

Case 3356***Schizechinus* Pomel, 1869 (Echinodermata, Echinoidea): proposed conservation of usage by suppression of *Echinus serresii* Des Moulins, 1837 and designation of *Psammechinus serresii* Desor, 1856 as the type species**

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Abstract. The purpose of this application, under Article 69 of the Code, is to conserve the prevailing usage of *Schizechinus* Pomel, 1869 for a genus of fossil toxopneustid echinoids from the Miocene of the Mediterranean region and possibly the Neogene of Australia. No type species was designated in the original description, while the subsequent designation of *Anapesus tuberculatus* Pomel, 1887 by Lambert & Thiéry (1914) is invalid because it was not an originally included nominal species. Acceptance of the originally included fossil species *Echinus serresii*, whether attributed to Des Moulins (1837) or Agassiz & Desor (1846), as the type species of *Schizechinus* would destabilize the nomenclature by completely changing the identity of this genus from that in current usage, rendering it a nomen dubium. It is therefore proposed that the Commission designates *Psammechinus serresii* Desor, 1856 as the type species of *Schizechinus*. In order to stabilise the identity of the type species we designate a neotype.

Keywords. Nomenclature; taxonomy; Echinodermata; Echinoidea; TOXOPNEUSTIDAE; *Schizechinus*; *Schizechinus serresii*; *Schizechinus delphinus*; Neogene; Miocene; Mediterranean.

1. Pomel (1869, p. 42) established the genus *Schizechinus* for a group of fossil and extant echinoid species that had previously been attributed to *Psammechinus* Agassiz in Agassiz & Desor, 1846. He noted as belonging to *Schizechinus* four species from Agassiz & Desor's (1846) catalogue — *Echinus serresii* Des Moulins, 1837 (fossil), *E. semituberculatus* Agassiz & Desor, 1846 (extant), *E. variegatus* Lamarck, 1816 (extant) and *E. excavatus* de Blainville, 1834 (extant) — but did not select a type species. However, from the discussion it is evident that he considered the fossil species as more typical, since later on he points out (1869, p. xlii) how the three extant species differ somewhat from the genus description that he has given.

2. Later works by Pomel (1883, 1887) treated *Schizechinus* as a synonym of *Anapesus* Holmes, 1860, which is a junior synonym of *Arbacia* Gray, 1835 (see

Mortensen, 1935, p. 566; Cooke, 1959, p. 19; Fell & Pawson in Moore, 1966, p. U409). No type species for *Schizechinus* was given until Lambert & Thiéry (1914, p. 247) invalidly designated *Anapesus tuberculatus* Pomel, 1887. This designation has been accepted by most subsequent authors (e.g. Mortensen, 1943, p. 463; Fell & Pawson in Moore, 1966, p. U429), but is not valid since it was not an originally included species. It is thus still necessary to fix a type species for *Schizechinus*.

3. Today the use of the genus *Schizechinus* is restricted to a small group of fossil echinoids from the Miocene of the Mediterranean region (see Szörényi, 1953; Montenat & Roman, 1970; Kier, 1972; Challis, 1979; Maćczyńska, 1979, 1988; Menesini, 1979a, b; Boggild & Rose, 1984; Borghi, 1993; Schmid et al., 2001; Kroh, 2005) and possibly Australasia (McNamara & Kendrick, 1994; Lindley, 2003), although the latter may not be congeneric.

4. To provide for stability in nomenclature, and following Recommendations 69.A.3 and 69.A.10 of the Code, the three extant species mentioned by Pomel are excluded from consideration. The fourth species, *Echinus serresii* des Moulins, 1837 would be the logical choice for the type species designation; however this poses some problems.

5. Des Moulins (1837, p. 126), while mentioning that his own material came from Martigues (a Burdigalian [Early Miocene] locality in the southern Rhône Basin, ~25 km WNW of Marseilles, France), did not describe or illustrate it, but established *Echinus serresii* by indication. He refers to two papers: 'Oursin fossile. Faujas, Maëstricht. p. 173. pl. 30. f. 11.' and 'Echinus . . . M.^{el} de Serres. Géognos. p. 156 [sic]'. The Faujas (1799) reference is to a partial regular echinoid from the Maastrichtian of St Pierre. The illustration is very poor but shows multiple subequal interambulacral tubercles on the plates and relatively wide ambulacral zones with a double column of ambulacral tubercles. The most likely candidate for this is *Orthopsis miliaris* (d'Archiac, 1835), but there must be great doubt attached here, since the drawings are so poor. The Serres (1829) reference is not to p. 156, as cited, but must be a mistake for p. 265. Here Serres describes from the rocks of Martigues an *Echinus*. All that is stated is '*Echinus*. Une espèce fossile de Martigues, paraissant se rapporter à l'Oursin figure dans l'Encyclopédie, planch. 141, fig. 6. C.' The 'C' does not refer to a fig. 6.C but is an abbreviation used by Serres (1829) to denote the provenance of the specimens (see Serres, 1829, p. 97, footnote 1). No figure is given, nor other indication of the form of this species. The reference Serres made is presumably to the *Encyclopédie méthodique*, where the echinoids were described by Deslongchamps (1824) based on Bruguière's drawings. On pl. 141, fig. 6 of the 1824 edition (Bruguière, 1824) there is an extant regular echinoid that is referred to as '*Echinus sagus* N'. The upper surface is illustrated. The illustration is insufficient for determination and the identity of the figured specimen remains dubious. If figure 7 is related (it is the same size and shows the oral surface, but is not listed in the explanation to the plate), then this looks like the oral surface of a species of *Arbacia*, with a very large peristome opening with a rather prominent scalloped margin. The identity of *Echinus serresii* Des Moulins, 1837 is thus ambiguous, being based on two indeterminate echinoids of widely differing ages.

6. Agassiz & Desor (1846, p. 369) transferred *Echinus serresii* to the genus *Psammechinus* and restricted it to the specimens of Des Moulins (1837) from the Molasse of Martigues and Clansayes. Yet they added no new data or description

besides mentioning a small morphological detail that distinguished it from another common species of the area. They also declared '*Echinus delphinus* DeFrance, 1827' a synonym of *serresii*. D'Orbigny (1852, p. 142) simply listed the species referring to the Des Moulins and Agassiz & Desor references. It was not until the compendium of Desor (1858, p. 120, pl. 18, figs. 1–3) that the species *serresii* was described and illustrated, using specimens from the Molasse of Martigues and Clansayes, Drome, France.

7. Most authors (e.g. Lambert, 1906; Philippe, 1998) referred the material described as *Psammechinus serresii* by Desor (1856, p. 120) to the nomen nudum '*Psammechinus delphinus* (DeFrance, 1827)'. *Echinus delphinus* DeFrance is a manuscript name, thus not available (see also Philippe, 1998, p. 75). Lambert (1906, p. 72) argued that the figured specimen of Desor (1856, pl. 18, figs. 1–3), in contrast to the description, does not belong in that species, but rather was a misidentified *Psammechinus dubius*. Unfortunately, Desor's figured specimen could not be located by Philippe (1998) or the present authors.

8. The generic attribution to *Psammechinus* by Agassiz & Desor (1846, p. 369) was accepted by most subsequent authors. Lambert (1906, p. 68), in a comparison of the genera *Anapesus*, *Psammechinus* and *Schizechinus*, stated that '*Psammechinus Serresii* . . . est en réalité par les caractères de son péristome un vrai *Psammechinus*'. This was supported by Lambert (1910) and Philippe (1998) in two revisions of the *Neogene Echinoids of the Rhône Basin*. Yet, both authors mention that it 'forme un type bien particulier' within that genus. A re-examination of material from Clansayes (considered as the type-locality of *Echinus delphinus* by Philippe (1998, p. 76)) housed at the Muséum national d'Histoire naturelle clearly shows that the material is not congeneric with *Psammechinus* but fits well within the current usage of the genus *Schizechinus*.

9. We have been unable to find any of the type series of *Psammechinus serresii* Desor, 1856. According to Desor (1856) his material came from his own collection and those of Des Moulins and Michelin, which are housed at the Muséum d'Histoire Naturelle de Neuchâtel, Muséum National d'Histoire Naturelle de Paris and Musée de Bordeaux respectively (Lambert & Jeannet, 1928; Prieur, 1980). Collection managers at Neuchâtel (Dr. Stefan Bucher) and Paris (Dr. Jean-Paul Saint Martin) were unable to locate Desor's types in their respective collections. In order to stabilise that name we hereby designate specimen no. A20616-A from the Muséum National d'Histoire Naturelle, Paris, Département des Sciences de la Terre (from batch A20616 with 9 specimens; collection Lambert n° L14.822) from the Burdigalian (Lower Miocene) of Clansayes, Drôme, France, as the neotype. The neotype chosen came from one of the localities mentioned by Desor (1856) and is consistent with the description and illustrations provided by that author.

10. Diagnosis for *Schizechinus* Pomel, 1869: Medium sized toxopneustid with multiple, subequal primary tubercles on the interambulacral plates forming regular vertical series at the ambitus; tubercles imperforate and non-crenulate; apical disc hemicyclic with oculars I and V insert; peristome with distinct, moderately deep gill slits. Differs from *Psammechinus* by its hemicyclic apical disc and more strongly expressed buccal notches and from *Sphaerechinus* by its trigeminate ambulacral plates.

11. In conclusion, we propose the suppression for the purposes of the Principle of Priority but not for those of the Principle of Homonymy of *Echinus serresii* Des

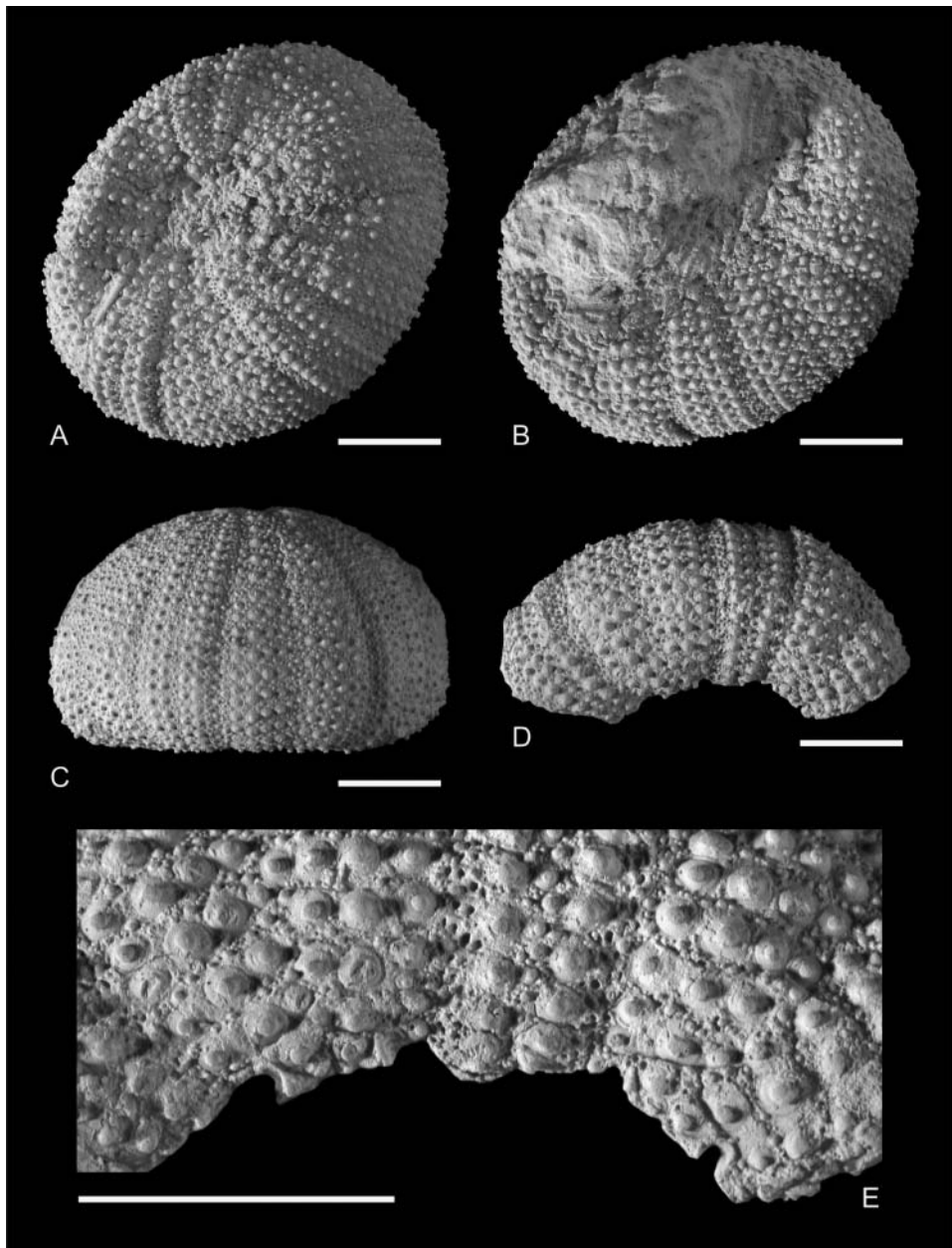


Fig. 1. *Schizechinus serresii* (Desor, 1856). A-B: aboral (A) and oral (B) views of the neotype (MNHN-Sciences de la Terre A20616-A); C: lateral view of MNHN-Sciences de la Terre A20616-B; D-E: oral view (D) and close-up of the peristomal margin with buccal notches (E) of MNHN-Sciences de la Terre A20346-A. Specimens whitened with ammonium chloride; C-E depict resin casts of the actual specimens. Scale bars 1 mm.

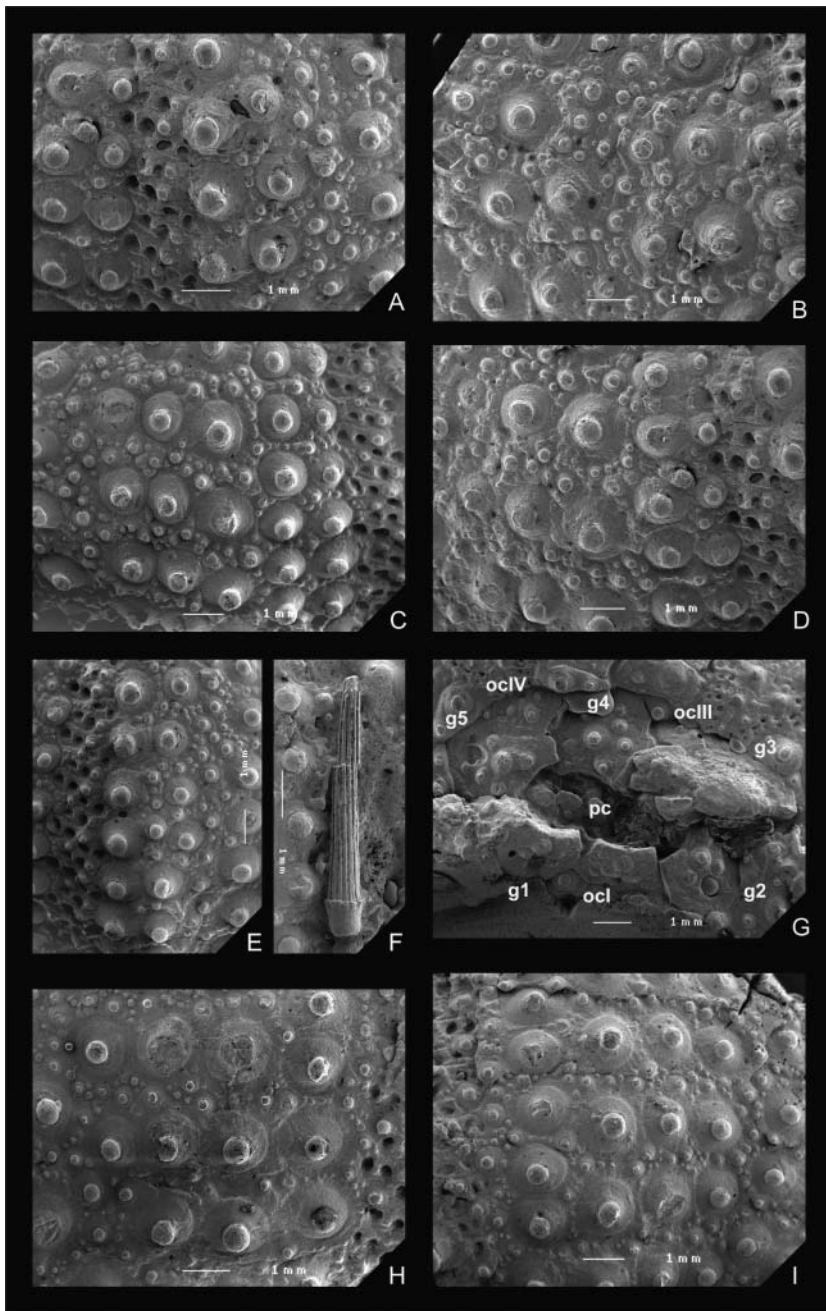


Fig. 2. *Schizechinus serresii* (Desor, 1856). A-F: details of the tuberculation in the neotype (MNHN-Sciences de la Terre A20616-A): supraambital ambulacra (A, E), adapical interambulacra (B), supraambital interambulacra (C), ambital interambulacra (D), primary spine (F); G: apical disc of MNHN-Sciences de la Terre A20616-B (distorted by sediment compaction; pc = periproct; ocular plates indicated by 'oc' and genital plates by 'g' and their respective number according to the Lovenian system); H-I: tuberculation in the subambital interambulacra of MNHN-Sciences de la Terre A20346-A. All figures are SEM images of resin casts of the actual specimens.

Moulins, 1837 (p. 126) which is a hybrid species of dubious identity. This action will make invalid the name *Echinus serresii* Agassiz & Desor, 1846 (p. 369), which simply cites Des Moulins. We also propose the designation of *Psammechinus serresii* Desor, 1856 as the type-species of *Schizechinus* Pomel, 1969, thereby conserving the current usage of the name and removing any ambiguity.

12. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
 - (a) to suppress for the purposes of the Principle of Priority but not for those of the Principle of Homonymy the name *serresii* Des Moulins, 1837, as published in the binomen *Echinus serresii*;
 - (b) to set aside all previous fixations of type species for the nominal genus *Schizechinus* Pomel, 1869 and to designate *Psammechinus serresii* Desor, 1856 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the name *Schizechinus* Pomel, 1869 (gender: masculine), type species by designation in (1)(b) above *Psammechinus serresii* Desor, 1856;
- (3) to place on the Official List of Specific Names in Zoology the name *serresii* Desor, 1856, as published in the binomen *Psammechinus serresii* and as defined by the neotype designated in para. 9 (above) (specific name of the type species of *Schizechinus* Pomel, 1869);
- (4) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *serresii* Des Moulins, 1837, as published in the binomen *Echinus serresii* and as suppressed in (1)(a) above.

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