

## Notes on Fossil Chitons. 1. A new species of *Lepidopleurus* (Mollusca: Polyplacophora) from the Pleistocene of Salice (Sicily, Italy)

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### Abstract

A new species of Polyplacophora (Mollusca) has been found in the Salice outcrop, in the Peloritain Mountains (Sicily, Italy), is attributed to the early Pleistocene. *Lepidopleurus (Leptochiton) salicensis* n.sp. is characterized by its uniformly sculptured tegmentum, with (well) raised, randomly distributed, neatly separated rounded/polygonal granules. The new species is compared with *Lepidopleurus (Leptochiton) alveolus* (M.Sars MS, Lovén, 1846), from the North Atlantic, and *Lepidopleurus (Leptochiton) tavianii* Dell'Angelo, Landau & Marquet, 2004, from the Pliocene of Estepona (Málaga, Spain).

**Key words:** Mollusca, Polyplacophora, Lepidopleuridae, Pleistocene, new species, Italy

### Introduction

The Salice outcrop, attributed to the early Pleistocene by Bonfiglio (1969), has already been discussed by Seguenza (1876), and is situated in the Tyrrhenian zone of the Peloritani Mountains, at an elevation of about 340 m. The top of the hill, where the former Salice military fort (locality "Coilare") is situated, is particularly rich in fossils, and is composed of upper bathyal sediments.

Brachiopods (Gaetani & Saccà 1983, 1984), Anthozoa (Micali & Villari 1991) and molluscs (Micali & Villari 1989, 1990, 1991) have previously been described from the Salice outcrop. The only chiton reported from this site is *Lepidopleurus (Leptochiton) sarsi* (Kaas, 1981) (Dell'Angelo & Palazzi 1989). Numerous isolated valves have been recovered from sieving large amounts of sediment, resulting in the discovery of a previously undescribed species of *Lepidopleurus (Leptochiton)*.

The following abbreviations are used to identify the repositories of material:

- MZB Zoological Museum of Bologna University (Italy);  
BDA B. Dell'Angelo Collection, Prato (Italy).

### Systematics

**Class POLYPLACOPHORA Gray, 1821**

**Order NEOLORICATA Bergenhayn, 1955**

**Suborder LEPIDOPLEURINA Thiele, 1910**

**Superfamily LEPIDOPLEUROIDEA Pilsbry, 1892**

**Family LEPIDOPLEURIDAE Pilsbry, 1892**

**Genus *Lepidopleurus* Risso, 1826**

Type species: *Chiton cajetanus* Poli, 1791, by subsequent designation by Herrmannsen 1846: 582.

**Subgenus *Leptochiton* Gray, 1847**

Type species: *Chiton cinereus* Montagu, 1803, non Linnaeus, 1767 (= *Chiton asellus* Gmelin, 1791), by subsequent designation by Gray 1847: 127.

***Lepidopleurus (Leptochiton) salicensis* n.sp.**

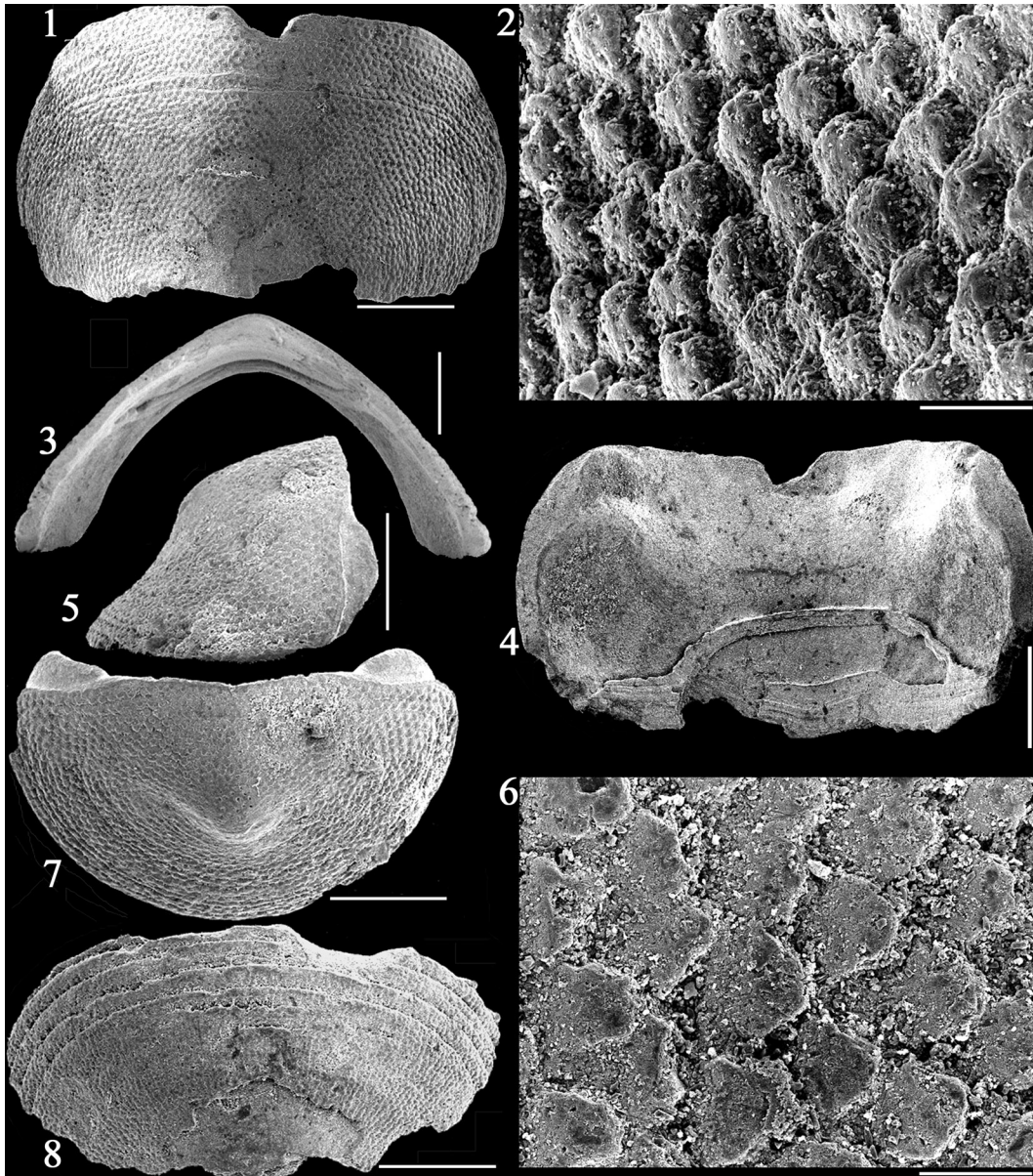
(Figures 1–8)

**Diagnosis.** Valves solid. Tegmentum uniformly sculptured with well raised, neatly separated rounded/polygonal granules, randomly arranged.

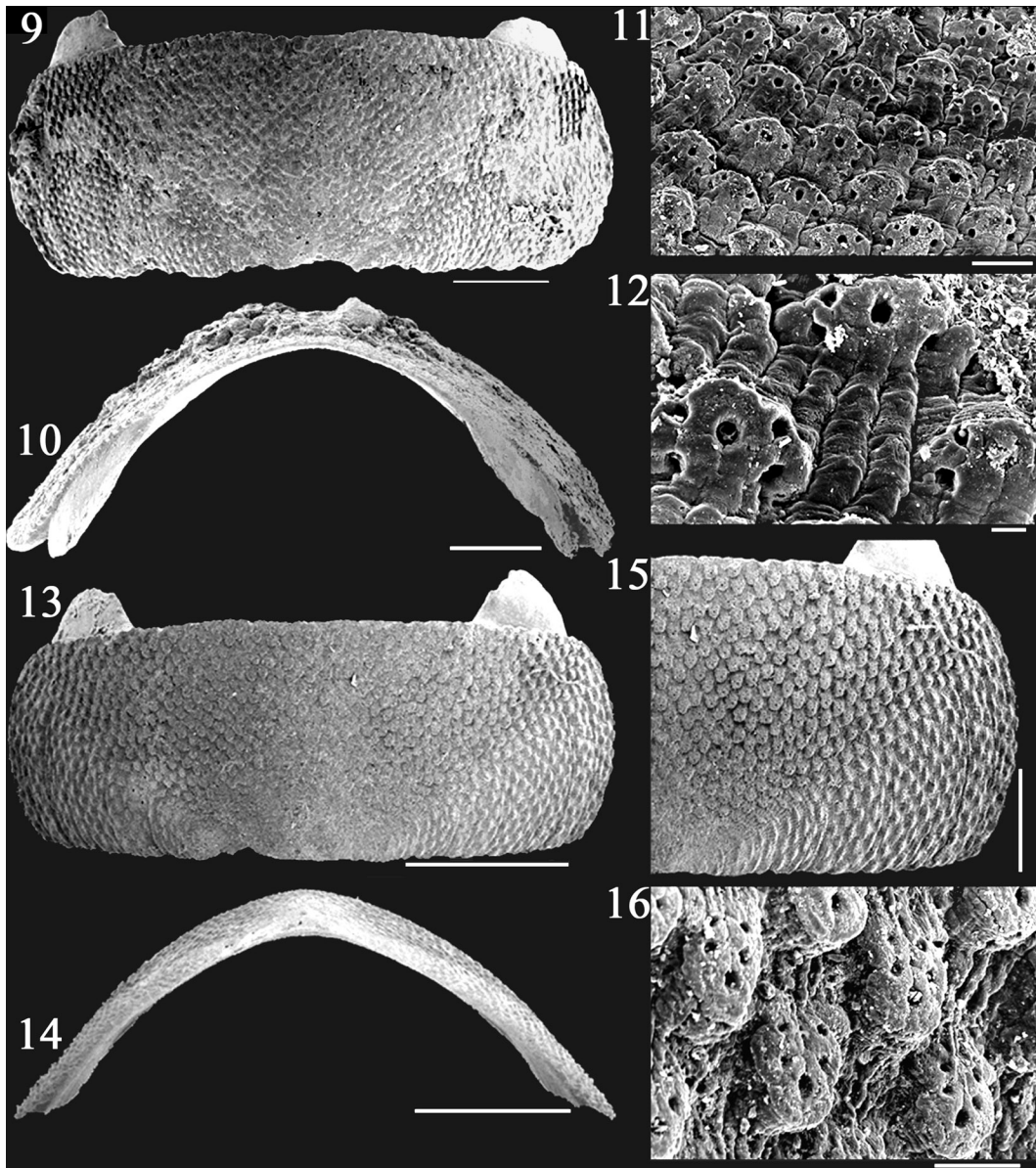
**Description.** Head valve semi-oval. Intermediate valves broadly rectangular, back evenly rounded, moderately elevated (intermediate valve, height/width 0.51), front margin slightly convex, side margins rounded, hind margin straight, apices inconspicuous, lateral areas not raised. Tail valve semicircular, anterior margin almost straight, mucro not prominent, subcentral, postmucronal slope concave.

Tegmentum uniformly sculptured with well raised, neatly separated roundish/polygonal granules, randomly arranged, diameter about 70–90 µm. The aesthetes are not clearly visible, a central one and 2–3 others (but there should be more) may be identified around the border of some granules.

Articulamentum without insertion laminae. On the ventral side of the intermediate valves the posterior area clearly presents an expanded central zone, with a bisinuate anterior margin. Apophyses small, largely incomplete in the material examined, but probably sharply triangular, widely separated by a large jugal sinus.



**FIGURES 1–8:** *Lepidopleurus (Leptochiton) salicensis* n.sp. Fig. 1. Holotype (MZB31028), intermediate valve, scale bar = 1 mm. Fig. 2. holotype, detail of sculpture, scale bar = 100 µm. Fig. 3. holotype, outline, scale bar = 1 mm. Fig. 4. holotype, ventral view, scale bar = 1 mm. Fig. 5. paratype, tail valve, lateral view, scale bar = 1 mm. Fig. 6. paratype tail valve, granules, scale bar = 100 µm; Fig. 7. mm paratype (MZB31029), tail valve, scale bar = 1 mm; Fig. 8. paratype (MZB31029), head valve, scale bar = 1 mm.



**FIGURES 9–12:** *Lepidopleurus (Leptochiton) tavianii* Dell'Angelo, Landau & Marquet, 2004, intermediate valve, Holotype, Velerín Carretera (Estepona, Málaga, Spain). Fig. 9. scale bar = 500  $\mu$ m. Fig. 10. outline, scale bar = 500  $\mu$ m. Fig. 11. detail of sculpture, scale bar = 50  $\mu$ m. Fig. 12. granules, scale bar = 10  $\mu$ m

**FIGURES 13–16:** *Lepidopleurus (Leptochiton) alveolus* (M.Sars MS, Lovén, 1846), intermediate valve, Sula Ridge (Norway), dredged at –215m. Fig. 13. scale bar = 1 mm. Fig. 14. outline, scale bar = 1 mm. Fig. 15. scale bar = 500  $\mu$ m. Fig. 16. detail of sculpture, scale bar = 50  $\mu$ m.

**Type material.** Holotype: MZB31028 (1 intermediate valve). Paratypes: MZB31029 (1 head and 1 tail valves); BDA 4662 (2 intermediate and 2 tail valves)

**Type locality.** Salice (Messina province, Sicily, Italy).

**Type stage.** Early Pleistocene.

**Etymology.** From the site of Salice.

**Remarks.** The genus *Lepidopleurus* (*Leptochiton*) is characterized by valves lacking insertion plates, the sutural laminae (apophyses) small and neatly separate, the tegmentum uniformly granulated, and the girdle narrow, covered with scales or with scales and spicules (Kaas & Van Belle 1985; Dell'Angelo & Smriglio 1999). The granules are generally of small size, with rather regularly arranged aesthetes, and can be arranged in radial or longitudinal series, quincuncially or randomly distributed. *Lp. (Lc.) salicensis* n.sp. is characterized by the tegmental sculpture consisting of randomly arranged granules.

Another species having the same kind of tegmental sculpture as *L. salicensis*, is *Lp. (Lc.) tavianii* Dell'Angelo, Landau & Marquet, 2004, known from the Pliocene of Estepona (Málaga, Spain) (Dell'Angelo, Landau & Marquet 2004: 29, pl.1 figs 1–8, pl.2 figs 1,5), where, however, the granules are characterized by a fungiform section and are arranged in a beehive structure (figs 9–12), not the random distribution seen in *L. salicensis*.

Also *Lp. (Lc.) alveolus* (M. Sars MS, Lovén, 1846), a species living in North Atlantic and not known as fossil (Kaas & Van Belle 1985: 36. fig. 14), has a tegmentum sculptured with neatly separated rounded to oval, raised granules, arranged quincuncially (fig. 16), but the granules are more oval and of different shape (compare fig. 2 and fig. 16), with a characteristic arrangement of aesthetes (fig. 16).

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