

A NEW SPECIES OF *CRYPTOLESTES* GANGLBAUER
FROM THE MIDDLE EAST AND A NEW SYNONYM
(COLEOPTERA: LAEMOPHLOEIDAE [CUCUJIDAE *SENSU LATO*])

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ABSTRACT

Cryptolestes halevyae Thomas, new species, is described and illustrated from Israel and Cyprus. It is compared to morphologically similar species and its biology as a presumed predator of *Matsucoccus josephi* Bodenheimer & Harpaz (Margarodidae) is discussed. *Cryptolestes dissimulatus* Thomas is a junior synonym of *Cryptolestes curus* Lefkovitch.

KEY WORDS: *Cryptolestes halevyae*, *Matsucoccus josephi*, Israel, Cyprus.

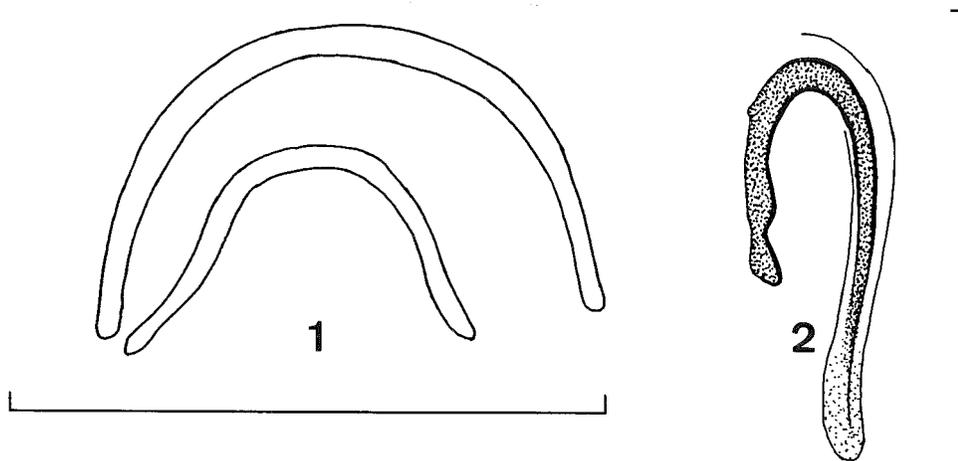
INTRODUCTION

Specimens of a species of *Cryptolestes* Ganglbauer collected during a study of natural enemies of the coccid *Matsucoccus josephi* Bodenheimer & Harpaz (Margarodidae) on *Pinus halepensis* Mill. by Miri Halevy were sent to me for identification. The specimens proved to belong to an undescribed species, which is described below. During research into the identity of these specimens, the holotype of *Cryptolestes curus* Lefkovitch (1965), described from Aden and recorded also from South Yemen (Slipinski, 1984), was borrowed from the British Museum of Natural History. It is conspecific with *Cryptolestes dissimulatus* Thomas (1988a), described from Arizona and California, *new synonymy*.

The genus *Cryptolestes* is represented in most of the faunal areas of the world, with the stored products pests being almost cosmopolitan. Lefkovitch (1965) recorded five species from the Arabian peninsula; Slipinski (1984) added a sixth species for Arabia.

Cryptolestes halevyae n. sp.
(Figs. 1–4)

DIAGNOSIS. The genital sclerotizations of both the male and female are diagnostic for this species (Fig. 1–2), as is the following combination of external character states: mandibles of males with lateroventral tooth (Fig. 3); antennae relatively short for genus; dorsal puncturation of head and prothorax medially fine and sparse, laterally coarse and dense; elytra with disc concave, with pronounced humeral carinae (Fig. 4), and first and second cells each with three rows of setae.



Figs. 1–2. Genital sclerotizations of *Cryptolestes halevyae*. 1. Male, internal sac. 2. Female, bursa. Lines = 0.25 mm.

DESCRIPTION. Length 2.3 mm; dark testaceous, mouthparts paler.

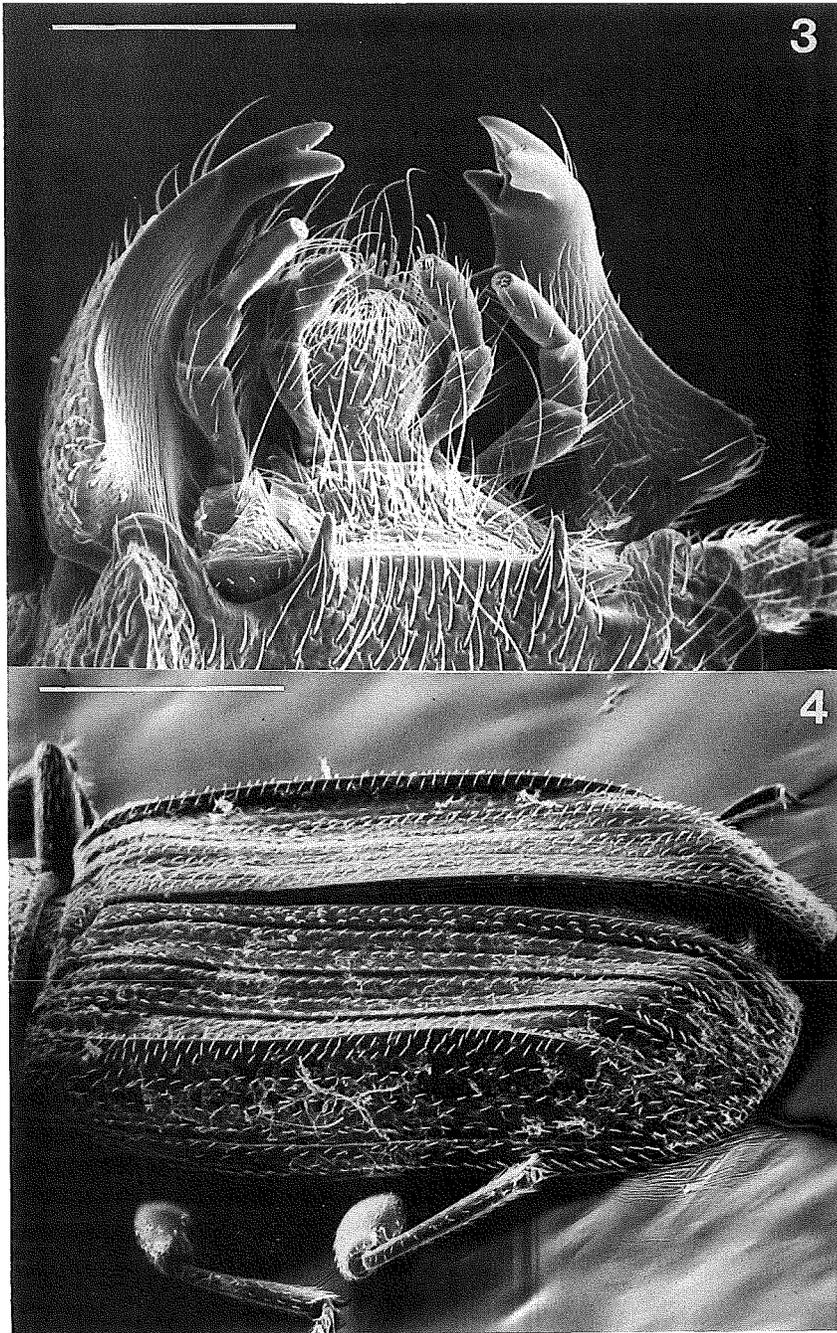
Head: Transverse (1:1.5), eyes small, about a fourth as long as head, advanced about twice their length from base of head; epistome truncate; mandibles large, with a strongly produced ventrolateral tooth (Fig. 3); antennae slender, filiform, attaining basal third of elytra; punctures of dorsal surface of head medially much smaller than an eye facet, more or less circular, separated by 2–4 diameters, laterally and basally larger than an eye facet, elongate, nearly confluent, punctures subtending long, pale setae; surface between punctures smooth and glossy, not microreticulate.

Thorax: Pronotum barely transverse (1:1.08), widest just behind apex; apical angles acute, somewhat produced; basal angles obtuse, not produced; surface sculpture as on head; length of head + pronotum shorter than elytra (1:1.21); first and second cells each with three rows of setae; humeral carina strongly produced and prominent (Fig. 4); elytral width/length 1.68; elytral disc somewhat concave; area between humeral carina and lateral margin sharply declivous, almost perpendicular.

Genital sclerotization of male as in Fig. 1. Sclerotization of bursa as in Fig. 2.

VARIATION. Allotype is 2.3 mm long. Length/width ratio of head is 1:1.65 and of pronotum is 1:1.03. Ratio of head + pronotum to elytra is 1:1.41. In the females, the pronotum is not as strongly constricted basally and the antennae are proportionally shorter than in the male, and the mandibles are simple. Paratypes range from 1.6 mm to 2.3 mm in body length.

MATERIAL EXAMINED. Holotype ♂: ISRAEL: Mazzuva [spelled Matzuva], 9.i.1991, [coll.] M. Halevy/“with *Matsucoccus josephi* on *Pinus halepensis*.” Allotype ♀ and 6 paratypes, same locality data as holotype. Additional paratypes (209): Mt. Karmel, 9.i.1991, #22, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (1); Mazzuva, 9.i.1991, #29, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (1); same except #34 (3); Mt. Karmel, 9.i.1991, #38, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (1); same except #40 (1);



Figs. 3–4. *Cryptolestes halevyae*. 3. Mandibles of male, oblique ventral view. Line = 0.15 mm. 4. Elytra, oblique view. Line = 0.38 mm.

Mazzuva, 9.i.1991, #44, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (4); same except #61 (34); same except #68 (6); same except #73 (9); same except #98 (2); same except #100 (1); same except #103 (1); same except #111 (3); same except #119 (6); Mt. Karmel, 9.i.1991, #131, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (1); Mazzuva, 9.i.1991, #151, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (2); same except #156 (1); same except #164 (1); same except #172 (1); same except #177 (1); same except #183 (6); same except #185 (1); same except #188 (12); Yoqne'am, 19.ii.1991, #203, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (4); same except #225 and *Pinus brutia* (1); same except #233 and *Pinus halepensis* (7); Yoqne'am, 19.ii.1991, #256, M. Halevy, with *Matsucoccus josephi* on *Pinus brutia* (2); same except #262 (1); same except #273 (1); Yoqne'am, 19.ii.1991, #298, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (1); same except #317 (5); same except #324 (1); same except #370 (7); same except #376 (1); same except #378 (1); same except #385 (1); same except #389 (5); Tarum, 12.iii.1991, #403, M. Halevy, with *Matsucoccus josephi* on *Pinus brutia* (1); same except #411 (1); same except #430 (1); Tarum, 12.iii.1991, #443, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (2); same except #450 (2); same except #456 (1); same except #458 (1); same except #468 (5); same except #473 (3); same except #487 (4); Tarum, 12.iii.1991, #490, M. Halevy, with *Matsucoccus josephi* on *Pinus brutia* (5); Tarum, 12.iii.1991, #511, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (2); same except #513 (2); same except #517 (2); same except #521 (5); same except #524 (3); same except #530 (1); same except #531 (4); Tarum, 12.iii.1991, #544, M. Halevy, with *Matsucoccus josephi* on *Pinus brutia* (2); Bet Guvrin, 28.iii.1991, #627, M. Halevy, with *Matsucoccus josephi* on *Pinus halepensis* (2); same except #634 (2); same except #641 (1); Mazzuva Forest [Matsuva Forest nr. Jerusalem], 9.i.1991, Miri Halevy, on live *Pinus halepensis* with *Matsucoccus josephi* (9); Eshta'ol, 18.x.1990, C2A1, Miri Halevy, on *Pinus halepensis* with *Matsucoccus josephi* (2); same except D2B1 (2); same except D2A3 (2); same except D2C4 (1); CYPRUS: Attalassa, 17.v.1991, Z. Mendel on *Pinus brutia* with *Matsucoccus josephi* (4).

Two paratypes are deposited in each of the following collections: British Museum of Natural History, London; California Academy of Sciences, Golden Gate Park; Canadian National Collection, Ottawa; Field Museum of Natural History, Chicago; Hungarian Natural History Museum, Budapest; Museo Civico de Storia Naturale "Giacomo Doria", Genoa; Muséum National d'Histoire Naturelle, Paris; Museum für Naturkunde der Humboldt-Universität, Berlin; Muséum d'Histoire Naturelle, Geneva; Polish Academy of Science, Warszawa; U.S. National Museum of Natural History, Washington, D.C.; D.G.H. Halstead, Slough, and Enrico Ratti, Venice. Holotype and allotype, and half of the remaining paratypes are in the Israeli National Insect Collection, Zoological Museum of Tel Aviv University; remaining paratypes in the Florida State Collection of Arthropods, Gainesville.

ETYMOLOGY. This species is named in honor of Miri Halevy, the collector of most of the specimens I have seen.

BIOLOGY. Miri Halevy (*in litt.*) reports that this species appears to be predaceous on *Matsucoccus josephi* on *Pinus halepensis* Mill. and *P. brutia* Ten. in Israel. Another Middle Eastern species, *Cryptolestes curus* Lefkovich, has been reported as a predator of the red date-palm scale, *Phoenicococcus marlatti* Cockerell (Phoenicococcidae) (Borden, 1921) in

the southwestern United States, where it was apparently introduced with its host (Thomas, 1988a). The larva of *C. halevyae* differs from all other known species of *Cryptolestes* in possessing a sharp uncus basally on the mandibles instead of a mola with a distinct grinding surface (Thomas, 1988b). The mandible in *C. halevyae* thus resembles that described for *Lathropus* Erichson and *Dysmerus* Casey (Thomas, 1988b). *Dysmerus basalis* Casey, at least, is suspected to be predaceous on scolytids. A complete larval description will be published separately.

Since most *Cryptolestes*, indeed most laemophloeids, are fungivorous on ascomycete fungus and various fungi imperfecti (Crowson, 1984; Lawrence, 1977; Thomas, 1988a), it is tempting to speculate that the ancestors of *C. halevyae* and *C. curus* originally fed on sooty mold. Whether these two species are obligate or facultative predators of coccoid insects is unknown, but the larval mandibles in *C. halevyae* suggest some adaptation to predation has taken place. The larva of *C. curus* is unknown. It is curious that the only known coccoid predators among the Laemophloeidae are both native to the Middle East, but closer study of other bark dwelling coccoid insects in other parts of the world may reveal additional species of laemophloeid coccoid-predators.

COMMENTS. This species is similar to *Cryptolestes ferrugineus* (Stephens), *C. capensis* (Waltl), and *C. curus* Lefkovitch, all species with relatively large adults and males with short antennae and ventrolaterally toothed mandibles. *Cryptolestes halevyae* will key out to *C. ferrugineus* in the keys to European and African species published by Lefkovitch (1959, 1962). Individuals of *C. halevyae* can be distinguished from individuals of that species by their different punctuation, more pronounced humeral carinae, genitalic sclerotizations, and elytral cells one and two each with three rows of setae.

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