Contr. Tert. Quatern. Geol. 27(1) | 27-35 3 pls. Leiden, June 1990

GEORGE PERRY'S FOSSIL MOLLUSCAN TAXA, PUBLISHED IN THE 'ARCANA'(1810-1811)

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Richard E. Petit & Jacques Le Renard. George Perry's fossil molluscan taxa, published in the 'Arcana' (1810-1811). — Contr. Tert. Quatern. Geol., 27(1): 27-35, 3 pls. Leiden, June 1990.

The fossil molluscan taxa proposed by George Perry in his Arcana are listed and discussed. These taxa, proposed in 1810 and 1811 for shells found mostly in the Paris Basin, with two exceptions have never been cited in a systematic work. The genus-level taxon *Aculea* Perry, 1810 is shown to be earlier than the synonymous *Haustator* de Montfort, 1810. '*Pinus*' Perry, 1811, proposed in a somewhat ambiguous manner and cited as a genus by Sherborn and by Neave, was introduced as *Rostellaria pinus*, a senior subjective synonym of *Clavilithes macrospira* Cossmann, 1889. *Cassis verrucosa* Perry, 1810 is a junior subjective synonym of *Cassis cancellata* Lamarck, 1803, but is the earliest available name for the species. *Conus angulatus* Perry, 1810, *Aculea angulata* Perry, 1810 and *Cerithium laevis* Perry, 1810 are junior subjective synonyms of *Conus deperditus* Bruguière, 1792, *Turritella imbricataria* Lamarck, 1804 and *Rhinoclavis striatus* (Bruguière, 1792), respectively. Neotypes are proposed for *Cassis verrucosa* Perry, 1810, and for *Rostellaria pinus* Perry, 1811.

Key words — Gastropoda, nomenclature, neotypes, Eocene, Paris Basin, Hampshire.

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RÉSUMÉ

Les taxa de mollusques fossiles de George Perry, publiés dans les 'Arcana' (1810-1811)

Les taxa de mollusques fossiles proposés par George Perry dans ses Arcana sont passés en revue et discutés. La plupart proviennent du Lutétien du Bassin de Paris. Publiés en 1810 et 1811, ils n'ont depuis été pris en considération dans aucune étude systématique, à deux exceptions près. Le genre *Aculea* Perry, 1810 a une courte antériorité sur *Haustator* de Montfort, 1810, son synonyme. '*Pinus*' Perry, 1811, cité comme genre par Sherborn et par Neave à la suite d'une ambiguïté dans la présentation du texte original, a en fait été introduit comme *Rostellaria pinus*, et se trouve être

un synonyme antérieur de *Clavilithes macrospira* Cossmann, 1889. *Cassis verrucosa* Perry, 1810 est un synonyme subjectif postérieur de *Cassis cancellata* Lamarck 1803, mais constitue le premier nom disponible pour cette espèce. *Conus angulatus*, *Aculea angulata* et *Cerithium laevis* Perry, 1810 sont respectivement synonymes subjectifs postérieurs de *Conus deperditus* Bruguière, 1792, *Turritella imbricataria* Lamarck, 1804 et *Rhinoclavis striatus* (Bruguière, 1792). Des néotypes sont proposés pour *Cassis verrucosa* Perry, 1810, et *Rostellaria pinus* Perry, 1811.

Introduction

Little is known about George Perry other than the fact that he authored two works treating Mollusca (Dance, 1966: 120; Kohn, 1986: 2-4). The better known of the two is his 'Conchology' (1811b), the taxa in which have been taken into consideration by many conchologists. Much lesser known is his 'Arcana, or the museum of natural history' (1810-1811a) (hereinafter referred to as Arcana). The Arcana, an extremely rare work, was the subject of a paper by Mathews & Iredale (1912), who gave an excellent discussion of the work. As a result of that paper, some of Perry's taxa described in the Arcana have been treated by subsequent authors. However, the fossil molluscs have been ignored.

In the Arcana there are two plates of Eocene molluscs (reproduced herein as Pls 1 and 2). The following listing and discussion utilizes the plate numbers devised by Mathews & Iredale (1912), as neither plates nor pages of the Arcana are numbered.

On Plate 3, we give photographs of specimens of the involved species, taken from the collection of one of the authors (JLR), in order to allow visual comparisons and to confirm our determinations.

Plate XV of Perry's Arcana

Plate XV of the Arcana, published April 1, 1810 and here reproduced as Plate 1, illustrates four species about which the text states: 'The above shells are of the kind found in different parts of France, in beds of gravel or clay, at a considerable depth in the earth, and are in the Museum of Mr. Bullock in London'. As may be seen by the reproduction herein, the figures are good and identifiable. Unfortunately, these specimens are lost, or may be presumed lost; the material of Bullock was auctioned in 1819 and then widely dispersed (see the chapter devoted to W. Bullock by Altick, 1978).

Conus (Leptoconus) deperditus Bruguière, 1792
Pl. 3, Fig. 1

1792 *Conus deperditus* Bruguière, p. 691, pl. 337, fig. 7.
1810 *Conus angulatus* Perry, pl. XV, fig. 1.
1835 *Conus diversiformis* Deshayes, p. 747, pl. 98, fig. 9.
1960 *Conus diversiformis* Deshayes — Glibert, pp. 104, 105.
1968 *Conus deperditus* Bruguière — Kohn, p. 453.
1978 *Conus deperditus* Bruguière — Wagner & Abbott, p. 25-016.
1986 *Conus deperditus* Bruguière — Kohn, p. 4 (= *C. angulatus* Perry).
non: 1853 *Conus angulatus* A. Adams, p. 118.

Identification — *Conus angulatus* Perry, 1810, stated to be 'found in a deep bed of clay at Grignon, near Paris, also at Courtagnon in France', is obviously *Conus deperditus* Bruguière, 1792. If drawn at natural size, Perry's figure represents an exceptional specimen (height 85 mm). Some of the characters, such as the coeloconoid spire and the prominent angulation of the shoulder, correspond to *Conus diversiformis* Deshayes, 1835 (see Pl. 3, Fig. 1), which Glibert (1960: 104-105) considered to be a synonym of *C. deperditus*. Glibert also gave a list of 26 localities for this species in the Lutetian of the Paris Basin, reflecting the commonness of the species. Perfect specimens are rare as the thin and expanded outer lip is almost always broken. *Discussion* — *Conus angulatus* Perry, 1810 is a junior subjective synonym of *Conus deperditus* Bruguière (1792: 691, pl. 337, fig. 7). *Conus deperditus* Bruguière was cited as a *nomen oblitum* by Wagner & Abbott (1978: 25-016), but that statement has no standing under the Code and no basis in fact. Bruguière's taxon has been adopted in all publications treating the Paris Basin Conidae and it was listed as a valid species by Kohn (1968: 453) in his review of 18th century *Conus* taxa. The conspecificity of *C. angulatus* Perry and *C. deperditus* Bruguière has recently been shown by Kohn (1986: 4).

Turritella (Haustator) imbricataria Lamarck, 1804
Pl. 3, Figs 2, 3

1804 *Turritella imbricataria* Lamarck, p. 216, vélin 17, fig. 1.
1810 *Aculea angulata* Perry, pl. XV, fig. 2.
1810 *Haustator gallicus* de Montfort, pp. 183, 184, fig. on p. 182.

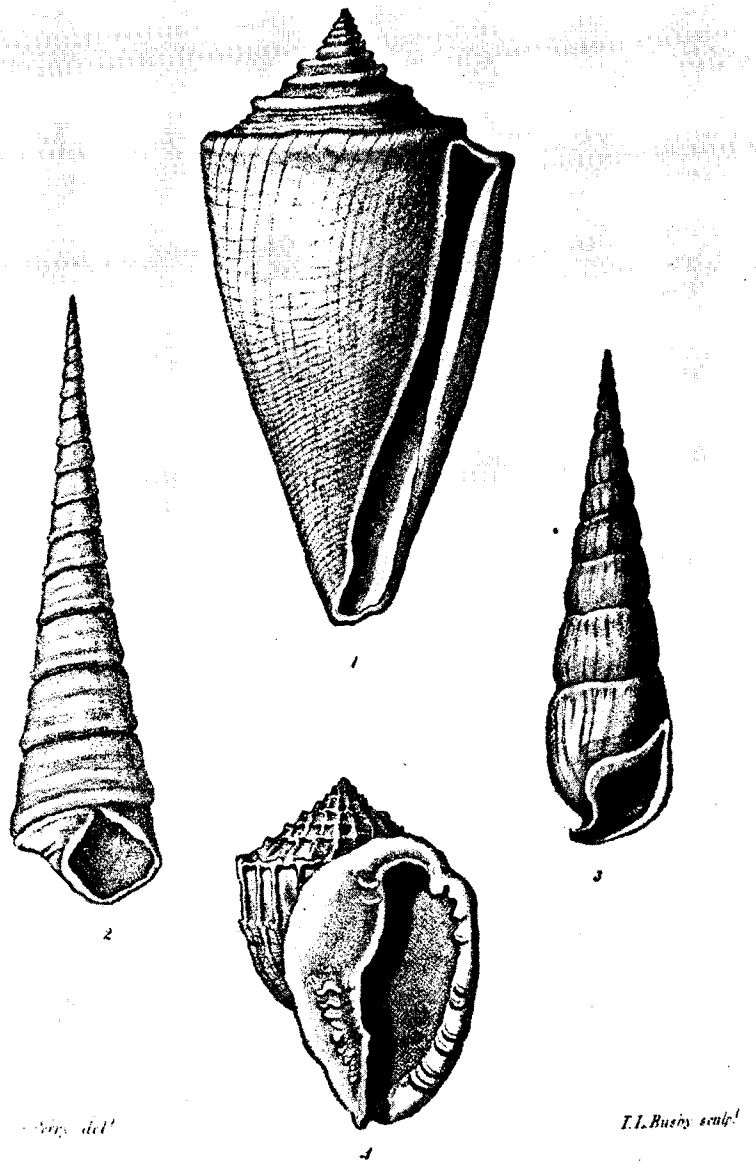


Plate 1. Facsimile of Perry's Arcana, plate XV, 1810.

Identification — There is no precise location given for *Aculea angulata* Perry, 1810, other than the general 'different parts of France' given for all shells on the plate. As all other shells on the plate are obviously from the Lutetian of the Paris Basin, we can infer that *Aculea angulata* probably has the same origin.

The figure depicts a large shell (height 84 mm) with weak or worn out spiral ornamentation. Its whorls are abapically bounded by a blunt keel, prominent above the sutural groove, producing an imbrication of successive whorls. This is a characteristic of *Turritella imbricataria* Lamarck (1804) as indicated by its name; if some other species of fossil turritellids also show the same peculiarity to a more or less extent, they do not occur in the Paris Basin Eocene.

Turritella imbricataria is one of the most common species in the Paris Basin, where it is sometimes the dominant species of paucispecific faunal associations. Its size can reach 85 mm. Its ornamentation is highly variable (see Pl. 3, Figs 2, 3), and several nominal species have been separated for different morphotypes; some specimens show only very little prominent spiral threads, hence resembling quite closely the figure on Perry's plate. Despite its abundance, we have never seen a specimen with a complete peristome, the outer lip being broken (Fischer, 1963, p. 105); this explains Perry's mention of a 'base continued wholly round at the bottom'. The contour of the outer lip, as inferred from collabral growth lines, is markedly sinuous, and is the basis for the separation of the genus *Haustator* de Montfort, 1810, the type species of which is *H. gallicus* de Montfort [= *H. imbricatarius* (Lamarck)].

Discussion — At the species level, *Aculea angulata* Perry, 1810 is a junior subjective synonym of *Turritella imbricataria* Lamarck, 1804. At the genus level, a problem arises. This is the first introduction of *Aculea*, with type species, by monotypy, *A. angulata* Perry, 1810, a subjective synonym of *Turritella imbricataria* Lamarck, 1804. The type species of *Haustator* de Montfort, 1810, is *Haustator gallicus* de Montfort, 1810, also a subjective synonym of *Turritella imbricataria* Lamarck. Therefore *Aculea* and *Haustator* are subjective synonyms. The exact publication date of de Montfort is not known, but Iredale (1915: 457) has shown that it was reviewed on May 28, 1810. *Aculea* (April 1, 1810) therefore has priority over *Haustator* [I.C.Z.N., Article 21(c)(i)].

The subgenus (or genus) ranges from Neocomian to the Recent (Cossmann, 1912: 116-119). We have determined that the genus-level name *Haustator* has been used frequently enough in the past 50 years to fulfil the provisions of Article 79(c)(2) of the Code, and it thus appears that reintroduction of *Aculea* could threaten the stability of nomenclature. A petition has been submitted to the I.C.Z.N. (Petit & Le Renard, submitted) requesting a ruling on these names.

Aculea was listed as a synonym of *Turritella* by H. & A. Adams (1854: 351), but that synonymy was based on the usage of *Aculea* by Perry (1811b) in his 'Conchology' and not on the earlier usage in the Arcana.

Rhinoclavis (Pseudovertagus) striatus
(Bruguière, 1792)
Pl. 3, Fig. 4

1792 *Cerithium striatum* Bruguière, p. 475.
1810 *Cerithium laevis* [*sic*] Perry, pl. XV, fig. 3.
1981 *Rhinoclavis (Pseudovertagus) striatus* (Bruguière) — Bouniol, p. 28.
non: 1834 *Cerithium leve* Quoy & Gaimard *in*: d'Urville, p. 106.

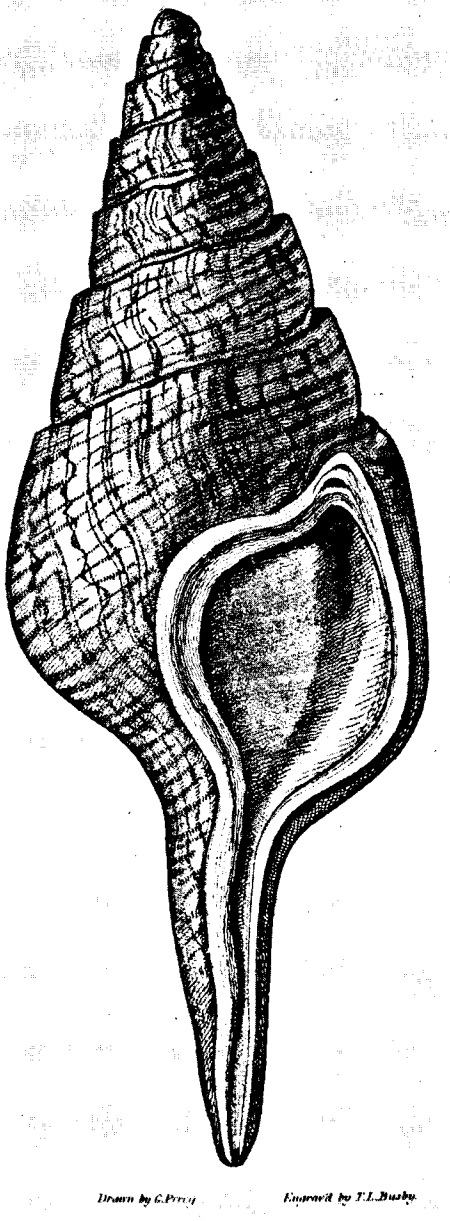
Identification — *Cerithium laeve* Perry, 1810, the origin of which is not specified, is immediately identifiable as *Cerithium striatum* Bruguière, 1792. This species is not rare in the Lutetian of the Paris Basin where it is usually well preserved due to its solid shell (Pl. 3, Fig. 4).

Discussion — *Cerithium laeve* Perry is a junior subjective synonym of *Rhinoclavis (Pseudovertagus) striatus* (Bruguière, 1792). This species has been placed in many different genera and subgenera, and our placement follows that of Bouniol (1981: 28).

Iredale (1917: 326) proposed the new name *Cerithium symbolicum* for *Cerithium leve* Quoy & Gaimard, 1834, the type species of the genus *Campanile* Bayle in P. Fischer, 1884, because of the preoccupation by Perry's name; the name *C. symbolicum* therefore is a junior objective synonym of *C. leve*.

Cassis (Morionella) verrucosa Perry, 1810
Pl. 3, Fig. 5

1803 *Cassis cancellata* Lamarck, p. 169; cf. vélin 45, fig. 1
1810 *Cassis verrucosa* Perry, pl. XV, fig. 4.



PINUS.

Plate 2. Facsimile of Perry's Arcana, plate LXXXIV, 1811

non: 1798 *Cassis cancellata* Röding, p. 30 (= *Buccinum cancellatum* Gmelin, 1791).
1798 *Cassis cancellata* Röding, p. 31 (= *Phalium decussatum* (Linné, 1758)).

Identification — The description and figure of *Cassis verrucosa* Perry, 1810 (named after the 'warty protuberances' on the inductura) point out the decussated aspect of the spire ornamentation. It is clear that this taxon is a junior subjective synonym of *Cassis cancellata* Lamarck, 1803, one of the most attractive shells of the Lutetian of the Paris Basin (Pl. 3, Fig. 5). All the characters agree, including size, sculpture, and the appearance of the inner lip.

Discussion — *Cassis cancellata* Lamarck, 1803, which is a senior synonym of *Cassis verrucosa* Perry, 1810, is, however, not available as it is preoccupied by *Cassis cancellata* Röding, 1798. Abbott (1968: 35) stated that Röding in 1798 used the binomen *Cassis cancellata* for two separate species (both already listed by Sherborn). *Cassis cancellata* Röding (1798: 30) was not newly proposed, but was a transfer of *Buccinum cancellatum* Gmelin, 1791 to the genus *Cassis*. *Cassis cancellata* Röding (1798: 31) is a junior objective synonym of *Phalium decussatum* (Linné, 1758) and is also a senior primary homonym of *Cassis cancellata* Lamarck, 1803. In an effort to conserve Lamarck's name, Abbott (1968: 35) declared both Röding usages of *Cassis cancellata* to be '*nomena oblita*' (*sic*!), but this relegation is not valid as it does not meet the conditions required by Article 79(c)(iii) of the Code. In any event, relegation as a *nomen oblitum* would eliminate *Cassis cancellata* Röding from synonymy, but would not prevent it from competing in homonymy. The *nomen oblitum* provision of the old Code was under the Law of Priority, while homonymy was treated under the Law of Homonymy. Suppressing a name for the Law (or Principle) of Homonymy is reserved for Commission action under the Plenary Powers (Article 79). *Cassis verrucosa* Perry, 1810 is thus the earliest available name for the species.

Neotype designation — As the original shells are presumably lost, we prefer to designate a neotype herein, though this is allowed by the I.C.Z.N. only in the scope of 'major revisions'. The specimen that we figure (Pl. 3, Fig. 5) is perfectly preserved and seems quite suitable for a type designation. It is deposited in the Muséum national d'Histoire naturelle, Paris (typothèque de Malacologie), and is labelled 'Néotype (Petit & Le Renard, 1990) de *Cassis verrucosa* Perry, 1810; Chaussy (Val-d'Oise); Lutétien moyen; legit Le Renard, 1975'.

Plate LXXXIV of Perry's Arcana

Plate LXXXIV of the Arcana (published September 1, 1811) (Perry, 1811a), here reproduced as Plate 2, bears the single name PINUS, entirely in capitals. The text is headed 'Class Fossilia, Order Univalvia, Species *Rostellaria*'. As stated by Mathews & Iredale (1912: 13), 'this last would seem to have meant genus, and the text bears this out, but «appears to belong to the genus *Rostellaria*»'. However, *Pinus* is listed as a genus by Sherborn (1928: 4985) and by Neave (1940: 765). Sherborn (1929: 5554) lists *rostellaria* as a species of *Pinus*, but places *Pinus* in square brackets; he does not list *pinus* as a species. A review of Perry's text clearly shows that his usage was intended to be *Rostellaria pinus*. The sentence partially quoted by Mathews & Iredale continues with the statement, 'which has been separated from the *Strombus*, by having a straighter and longer beak, and a different mouth and spire'. Perry used *Rostellaria* as a genus for the fossil *'Rostellaria fissurella'* and for Recent species, in an earlier number of the Arcana and in his 'Conchology' (1811b), publication of which preceded this part of the Arcana. Plate II of the Arcana (January, 1810) depicts '*Rostellaria rubicunda*' and the accompanying text defines both the genus and the species. It is again defined on the explanations to plates X and XI of the 'Conchology'. The species figured on these two plates are currently placed in *Aporrhais*, *Tibia*, *Strombus (Canarium)* and ?*Varicospira*.

Clavilithes pinus (Perry, 1811)
Pl. 3, Fig. 6

1811a [*Rostellaria*] *pinus* Perry, pl. LXXXIV.
1889 *Clavilithes macrospira* Cossmann, pp. 177, 178, pl. 6, fig. 7.
1913 *Clavilithes macrospira* Cossmann — Cossmann, p. 193.
1927 *Clavilithes macrospira* Cossmann — Wrigley, pp. 232, 233.
1960 *Clavilithes macrospira* Cossmann — Anonymous, p. 76, pl. 23, fig. 6.
1977 *Clavilithes macrospira* Cossmann — Sanders & Cooper, p. 21, fig. on p. 10.

Identification — The origin of *Rostellaria pinus* Perry, 1811, is not indicated in the text. However, Perry's figure exhibits characters sufficient to

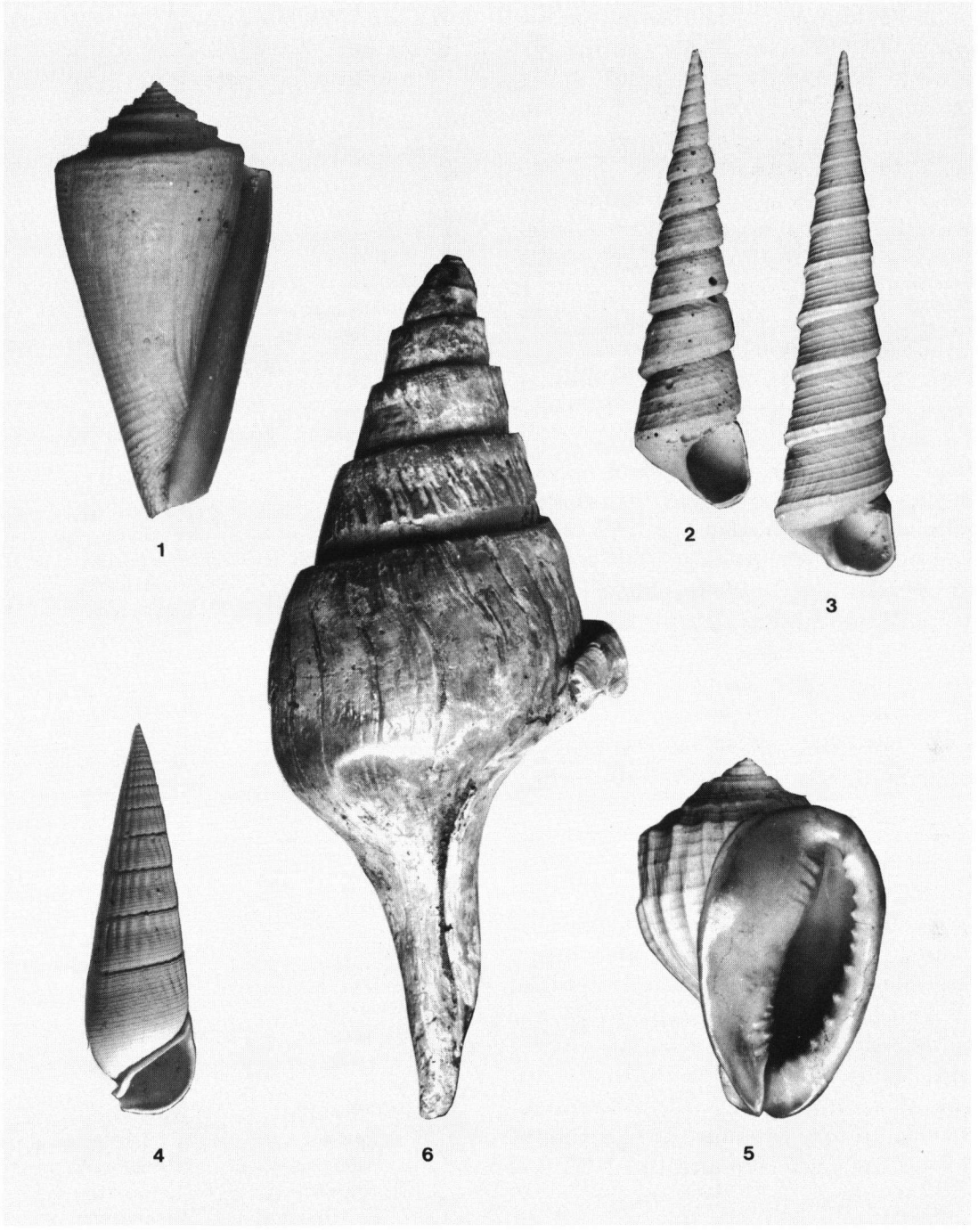


Plate 3. Eocene fossils (all at natural size)

1 *Conus (Leptoconus) deperditus* Bruguière, Chaussy (Lutetian).
2. *Turritella (Haustator) imbricataria* Lamarck, Frileuse (Lutetian).
3. *Turritella (Haustator) imbricataria* Lamarck, Fercourt (Lutetian). Specimen with stronger sculpture.
4. *Rhinoclavis (Pseudovertagus) striatus* (Bruguière), Parnes (Lutetian).
5. *Cassis (Morionella) verrucosa* Perry, Chaussy (Lutetian), neotype.
6. *Clavilithes pinus* (Perry), Highcliffe (Auversian).

identify it as the classic Bartonian *Clavilithes macrospira* Cossmann, 1889 (see Sanders & Cooper, 1977, fig. on p. 10). We give a figure (Pl. 3, Fig. 6, to be compared to Pl. 2) of an imperfectly preserved specimen from Highcliffe (Barton), which shows that a partial decortication of the shell may lead to an exaggeration of both spiral and axial sculptures, whereas the better preserved specimens are smoother. In the text accompanying the plate, Perry described the colour of fossil shells as 'dull brown, sometimes inclining to a reddish brown'; while this assertion clearly does not apply to the Paris Basin fossils, which are whitish, it closely depicts the peculiar aspect of the fossils found in Barton, Hampshire. Elsewhere in the Arcana (about pl. XV, 1810), Hampshire is mentioned, together with the Paris Basin, for its fossils.

The alternate hypothesis, that *Clavilithes pinus* is not of British origin, is hardly defensible, as this species is extremely rare elsewhere, although it has been reported from the Paris Basin (Cossmann, 1889, 1913).

It is our opinion that *Clavilithes pinus* (Perry, 1811) is a senior subjective synonym of *C. macrospira* Cossmann, 1889. We do not feel that the replacement of this specific name will disturb stability.

Discussion — A discussion of *C. macrospira* and its affinities with other species can be found in Wrigley (1927: 232, 233).

Neotype designation — We choose to designate a neotype herein for the same reasons as for *Cassis verrucosa* (see above). We here select as neotype the specimen figured in Anonymous (1960, pl. 23, fig. 6) (= the well-known 'British Caenozoic fossils'), under the name *Clavilithes macrospira*. This specimen is at present in the Cowderoy collection in the Natural History Museum, Department of Palaeontology, catalogue number BM(NH) GG 6896.

Acknowledgements

We wish to acknowledge our appreciation to: Dr F.M. Bayer, National Museum of Natural History, Washington, D.C., who advised concerning interpretations of the Code; Mr J. Cooper, British Museum (Natural History), London, who made constructive comments on this paper; Mr S. Tracey, London, who helped us choosing the neotype of *Clavilithes pinus*; and Dr M.G. Harasewych, National Museum of Natural History, Washington, D.C., who prepared the plates from Perry's Arcana and made comments on a draft of this paper.

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Manuscript received July 26, 1989; revised version accepted April 18, 1990