THE HAUTERIVIAN AMMONITE GENUS
LYTICOERAS HYATT, 1900 AND ITS
SYNONYM ENDEMOCERAS THIERMANN, 1963

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ABSTRACT. Thiernann's (1963) arguments for establishing Endemoceras as a distinct genus are rejected and it is
considered a junior synonym of Lyticoceras Hyatt.

Lyticoceras was established by Hyatt (1900, p. 586) with Ammonites cryptoceras
d'Orbigny (1840, p. 24) as type species by original designation. Hyatt figured as
representative 'Lyticoceras Noricum Sowb. sp. = Hoplites amblygonium, Neum.' He
can, therefore, be presumed to have regarded both noricum, generally attributed to
Schlotheim or to Roemer, and amblygonium (Neumayr and Uhlig), if different from
noricum, as congeneric with cryptoceras (d'Orbigny).

Hyatt's genus came into general use for the widespread group of species from the
boreal Neocomian that includes amblygonium (Neumayr and Uhlig) and regale
(Pavlov). Spath's important work on the ammonites of the Speeton Clay (1924) gave
this usage wide currency, particularly as several species of the genus were made zonal
or subzonal indices. He writes (p. 88) 'Lyticoceras, here adopted for the group of
A. noricus Schlotheim, to which d'Orbigny's A. cryptoceras, Hyatt's genotype, prob-
ably belongs, . . .'. This usage continued without serious question until the mid
sixties, although Kilian had in 1910 (pp. 198, 220) stated that cryptoceras was a
Leopoldia, a view that entailed an eccentric notion of that genus, and Roman in 1938
(p. 334) had treated Lyticoceras as a synonym of Neocomites.

In 1963, however, Thiernann, in a published version of a dissertation at the
University of Hamburg, established a new genus Endemoceras, with type species by
original designation Hoplites amblygonius Neumayr and Uhlig (1881, p. 168), for
the group of northern European species long included in Lyticoceras. Thiernann
has begun to appear in the literature. For example, Busnardo (1966, pp. 233–235)
treats Lyticoceras and Endemoceras as distinct genera; Rawson (1971a, p. 71) in a
paper on Simbirskitas from the Speeton Clay uses Endemoceras without comment,
while Kullmann and Wiedmann in a survey of ammonite sutures and phylogeny
name is used generally in 'The Boreal Lower Cretaceous' (Casey and Rawson 1973)
and in current stratigraphical papers (e.g. Kemper 1971; Rawson 1971b).

In view of the wide usage of Lyticoceras and the stratigraphical importance of the
species included in it the proposed new name needs careful examination before it is
accepted.

Thiermann's argument was that Ammonites cryptoceras was stated by its author
d'Orbigny to come from the 'Lower Neocomian' of Lagne, near Castellane, Basses
Alpes and that according to Rutsch and Bertisch (1955) d'Orbigny meant by the

term ‘Lower Neocomian’ what is now regarded as Infraavlanguinian (Berriasian) and Valanginian. Consequently Thiermann maintained (1963, p. 348) that cryptoceras was not a Hauperian species, although d'Orbigny used exactly the same words for the horizon of his Ammonites radiatus, the type species of Acanthidicus, universally regarded as lower Hauperian; moreover, Lagne is a well-known locality for lower Hauperian ammonites (cf. Kilian 1910, p. 204). Thiermann quoted Kilian in support of his view that Lytoceratites was a synonym of Leopolidea Mayer-Eymar, on the strength of the suture of cryptoceras, but he did not discuss further the morphology of Lytoceratites.

Busnardo (1966, p. 233) regarded Lytoceratites as a valid genus of lower Hauperian date and, on the basis of study of d'Orbigny's larger figured specimen, mistakenly referred to as the holotype, he diagnosed Lytoceratites as follows [translated]: ‘... evolute, umbilicus wide with sharp edge, whorl section high, tending to be rectangular; primary ribs generally with a slight umbilical tubercle, secondaries intercalated or branching, but all ribs equal on the outer part of the sides where they bend sharply forward, partly covering a smooth siphonal band on the flat or arched venter but with no chevrons; occasional small ventrolateral tubercles may be present, particularly on the body chamber; suture with asymmetrical lobes like those of Leopolidea.' He reports that Endemoceras is distinct, though closely related, but mentions only the more frequent and sometimes regular ventrolateral tubercles and the tendency of the ribs to form chevrons on the venter.

I owe to the kindness of J. Sornay a plaster cast of d'Orbigny's larger figured specimen of cryptoceras (Mus. Hist. Nat. de Paris, no. 1884). This specimen is hereby designated lectotype; the cast is figured in Plate 71, figs. 1a-d. D'Orbigny's figure, though restored as usual, is shown to be fairly accurate; the only really misleading aspect of it is the impression of a smooth keel in the side view (fig. 1); however, his figs. 2 and 4 show that the venter is flat. Certainly the species is not a Leopolidea.

In interpreting d'Orbigny's specimen it should be noted that the apparently uncrushed outer whorl is in fact slightly distorted obliquely, that the test is missing entirely over some areas and only its inner layers are preserved elsewhere and that the specimen is somewhat worn.

Study of the abundant northern material of the amblygonium group shows that in the macromorph species/specimens which compare in size with the lectotype of

EXPLANATION OF PLATE 71

All figures half natural size.

Fig. 1a-d. Lytoceratites cryptoceras (d'Orbigny), lectotype, 'Lower Neocomian', Lagne, France. (Musée d'Histoire Naturelle, Paris, no. 1884.) Plaster cast, of slightly distorted specimen with inner whorls crushed and most of test missing.

Fig. 2. Lytoceratites amblygonium (Neumayr & Uhlig), lectotype, amblygonium Zone, Kirchwerden, Germany. (Bayerische Staatssammlung für historische Geologie, München.) Copy of Thiermann 1963, pl. 20, fig. 1; a plaster cast of an internal mould with some test preserved between ribs.

Fig. 3. Lytoceratites amblygonium (Neumayr & Uhlig), C laxby Ironstone, Nettleton Top Mine, Caistor, Lincs. (C. W. and E. V. Wright Collection no. 22906.) Test largely preserved.

Fig. 4a, b. Lytoceratites amblygonium (Neumayr & Uhlig), densicostate form, C laxby Ironstone, Nettleton Top Mine, Caistor, Lincs. (C. W. and E. V. Wright Collection no. 24816.) Test preserved.
cryptoceras the ventro-lateral tubercles and ventral chevrons are distinct only if the outer layers of the test are preserved; the siphonal area of internal moulds of such well-chevroned species as amblygonium or regale is almost or entirely smooth.

For comparison Thierrmann's figure (1963, pl. 20, fig. 1) of the lectotype of amblygonium is reproduced here (Pl. 71, fig. 2) and two well-preserved Claxby Ironstone specimens are figured. These show that cryptoceras and amblygonium are indeed closely related; the whorl section, degree of evolution, and the general pattern of ribboning and tuberculation are the same; the two forms share the characteristic sharp twisted bullate umbilical tubercles. The only noticeable differences lie in the ribbing; in cryptoceras the primary ribs are only slightly biconcave and tend on the last preserved whorl to become falcooid and sparser, while in amblygonium they are more distinctly biconcave and remain dense to a slightly later stage. The lectotype of cryptoceras has about 25 umbilical tubercles and 97 ventro-lateral ribs on the last preserved whorl compared with 28 and 71 in the lectotype of amblygonium and 22 and 74 (estimated) in another amblygonium figured by Thierrmann (pl. 21, fig. 3).

The Claxby Ironstone specimen of amblygonium in Plate 71, fig. 3 has 15 and 48 in a half whorl; the primary ribs become distantly spaced at about the same stage as in cryptoceras. The specimen in Plate 71, fig. 4a, b has 41 umbilical tubercles and 89 ventro-lateral ribs.

The suture of cryptoceras is not well figured by d'Orbigny and is only poorly visible on the lectotype. However, it can be seen that the second lateral saddle and lobe are not as drawn by d'Orbigny's artist but are much as in the northern group of species; they bear little resemblance to the markedly short and wide elements in Leopoldia.

Lyttoceras cryptoceras is in fact of lower Hauterivian date and is closely related to Hoplitites amblygonium Neumayr and Uhlig; the only differences between the two are due to preservation or are of no more than specific significance. Endemoceras is, therefore, a synonym of Lyttoceras.

Certain other nominal taxa have recently been established in this group. Eleniceras Bruszkowski, 1967 (p. 47) from the lower Hauterivian of Germany, Bulgaria, and the Crimea was distinguished from Lyttoceras only by having constrictions and associated trituberculate ribs from a rather earlier stage of growth than in the amblygonium group. Most, if not all, macromorph Lyttoceras develop similar ornament on the outer whorls and it is very doubtful if Eleniceras is justified even as a subgenus. The Madagascan Besatreferas Collignon, 1962 (p. 58), said to be from the upper Valanginian, comprises a group of species that differ only slightly from European Lyttoceras by their elongated umbilical tubercles projecting into the umbilicus. It is again very doubtful if even subgeneric separation is needed.

REFERENCES


SPATZ, L. F. 1924. On the Ammonites of the Speeton Clay and the Subdivisions of the Neocomian. Geol. Mag. 61, 73–89.


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