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**Notes on scale insects (*Homoptera, Coccoidea*) found in Crete
and their parasites**

Abstract

Twelve *Coccoidea* species collected in Crete in June 1975 are given, as well as four species of parasites reared from them.

The fauna of scale insects of Crete is not much known. In available literature there have been found only some mentions of the occurrence of these insects in this island (LEONARDI 1920, KORONÉOS 1934, ARGYRIOU 1963, 1976, DEBACH and ARGYRIOU 1967, MOURIKIS and VASSILAINA-ALEXOPOULOU 1975, ARGYRIOU and PALOUKIS 1976).

Studies on scale insects of this area are not only of cognitive significance because several of them in this climatic zone are qualified as economically important plant pests. It is also important to recognize their parasites which to a smaller or greater extent control their numbers in the field.

Twelve *Coccoidea* species collected by the author during her stay in Crete in June 1975 are mentioned below, as well as four species of parasites reared from them.

Chalcidoidea were elaborated under the guidance of Dr. V. A. TRJAPITZIN. The author wants to express her warmest gratitude and sincere thanks to Dr. V. A. TRJAPITZIN for the introduction into the subject. She is extremely grateful for his generous hospitality, encouragement and valuable help during her stay in the Zoological Institute of the Academy of Sciences in Leningrad.

Host plants have been determined by Pelagia PODLECKA, M. Sc., from the Botanical Garden of the Warsaw University.

LIST OF SPECIES

*Margarodidae*1. *Gueriniella serratulae* (F.)

Description: LEONARDI (1920), SILVESTRI (1939), BORCHSENIUS (1950).
Mediterranean species. Polyphagous species.

Locality: Stalis, June 11, 12 and 15, 1975 — ♀♀.

Host plant: *Scolymus* sp. (*Compositae*), *Tamarix* sp. (*Tamaricaceae*), *Umbelliferae*.

Parasite: *Cryptochetum grandicorne* RD.¹ (*Diptera*, *Cryptochetidae*). Species known from *G. serratulae* in the region of the Mediterranean Sea (HENNIG 1937).

2. *Icerya purchasi* MASK.

Description: LEONARDI (1920), SILVESTRI (1939), BORCHSENIUS (1950).

Australian species distributed pan-tropically with extension into lower temperate regions (ZIMMERMAN 1948). Polyphagous species. It is often injurious (BALACHOWSKY 1957). It decreases the commercial quality of citrus fruit by the heavy exudation of honeydew which causes the development of the sooty mould (BODENHEIMER 1951).

Locality: Iraklion, June 16, 1975 — ♀♀.

Host plant: *Pittosporum tobira* (THNB.) AIT. (*Pittosporaceae*).

*Coccidae*3. *Coccus hesperidum* L.

Description: LEONARDI (1920), SILVESTRI (1939), ZIMMERMAN (1948), BORCHSENIUS (1950, 1957), DE LOTTO (1959), EZZAT and HUSSEIN (1967).

Species distributed all over the world. In subtropics and tropics it lives in the open, in temperate zones it occurs commonly in greenhouses. It is frequently found on indoor plants. Polyphagous species. Injurious, especially for citrus plants and in greenhouses.

Locality: Stalis, June 11, 1975; Iraklion, June 16, 1975. — ♀♀.

Host plant: *Elaeagnus pungens* THNB. (*Elaeagnaceae*).

Parasite: *Coccophagus lycimnia* (WALKER) (*Chalcidoidea*, *Aphelinidae*). Almost cosmopolitan species, known from many species of scale insects of the family *Coccidae* (JASNOSH 1978) including also Poland (ŽAK-OGAZA 1961).

¹ Determined by E.P. NARTSHUK.

4. *Sphaerolecanium prunastri* (FONSC.)

Description: SILVESTRI (1920, 1939), BORCHSENIUS (1957).

Southern Palaearctic element, perhaps Mediterranean (Irano-Turanien) (BODENHEIMER 1953b). It occurs in central and southern Europe, in Asia and in North America where it has been most probably introduced. It is connected with *Rosaceae*, mainly with stone-fruit plants. Damage to almond-trees caused by this species has been observed in Crete (ARGYRIOU and PALOUKIS 1976). In Poland it seems to begin to be a species of economical importance. It occurs abundantly on hedges of *Prunus divaricata* LEDEB. There has been noted also one case when it has damaged a prune orchard (KAWECKI 1972).

Locality: Festos, June 16, 1975 - ♀♀.

Host plant: unidentified.

Parasite: *Cerapterocerus mirabilis* WESTW. (*Chalcidoidea*, *Encyrtidae*). Known from Europe and Asia. Hyperparasite of *Sphaerolecanium prunastri* (FONSC.), *Parthenolecanium corni* (BOUCHÉ) and of some other species of scale insects (TRJAPITZIN 1978). In Poland known from *S. prunastri* (ŻAK-OGAZA 1961).

5. *Saissetia hemishaerica* (TARG.-TOZZ.)

Description: LEONARDI (1920), ZIMMERMAN (1948), BORCHSENIUS (1957).

Tropical species widely distributed all over the world, commonly occurring in greenhouses and on indoor plants. It attacks many tropical and subtropical plant species; it is a serious pest in greenhouses, especially of ferns and sago palms.

Locality: Iraklion, June 16, 1975 - ♀♀.

Host plant: *Ficus* sp. (*Moraceae*).

6. *Ceroplastes rusci* (L.)

Description: LEONARDI (1920), SILVESTRI (1939), BORCHSENIUS (1957), EZZAT and HUSSEIN (1967).

Numerous localities of this species are recorded in the whole region of the Mediterranean Sea, also on Far East (Japan), Australia, South America and South Africa. Its occurrence in England (KLOET and HINCKS 1964) and in Poland (SZULCZEWSKI 1927) concerns artificial conditions. Polyphagous species, causing the greatest damage to fig-trees.

Locality: Stalis, June 13, 1975; Iraklion, June 16, 1975 - ♀♀.

Host plant: *Ficus carica* L. (*Moraceae*), *Pittosporum tobira* (THUNB.) AIT (*Pittosporaceae*).

Diaspididae

7. *Lepidosaphes ulmi* (L.)

Description: LEONARDI (1920), KORONÉOS (1934), SILVESTRI (1939), BORCHSENIUS (1950), ZAHRADNÍK (1951), BALACHOWSKY (1954), FERRIS (1954),

McKENZIE (1956), SCHMUTTERER (1959), BAZAROV and ŠMELEV (1971).

This armoured scale insect is distributed almost all over the world. Polyphagous species. Known pest of apple-trees in Europe and North America (BORCHSENIUS 1966). Causes great damages in northern regions of middle Asia and Kazakstan.

Locality: Stalis, June 13, 1975 — ♀♀.

Host plant: *Ceratonia siliqua* L. (*Leguminosae*).

8. *Nilotaspis halli* (GREEN)

Description: KORONÉOS (1934), BORCHSENIUS (1950), BODENHEIMER (1953a), BALACHOWSKY (1954), McKENZIE (1956), FERRIS (1958), BAZAROV and ŠMELEV (1971).

So-called Palestinian or Egyptian armoured scale insect known from the eastern region of the Mediterranean Sea, but also distributed in Asia Minor and in middle Asia and introduced to California (BORCHSENIUS 1966). Polyphagous species, mainly connected with *Rosaceae*. Injurious. In California it is the subject of intense eradication by the Federal Department of Agriculture.

Locality: Féstos, June 16, 1975 — ♀♀.

Host plant: unidentified.

9. *Leucaspis pusilla* LÖW

Description: LEONARDI (1920), KORONÉOS (1934), BORCHSENIUS (1950).

Species distributed in the Mediterranean region, has been recorded also in Argentina. Very common in Greece. According to the available literature, Hungary seems to be the locality of its European occurrence farthest to the north (KOSZTARAB and KOZAR 1978)¹. ZAHRADNÍK (1951) although questioning the recorded locality of *L. pusilla* in Czechoslovakia does not exclude the possibility of the occurrence of this species in this country. Similarly SCHMUTTERER (1959) has considered as possible to find *L. pusilla* in the southern part of "Deutschland". This armoured scale insect lives on pine-tree needles. Causes great damage, needle fall and decaying plants.

Locality: Knossos, June 11, 1975; Féstos, June 16, 1975 — larvae of the second stage.

Host plant: *Pinus pinea* L. (*Pinaceae*).

Parasite: *Prospaltella leucaspidis* MERCET (*Chalcidoidea, Aphelinidae*). Species distributed in Europe; also recorded in Caucasus. It is a parasite of some *Diaspididae* species (JASNOSH 1978). In Poland known from *Leucaspis* sp. (ŽAK-OGAZA 1961).

10. *Aspidiotus nerii* BOUCHÉ

In coccidological literature commonly known as *Aspidiotus hederæ* (VALLOT).

Description: LEONARDI (1920), KORONÉOS (1934), SILVESTRI (1939), ZIM-

¹ LEONARDI (1920) has mentioned among localities of *L. pusilla* Austria and "Germania" but they are not given in Catalogue of BORCHSENIUS (1966).

MERMAN (1948), BORCHSENIUS (1950), BALACHOWSKY (1956), MCKENZIE (1956), FERRIS (1958), SCHMUTTERER (1959), BAZAROV and ŠMELEV (1971).

Species widely distributed all over the tropical and subtropical zones, also in greenhouses and on indoor plants of countries having a temperate climate (BORCHSENIUS 1966).

Polyphagous species. Injurious. Common in all parts of Greece. Cases of severe infestation have occurred in many olive-groves, particularly in Central Greece and Crete. This scale, living on various kind of citrus, prefers lemon-trees to which it causes considerable damage (ARGYRIOU 1976). Recorded in Poland on lemons imported from Greece, Italy, Tunisia and Spain (KOMOSIŃSKA-CZWAR-TACKA 1964).

Locality: Stalis, June 12 and 13, 1975; Iraklion, June 16, 1975. — ♀♀.

Host plant: *Ceratonia siliqua* L. (*Leguminosae*); *Buddleya* sp. (*Loganiaceae*), *Agave americana* L. (*Amaryllidaceae*), *Palmae*.

11. *Aonidiella aurantii* (MASKELL)

Description: LEONARDI (1920), KORONÉOS (1934), BORCHSENIUS (1950), BALACHOWSKY (1956), MCKENZIE (1956), FERRIS (1958).

Species widely distributed in tropics and hot subtropics of the world (BORCHSENIUS 1966). Polyphagous species. It damages many plants. Belongs to the most serious citrus pests of the world. Known in Crete (DEBACH and ARGYRIOU 1967). In east Africa, where it occurs commonly, it is also a dangerous pest of roses (DE LOTTO 1967). In Poland has been recorded on oranges, lemons and grapefruits imported from Mediterranean countries (KOMOSIŃSKA-CZWAR-TACKA 1964).

Locality: Stalis, June 11, 1975 — ♀♀.

Host plant: *Citrus sinensis* (L.) OSBECK (*Rutaceae*) in a variety; *Elaeagnus pungens* THUNB. (*Elaeagnaceae*).

12. *Hemiberlesia lataniae* (SIGNORET)

Description: KORONÉOS (1934), ZIMMERMAN (1948), BORCHSENIUS (1950), BALACHOWSKY (1956), MCKENZIE (1956), FERRIS (1958), SCHMUTTERER (1959).

Species widely distributed in the world in tropical and subtropical zones, also in greenhouses in temperate climate (BORCHSENIUS 1966). Polyphagous species. Injurious.

Locality: Stalis, June 13, 1975 — ♀♀.

Host plant: *Ceratonia siliqua* L. (*Leguminosae*).

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STRESZCZENIE

[Tytuł: Materiały do fauny czerwców (*Coccoidea*) Krety i ich pasożytów]

W pracy podano 12 gatunków czerwców (*Coccoidea*) zebranych na Krecie w czerwcu 1975 r. oraz 4 gatunki wyhodowanych z nich pasożytów.

РЕЗЮМЕ

[Заглавие: Материалы к фауне *Coccoidea* Крита и их паразитов]

В работе приведены 12 видов *Coccoidea* собранных автором на острове Крит в июне 1975 г. и 4 вида паразитов выведенных из них.

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