

二叠纪菊石属 *Shengoceras* 的特大型 标本在广西的发现^{*}

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关键词 *Shengoceras* 菊石 二叠纪 华南

当前研究标本壳体之大,在此类菊石中是罕见的,而且它的缝合线保存亦十分完美。标本体室虽已剥落,仅存留气室,但其壳径仍达 101mm,推测完整壳体的壳径至少在 150mm 以上。标本系由我所张治平一年前得自广西柳州市。根据他所提供的地点及标本本身的特征,推断它可能来自广西柳江、来宾和武宣县一带二叠系的孤峰组。壳形及缝合线表明它即赵金科(1955)所记录、嗣后 Ruzhencev(1956)更名为“孤峰菊石(*Kufengoceras*)”的一类化石,只是赵氏记述的标本壳径最大者仅为当前标本的一半左右。

笔者在“无脊椎动物古生物学论丛(Treatise on Invertebrate Paleontology)”, pt·L 二叠纪菊石部分的二版修订过程中,重新研究了广西孤峰菊石群的全部模式材料后,认为 *Shengoceras* 与 *Kufengoceras* 两属的缝合线相同,所不同者仅仅是二者的壳形,即前者的腹部呈尖棱状,后者腹部浑圆。观察了 *Shengoceras* 唯一的种,即模式种 *S. lenticulare* Chao 仅有的两个标本后,发现它们腹部的“尖棱”均系压裂所致,实与一般的 *Kufengoceras* 并无二致。所以二者应视为同物异名,而 *Shengoceras* 为早出异名,在其属征做出适当修订后,该属名应取代 *Kufengoceras* 而成为有效名。问题是赵氏建立的 *Kufengocertinae* 亚科是否继续有效?

国际动物命名法规第三版第 40 条 a 项规定:1960 年以后,当据以为任何有效科级单位命名基础

的属名作为晚出异名而被废黜时,这一科级单位的命名不必予以变更,除非在(i)款的情况下:(i) 如果该晚出异名本身是另一个科级单位命名的基础,或者如果重新分类后,里面包括有另外一些科级分类的命名属;此时优先律就要应用于所有有关的全部科级分类名称。亚科 *Kufengocertinae* Zhao, 1980 系 1960 年以后的命名,符合法规第 40 条 a 项规定而不存在附则(i)款的情况;所以,尽管 *Kufengoceras* 属作为 *Shengoceras* 属的晚出异名而废弃,但以它命名的亚科仍然是一个有效名。

俄罗斯作者 Bogoslovskaya (1990) 指出, *Kufengocertinae* 亚科除 *Tongluceras* 属以外应完全归入 *Marathonitaceae*(马拉桑菊石超科),并将其提升为科级分类单位。该作者所据理由是 *Kufengocertinae* 亚科诸属的缝合线的第一至第三外侧叶由原始侧叶分化而来,而第四外“侧叶”则由原始脐叶分化而来,与 *Cyclolobaceae* 超科的叶系发育形式不同。笔者认为 Bogoslovskaya 的意见似有一定道理,华南所见“*Kufengoceras*”类大多只具 3 个发育良好的第一至第三外侧叶,而第四外“侧叶”多细小,位于脐缘附近,很像由脐叶分化而来;但她的论断缺乏个体发育上的依据。相反,通过当前成年材料与未成年材料缝合线的对比,其第四“侧叶”有向脐缘内转移的趋势。这与 Bogoslovskaya 的意见正好是相反的。

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AN EXCEPTIONALLY LARGE REPRESENTATIVE OF PERMIAN AMMONOID
SHENGOCERAS FROM GUANGXI, SOUTH CHINA

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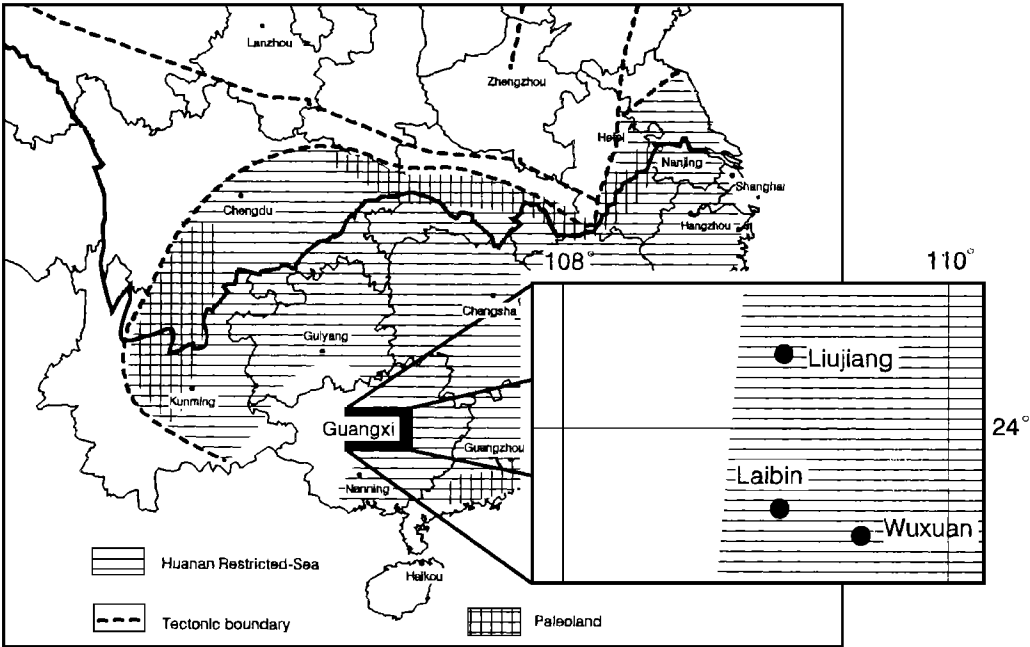
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Abstract: An exceptionally large specimen of Permian ammonoid genus *Shengoceras* is reproted from Guangxi, South China. The giant size and the matured stage of the suture extend the definition of this genus and its subfamily in taxonomy of Permian cyclolobids.

Key words: *Shengoceras*, Ammonoid, Permian, South China

A well preserved “*Kufengoceras*” of nearly 10 cm phragmocone diameter was procured recently from the Middle Permian Kuhfeng Formation of Central Guangxi, South China. The exact locality and horizon are uncertain, but are assumed to be the same as the typical stratum of Chao (1955), the basal Kuh-

feng Formation as found in Liujiang, Laibin and probably Wuxuan Counties (text-figure 1). The giant size and mature stage of the suture extend the definition of this genus and its subfamily in taxonomy of Permian cyclolobids.



Text-fig. 1 The possible distribution *Kufengoceras* in Guangxi, south China

In studying the type material of the monotypic *Shengoceras*, *S. lenticulare* Chao(1955), we found that one critical attribute of the genus, “a sharply keeled outer periphery” of the ultimate volution is merely the result of preservational deformation. Remaining features of the genus are then the same as those in *Kufengoceras* Ruzhencev (1956), so that it is now appropriate to suppress the name *Kufengo-*

ceras as the junior synonym of *Shengoceras*. Although the generic designation *Kufengoceras* can be discarded, the subfamily Kufengoceratinae is still valid (Article 40a, International Code of Zoological Nomenclature).

Bogoslavskaya (1990) has suggested that kufengoceratids, including *Kufengoceras*, *Shengoceras*, *Liuzhouceras* and *Paratongluceras* from South China

should be raised to familial rank and included within the Superfamily Marathonitaceae. She based this on her interpretation that in these forms the first three lateral lobes originated by subdivision of the primary lateral lobe, whereas other lobes near the umbilical shoulder originated by subdivision of the primary umbilical lobe. Two specimens of *Shengoceras umbilicatum* (Chao, 1955) are now available, the juvenile Holotype, and the presumably mature larger new specimen described herein. In the juvenile (text-figure 2a) the fourth external lobe lies ventrad of the umbilical shoulder, whereas in the larger specimen (text-figure 2b) it has migrated dorsad onto the umbilical wall. Information on kufengocertin ontogeny is still inadequate, but some other representatives appear to provide comparable patterns of lobe subdivision and lateral migration (e.g., *Guiyangoceras latiformum* Zhou, 1985, text-figures 4a–k). Additionally, kufengoceratins have common with all other cyclobids lobes that are subequal, parallel-sided and highly denticulate. Together, these similarities favor retention of the group as a subfamily of Cyclobidae.

SYSTEMATIC DESCRIPTION

Superfamily Cyclobaceae Zittel, 1895

Family Cyclobidae Zittel, 1895 [Cyclobidae Zittel, 1895, p. 408] [= Timoritidae Böhmers, 1936, p. 61]

Subfamily Kufengoceratinae Zhao, 1980 [Kufengoceratinae Zhao, 1980, p. 79. *Kufengoceras* Ruzhencev, 1956, is suppressed herein as a synonym of *Shengoceras* Chao, 1955; however, the subfamilial name remains valid, fide Code Article 40a]

Diagnosis: Ancestral cyclobids with phragmocone diameter commonly 3–5 cm, and mature conch diameter less than 10 cm; a few individuals reached 10 cm phragmocone, with probable conch diameter more than 15 cm. Sutures have three to five pairs of denticulate external lateral lobes across the flanks to the umbilical shoulders, and several small lobes on each umbilical shoulder and wall. Denticulation of the lateral lobes in all but the most advanced representatives is generally confined to the adapical three-fourths of the elements. Prongs of the ventral lobe are approximately one-half the width of the corresponding first lateral lobe, and their ventral flank is either

smooth or weakly denticulate. The sutural trace is almost directly transverse.

Distribution: Middle Permian (Roadian-Capitanian), mainly in the Restricted-Sea of South China and of Coahuila (Mexico).

Genus *Shengoceras* Chao, 1955

Waagenoceras, Chao, 1955, p. 149.

Kufengoceras Ruzhencev, 1956, p. 160; Chao, 1965, p. 1816, 1817; Glenister and others, 1979, p. 237; Zhao (formerly, Chao), 1980, p. 79; Bogoslovskaya, 1990, p. 72, 75.

Type species: *Shengoceras simplex* (Chao, 1955); Holotype NIGP 7459 was procured from loose scree at Fei'eling (i.e., formerly Feignoling) in Laibin (i.e., Laipin) County, Guangxi, South China, and Paratypes NIGP 7460–7463 from Kuhfeng Formation at Boheling (Poholing), Liujiang (i.e., Liukaing) County, Guangxi, South China, in association with Holotype NIGP 7466 of the subjective junior synonym, *Shengoceras lenticulare* Chao.

Diagnosis: Subglobular kufengoceratins, with uniformly rounded venter and flanks, and moderately wide umbilicus. Internal mold smooth, except for faint ribs and constrictions. External suture is characterized by narrow secondary ventral saddle, ventral prongs with extensive ventral and dorsal denticulations in mature stages, three pairs of moderately denticulate lobes across flanks, and several simpler lobes on umbilical shoulder and wall.

Discussion: Paratypes of *Shengoceras simplex* were found in direct association with the Holotype of *S. lenticulare*. The only difference between these types is the development of an angular venter in the final evolution of the latter taxon. Our review of the type material indicates clearly that this angularity is a function of preservational deformation, so that *S. lenticulare* must be suppressed as a junior subjective synonym of *S. simplex*. *S. umbilicatus*, described below, is the only other named representative of the genus, although a new species will probably be needed for material from Mexico.

Distribution: Middle Permian (Roadian-Capitanian), mainly in the Restricted-Sea of South China, but known from rarer occurrences in Coahuila (Mexico).

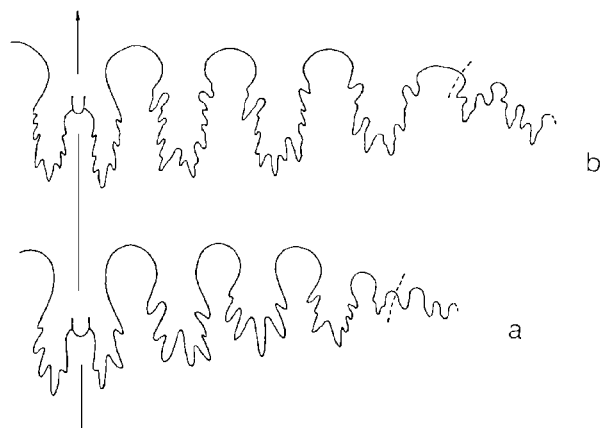
Shengoceras umbilicatum (Chao), 1955

(Plate I, figures 1–4; text-figure 2a, b)

Waagenoceras umbilicatum Chao, 1955, p. 150, pl. 1, figs. 12, 13.

text-fig. 2a.

Description: Chao's Holotype was the only representative of the species known previously. Its suture is redrawn for comparison with that of the larger new Hypotype (text-figure 2), but the following description refers only to the exceptionally well-preserved larger specimen.

Text-fig. 2 Sutures of *Shengoceras umbilicatum* Chao, 1955

a. Holotype, NIGP 7464, D=17.8mm

b. Hypotype, NIGP 128936, D=86.1mm

Phragmcone large, subglobular, with uniformly rounded venter and flanks. Close spacing of the ultimate two septa suggests maturity. Umbilicus wide and deep, with uniformly rounded shoulders and steep walls. Proportions at maximum diameter (D) 101.0mm; $W/D=0.82$, $H/D=0.25$, outer umbilical diameter $U/D=0.33$. Sculpture unknown.

External suture (text-figure 2b) comprises three pairs of large lateral lobes across the flanks, and succession of more than three progressively smaller lobes on umbilical wall. Width of ventral lobe two-thirds depth, with height of secondary ventral saddle approximately equal to lobe width. Lateral lobes parallel-sided, each with width approximating corresponding lateral saddle; apical three-quarters of lobes strongly denticulate, including secondary serration of some elements. More than three lobes on umbilical wall progressively shallower, narrower, and less denticulate to umbilical seam. Sutural trace directly transverse.

Comparison: The two known specimens of *Shengoceras umbilicatum* are closely similar in conch form, and sutural differences are readily attributable to different stages of ontogenetic development. Sutures of *S. simplex* are closely comparable to those of similar-sized *S. umbilicatum*, but the

former is readily differentiated by significantly smaller umbilicus (U/D at 2 cm diameter 0.15 versus 0.37).

Occurrence: Holotype NIGP 7464 is from the Middle Permian Kuhfeng Formation near Sifangtang (*i. e.*, formerly Szeftongtang), Liujiang (*i. e.*, Liukiang) County, Guangxi. Precise occurrence of Hypotype NIGP 128936 is uncertain, but is believed to be the basal Kuhfeng of the same general area, Guangxi, South China.

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EXPLANATION OF PLATE

Specimen showing in plate is deposited in repository of the Nanjing Institute of Geology and Paleontology, Chinese Academy of Sciences (Nanjing 210008, Jiangsu, P. R. China).

1—4. *Shengoceras umbilicatum* (Chao), X1; Locality: Central Guangxi; Horizon: Permian Kuhfeng Formation; Catalogue number: NIGP 128936 (Hypotype).

