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ADDITIONAL NOTE

Additional note to new trace fossils produced by etching molluscs from the Upper Neogene of the southwestern Iberian Peninsula

ANA SANTOS[1], EDUARDO MAYORAL[2] AND FERNANDO MUÑIZ[3]

INTRODUCTION

The authors recently published in this journal (SANTOS & *al.* 2003) the description of a new trace fossil, *Lacrimichnus* SANTOS, MAYORAL & MUÑIZ, 2003, ichnogen. nov. They ascribed this ichnotaxon to the encrusting activity of calyptracean gastropods (*Crepidula* LAMARCK 1799) and ostracean bivalves. However, they not exclude the possibility that the scars might have been made by *Capulus* or *Calyptraea.* In the case of the Portuguese and Spanish material, the traces were made by the *Crepidula* fossilized with the pectinid bivalves, particularly in view of the fact that no specimens of *Calyptraea* or *Capulus* were found. The occurrence in the Atlantic realm (southwestern Iberian Peninsula, Portugal and Spain) was dated as Late Tortonian (Late Miocene) to Lower Pliocene; similar tarces are also known fossil from the Holocene.

During the printing of their paper, the authors found an article by BONGRAIN (1995), which seems to be crucial for the definitive interpretation of these traces. In her paper, BONGRAIN demonstrated that the Recent capulid gastropod *Capulus ungaricus* attaches itself to the valves of the pectinid bivalve *Aequipecten opercularis* and leaves a distinctive bioerosion trace at the site of attachment. She attributed analogous bioerosion traces on the pectinid *Gigantopecten gallicus* from the Serravallian (Mid Miocene) of Salles (Aquitanie, southest France) to other species of *Capulus* and inferred a general commensalism-parasitism relationship between capulid gastropods and pectinid bivalves, even though they were never found fossilised in direct association. She noted the similarity of the bioerosion traces on the North American Lower Pliocene pectinid *Chesapecten jeffersonius*, including those shown in the specimen figured by LISTER (1687, pl. 167), to the traces made by the Recent *Capulus ungaricus*. She also discussed two additional examples in the literature of the inferred relationship between capulid gastropods and pectinids, from the Pliocene of New Zealand ant the Late Pleistocene of Japan respectively.

The bioerosion traces discussed by BONGRAIN (1995), but not considered paleoichnologically by her (p. 347, *"l'aspect paléoichnologique du sujet et les problèmes de parataxinomie qu'il soulève demanderaient à être traités par un spécialiste de la question, ce que je ne suis pas"*), are virtually identical to our new ichnotaxon *Lacrimichnus*.

PREVIOUS REFERENCES

The possible relationship of capulids to pectinids was reported already prior to the publication of BONGRAIN. DELL 1964 and GRANT-MACKIE & CHAPMAN-SMITH 1971 described this association from the Pliocene of New Zealand, and MATSUKUMA 1978, from the Late Pleistocene of Kagoshima (Japan).

SYSTEMATIC PALEOICHNOLOGY

Lacrimichnus SANTOS, MAYORAL & MUÑIZ, 2003
(not illustrated herein; see SANTOS & *al.* 2003, pl. 1, figs 1-5; pl. 2, figs 1-4, 7-8)

1964. Subcircular scars produced by *Capulus uncinatus* (HUTTON); R. K. DELL, p. 50, figs 1-3.

1968. Etching marks produced by slipper-shaped gastropods; W. O. CERNOHORSKY, pl. 41, figs 3-4.

1971. Etching scars presumed to have been produced by *Capulus uncinatus* (Hutton); GRANT-MACKIE & CHAPMAN-SMITH, p. 693, figs 4.5- 4.6.

1977. Etching marks produced by the gastropod *Hipponix conicus* (SHUMACHER); A. RADWAŃSKI, p. 242, pl. 7, figs b2,

1978. Boreholes made by *Capulus dilatatus* Adam; MATSUKUMA, p. 34, fig. 3.

1995. Empreintes de bioérosion présumées laissées par *Capulus*; M. BONGRAIN, p. 354, fig 4 a-c ; pl. 47, figs 2, 6 ; pl. 48, figs 1, 2, 5.

2003. *Lacrimichnus* nov. ichnogen.; SANTOS, MAYORAL & MUÑIZ, 2003, pl. 1, figs 1-5; pl. 2, figs 1-4, 7-8.

OCCURRENCE: Serravalian (Middle Miocene) – Holocene.

OBSERVATIONS ON TRACEMAKERS: The possibility that attachment scars on pectinid bivalves, similar to the ichnogenus *Lacrimichnus*, could have been made by some species of the gastropod *Capulus* has already been suggested several times previosly. DELL (1964) and GRANT-MACKIE & CHAPMAN-SMITH (1971) tentatively ascribed comparable traces from the Pliocene of New Zealand to *Capulus uncinatus* (HUTTON, 1873). MATSUKUMA (1978) attributed perforations within oval scars on Japanese Late Pleistocene pectinids *Capulus dilatatus* ADAMS 1860. BONGRAIN (1995) attributed bioerosion scars on Miocene pectinids to *Capulus sinuosus* (BROCCHI, 1814) and *Capulus neglectus* (MICHELOTTI, 1847).

However, it must be emphasized that no fossil example of any species of the gastropod *Capulus* has ever been found in direct connection with pectinid bivalves.

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ANA SANTOS[1], EDUARDO MAYORAL[2] AND FERNANDO MUÑIZ[3],

[1]*Centro de Investigação Marinha e Ambiental, Faculdade Ciências do Mar e do Ambiente, Universidade do Algarve, Campus de Gambelas, 8000-117 Faro, Portugal. E-mail: aasantos@ualg.pt*

[2]*Departamento de Geodinámica y Paleontología, Facultad de Ciencias Experimentales, Universidad de Huelva, Campus del Carmen, Avda. de las Fuerzas Armadas s/n, 21071 Huelva, Spain. E-mail: mayoral@uhu.es*

[3]*Grupo de Investigación Tectónica y Paleontología, Spain. E-mail: gyrolithes@yahoo.es*