

## 关岭生物群--世界上罕见的化石库

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摘要: 以保存完美海生爬行动物和海百合化石为特色, 多门类脊椎动物、无脊椎动物共同繁盛, 且夹带有少许古植物化石的关岭生物群是世界上极为罕见的珍稀古生物组合。其化石保存之完美, 类型之多样, 数量之丰富, 堪称世界上少有的晚三叠世“化石库”。在该“化石库”中, 海生爬行动物主要有鱼龙类(ichthyosaurs): *Qianichthosaurus zhoui* Li (1999), *Cymbospondylus asiaticus* Li et You (2002), *Panjiangsaurus epicharis* Chen et Cheng gen. et sp. nov.; 海龙类(thalattosaurs): *Anshunsaurus huangguoshuensis* (Liu, 1999), *Xinpusaurus suni* (Yin et al., 2000), *X. bamaolinensis* Cheng et Liu sp. nov. 楯齿龙类(placodonts): *Sinocymodus xinpuensis* Li (2000) 以及某些尚待研究的类型。在所储藏的海百合化石中, 以重新厘定的许氏创口海百合 *Traumatocrinus hsui* (Mu) [ ? = *T. caudes* (Dittmar, 1866); ? = *T. guanlingensis* Yu et al. ] 为主, 新的发现说明, 此类海百合营假浮游生活方式, 它们通过其网状或铰接状根簇附着在漂浮树干上而广泛分布。共存的化石还有: 新近发现和重新厘定的 *Metapolygnathus nodosus* 带的牙形石, 少量鱼类(*Asialepidotus* sp. nov.), 大量软骨鱼类(elasmobranch ichthyoliths) 鳞片和牙齿化石的新类型, *Trachyceras multituberculatus* 带的菊石, *Halobia*-“*Daonella*” *bifurcata* 组合带的双壳类, 以及腕足类: *Koninckina guizhouensis*, *K. zhengfengensis* 等以及古植物化石: *Equisetites arenaceus*, *Ctenozamites sarrani* 等。系统调查、科学发掘和对上述各门类化石时代综合分析后指出, 这个珍稀生物群形成于晚三叠世卡尼期早-中期, 主要产在新铺乡黄土塘、小凹、毛凹、巴毛林和岗乌乡白岩一带小凹组下段, 距底5~11m的地层间隔中, 其分布面积约200km<sup>2</sup>。构造古地理及层序、生态、化学地层的综合研究说明, 关岭生物群可能是伴随晚三叠世卡尼期早中期的海侵在南盘江裂陷槽盆西北角活动外陆棚边缘所形成的“避难所”中形成和发展起来的。随着海侵的扩大, 海水的加深和有机质的过盛贮存所诱发的缺氧和海水的咸化事件, 可能是导致该生物群的集群绝灭, 并形成完好保存埋藏群落的主要原因。

关键词: 关岭生物群; 晚三叠世; 海生爬行动物; 海百合; 牙形石; “化石库”

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### The Guanling Biota-A unique “Fossilagerst-tte” in the world

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Abstract: The Guanling biota is characterized by the occurrence of numerous well-preserved Late Triassic (Carnian) marine reptiles and crinoids with ammonoids, bivalves, conodonts, brachiopods, elasmobranch ichthyoliths and a few fossil fishes and plants. Such a rich, diversified and perfectly preserved paleontological assemblage is rarely encountered in the world and can be called, therefore, a unique Late Triassic “Fossilagerst-tte” in the world. Preliminary study indicates that the principal marine reptiles are ichthyosaurs: *Qianichthosaurus zhoui* Li (1999), *Cymbospondylus asiaticus* Li et You (2002), *Panjiangsaurus epicharis* Chen et Cheng gen. et sp. nov., thalattosaurs: *Anshunsaurus huangguoshuensis* (Liu, 1999), *Xinpusaurus suni* (Yin et al., 2000), *X. bamaolinensis* sp. nov. Cheng et Liu, placodonts: *Sinocymodus xinpuensis* Li (2000) and some new unidentified taxa. The crinoids are dominated by *Traumatocrinus hsui* (Mu) (? = *T. caudes* (Dittmar, 1866), ? = *T. guanlingensis* Yu et al. 2000) revised in the present paper. New discovery of *Traumatocrinus* attaching drifting wood fossils by anastomosing or articulated rootlets indicates that the taxa of crinoids are widespread in the world, depending on its pseudo-planktonic living style. Associated fossils comprise conodonts of the *Metapolygnathus nodosus* Zone redefined by Chen (in press), ammonoids of the *Trachyceras multituberculatum* Zone, bivalves of the *Halobia*-“*Daonella*” *bifurcatus* Assemblage Zone, brachiopods, *Koninckina guizhouensis*, *K. zhengfengensis*, and newly discovered fossil fishes, *Asialepidotus* sp. nov., shark scales and teeth, plants, *Equisetites arenaceus*, *Ctenozamites sarrani* etc. Comprehensive analysis of the above-mentioned various kinds of fossil suggests that the age of the Guanling biota should be Late Triassic early-middle Carnian. Detailed investigation and systematic exploration indicate that the Guanling biota is distributed mainly in the interval of 5-11 m above the base of the Lower Member of the Xiaowa Formation (former “Wayao Formation”) around Huangtutang, Xiaowa, Maowa, Bamaoling of Xinpu Township and Baiyan of Gangwu Township, Guanling County, covering an area of about 200 km<sup>2</sup>. Combined tectono-paleogeographic and eco-, sequence- and chemo-stratigraphic studies indicate that

this rare biota was probably formed and developed in a particular "asylum" situated in the NW corner of the active shelf margin close to the relatively stagnated Nanpanjiang intracontinental rift basin. This basin was surrounded by the Sichuan-Yunnan-Guizhou-Guangxi old land on three sides during the earliest Late Triassic transgression, following the Middle Triassic Ladinian global regression. The anoxic and salted events, caused by subsequent Early-Middle Carnian maximum transgression and sedimentary organic surplus stockpiling, were probably the main causes for the mass extinction of this biota and formation of well-preserved taphocenosis.

Key words: Guanling biota; Late Triassic; marine reptile; crinoid; conodont; "Fossilagerst"