

A C T A Z O O L O G I C A
C R A C O V I E N S I A

Tom XII

Kraków, 30. IX. 1967

Nr 9

Barbara ŻAK-OGAŻA

**Materials to the Knowledge of the Scale Insects Fauna of Yugoslavia
(Homoptera, Coccoidea)**

[Pp. 211—218]

Materialy do fauny czerwów (*Homoptera, Coccoidea*) Jugosławii

Материалы к фауне кокцид (*Homoptera, Coccoidea*) Югославии

Abstract. The author presents the results of investigations on the scale insects fauna of Yugoslavia. 25 species are given, 7 of which are new for the fauna of this country.

The material was collected in June, July, August and September in the years 1965—1966. Species from Rab, Split and Dubrovnik were collected by Dr Zofia KAWECKA and Professor Zbigniew KAWECKI who kindly handed them over to me for elaboration and to whom I would like here to express my gratitude. 25 species of scale insects belonging to the families *Ortheziidae*, *Margarodidae*, *Pseudococcidae*, *Coccidae* and *Diaspididae* were investigated. 23 species were collected on the seashore, and 2 on the territory of the National Park, Plitvička Jezera.

Out of 25 species reported in this paper 7 were not hitherto known in the fauna of Yugoslavia. Information on the remaining 18 species is found chiefly in the works of BACHMANN (1953) and SCHMIDT (1955, 1956). It is repeated in this paper as some biological data have been added and the systematic treatment of individual species is more up-to-date.

Preparations were made using the generally accepted methods. The collected materials are in the Department of Zoology, Agricultural College in Warsaw (SGGW) and in the Department of Zoology, the Cracow College of Agriculture (WSR). The plants were determined by Docent Dr Adam JASIEWICZ to whom the author wishes to express her thanks.

LIST OF SPECIES

Species are given in the systematic order, giving the host plant (in most cases), date and place of collection, and the development stage. Species new for Yugoslavia are marked with an asterisk.

Family: *Ortheziidae***1. *Orthezia urticae* (L.)**

host: *Urtica* sp.

loc.: Duba, 19 Sept. 1965 — numerous larvae; Plitvička Jezera, 25 July 1966 — numerous ♀♀.

Nearly cosmopolitan species (MORRISON 1952), reported from Yugoslavia from Zagreb and Hrvatska (SCHMIDT 1956).

Family: *Margarodidae***2. *Icerya purchasi* MASK.**

host: *Spartium junceum* L.

loc.: Split, 10 July 1965 — ♀♀; Sutomore, 24 Sept. 1965 — larvae and ♀♀.

Cosmopolitan species, collected on numerous species of plants in Yugoslavia.

Family: *Pseudococcidae****3. *Pseudococcus comstocki* (KUW.)**

host: *Pittosporum tobira* (THUNDB.) DRYAND

loc.: Rab, 19 June, 1965 — 4 ♀♀ with eggs in ovisac.

Nearly cosmopolitan species, polyphagous (BORCHSENIUS 1949). Probably not distinguished from *Pseudococcus adonidum* (GEOFFR.) in Yugoslavia.

***4. *Trionymus aberrans* GOUX**

host: in sheaths, *Agropyrum intermedium* (HOST) BEAUV.

loc.: Sutomore, 23 Sept. 1965 — ♀♀ with eggs in ovisac.

Species known only from France, the European part of the U. S. S. R. (BORCHSENIUS 1949), Germany (SCHMUTTERER 1952 b), Hungary (ŽAK-OGAZA 1966) and Poland (KOTEJA & ŽAK-OGAZA 1966).

***5. *Paroudablis interruptus* GREEN**

host: *Gramineae*

loc.: Rab, 23 June 1965 — 2 ♀♀ before oviposition.

Species known hitherto from England (GREEN 1923), U. S. S. R. (Ukraine, Armenia) (BORCHSENIUS 1949) and Poland (ŽAK-OGAZA & KOTEJA 1964).

***6. *Macrocerococcus superbus* LEON**

host: *Gramineae*

loc.: Rab, 23, 25, 26 June 1965 — numerous ♀♀.

Polyphagous species of Ponto-Mediterranean range (SCHMUTTERER 1952 a).

Family: *Eriococcidae*

***7. *Rhizococcus cynodontis* (KIR.)**

host: *Cynodon dactylon* L.

loc.: Živogošće, 5 Aug. 1966 — very numerous ♀♀ in ovisac during oviposition.

The species has been hitherto collected only in Crimea, Armenia (DANZIG 1962) and Hungary (ŽAK-OGAZA 1966). It was always collected on *Cynodon dactylon* L. It occurs in characteristic colonies on leaves of its host. Judging from observations in Hungary and Yugoslavia it has two generations in a year.

Family: *Coccidae*

8. *Eriopeltis festucae* (FONSC.)

host: *Gramineae*

loc.: Rab, 25, 27, 28 June 1965 — numerous ♀♀ in ovisac after oviposition; Duba, 24 Sept.

1965 — ♀ in ovisac, parasite infected; Blato, 10 Aug. 1966 — numerous ♀♀ in ovisac after oviposition; Čenja, 14 Aug. 1966 — numerous ♀♀ in ovisac parasite infected.

Nearly cosmopolitan species, collected on several species of grasses. Reported from Yugoslavia from the coast in 1912 (SCHMIDT 1956).

9. *Filippia oleae* (COSTA)

host: *Olea europaeae* L., *Pistacia terebinthus* L.

loc.: Rab, 26, 29 June 1965 — ♀♀ with eggs in ovisac; Duba, 22 Sept. 1965 — ♀♀ in ovisac.

Mediterranean species, polyphagous, reported on numerous host plants and from many localities in Yugoslavia (SCHMIDT 1956).

10. *Filippia viburni* (SIGN.)

host: *Viburnum* L.

loc.: Dubrovnik, 6 July 1965 — 1 ♀ in ovisac.

South and Central European species. Reported only from Dubrovnik from Yugoslavia, where it was collected on *Viburnum tinus* (SCHMIDT 1956).

11. *Chloropulvinaria floccifera* (WESTW.)

host: *Olea europaeae* L.

loc.: Split, 10 July, 1965 — 1 ♀.

Nearly cosmopolitan species, polyphagous. In Yugoslavia it was recorded only in Poreč, Opatija, Dubrovnik, Zagreb (SCHMIDT 1956).

***12. *Phyllostroma myrtilli* (KALT.)**

host: *Erica cornea* (L.) (?)

loc.: Plitvička Jezera, 25 July 1966 — ♀♀ in ovisac after oviposition.

European species (BORCHSENIUS 1957), lives on several species of the family *Ericaceae*.

13. *Coccus hesperidum* L.

host: *Eryngium amethystinum* L. and other not identified plant

loc.: Rab, 28 June 1965 — 2 ♀♀; Čenja, 13 Aug. 1966 — 1 ♀.

Cosmopolitan species, polyphagous. Recorded on numerous hosts and localities in Yugoslavia (SCHMIDT 1955, 1956).

14. *Saissetia oleae* (BERN.)

host: *Olea europaea* L.

loc.: Dubrovnik, 6 July 1965 — ♀♀ with deposited eggs; Rab, 26 June 1965 — ♀♀; Blato, 4 Aug. 1966 — numerous ♀♀; Duba, 20 Sept. 1965 — 1 ♀.

Cosmopolitan species, recorded on numerous hosts and localities in Yugoslavia (SCHMIDT 1955, 1956).

15. *Lecanium corni* BCHÉ.

host: *Vitis vinifera* L.

loc.: Blato, 4 Aug. 1966 — numerous ♀♀.

Species of cosmopolitan range (KAWECKI 1958), reported on numerous host plants from Yugoslavia (SCHMIDT 1955).

16. *Ceroplastes rusci* (L.)

host: *Myrtus communis* L.

loc.: Duba, 20 Sept. 1965 — numerous ♀♀; Blato, 10 Aug. 1966 — ♀♀; Čenja, 12 Aug. 1966 — numerous larvae and ♀♀.

Nearly cosmopolitan species, polyphagous, occurs on the whole coast of Yugoslavia (SCHMIDT 1956).

Family: *Diaspididae***17. *Lepidosaphes ulmi* (L.)**

host: *Spartium junceum* L.

loc.: Sutomore, 24 Sept. 1965 — numerous old ♀♀.

Polyphagous species of nearly cosmopolitan range, widespread in Yugoslavia (SCHMIDT 1956).

18. *Aulacaspis rosae* (BCHÉ.)

host: *Rubus ulmifolius* SCHATT., RUBUS sp.

loc.: Rab, 27 June 1965 — larvae and ♀♀; Sutomore, 24 Sept. 1965 — larvae and ♀♀; Cenja, 14 Aug. 1966 — larvae and ♀♀.

Cosmopolitan species, occurs on plants of the family *Rosaceae*. BACHMANN (1953) reported it from Rab. SCHMIDT (1956) gave a number of host plants of the species but not the site.

19. *Adiscodiaspis tamaricicola* MAL.

host: *Tamarix* sp.

loc.: Čenja, 12 Aug. 1966 — numerous ♀♀.

East-mediterranean species, reaching Central Asia. BORCHSENIUS (1966) recorded it in Yugoslavia. It is not mentioned in the works of BACHMANN and SCHMIDT. It is collected only on *Tamarix* L.

*20. *Carulaspis caruelii* (TARGIONI-TOZZETTI)

host: *Cupressus sempervirens* L., *Juniperus oxycedrus* (L.)

loc.: Rab, 25 June 1965 — several ♀♀; Rab, 28 June 1965 — numerous ♀♀.

Ponto-mediterranean species, occurs also in California, Bermuda and Guinea (BORCHSENIUS 1966). It lives on several plants of the family *Cupressaceae*. In Yugoslavia probably not distinguished from *Carulaspis juniperi* (BCHÉ.).

21. *Pseudaulacaspis pentagona* (TARGIONI-TOZZETTI)

host: *Populus* sp.

loc.: Čenja, 13 Aug. 1966 — ♀♀.

Cosmopolitan species, polyphagous (BALACHOWSKY 1953), widespread in the whole Yugoslavia (SCHMIDT 1956).

22. *Leucaspis pusilla* LÖW

host: *Pinus* sp.

loc.: Dubrovnik, 6 July 1965 — ♀♀; Rab, 26, 27, June 1965 — ♀♀.

Species of mediterranean range. It occurs also in Argentina. It was recorded on several localities in Yugoslavia (BACHMANN 1953).

23. *Anamaspis loewi* (COLVÉE)

host: *Pinus* sp.

loc.: Split, 10 July 1965; Duba, 20 Sept. 1965 — ♀♀.

European species. Not reported from Split or Duba.

24. *Targionia vitis* (SIGNORET)

host: *Quercus ilex* L.

loc.: Rab, 27 June 1965 — ♀♀.

Ponto-mediterranean species occurs on plants of the families *Fagaceae*, *Platanaceae*, *Vitaceae* and *Ericaceae*. In Yugoslavia it was found on the coast (SCHMIDT 1956).

25. *Aonidia lauri* (BCHÉ.)

host: *Laurus nobilis* L.

loc.: Rab, 27 June 1965 — numerous ♀♀; Dubrovnik, 6 July 1965 — ♀♀.

Species of mediterranean range, fairly common in Yugoslavia. It lives on *Laurus* L.

CONCLUSION

SCHMIDT (1955, 1956) gave in his works about 100 species from Yugoslavia. The present author cannot give even approximately the number of scale insects known in Yugoslavia as it would require a new elaboration of all the materials collected in the territory of Yugoslavia. Out of 7 species, she determined as new for Yugoslavia, only the following can be accepted as not hitherto collected in that country, i. e. *Trionymus aberrans* GOUX, *Paroudablis interruptus* GREEN, *Rhizococcus cynodontis* (KIR.), *Phyllostroma myrtilli* (KALT.). All these scale insects belong to the European species but with the exception of the last one had been collected very rarely.

Pseudococcus comstocki (KUV.), however, as a common species was probably confused with *P. adonidum* (GEORGE). *Macrocerococcus superbus* LEON. was perhaps also collected as *Pseudococcus*. *Carulaspis caruelii* (TARGIONI-TOZZETTI) was probably not distinguished from *Carulaspis juniperi* (BCHÉ.).

Department of Zoology
of the Cracow College of Agriculture
Kraków, Mickiewicza 24/28

REFERENCES

- BACHMANN F. 1953. Beitrag zur Kenntnis der jugoslawischen Schildlausfauna. Zborn. Radova (Inst. Ekol. Biogeogr.), Beograd, 31: 175—184.
BALACHOWSKY A. 1953. Monographie des *Coccoidea Diaspidinae* IV. Act. Sc. Ind., Paris, 7: 725—929.
BORCHSENIUS N. S. 1949. Podotr. červecy i ščitovki (*Coccoidea*), semejstvo mučnistye červecy (*Pseudococcidae*). Fauna SSSR, Nasekomye chobotnye, Moskwa—Leningrad, 7.

- BORCHSENIUS N. S. 1957. Podotr. červcey i ščitovki (*Coccoidea*), semejstvo podušečnicy i ložno-ščitovki (*Coccidae*). Fauna SSSR, Nasekomye chobotnye, Moskva—Leningrad, 9.
- BORCHSENIUS N. S. 1966. Katalog ščitovok mirovoy fauny. Moskva—Leningrad.
- DANZIG E. M. 1962. Revizija roda *Rhizococcus* SIGNORET (*Homoptera, Coccoidea*) fauny SSSR. Ent. Obozr., Leningrad, 41: 839—860.
- GREEN E. 1923. Observations on British *Coccidae*, with descriptions of new species. No. 8. Ent. monthly Mag., London, 59: 211—218.
- KOTEJA J., ŽAK-OGAZA B. 1966. Investigations on Scale Insects (*Homoptera, Coccoidea*) of the Pieniny Klippen Belt. Acta zool. cracov., Kraków 11: 305—332.
- KAWECKI Z. 1958. Studia nad rodzajem *Lecanium* BURM. IV. Materiały do monografii misecznika śliwowego, *Lecanium corni* BOUCHÉ, MARCHAL (♀ nec ♂) (*Homoptera, Coccoidea, Lecaniidae*). Ann. zool., Warszawa, 17: 135—246.
- MORRISON H. 1952. Classification of the *Ortheziidae*. Tech. Bull. US Dep. Agric., Washington D. C., 1052: 1—78.
- SCHMIDT L. 1955. Prilog fauni štitastih ušiju Hrvatske s obzirom na njihove biljke hraniteljice. Biološki Glasnik, 8: 77—88.
- SCHMIDT L. 1956. Štitaste uši Hrvatske. Zaštita bilja, Beograd, 36: 1—11.
- SCHMUTTERER H. 1952a. Die Ökologie der Cocciden (*Homoptera, Coccoidea*) Frankens. Z. angew. Ent., Berlin—Hamburg, 33: 370—420.
- SCHMUTTERER H. 1952b. Über drei neue an Gräsern lebende Schildlausarten der deutschen Fauna (*Homoptera, Coccoidea*). Beitr. Ent., Berlin, 2: 554—566.
- ŽAK-OGAZA B. 1966. A note on some scale insects (*Homoptera, Coccoidea*) of the Hungarian Fauna. Acta agron. Acad. Sci. hung., Budapest, 15: 79—83.
- ŽAK-OGAZA B., KOTEJA J. 1966. Investigations on Scale Insects (*Homoptera, Coccoidea*) of the Pieniny Mountains. Acta zool. cracov., Kraków, 9: 417—439.

STRESZCZENIE

W latach 1965—1966 zebrano i opracowano z terenu Jugosławii 25 gatunków czerwców. Siedem gatunków nie było dotąd notowanych w faunie Jugosławii. Są to: *Pseudococcus comstocki* (KUW.), *Trionymus aberrans* GOUX, *Paroudablis interruptus* GREEN, *Macrocerococcus superbus* LEON, *Rhizococcus cynodontis* (KIR.), *Phyllostroma myrtilli* (KALT.), *Carulaspis caruelii* (TARGIONI-TOZZETTI).

РЕЗЮМЕ

В 1965—1966 г. г. были собраны в Югославии и определены 25 видов кокцид. Семь видов были новыми для фауны Югославии, а именно: *Pseudococcus comstocki* (KUW.), *Trionymus aberrans* GOUX, *Paroudablis interruptus* GREEN, *Macrocerococcus superbus* LEON, *Rhizococcus cynodontis* (KIR.), *Phyllostroma myrtilli* (KALT.), *Carulaspis caruelii* (TARGIONI-TOZZETTI).

Redaktor zeszytu: doc. dr W. Szymczakowski

PAŃSTWOWE WYDAWNICTWO NAUKOWE—ODDZIAŁ W KRAKOWIE—1967

Nakład 700+80 egz. — Ark. wyd. 0,5 — Ark. druk. $\frac{8}{16}$ — Papier ilustr. kl. III 80 g 70×100
Zam. 139/67

Cena zł 6.—

DRUKARNIA UNIWERSYTETU JAGIELLOŃSKIEGO W KRAKOWIE