

BOREOSIPHOPSIS NOV. GEN.
(MOLLUSCA, GASTROPODA, BUCCINIDAE)
FROM THE EOCENE AND OLIGOCENE OF THE
NORTH SEA BASIN

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Within the subfamily Siphopsinae Le Renard, 1995 (Buccinidae Latreille, 1825), the new genus *Boreosiphopsis* is established and its affinities are discussed. Two species from the North Sea Basin are assigned to this new genus, viz. the Oligocene *Boreosiphopsis danica* (Schnetler, 1985) and the late Eocene *B. recticosta* (von Koenen, 1889).

Key words — Mollusca, Gastropoda, Buccinidae, North Sea Basin, Eocene, Oligocene, new taxon.

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INTRODUCTION

In the original paper (Schnetler, 1985), the new late Oligocene gastropod *Coptochetus* (s. lat.) *danicus* was assigned to the genus *Coptochetus* Cossman, 1889 with a query. The available material of this species was rather limited and preservation on the whole not perfect. In addition, the protoconch of *C. danicus* had a spiral ornament, whereas that of the type species of the genus, *C. scalaroides* (Lamarck, 1803), had a papillate nucleus. Despite this difference, the Danish material appeared to be in good agreement with *C. scalaroides* in general outline and ornament. Further studies and additional material from Denmark of this and of other species of

Buccinidae have convinced me that this generic assignment cannot be upheld and that the introduction of a new genus to accommodate the species is warranted.

SYSTEMATIC PART

Family	Buccinidae Latreille, 1825
Subfamily	Siphopsinae Le Renard, 1995
Genus	<i>Boreosiphopsis</i> nov. gen.

Type species — *Coptochetus* (s. lat.) *danicus* Schnetler, 1985.

Derivatio nominis — Combination of Boreas (Latin) = the north, alluding to its occurrence in the north of Europe, and *Siphopsis* Le Renard, 1995.

Diagnosis — A buccinid with slightly convex whorls and strong radial ornament. Spiral ornament is considerably weaker and consists of spiral bands separated by narrow spiral furrows, spiral ornament being most prominent abapically. Protoconch paucispiral with oblique smooth nucleus, probably representing the embryonic shell. The terminal 1½ larval whorls have a very delicate spiral ornament of furrows. The transition into the teleoconch is sharp and orthocone.

Affinities — When establishing *Coptochetus danicus*, generic assignment was based mainly on the general outline of the protoconch and teleoconch and the strong radial ornament, the latter feature corresponding to that of other species then considered to belong in *Coptochetus*. Gougerot & Le Renard (1983) revised the genera *Coptochetus* and *Suessionia* Cossmann, 1889 from the Eocene of the Paris Basin and accepted only two species in the former genus, both with a paucispiral protoconch. Other species previously placed in *Coptochetus* were re-assigned to the genera *Suessionia* and *Siphonalia* A. Adams, 1863.

I previously stated (Schnetler, 1985) that the protoconch of *C. danicus* showed some resemblance to that of the genus *Parvisipho* Cossmann, 1889. The Eocene representatives of that genus from the Paris Basin were revised by Le Renard (1989), who emphasised the difficulties in distinguishing the genera *Siphonalia* and *Parvisipho*. Subsequently, Le Renard (1995) transferred the greater part of the species previously referred to these genera to two new genera, viz. *Siphopsis* and *Andoniopsis*, and to *Amplosipho* Cossmann, 1901, *Pseudoandonia* Morroni & Ruggieri, 1981 and *Coptosipho* Le Renard, 1989. For these genera he established the new subfamily Siphopsinae, which he considered to belong to the family Conidae Fleming, 1822.

The genus *Donovania* Bucquoy *et al.*, 1883 was considered by Gougerot & Le Renard (1983, p. 4) to be the precursor of *Coptochetus*, on account of the similarity in protoconch and teleoconch characters. However, they stated that the protoconch in *Donovania* had a spiral ornament. I have compared photomicrographs of protoconchs of *Donovania*, kindly supplied by Drs P. Lozouet and P. Bouchet (Muséum National d'Histoire naturelle, Paris), with that of *Boreosiphopsis danica*. The protoconch of the former (Pl. 1, Fig. 7) also has spirals on the nucleus, but one less whorl. The spiral furrows between the spiral bands on the protoconch have numerous radial thread-like riblets, and the transition into the teleoconch is gradual. The teleoconch of *Donovania* has strong knobs on the radial ribs, a thickened labrum and a shorter canal. Thus, the new genus differs considerably from *Donovania*, which possibly is a representative of the subfamily Siphopsinae as well.

Discussion — *Boreosiphopsis* nov. gen. agrees well with the diagnosis of the genus *Siphopsis* Le Renard, 1995 in many features, the latter genus having (very) weak ornament, in most cases consisting of regular spirals, occasionally with oblique and only slightly prominent radial ribs. The labrum is not thickened and has no internal lirae; there is no anal sinus either. The columella is smooth and lacks a callus. The protoconch is glossy with a pointed nucleus and outdrawn whorls which are

smooth or bear spirals. *Boreosiphopsis* differs in having a protoconch with an oblique nucleus which is not pointed; the whorls are not outdrawn. In addition, the radial ribs are strong and orthocone. The canal is longer and narrower and turned to the left. The representatives of the genus *Siphopsis* from the Eocene of the Paris Basin differ somewhat in details of ornament and whorl convexity, but they are similar in general outline and have all a more or less outdrawn protoconch. *Boreosiphopsis* is most probably a descendant of *Siphopsis*.

Le Renard (1995, p. 58) discussed in detail the stratigraphical range of the Siphopsinae, concluding that, based mainly on teleoconch features, they were close to the Conidae. For the time being, I prefer to maintain placement in the Buccinidae on the basis of general outline, orthocone growth lines and protoconch features. Such protoconchs are not known in Conidae (Fleming, 1822) nor Turridae (Swainson, 1840 emend. Powell, 1966).

STRATIGRAPHICAL AND GEOGRAPHICAL DISTRIBUTION

So far, *Boreosiphopsis danica* has been recorded exclusively from the late Oligocene of Denmark. From the Galten Brickworks clay pit at Nørre Vissing eight specimens have been collected; the species is very rare at Skanderborg and Kirstinebjerg Skov (Schnetler, 1985) and at Mogenstrup (Schnetler & Beyer, 1990). To date, no representatives of the new genus are known from the early Oligocene Viborg Formation. German material from the Lower Rhine area mentioned by Schnetler & Beyer (1987, p. 213) cannot be referred to this genus.

Von Koenen (1889, p. 205, pl. 20, figs 9a-c, 10a, b) described and illustrated *Fusus recticosta* von Koenen from the Latdorfian (late Eocene) of Latdorf and Calbe a/S. This species has recently been discussed by Schnetler & Beyer (1987, p. 214); it differs in having weaker ornament and a lower number of spiral bands (six instead of eleven). In addition, the protoconch lacks spiral ornament, which, however, may be due to the rather poor state of preservation. The protoconch of this species is more pointed in all specimens except one (Pl. 1, Fig. 5) whose protoconch is similar to that of the Danish species (Pl. 1, Fig. 4). These two species agree well in general outline and in details of radial ornament, labrum, inner lip, aperture and canal.

Albrecht & Valk (1943, p. 68, pl. 20, figs 784-787) recorded *Fusus ? recticosta* von Koenen from the early Oligocene of the Emma colliery (southern Limburg, The Netherlands).

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PLATE 1

- Figs 1-3, 6. *Boreosiphopsis danica* (Schnetler, 1985) n. comb.; **1** - **holotype** (Geological Museum Copenhagen collections, MGUH 16 810), Nørre Vissing (late Oligocene), x 19; **2** - **paratype** (MGUH 16 811), protoconch and first teleoconch whorl, Skanderborg (late Oligocene), x 50; **3** - MGUH 17 617, Nørre Vissing (late Oligocene), x 15; **6** - **paratype** (MGUH 16 811), protoconch and first teleoconch whorls, Skanderborg (late Oligocene), x 43.
- Figs 4, 5. *Boreosiphopsis recticosta* (von Koenen, 1889) n. comb.; **4** - Geologisch-paläontologisches Institut Göttingen collections (von Koenen Coll., no. 89), specimen with rounded nucleus from Latdorf (Latdorfian, late Eocene), x 15; **5** - same repository and collection, specimen with pointed nucleus, x 15.
- Fig. 7. *Donovania* sp., Muséum national d'Histoire naturelle collections (Paris), protoconch (photomicrograph, x 57), off Corsica (Recent). Photograph courtesy of Dr P. Bouchet.

PLATE 1

