Tortolithus gen. nov. Crux and new combinations of Mesozoic calcareous nannofossil from England.

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The format of the recently published 'Stratigraphical Index of Calcareous Nannofossils' (Lord (Ed.) 1982) did not permit the formal inclusion of new taxonomy. We therefore take this early opportunity to validate certain new combinations and to include the description of the new genus Tortolithus Crux.

Bipodorhabdus brooksii (Bukry 1969) comb. nov. Crux

1969 Amphizygus brooksii brooksii Bukry, p.47, pl.25, figs.1-3.
1970 Bipodorhabdus tesselatus Noël, pp.50-52, pl.13, figs.7,8; pl.14, figs.1-4; pl.15, fig.1; Text fig.10.
1971 Reinhardtites brooksii (Bukry); Reinhardt, p.21, Text figs.5,6.
1982 Bipodorhabdus brooksii (Bukry); Crux, p.114, pl.5.2, fig.10.

Flabellites oblonga (Bukry 1969) comb. nov. Crux

1969 Watznaueria oblonga Bukry, p.33, pl.11, figs.8-10.
1982 Flabellites oblonga (Bukry); Crux, p.110, pl.5.1, fig.11; pl.5.8, fig.1.

Helicolithus bifarius (Bukry 1969) comb. nov. Crux

1969 Chiastozygus bifarius Bukry, p.49, pl.26, figs.10-12.
1970 Eiffellithus anceps (Gorka); Hoffmann, p.850, pl.1, figs.3,4.
1982 Helicolithus bifarius (Bukry); Crux, p.116, pl.5.3, figs.6,10.

Heteromarginatus bugensis (Gorka 1963) comb. nov. Crux

1963 Discolithus bugensis Gorka, p.12, pl.2, figs.4,5.
1982 Heteromarginatus bugensis (Gorka); Crux, p.118, pl.5.4, fig.20; pl.5.9, fig.4.

Parhabdolithus plebeius (Perch-Nielsen 1968) comb. nov. Crux

1968 Rhagodiscus plebeius Perch-Nielsen, p.44-45, pl.7, figs.2-6.
1968 Rhagodiscus bispiralis Perch-Nielsen, p.45-46, pl.7, fig.7.
1969 Parhabdolithus granulatus Stover; Bukry, p.53, pl.30, figs.4-7.
1976 Parhabdolithus melanoarachnion Hill, p.148, pl.10, figs.16-21.
1982 Parhabdolithus plebeius (Perch-Nielsen); Crux, p.124, pl.5.6, fig.6.

Parhabdolithus reniformis (Perch-Nielsen 1973) comb. nov. Crux

1973 Rhagodiscus reniformis Perch-Nielsen, p.323, pl.3, figs.2,4,6; pl.10, figs.45,46.
1976 Nephrolithus frequens Gorka emend Perch-Nielsen; Verbeek, p.145, pl.3, fig.6.
1982 Parhabdolithus reniformis (Perch-Nielsen); Crux, p.124, pl.5.6, fig.4.

Staurolithites coroniformis (Forchheimer 1972) comb. nov. Taylor

1972 Vagalapilla coroniformis Forchheimer, p.63, pl.XXI, figs.3-5.
1978 Staurolithites coroniformis (Forchheimer); Taylor, p.199.

Stradnerlithus minutus (Rood, Hay and Barnard 1971) comb. nov. Hamilton

1971 Diadorhombus minutus Rood, Hay and Barnard, p.258, pl.II, fig.6.
1982 Stradnerlithus minutus (Rood, Hay and Barnard); Hamilton, p.34, pl.3.2, fig.10.

Remarks: Original illustration of holotype shows a reversed image; illustration of Hamilton (1982) is correct.

Zygodiscus noelae (Rood, Hay and Barnard 1971) comb. nov. Taylor

1971 Zeugrhabdotus noeli Rood, Hay and Barnard, p.252-253, pl.1, fig.4.
1978 Zygodiscus noeli (Rood, Hay and Barnard); Taylor, p.200.
1982 Zygodiscus noeli (Rood, Hay and Barnard) Taylor 1978; Hamilton, p.32, pl.3.1, fig.11.
1982 Zygodiscus noeli (Rood, Hay and Barnard) Taylor 1978; Taylor, p.66, pl.4.4, figs.2,3.
1982 Zygodiscus noelae (Rood, Hay and Barnard) Taylor 1978; Crux, p.112, pl.5.1, fig.18.

Remarks: Original illustration of holotype shows a reversed image; illustration given by Hamilton (1982) is correct.

Genus Lithastrinus Stradner, 1962

Remarks: The genus Lithastrinus was erected by Stradner for a group of circular calcareous nannofossils with 6 to 11 wall-forming elements and a central diaphragm structure composed of the same number of calcite plates. He placed two species floralis and grilli in Lithastrinus. In 1966 Stover erected two further genera, Eprolithus and Radiolithus, and distinguished the former (which included L. floralis) from Lithastrinus by its possession of a conspicuous axial opening divided by a central plate. Radiolithus was distinguished from the two other genera by its U-shaped cross-section. Forchheimer (1968) described Polycyclolithus which included forms with a ring-like shape and few elements around a central hole. Finally, Black (1973, p.103) erected the genus Rhombogyrus which was diagnosed as "Eprolithaceae with a diaphragm of imbricating rhombohedral plates in a proximal position."

The genus Lithastrinus is used here to include all forms belonging to this group of species. Stover's separation of Eprolithus from Lithastrinus is thought to be unnecessary, as the two genera are linked by a continuous series of variations between the two extreme forms. Radiolithus is not used because the type species R. planus is thought to be closely related to members of the genus Lithastrinus, which do not have the U-shaped cross-section characteristic of the genus Radiolithus. Polycyclolithus is considered a junior synonym of Lithastrinus. Rhombogyrus is synonymous with Radiolithus; Black's distinction of the two genera based on the structure of the central diaphragm is not considered useful because the appearance of this structure is altered by differences in preservation.

Lithastrinus orbiculatus (Forchheimer 1972) comb. nov. Crux

1972 Polycyclolithus orbiculatus Forchheimer, pp.57-58, pl.27, figs.5-6.
1973 Eprolithus apertior Black, pp.100-101, pl.33, figs.7,9,10, Text figs. 48,49.
1973 Rhombogyrus stellatus Black, p.104, pl.32, figs.5-7.
1982 Lithastrinus orbiculatus (Forchheimer); Crux, p.124, pl.5.6, figs.18,19.

Genus Tortolithus gen. nov. Crux

Diagnosis: A coccolith with an outer rim of large imbricating elements; the central area has a median suture, aligned parallel with the long axis of the elliptical coccolith, and around the suture lie approximately the same number of elements as in the rim in an imbricate relationship.

Remarks: This genus is possibly ancestral to Tertiary genera and species; it has a similar construction to Discolithus phaseolus Black and Barnes, 1961. The latter differs in having more than one cycle of imbricating elements in its central area.

Type species: Tortolithus caistorensis sp. nov. Crux.

Tortolithus caistorensis sp. nov. Crux

Diagnosis: A species of Tortolithus with 12 to 20 elements in its outer rim.
Derivatio nomenis: from the type locality of Caistor St. Edmund.
Figured: Crux 1982, pl.5.4, fig.17.
Holotype: Negative No. UCL-1018-9.
Type level and locality: mucronata Zone, Campanian. Caistor St. Edmund, Norfolk.

Other species:

Tortolithus furlongii (Bukry) comb. nov. Crux

1969 Discolithina? furlongii Bukry, pp.45-46, pl.24, fig.1

Tortolithus hallii (Bukry) comb. nov. Crux

1969 Discolithina? hallii Bukry, p.46, pl.24, fig.2-4.

Tortolithus pagei (Bukry) comb. nov. Crux

1969 Discolithina? pagei Bukry, p.46, pl.24, figs.5-6.

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VALIDATION OF BLACKITES TROCHOS

by L. M. Bybell

It has been brought to my attention that the name Blackites trochos Bybell (1975, p.230, pl.6) is invalid because no holotype was designated. The specimen illustrated om Plate 6, Figure 3, is herewith designated the holotype for Blackites trochos.

Ref.

Bybell, L. M., 1975. Middle Eocene calcareous nannofossils at Little Stave Creek, Alabama. Tulane Studies in Geology and Paleontology, v. 11 (4), pp.177-252.