5163; *Stauracanthus boivinii* (Fabaceae), Novo Sancti Petri, Chiclana de la Frontera (Cádiz), 02.viii.2012, C-5171; *Asparagus stipularis* Forskål (Asparagaceae), Pinar de las Yeguas, Puerto Real (Cádiz), 29.i.12, C-5166; *Osyris lanceolata* Hochst. & Steud. (Santalaceae), Pinar de las Yeguas, Puerto Real (Cádiz), 09.iii.2012, C-5172; *Globularia alypum*, (Globulariaceae), Las Aguilillas, Jerez de la Frontera (Cádiz), 20.v.2010, C-5193; *Aristolochia elegans* Mast. (Aristolochiaceae), Jerez de la Frontera (Cádiz), 22.ii.2012, C-5204; *Thymelaea hirsuta* (L.) Endl. (Thymelaeaceae), Sierra de San Cristobal, El Puerto de Santa María (Cádiz), 05.viii.2012, C-5205; *Juniperus phoenicea* (Cupressaceae), Dehesa Picado, San José del Valle (Cádiz), 25.ii.2012, C-5209.

• *Carulaspis atlantica* (Lindinger)

This armoured scale is widely distributed in Western Europe (Ben-Dov *et al.*, 2014). Gómez-Menor Ortega (1960) collected it at the Mediterranean regions of Spain. Here it is reported for the first time from the Atlantic regions. All the published records suggest that this armoured scale is restricted to host plants of the genus *Juniperus*.

MATERIAL EXAMINED: *Juniperus oxycedrus* L. (Cupressaceae), Pinar de la Algaida, Puerto Real (Cádiz), 04. iv.2012, C-5187.

• *Diaspidiotus ceconii* (Leonardi)

Previously this species was recorded by Blay Goicoechea (1993) from the Mediterranean region of Spain. Here it is reported from Cádiz province in Southwestern Spain.

MATERIAL EXAMINED: *Ulex australis* Clemente (Fabaceae), Puerto Real, 04.viii.2012, C-5177.

• *Diaspidiotus mairei* (Balachowsky)

Blay Goicoechea (1993) collected this species at Central Spain. The material reported here was collected at the in Cádiz province in Southern Spain.

MATERIAL EXAMINED: *Retama sphaerocarpa* (L.) Boiss. (Fabaceae), Nueva Jarilla, Jerez de la Frontera (Cádiz), 08.viii.2012, C-5492; *Retama sphaerocarpa* (Fabaceae), Laguna de Los Tollos, Jerez de la Frontera (Cádiz), 09.xii.2013, C-5498; *Sedum sediforme* (Crassulaceae), Graganta del Cacín, Alhama de Granada (Granada), 15.iv.2014, C-5499.

• *Duplachionaspis berlesii* (Leonardi)

García Mercet (1930) reported on the Aphelinid parasitoids of this species in Spain. This is the third record of that Diaspidid from Spain.

MATERIAL EXAMINED: *Asparagus stipularis* Forskål, (Liliaceae), Rota (Cádiz), 30.vii.2012, C-5167.

• *Duplachionaspis natalensis* (Maskell)

Balachowsky (1935) was the first who collected this armoured scale (recorded it as *Chionaspis stanotophri* Cooley, currently a junior synonym of *D. natalensis*) from Alicante, at the Mediterranean coast. The current new record was collected at Cádiz province in the Atlantic coast of Spain.

MATERIAL EXAMINED: *Imperata cylindrica* (L.) Raeschel (Poaceae), Las Yeguas, Puerto Real (Cádiz), 08.ix.2013, C-5501.

• *Lineaspis striata* (Newstead)

This species is widely-distributed in the Mediterranean countries (Balachowsky, 1954). Gómez-Menor Ortega (1946, 1960) collected it in central Spain. The present record was collected in Southern Spain.

MATERIAL EXAMINED: *Juniperus phoenicea* (Cupressaceae), Dehesa Picado San José del Valle (Cádiz), 05.ii.2012, C-5203.

• *Rhizaspidotus donacis* (Leonardi)

Balachowsky (1935) collected this species at Barcelona, and the present record was collected at the Atlantic coast of Spain. This record together with earlier-published records indicates that this armoured scale develops on grasses, that belong mainly to the genus *Arundo*.

MATERIAL EXAMINED: *Arundo donax* L. (Poaceae), Las Tres Piedras, Rota (Cádiz), 01.viii.2012, C-5175.

ERIOCOCCIDAE

• *Acanthococcus araucariae* (Maskell)

Hoy (1963) listed this species as occurring in Spain, but gave no collection data. Gómez Menor (1937; 1946; 1958) collected this species from Central and Eastern Spain, and the present record was collected at the Atlantic coast region.

MATERIAL EXAMINED: *Araucaria columnaris* (G. Forst.) Hook. (Araucariaceae), Cádiz, 31.vii.12, C-5206.

• *Eriococcus devoniensis* (Green)

Since this eriococcid species was first described from England (Green, 1896) it has been reported from many territories in the Western Palaearctic Region (Köhler, 1998; Ben-Dov *et al.*, 2014). The present record from Spain was collected on a new host plant.

MATERIAL EXAMINED: *Ulex baeticus* Boiss. (Fabaceae), San José del Valle, 05.viii.2012, C-5161.

• *Eriococcus ericae* Signoret

This species is distributed mainly in west Mediterranean countries. The present collection and previous records at other countries were taken on host plants of the Ericaceae.

MATERIAL EXAMINED: *Erica australis* L. (Ericaceae), Las Yeguas, Puerto Real (Cádiz), 29.i.2012, C-5157.

PSEUDOCOCCIDAE

• *Coccidohystrix insolita* (Green) **

This species, commonly named the eggplant mealybug, is widely distributed in the Afrotropical, Australian and Oriental zoogeographical regions. In the Palaearctic region it has been recorded only from China (Ferris, 1954) and from Saudi Arabia (Matile-Ferrero, 1988). This first record from Spain was collected on host plants that are new host records.

MATERIAL EXAMINED: *Halimum halimifolium* (L. Willk. (Cistaceae), La Barrosa, Chiclana de la Frontera (Cádiz), 02.viii.2012, C-5152; *Cistus ladanifer* (Cistaceae); Cancha de la Parra, Medina Sidonia (Cádiz), 8.ix.2013, C-5504.

• *Dysmicoccus grassii* (Leonardi) **

While this mealybug is mainly common in the Neotropical region, it has been recorded also from territories in the Afrotropical, Nearctic and Oriental regions. In the Palaearctic region it has been found in the Canary Islands, France, Italy, and Sicily. Here it is reported for the first time from mainland Spain.

MATERIAL EXAMINED: *Musa paradisiaca* (Musaceae), Zoobotánico de Jerez, Jerez de la Frontera (Cádiz), 25.iv.2012, C-5149.

• *Phenacoccus madeirensis* Green

This mealybug species is widely-distributed and highly-polyphagous in the Afrotropical, Nearctic and Neotropical regions. It was first reported from Valencia, Spain by Beltra & Soto (2011). The present new record was taken at the Atlantic region.

MATERIAL EXAMINED: in nest of a species of *Tetramorium* spp. (Formicidae), Dehesa Picado, San José del Valle (Cádiz), 23.xii.2011, C-5159.

• ***Trabutina mannipara* (Hemprich & Ehrenberg)**

This mealybug, commonly named the manna mealybug, has been recorded only from various species of *Tamarix*, and is distributed in Mediterranean countries, as well as at Central Asia (Ben-Dov et al., 2014). Sánchez-García (2004) reported it for the first time from Spain.

MATERIAL EXAMINED: *Tamarix canariensis* Willd. (Tamaricaceae), Dehesa Picado, San Jose del Valle (Cádiz), 05.viii.2012, C-5153.

• ***Vryburgia amaryllidis* (Bouclé) ****

The lily bulb mealybug is reported here for the first time from Spain. It is widely distributed in the Afrotropical, Australasian, Nearctic and Palaearctic zoogeographical regions, where it develops on monocotyledonous host plants of the families Agavaceae, Amaryllidaceae, Crassulaceae, Cyperaceae, Iridaceae, Liliaceae and Poaceae. MATERIAL EXAMINED: *Crinum powellii* Baker (Amaryllidaceae), Zoobotánico de Jerez, Jerez de la Frontera (Cádiz), 15.vii.2012, C-5147.

References

- BALACHOWSKY, A.S. 1935. Les cochenilles de l'Espagne. *Revue de Pathologie végétale et d'Entomologie agricole de France*, **22**: 255-269.
- BALACHOWSKY, A.S. 1954. Les cochenilles paléarctique de la tribu des Diaspidini. *Memmoires Scientifiques de l'Institut Pasteur*. Paris, 450 pp.
- BELTRA, A & A. SOTO 2011. New records of mealybugs (Hemiptera: Pseudococcidae) from Spain. *Phytoparasitica*, **39**: 385-387.
- BEN-DOV, Y., D.R. MILLER & G.A.P. GIBSON 2014. ScaleNet: a database of the scale insects (Hemiptera: Coccoidea) of the world. December, 2014. <http://www.sel.barc.usda.gov/scalenet/htm>
- BLAY GOICOECHEA, M.A. 1993. *La familia Diaspididae Targioni-Tozzetti, 1868 de España peninsular y Baleares (Insecta: Hemiptera: Coccoidea)*. Editorial de la Universidad Complutense de Madrid, Tesis Doctoral, Madrid, 736 pp.
- FERRIS, G.F. 1954. Report upon scale insects collected in China (Homoptera: Coccoidea). Part V. (Contribution No. 89). *Micrentomology*, **19**: 51-66.
- FOLDI, I. 2001. Liste des cochenilles de France (Hemiptera, Coccoidea). *Bulletin de la Société Entomologique de France*, **106**(3): 303-308.
- GARCIA MERCET, R. 1930. Los afelínidos de España. *Revista de Biología Forestal y Limnología*, (B)**2**(2): 29-106.
- GÓMEZ-MENOR ORTEGA, J. 1937. *Cóccidos de España*. Instituto de Investigaciones Agrarias. Estación de Fitopatología Agrícola de Almería, 432 pp.
- GÓMEZ-MENOR ORTEGA, J. 1946. Adiciones a los "Cóccidos de España". 1ª Nota. *Eos*, **22**: 59-106.
- GÓMEZ-MENOR ORTEGA, J. 1958. Distribución geográfica y ensayo de la ecología de los Cócidos en España. *Publicaciones del Instituto de Biología Aplicada de Barcelona*, **27**: 5-15.
- GÓMEZ-MENOR ORTEGA, J. 1960. Adiciones a los "Cócidos de España". V. (Superfamilia Coccoidea). *Eos*, **36**: 157-204.
- GREEN, E.E. 1896. A new British coccid. *Entomologist's Record and Journal of Variation*, **8**: 260-261.
- HOY, J.M. 1963. A catalogue of the Eriococcidae (Homoptera: Coccoidea) of the world. *New Zealand Department of Scientific and Industrial Research Bulletin*, **150**: 1-260.
- KÖHLER, G. 1998. Eriococcidae. 371-402. En: Kozár, F., Ed., *Catalogue of Palaearctic Coccoidea*. Plant Protection Institute, Hungarian Academy of Sciences, Budapest, Hungary, 526 pp.
- MATILE-FERRERO, D. 1988. Sternorrhyncha: Suborder Coccoidea of Saudi Arabia (Part 2). *Fauna of Saudi Arabia*, **9**: 23-38.
- SÁNCHEZ GARCÍA, I. 2004. El maná bíblico llega a España. *Quercus*, **222**: 42-43.
- SPODEK, M., Y. BEN-DOV, A. PTOTASOV, C.J. CARVALHO & Z. MENDEL 2014. First record of *Dactylopius opuntiae* (Cockerell) (Hemiptera: Coccoidea: Dactylopiidae) from Israel. *Phytoparasitica* **42**: 377-379.

Annex I

List of scales recorded in Iberian Peninsula (A: Andorra, G: Gibraltar,
P: Portugal mainland, S: Spanish mainland) and Balearic Islands (BI).

Acleridae		
<i>Aclerda berlesii</i> Buffa	.....	S
<i>Aclerda subterranea</i> Signoret	.....	S
Asterolecaniidae		
<i>Asterodiaspis bella</i> (Russell)	.....	P
<i>Asterodiaspis ilicicola</i> (Targioni Tozzetti)	.....	S, P
<i>Asterodiaspis quercicola</i> (Bouché)	.....	P
<i>Asterodiaspis roboris</i> (Russell)	.....	S
<i>Asterodiaspis variolosa</i> (Ratzeburg)	.....	S, P
<i>Asterodiaspis conimbrigense</i> Saraiva	.....	P
<i>Asterodiaspis epidendri</i> (Bouché)	.....	P
<i>Asterodiaspis seabrai</i> Saraiva	.....	P
<i>Bambusaspis bambusae</i> (Boisduval)	.....	P
<i>Planchonia arabidis</i> Signoret	.....	S, P
<i>Planchonia fimbriata</i> (Boyer de Fonscolombe)	.....	S, P
<i>Pollinia pollini</i> (A. Costa)	.....	S
Cerococcidae		
<i>Cerococcus camarai</i> Neves	.....	P
<i>Cerococcus pocilliferus</i> Neves	.....	P
Coccidae		
<i>Cajalecanium salicorniae</i> Gómez-Menor Ortega	.....	S
<i>Ceroplastes rusci</i> (Linnaeus)	.....	S, P
<i>Ceroplastes sinensis</i> Del Guercio	.....	S, P
<i>Coccus hesperidum</i> Linnaeus	.....	S, P
<i>Coccus pseudomagnoliarum</i> (Kuwana)	.....	S
<i>Eriopletis festucae</i> (Boyer de Fonscolombe)	.....	S, P
<i>Eucalymnatus tessellatus</i> (Signoret)	.....	S
<i>Eulecanium tiliae</i> (Linnaeus)	.....	S, P
<i>Filippia follicularis</i> (Targioni Tozzetti)	.....	S
<i>Lecanopsis aphenogastrorum</i> Gómez-Menor Ortega	.....	S
<i>Lecanopsis formicarum</i> Newstead	.....	S
<i>Lichtensia viburni</i> Signoret	.....	S, P
<i>Palaeolecanium bituberculatum</i> (Signoret)	.....	S
<i>Parafairmairia bipartita</i> (Signoret)	.....	S
<i>Parafairmairia gracilis</i> Green	.....	P
<i>Parasaissetia nigra</i> (Nietner)	.....	S, P
<i>Parthenolecanium corni corni</i> (Bouché)	.....	P
<i>Parthenolecanium persicae persicae</i> (Fabricius)	.....	S, P
<i>Parthenolecanium pomeranicum</i> (Kawecki)	.....	S
<i>Parthenolecanium rufullum</i> (Cockerell)	.....	S
<i>Physokermes hemicyphus</i> (Dalman)	.....	S
<i>Protopulvinaria pyriformis</i> (Cockerell)	.....	S, P
<i>Pulvinaria elongata</i> Newstead	.....	S
<i>Pulvinaria floccifera</i> (Westwood)	.....	S, P
<i>Pulvinaria vitis</i> (Linnaeus)	.....	S, P
<i>Pulvinariella mesembryanthemi</i> (Vallot)	.....	S, P
<i>Rhizopulvinaria artemisiae</i> Signoret	.....	S, P
<i>Saissetia coffeae</i> Walker	.....	S, P
<i>Saissetia ficcinum</i> (Paoli)	.....	S
<i>Saissetia miranda</i> (Cockerell & Parrott in Cockerell)	.....	P
<i>Saissetia oleae cherimoliae</i> (Gómez-Menor Ortega)	.....	S
<i>Saissetia oleae oleae</i> (Olivier)	.....	S, P
<i>Sphaerolecanium prunastri</i> (Boyer de Fonscolombe)	.....	S
<i>Stotzia ephedrae</i> (Newstead)	.....	S
Diaspididae		
<i>Adiscodiaspis ericicola</i> (Marchal)	.....	S
<i>Aonidia ilicitana</i> Gómez-Menor Ortega	.....	S
<i>Aonidia lauri</i> (Bouche)	.....	S, P
<i>Aonidia mediterranea</i> (Lindinger)	.....	S
<i>Aonidiella aurantii</i> (Maskell)	.....	S, P
<i>Aonidiella lauretorum</i> (Lindinger)	.....	P
<i>Aonidiella taxus</i> Leonardi	.....	S
<i>Aonidiella tinertensis</i> (Lindinger)	.....	P
<i>Aspidiotus hedericola</i> Leonardi	.....	S
<i>Aspidiotus juglandis</i> Colvee	.....	S
<i>Aspidiotus nerii</i> Bouche	.....	S, P
<i>Aulacaspis rosae</i> (Bouché)	.....	S, P
<i>Carulaspis atlantica</i> (Lindinger)	.....	S
<i>Carulaspis juniperi</i> (Bouché)	.....	S, P
<i>Carulaspis minima</i> (Signoret)	.....	S, P
<i>Carulaspis visci</i> (Schrank)	.....	S, P
<i>Chinaspis vellae</i> Gómez-Menor Ortega	.....	S
<i>Chionaspis austriaca</i> Lindinger	.....	S
<i>Chionaspis etrusca</i> Leonardi	.....	S
<i>Chionaspis lepinyei</i> Balachowsky	.....	S
<i>Chionaspis salicis</i> (Linnaeus)	.....	S, P
<i>Chrysomphalus aonidum</i> (Linnaeus)	.....	S, P
<i>Chrysomphalus dictyospermi</i> (Morgan)	.....	S, P
<i>Chrysomphalus diversicolor</i> (Green)	.....	P
<i>Chrysomphalus pinnulifer</i> (Maskell)	.....	S, P
<i>Comstockaspis perniciososa</i> (Comstock)	.....	S, P
<i>Diaspidiotus ancyclus</i> (Putnam)	.....	S, P
<i>Diaspidiotus bavaricus</i> (Lindinger)	.....	S, P
<i>Diaspidiotus botanicus</i> (Gómez-Menor Ortega)	.....	S, P
<i>Diaspidiotus cecconii</i> (Leonardi)	.....	S, P
<i>Diaspidiotus degeneratus</i> (Leonardi in Berlese & Leonardi)	.....	P
<i>Diaspidiotus distinctus</i> (Leonardi)	.....	S
<i>Diaspidiotus gigas</i> (Thiem & Gerneck)	.....	S
<i>Diaspidiotus jaapi</i> (Leonardi)	.....	S
<i>Diaspidiotus labiatarum</i> (Marchal)	.....	S
<i>Diaspidiotus lenticularis</i> (Lindinger)	.....	S
<i>Diaspidiotus mairei</i> (Balachowsky)	.....	S
<i>Diaspidiotus ostreaeformis</i> (Curtis)	.....	S, P
<i>Diaspidiotus pyri</i> (Lichtenstein)	.....	S
<i>Diaspidiotus thymicola</i> (Balachowsky)	.....	S
<i>Diaspidiotus uvae</i> (Comstock)	.....	S, P
<i>Diaspidiotus zonatus</i> (Frauenfeld)	.....	S, P
<i>Diaspis boisduvalii</i> Signoret	.....	S, P
<i>Diaspis bromeliae</i> (Kerner)	.....	S, P
<i>Diaspis coccoides</i> Lichtenstein	.....	S
<i>Diaspis echinocacti</i> (Bouché)	.....	G, S, P
<i>Discodiaspis numidica</i> (Balachowsky)	.....	S
<i>Discodiaspis salicorniae</i> (Gómez-Menor Ortega)	.....	S
<i>Duplachionaspis berlesii</i> (Leonardi)	.....	S
<i>Duplachionaspis natalensis</i> (Maskell)	.....	S
<i>Duplachionaspis noeaeae</i> (Hall)	.....	S
<i>Dynaspidiotus abietis</i> (Schrank)	.....	S
<i>Dynaspidiotus britannicus</i> (Newstead)	.....	S, P
<i>Dynaspidiotus ephedrarum</i> (Lindinger)	.....	S
<i>Dynaspidiotus regnieri</i> (Balachowsky)	.....	S
<i>Epidiaspis leperii</i> (Signoret)	.....	S, P
<i>Fiorinia fiorinae</i> (Targioni Tozzetti)	.....	S
<i>Fiorinia phoenicis</i> Balachowsky	.....	S
<i>Fiorinia pinicola</i> Maskell	.....	P
<i>Furchadaspis zamiae</i> (Morgan)	.....	S, P
<i>Gomezmenoraspis pinicola</i> (Leonardi)	.....	S, P
<i>Gonaspidiotus minimus</i> (Leonardi in: Berlese & Leonardi)	.....	S
<i>Gymnaspidiotus aechmeae</i> Newstead	.....	S
<i>Hemiberlesia caricis</i> (Gómez-Menor Ortega)	.....	S
<i>Hemiberlesia laciniata</i> Gómez-Menor Ortega	.....	S
<i>Hemiberlesia lataniae</i> (Signoret)	.....	S, P
<i>Hemiberlesia palmae</i> (Cockerell)	.....	S, P
<i>Hemiberlesia rapax</i> (Comstock)	.....	S, P
<i>Hemiberlesia silvestrii</i> Gómez-Menor Ortega	.....	S
<i>Howardia biclavata</i> (Comstock)	.....	S, P
<i>Ischnaspis longirostris</i> Signoret	.....	P
<i>Kuwanaspis pseudoleucaspis</i> (Kuwana)	.....	P
<i>Lepidosaphes beckii</i> (Newman)	.....	S, P
<i>Lepidosaphes conchiformis</i> (Gmelin)	.....	S, P
<i>Lepidosaphes flava</i> (Signoret)	.....	S
<i>Lepidosaphes gloverii</i> (Packard)	.....	S, P
<i>Lepidosaphes juniperi</i> Lindinger	.....	S
<i>Lepidosaphes pinnaeformis</i> (Bouché)	.....	S, P
<i>Lepidosaphes ulmi</i> (Linnaeus)	.....	S, P
<i>Leucaspis lowi</i> Colvée	.....	S, P
<i>Leucaspis pini</i> (Hartig)	.....	S, P
<i>Leucaspis pusilla</i> Löw	.....	S, P
<i>Lindingaspis rossi</i> (Maskell)	.....	S, P
<i>Lineaspis striata</i> (Newstead)	.....	S
<i>Melanaspis bromiliae</i> (Leonardi)	.....	P
<i>Melanaspis smilacis</i> (Comstock)	.....	S, P
<i>Mercetaspis benitezi</i> Gómez-Menor Ortega	.....	S
<i>Mercetaspis sphaerocarphae</i> Gómez-Menor Ortega	.....	S
<i>Mohelinaspis toletana</i> (Gómez-Menor Ortega)	.....	S
<i>Oceanaspidiotus spinosus</i> (Comstock)	.....	S, P
<i>Odonaspis ruthae</i> Kotinsky	.....	P
<i>Paraepidiaspis staticicola</i> (Gómez-Menor Ortega)	.....	S
<i>Parlatoria blanchyardi</i> (Targioni Tozzetti)	.....	S
<i>Parlatoria camelliae</i> Comstock	.....	S, P
<i>Parlatoria cinerea</i> Hadden in Doane & Hadden	.....	S

<i>Parlatoria oleae</i> (Colvée).....	S, P
<i>Parlatoria pergandii</i> Comstock.....	S, P
<i>Parlatoria proteus</i> (Curtis).....	S
<i>Parlatoria theae</i> Cockerell.....	S, P
<i>Parlatoria ziziphi</i> (Lucas).....	S, P
<i>Pinnaspis aspidistrae aspidistrae</i> (Signoret).....	S, P
<i>Pinnaspis buxi</i> (Bouché).....	S
<i>Pseudaulacaspis pentagona</i> (Targioni Tozzetti).....	Bl, S, P
<i>Pseudoparlatoria parlatorioides</i> (Comstock).....	S
<i>Rhizaspidotus adiscus</i> Gómez-Menor Ortega.....	S
<i>Rhizaspidotus canariensis</i> (Lindinger).....	S
<i>Rhizaspidotus donacis</i> (Leonardi).....	S
<i>Targionia halophila</i> (Balachowsky).....	S
<i>Targionia nigra</i> Signoret.....	S
<i>Targionia vitis</i> (Signoret).....	S, P
<i>Unaspis citri</i> (Comstock).....	S, P
<i>Unaspis euonymi</i> (Comstock).....	S, P
<i>Unaspis permutans</i> (Green).....	S
Eriococcidae	
<i>Acanthococcus araucariae</i> (Maskell).....	S, P
<i>Acanthococcus araucariae nudus</i> (Gómez-Menor Ortega).....	S
<i>Acanthococcus bezzii</i> (Leonardi).....	S
<i>Acanthococcus ericae</i> (Signoret).....	S
<i>Eriococcus buxi</i> (Boyer de Fonscolombe).....	S
<i>Eriococcus devoniensis</i> (Green).....	S
<i>Eriococcus formicicola</i> Newstead.....	S
<i>Eriococcus greeni</i> Newstead.....	S
<i>Eriococcus roboris</i> Goux.....	P
<i>Eriococcus spurius</i> (Modeer).....	S, P
<i>Eriococcus thymeleae</i> Newstead.....	S
<i>Eriococcus thymi</i> (Schrank).....	S, P
<i>Ovaticoccus agenjoi</i> (Gómez-Menor Ortega).....	S
<i>Pseudochermes fraxini</i> (Kaltenbach).....	S, P
Kermesidae	
<i>Kermes bacciformis</i> Leonardi.....	S
<i>Kermes ilicis</i> (Linnaeus).....	S, P
<i>Kermes quercus</i> (Linnaeus).....	P
<i>Kermes roboris</i> (Fourcroy).....	S, P
<i>Kermes vermilio</i> Planchon.....	S, P
<i>Nidularia pulvinata</i> (Planchon).....	S, P
Kuwaniidae	
<i>Kuwania rubra</i> Goux.....	S, P
Lecanodiaspididae	
<i>Lecanodiaspis sardoa</i> Targioni Tozzetti.....	S, P
Margarodidae	
<i>Dimargarodes mediterraneus</i> (Silvestri).....	S
<i>Porphyrophora boliviari</i> (Balachowsky).....	S
Matsucoccidae	
<i>Matsucoccus feytaudi</i> Ducassee.....	S, P
<i>Matsucoccus pini</i> Green.....	S
Micrococcidae	
<i>Micrococcus baeticae</i> Matile-Ferrero & Williams.....	S
<i>Micrococcus silvestrii</i> Leonardi.....	S
Monophlebidae	
<i>Gueriniella serratulae</i> (Fabricius).....	S, P
<i>Icerya purchasi</i> Maskell.....	S, P
<i>Palaeococcus fuscipennis</i> (Burmeister).....	S
Ortheziidae	
<i>Arctorthezia cataphracta</i> (Olafsen).....	S
<i>Arctorthezia occidentalis</i> (Douglas).....	S
<i>Insignorthezia insignis</i> Browne.....	P
<i>Newsteadia floccosa</i> (De Geer).....	S
<i>Orthezia urticae</i> (Linnaeus).....	S, P
<i>Orthezinella hispanica</i> Silvestri.....	S
<i>Ortheziola szelenyii</i> Kozár & Konczné Benedicty.....	P
Phoenicococcidae	
<i>Phoenicococcus marlatti</i> Cockerell.....	S
Pseudococcidae	
<i>Amonostherium rorismarinis</i> (Boyer de Fonscolombe).....	S
<i>Antonina crawi</i> Cockerell.....	S
<i>Antonina graminis</i> (Maskell).....	S
<i>Antonina purpurea</i> Signoret.....	S
<i>Atrococcus paludinus</i> (Green).....	P
<i>Balanococcus scirpi</i> (Green).....	P
<i>Chaetococcus phragmitis</i> (Marchal).....	S
<i>Cucullocooccus arrabidensis</i> (Neves).....	S, P
<i>Delottococcus aberiae</i> (De Lotto).....	S
<i>Dysmicoccus bonisis</i> (Kuwana).....	S
<i>Dysmicoccus walkeri</i> (Newstead).....	S
<i>Ferrisia malvastra</i> (McDaniel).....	S
<i>Fonscolombia tomlinii</i> (Newstead).....	S
<i>Gomezmenoricoccus hispanicus</i> (Gómez-Menor Ortega).....	S
<i>Heliococcus bohemicus</i> Sulc.....	S
<i>Heliococcus minutus</i> (Green).....	S
<i>Hypogeococcus pungens</i> Granara de Willink.....	S
<i>Iberococcus andalusicus</i> Gómez-Menor Ortega.....	S
<i>Mirococcopsis subterranea</i> (Newstead).....	S
<i>Nipaeococcus dalessusi</i> (Balachowsky).....	S
<i>Nipaeococcus nipae</i> (Maskell).....	S, P
<i>Paracoccus leucadendri</i> Mazzeo & Franco.....	P
<i>Peliococcus cycliger</i> (Leonardi).....	S
<i>Phenacoccus gossypii</i> Townsend & Cockerell.....	S
<i>Phenacoccus hystrix</i> (Baerensprung).....	S
<i>Phenacoccus maderiensis</i> Green.....	S, P
<i>Phenacoccus meridionalis</i> Gómez-Menor Ortega.....	S
<i>Phenacoccus parietariae</i> (Lichtenstein).....	S
<i>Phenacoccus peruvianus</i> Granara de Willink.....	S, P
<i>Phenacoccus solani</i> Ferris.....	S
<i>Phenacoccus yerushalmi</i> Ben-Dov.....	S, P
<i>Planococcus citri</i> (Risso).....	S, P
<i>Planococcus ficus</i> (Signoret).....	S, P
<i>Planococcus vovae</i> (Nasonov).....	S, P
<i>Pseudococcus calceolariae</i> (Maskell).....	S, P
<i>Pseudococcus cryptus</i> Hempel.....	S
<i>Pseudococcus longispinus</i> (Targioni Tozzetti).....	S, P
<i>Pseudococcus viburni</i> (Signoret).....	S, P
<i>Seabrina cistorum</i> Neves.....	S, P
<i>Trabutina andreui</i> Gómez-Menor Ortega.....	S
<i>Trabutina elastica</i> Marchal.....	S
<i>Trabutina mannipara</i> (Hemprich & Ehrenberg in Ehrenberg).....	S
<i>Trionymus perrisii</i> (Signoret).....	P
<i>Vryburgia amaryllidis</i> (Bouché).....	P
Putoidae	
<i>Puto caballeroi</i> (Gómez-Menor Ortega).....	S
Rhizoecidae	
<i>Rhizoecus falcifer</i> Kunckel d'Herculais.....	S
Xylococcidae	
<i>Xylococcus filiferus</i> Löw.....	S