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北京西郊下苇甸剖面寒武系崮山组叠层石生物丘的沉积组构

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摘要：

北京西郊下苇甸剖面的崮山组,属于寒武系第三统顶部,自下而上从陆棚相泥灰岩向上变浅至鲕粒滩相灰岩,组成一个淹没不整合型三级沉积层序。在该组上部的一层块状鲕粒滩相颗粒灰岩中,发育串珠状分布的、可以归为叠层石生物丘的穹窿状构造。这些叠层石生物丘,典型的地势隆起和突变的边界代表了明显的早期石化作用特征。叠层石生物丘中的柱状叠层石,为典型的泥晶相叠层石,其内部除了黏结较多的三叶虫生物碎屑外,还不均匀地分布着放射-纤维状方解石(或文石？)组成的底栖鲕粒。这些底栖鲕粒,以其较小的粒径、多样的类型、平滑但不连续的鲕粒圈层以及外部边缘的泥晶套等特征,明显区别于宿主岩石中的颗粒滩相悬浮鲕粒,而且表现出较为明显的与微生物活动相关的微组构。鉴于叠层石是典型的微生物席建造物,该叠层石生物丘特别的宏观和微观沉积组构还可以进一步将其归为较为典型的"微生物礁",从而成为研究中奥陶生物大辐射事件之前贫乏骨骼的浅海环境的沉积作用样式、以及更加深入理解这一特殊时期的微生物造礁作用特征提供了一个较为典型的实例。

英文摘要：

Cambrian Gushan Formation, belonging to the upper part of Series 3, is made up a general upward shallowing succession of sedimentary facies from shelf marls to grain-bank oolitic grainstones, which constitutes a third-order carbonate depositional sequence of the drowning-unconformity type. Within one bed of the grain-bank oolitic grainstones in the upper part of Gushan Formation, occur many dome-shaped carbonate structures with the distribution like a string of beads that can be described as the stromatolitic bioherm. Macroscopically, both the typical high topography and the abrupt-changing boundaries with host rock reflect the early lithification feature of the stromatolitic bioherm. Within column stromatolites making up these stromatolitic bioherms, in addition to bounding few bioclasts of trilobites, develop non-uniform some of benthic oolites that are mainly constituted by radiated-fibrous calcites (or aragonites?). For these benthic oolites, many features such as the small grain size, diverse type, smooth and discontinue oolitic circle and an obvious micritic envelope in the exterior margin of the oolite, reflect the special microbial-relative microscopic fabrics that are different from the suspended oolites of the host rock. Since stromatolites are typical buildups of microbial mats, these stromatolitic bioherms with special macro- and microscopic fabrics can further be grouped into the microbial reef, and become the typical example for the further understanding of both the sedimentation pattern in the shallow skeleton-poor sea before the biological radiation of the Middle Ordovician and the microbial reef-building features in this special geological time.

关键词：沉积组构 叠层石生物丘 寒武系第三统 下苇甸剖面 北京

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