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The lectotype of *Baculites asperoanceps*
LASSWITZ, 1904 (Cretaceous ammonite),
with a discussion on the affinities
of the species

ABSTRACT: The lectotype of *Baculites asperoanceps* LASSWITZ, 1904, was located in Wrocław (in German *Breslau*), Poland, the place of birth of the late Jost WIEDMANN. A cast of the lectotype is here figured photographically and the affinities of this poorly known Texan species are discussed.

INTRODUCTION

Some of fossils described by LASSWITZ (1904) in his "*Die Kreide-Ammoniten von Texas*" were recently located in Wrocław, Poland (KLINGER 1994); among these is the figured specimen of *Baculites asperoanceps* of LASSWITZ (1904, p. 236, Pl. 15, Figs 1a-1b), herein designated as the lectotype. A plaster cast of this lectotype is here refigured photographically for the first time, and its affinities with other American baculite species are discussed.

SYSTEMATIC ACCOUNT

Dimensions are given in millimeters; MxWb – Maximum whorl breadth, MxWh – Maximum whorl height, Wb:Wh – ratio of whorl breadth to whorl height, MnWb – Minimum whorl breadth, MnWh – Minimum whorl height, D – Distance measured between maximum and minimum whorl height, Taper – $100 \times$ difference between MxWh and MnWh divided by D.

Order Ammonoidea ZITTEL, 1884
Suborder Ancyloceratina WIEDMANN, 1960
Superfamily Turrititaceae GILL, 1871
Family Baculitidae GILL, 1871
(=Eubaculitinae BRUNNSCHWEILER, 1966)
Genus *Baculites* LAMARCK, 1799
(=*Homaloceratites* HUPSCH, 1768, p. 110 (non binomen);
***Euhomaloceras* SPATH, 1926, p. 80)**
***Baculites asperoanceps* LASSWITZ, 1904**
(Plate 1A-D)

1904. *Baculites aspero-anceps* LASSWITZ; R. LASSWITZ, p. 236 (16), Pl. 3 (15), Fig. 1a-1b.

non 1921. *Baculites* cf. *aspero-anceps* LASSWITZ; L.F. SPATH, p. 259, Pl. 24, Fig. 4-4a (= *B. capensis* WOODS, 1906).

1928. *Baculites aspero-anceps* LASSWITZ; W.S. ADKINS, p. 206.

non 1931. *Baculites* cf. *aspero-anceps* LASSWITZ; M. COLLIGNON, p. 22, Pl. 3, Fig. 7-7a; Pl. 8, Fig. 12 (= *B. capensis* WOODS, 1906).

non 1938. *Baculites* cf. *aspero-anceps* R. LASSW.; M. COLLIGNON, p. 89, Pl. 6, Fig. 7-7b (= ? *B. bassei* BESAIKIE, 1930).

TYPES: LASSWITZ (1904) based his description of *B. aspero-anceps* sp.n. on a large specimen which he figured as Pl. 3, Fig. 1a-1b, and two fragments, all from the F.A. ROEMER collection of fossils from Texas. The figured specimen is herein designated as the lectotype (Plate 1 A-D). It is imprecisely located as Austin, Texas, and is housed in the collections of the Henryk TEISSEYRE Geological Museum of the Institute of Geological Sciences of the University of Wrocław, Poland; labelled No. 3045s (k), MGUWr.

Dimensions:

<i>MxWb</i>	<i>WxWh</i>	<i>Wb:Wh</i>	<i>MnWb</i>	<i>MnWh</i>	<i>D</i>	<i>Taper</i>
15.2	19.6	0.78	12.4	17.7	180	1.06

DESCRIPTION: Lectotype still has part of diagenetically replaced shell preserved. At adapical end, which appears to be last part of phragmocone, ornament consists of densely spaced, crescentic lateral ribs, circa three and a half per whorl height, situated on dorsal half of flanks. These give rise to thin, forwardly projected riblets near mid-flank that become very weak over ventral half of flanks and cross venter in narrow convexity, accompanied by numerous intercalated riblets. Towards adapertural end of specimen, ornament coarsens. Although still crescentic, lateral ribs become prominent and node-like, and wider-spaced, circa two and a half per whorl height.

DISCUSSION

The species *B. asperoanceps* is difficult to interpret. As far as we can ascertain, the only description to date of the species based on actual material is that of LASSWITZ (1904, p. 236). ADKINS' (1928, p. 206) description of this species is apparently based on LASSWITZ's original material. (Prof. Keith YOUNG informed us that he has material from Alabama and Texas). As the name implies, LASSWITZ indicated that the species combines features of *B. anceps* LAMARCK and *B. asper* MORTON;



Baculites asperoanceps LASSWITZ, 1904

Plaster cast of the lectotype, No. 3045s (k) MGUWr, housed in the collections of the Henryk TEISSEYRE Geological Museum of the Institute of Geological Sciences, University of Wrocław; nat. size

i.e., crescentic (*anceps*) ribbing in the early stages and lateral (*asper*) nodes in the later stages. Without the original material, it is impossible to state with certainty whether *B. asper* MORTON of LASSWITZ (1904, p. 235) and *B. anceps* LAMARCK (LASSWITZ 1904, p. 235) are the same as *B. asperoanceps*. Both are imprecisely recorded from the same locality – Austin, and we assume that they are the same. The same holds for ROEMER's (1852, p. 36, Pl. 2, Fig. 2) *B. asper* that is also probably the same as *B. asperoanceps*.

KENNEDY & COBBAN (1991, p. 76) commented on the close similarity between the figured lectotype of *B. asperoanceps* and one of their specimens of *B. codyensis* REESIDE, 1927a (KENNEDY & COBBAN 1991, Pl. 15, Figs 22-24), but, without access to the type material of the former, pronounced themselves "uncertain as to its precise affinities". The species *Baculites codyensis* shows an ontogenetic change in ornament very similar to that of the lectotype of *B. asperoanceps*; in fact, most references to *B. "asper"* of previous authors are misidentified, nodose *B. codyensis* and have nothing to do with MORTON's (1833, p. 291; and 1834, p. 43, Pl. 1, Figs 12-13) species. The species *Baculites asper* is also difficult to interpret, but it is definitely a much younger species; the original material was collected at Cahawba and Prairie Bluff in Alabama, dated as late Campanian and Maastrichtian respectively. [Prof. Keith YOUNG informed us that he has topotype material of *B. asper* from Cahawba (Cahaba) River and additional specimens from other localities in Alabama].

Based on superficial resemblance alone, it would be tempting to consider *B. codyensis* as a junior synonym of *B. asperoanceps*. However, they seem to differ in that known body chambers of *B. codyensis* that are of the size of the lectotype of *B. asperoanceps* have either lost their ornament or have a few, widely spaced nodes. Furthermore, LASSWITZ (1904, p. 236) stated that the lectotype of *B. asperoanceps* was from Austin – we do not know if he meant the city or the Austin Chalk. One of us (W.A.C.) has noted that baculites from the Austin Chalk (Coniacian to Lower Campanian) are rare, crushed and preserved as internal moulds – a mode of preservation irreconcilable with that of the uncrushed lectotype. Uncrushed baculites are, however, present in the younger (Middle Campanian) Pecan Gap Chalk. According to COBBAN & KENNEDY (1994), *B. taylorensis* ADKINS (1929, p. 204, Pl. 5, Figs 9-11) occurs in the Pecan Gap Chalk near Austin, but in collections from other localities of the Pecan Gap Chalk, COBBAN has identified baculites that may be *B. obtusus* MEEK (1876, p. 406, Text-figs 57-60).

The species *Baculites taylorensis*, recently described from Arkansas by KENNEDY & COBBAN (1993a, p. 93, Figs 10.1-10.9, 10.11, 10.12, 10.16, 10.18, 10.19, 11.1-11.2; KENNEDY & COBBAN 1993b, p. 143, Pl. 6, Figs 1-9,

Pl. 7, Figs 1-6, 10-13, Text-figs 8B, D) is easily distinguished from *B. asperoanceps* by the possession of widely-spaced lateral nodes throughout its growth. The species *Baculites taylorensis* lacks the crescentic ribbed ornament of the early stages of growth of *B. asperoanceps*.

The species *Baculites obtusus*, best known from the lower part of the Pierre Shale (Campanian) of the Western Interior (*see* COBBAN 1962, p. 706, Pl. 105, Figs 1-14), but also recorded from the lower Campanian of West Greenland (BIRKELUND 1965, p. 58, Pl. 8, Fig. 1; Pl. 9, Figs 1-3; Pl. 10, Fig. 1; Pl. 11, Figs 1-2; Pl. 12, Figs 1-2; Pl. 13, Figs 1-2; Pl. 14, Fig. 1; Text-figs 47-52) is still strongly ornamented at sizes similar to that of the lectotype of *B. asperoanceps*. The crescentic rib-like parts of the ornament of *B. obtusus* and *B. asperoanceps* are very similar, but the ornament on the body chambers of *B. obtusus* is more rib-like (*see e.g.* COBBAN 1962, Pl. 105, Figs 7 and 12) rather than rounded nodose as in the lectotype of *B. asperoanceps*. For the present, we can only say that stratigraphic data suggest that *B. asperoanceps* may be the same as *B. obtusus*, but, based on the present limited material, we cannot be sure.

YOUNG (1963, p. 42) thought that *B. asperoanceps* could be a senior synonym of *B. aquilaensis* REESIDE (1927b, p. 12, Pl. 6, Figs 11-13; Pl. 8, Figs 1-14). The latter, however, including varieties *separatus* REESIDE (1927b, p. 12, Pl. 8, Figs 15-21; Pl. 9, Figs 6-15; Pl. 45, Figs 5-6) and *obesus* REESIDE (1927b, p. 12, Pl. 10, Figs 1-8) has ribbing similar to that of the phragmocone of *B. asperoanceps*, but apparently never developed the "asper"-like nodes on the body chamber.

Tentative records of *B. asperoanceps* from South Africa by SPATH (1921, p. 259, Pl. 24, Fig. 4-4a) and Madagascar by COLLIGNON (1931, p. 22, Pl. 3, Fig. 7-7a; Pl. 8, Fig. 12; and 1938, p. 89, Pl. 6, Fig. 7-7b) are incorrect. The South African specimen belongs to *B. capensis* WOODS (1906, p. 342, Pl. 44, Figs 6-7), as does COLLIGNON's (1931) specimen. COLLIGNON's (1938) baculitid is of Campanian age, and has a distinct trigonal whorl section with a flattened dorsum; it is probably allied to *B. basseae* of BESAIRIE (1930, p. 222, Pl. 22, Fig. 8, 8a) and similar to *Baculites* sp. of STEPHENSON (1941, p. 406, Pl. 76, Figs 7-8).

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