

**A NEW SPECIES OF THE GENUS *ERODIUS* FROM ISRAEL AND EGYPT  
(COLEOPTERA: TENEBRIONIDAE: PIMELIINAE)**

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**ABSTRACT**

*Erodius (Dirosis) hebraicus* n. sp. is described from the Negev, Israel and Sinai, Egypt and compared with *E. (s. str.) gibbus* Fabricius and *E. (Dirosis) puncticollis* Solier from the Middle East.

KEY WORDS: Tenebrionidae, Pimeliinae, *Erodius* Fabricius, Negev, Sinai, new species.

**INTRODUCTION**

During the preparation of a checklist of the Tenebrionidae (darkling beetles) of Israel (Chikatunov et al., in preparation), a new species belonging to the genus *Erodius* Fabricius was found in the National Collection of Insects, Department of Zoology, Tel Aviv University. Initially a single female was found, with the label "*cyrenaicus* ssp. *hebraicus* m. det. Gridelli 1948", but this was never described. Whilst reviewing the collections, Prof. Dr. Chikatunov and Dr. Pavlf&k found another 13 specimens in the Tel Aviv University Collection. Another 4 specimens were subsequently recognised in Termeszettudományi Múzeum, Budapest, and 2 in the author's collection.

Terminology of the  $\sigma^7$  genitalia follows Carl (1992).

The following acronyms are used in this paper: CL = private collection of M. Lillig, Saarbrücken; TAU = Tel Aviv University Collection; TMB = Termeszettudományi Múzeum, Budapest.

***Erodius (Dirosis) hebraicus* Lillig n. sp.**  
(Figs. 1,3)

*Shape*: Short-oval, strongly arched, black, slightly shining; length 6.2-7.4 mm, width 3.9-5.3 mm, height 3.1<sup>1</sup>.2 mm.

*Head*: Labrum light to dark brown, with a shallow emargination anteriorly, covered with yellow bristles. Clypeus broadly emarginate anteriorly, somewhat protruding, transversely rugose, usually with some unsculptured areas, base narrower than frons so that the frons meets the clypeus at a right-angle. Clypeus weakly impressed at middle behind the fore margin, more strongly so towards sides. Frons not punctuate, densely granular. Vertex also without punctures, more sparsely granular than frons. Eye small, slightly transversely oval, towards hind margin strongly projecting from the head convexity. Outer side of mandible granular, upper and lower

margins of mandible sharp-edged, in dorsal view lower margin projecting further outwards than upper margin. Palpus maxillaris and palpus labialis dark brown. Antenna dark brown or black, reaching slightly beyond hind margin of pronotum when directed backwards, segments 1 to 9 longer than broad, segment 10 about as long as broad or slightly longer than broad, segment 11 projecting from segment 10 by about 1/4 to 1/3 of the length of segment 10, fore margin of segment 10 (= "Naht" *sensu* Reitter, 1914) curved in an arc (Fig. 3).

*Pronotum*: Length along middle 1.4–1.6 mm, width 3.9–4.6 mm. Evenly transversely arched, almost smooth, with shallow punctures only in the area of the hind corner and along lateral margin. Sides evenly rounded, greatest width between the hind corners. Fore and lateral margins completely bordered; fore margin rounded in a deep arc; hind margin weakly bi-emarginate, median lobe projecting as far backwards as lateral margin. Anterior angle rounded, posterior corner pointed and projecting somewhat backwards.

*Elytron*: Strongly arched. Costae rather more shining than interspaces. All interspaces granular from base to apex, granulation becoming stronger and denser posteriorly and laterally. Three costae, all of which reach elytral base, at least as traces. Costa 1 parallel to the suture, costae 1 and 2 (dorsal costae) high discally, becoming flatter distally and posteriorly disappearing after 2/3 of elytral length, almost without granules. Costa 1 about as far from the slightly raised suture as from costa 2, the latter closer to costa 1 than to costa 3 (humeral costa). Costa 3 flatter than costae 1 and 2, extending further posteriorly, granular like surrounding interspaces. Outer margin of the smooth epipleura (epipleural edge) evenly and smoothly rounded on anterior 2/3, curved outwards apically (Fig. 1).

*Underside*: Prosternum in both sexes without tufts of bristles. Prosternum and the posteriorly-truncated prosternal apophysis leathery-rugose, proepipleura smooth outside and inside, along middle with 5–10 arched, shallow, longitudinal furrows. Visible abdominal sternites 1–4 indistinctly granular, sternite 5 punctuate.

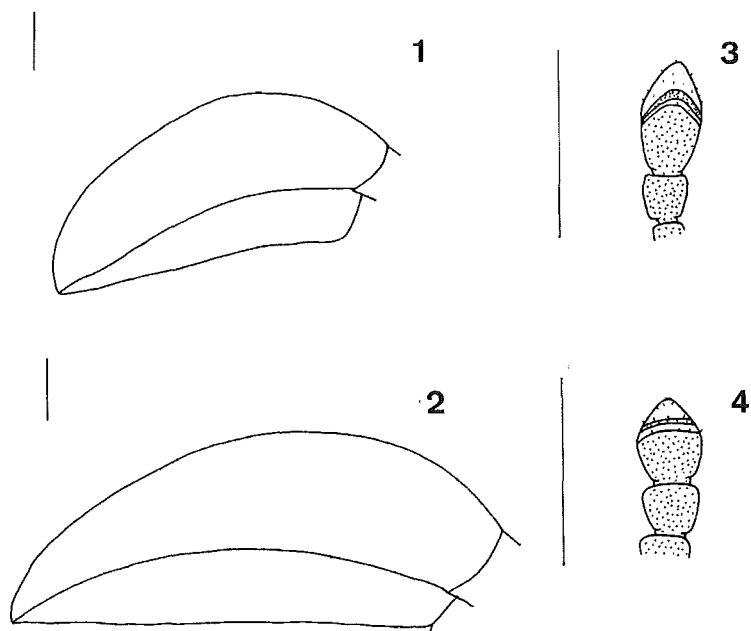
*Legs*: Posterior 4 femora and tibiae coarsely punctuate. Fore tibia straight inside; slightly narrower between the two teeth than basally; fore margin of posterior tibial tooth placed more or less at a right-angle to tibia. Mid tibia without spines. Hind tibia narrow, in posterior view slightly curved in both sexes. Tarsi of mid leg as long as tibia. The longer spur on hind tibia as long as the first 2 tarsal segments combined.

*Aedeagus*: Parameres pointed, shorter than phallobasis.

### Differential diagnosis

In general appearance, the new species can be easily confused with *Erodius gibbus* Fabricius. However, *E. gibbus* differs from it by the generally larger size (7–10 mm), shorter face, uniformly rounded epipleural edge which places it in *Erodius* s. str. (Fig. 2), form of the antenna with the shorter transverse segment 10, almost straight distal margin of segment 10 (Fig. 4), longer parameres, and the course of costa 1 which runs towards the outside at base and is not parallel to the suture.

Gridelli, who was the first to recognise this species as new, considered it to be a subspecies of *E. cyrenaicus* Schuster. This species, which was placed as a subspecies of *E. gibbus* by Koch (1935, 1939), belongs to the subgenus *Erodius* s.str. because of the uniformly rounded epipleural edge. Using the identification keys of Reitter (1914) and Koch (1940), *E. hebraicus* n. sp. runs to the area of *E. puncticollis* Solier *sensu lato*. The forms of *E. puncticollis* are, at



Figs. 1–4. Characters of *Erodium* spp. 1. *E. hebraicus* n. sp., elytron with epipleural edge, lateral view. 2. *E. gibbus* Fabricius, same. 3. *E. hebraicus* n. sp., tip of antenna. 4. *E. gibbus* Fabricius, same. (Scale bar = 1 mm).

10–15 mm (Reitter, 1914), considerably larger than *E. hebraicus* n. sp. The pronotum is also distinctly punctate on the disc (Koch, 1940), whereas it is non-punctate in the new species.

MATERIAL EXAMINED: Holotype ♀, ISRAEL: Asluj [Mash'abbé Sadé], 8.iv.1946, leg. Bytinski-Salz. *cyrenaicus* ssp. *hebraicus* n. det. Gridelli 1948 (TAU). Paratypes: ISRAEL: Gevulot, 11.iii.1946, Bytinski-Salz, 4♂ and 1♀, originally on two pins, mounted separately by the author (TAU); 9.iv.1946, Bytinski-Salz, 1♂ (TAU); Mash'abbé Sadé, 30.iii.1969, Kugler, 1♂ (TAU); Haluza, 30.iii.1965, Bytinski-Salz, 3♀ originally on one pin, mounted separately by the author (TAU); Haluza [in Hebrew], 29.iii.[19]71. Kuty Yefenof, 1♂ (TAU); Ze'elim, 12.iii.1974, D. Furth, 1♂ (TAU); Negev, B.A. (Linda) [Bir Asluj, dune habitat], 3.vii.1989, Y. Ayal. *Erodium gibbus* F., det. O. Merkl, 1991, 1♂ (TMB); Negev, Mash'abbim (dunes), 25.iii.1990, Y. Ayal. *Erodium gibbus* F., det. O. Merkl, 1991, 2♂ (TMB); 24.iv.1990, Y. Ayal. *Erodium gibbus* F., det. O. Merkl, 1991, 1♂ (CL); 2 km SE Ze'elim, 31 11[N 34 32[E], 9.xii.1992, M., M., S. Lillig, T. Pavlíček, 1♂ (CL); EGYPT: Sinai, Mitle, 13.iv.1973, D. Furth, 1♂ (TAU).

FURTHER MATERIAL: ISRAEL: 2 km SE Ze'elim, 31 11[N 34 32[E], 9.xii.1992, M., M., S. Lillig, T. Pavlíček, 1 specimen in poor condition (CL).

DISTRIBUTION: The new species is known from the northwestern part of the Negev and northern Sinai.

NOTES: Ayal and Merkl (1994) have given an account of the autecology of *Erodius gibbus* Fabricius. Re-examination of some of the specimens collected by Ayal has shown that they actually belong to *E. hebraicus* n. sp. The new species should therefore be diurnal and psammophilous. According to Ayal and Merkl it first appears in April and disappears again in June. Bytinski-Salz collected it in the middle of March and early April. My own collecting produced one live specimen in December.

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#### ZUSAMMENFASSUNG

*Erodius (Dirosis) hebraicus* n. sp. vom Negev (Israel) und Sinai (Ägypten) wird beschrieben und mit *E. (s. str.) gibbus* Fabricius und *E. (Dirosis) puncticollis* Solier aus dem Nahen Osten verglichen.

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