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Verruca punica, a new species of verrucomorph barnacle (Crustacea, Cirripedia, Thoracica) from the Lower Danian (Palaeocene) of Tunisia

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Abstract

The discovery of a near-complete shell wall of a small verrucid barnacle from the Lower Danian (Palaeocene) portion of the El Haria Formation as exposed in the El Kef area (northwest Tunisia), permits its description as a new species with characters that, although conforming primarily to *Verruca* sensu stricto, show some similarities to *Altiverruca* Pilsbry, 1916, a genus that is not yet known from the fossil record. The present material extends the known geographic distribution of fossil verrucids, and constitutes one of the earliest species of *Verruca* to be documented subsequent to the Cretaceous/Palaeogene (K/Pg) boundary mass extinction event.

Key words: Barnacles, Verrucomorpha, *Verruca*, Tunisia, Danian, new species

Introduction

The verrucomorph barnacles are a group of sessile crustaceans that possess asymmetrical shells. The earliest known representatives, i.e., the proverrucid genera *Proverruca* Withers, 1914 (Cenomanian-Upper Maastrichtian of northwest Europe; see Withers, 1935: 324–337, text-figs. 33–36; pl. 43, figs. 1–17; pl. 44, figs. 1–8; pl. 45, figs. 1–6), and *Eoverruca* Withers, 1935 (Upper Santonian-Upper Campanian of England and southern Poland; see Withers, 1935: 338–340, text-figs. 37, 38; pl. 44, figs. 9–18; Jagt *et al*., 2008, figs. 2, 3), had a shell wall comprising carina, rostrum, fixed tergum and fixed scutum plus two latera. *Verruca* Schumacher, 1817 is characterised by a shell wall comprising only four plates, the latera having been lost. Although the first records are from the Santonian of Western Australia (Buckeridge, 1983), *Verruca* had reached a wide geographic distribution by the late Campanian-Maastrichtian, being known from Europe and Western Australia. The present record is one of the earliest of verrucid barnacles following Cretaceous-Palaeogene (K/Pg) boundary perturbations, and demonstrates that such were amongst the first taxa to recover from the crisis. Another record is that of material referred to as *V.* cf. *prisca* Bosquet, 1854 from the lowermost two metres of the Danian portion of the Scaglia Rossa Formation in the Forada creek section, Prevenetian Alps, northeast Italy (see Giusberti *et al*., 2005: 459, fig. 1; pl. 1, figs. 6–10; pl. 2, figs. 8, 9). Specimens of slightly younger (i.e., Middle Danian) age from Fakse (Jylland, eastern Denmark) were originally considered to represent a distinct species, *V. steenstrupi*, by Brünnich Nielsen (1912) (see also Donovan & Jakobsen, 2004, fig. 3c, d, as *V. prisca*?). Withers (1935: 341) was of the opinion that this was synonymous with *V. prisca*, but in the absence of moveable rostra and scuta this cannot be demonstrated beyond doubt. For the time being, *V. steenstrupi* is here considered to be a valid species (see Fig. 2, Table 1).

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