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Technological systems and hominin behavior—a view from the Acheulian site of Gesher Benot Ya'aqov, Israel

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ABSTRACT: The study of the Acheulian cultural sequence as viewed through the analyses of lithic assemblages from the site of Gesher Benot Ya'aqov (GBY) provides extensive insight into the complexity of ancient technological systems. The research, which involves analyses of over 15 archaeological horizons representing ca. 50Ka, enables high-resolution technological investigations and illuminates processes and behavioral modes at this paleo-lakeshore site located in the Upper Jordan Valley, Israel. Among these, the most detailed system reconstructed is the *chaîne opératoire* or reduction sequence aimed at the production of bifacial tools (handaxes and cleavers). It includes procurement of raw material in the form of basalt slabs, their transportation to the lake margin, the modification of slabs into giant cores and the systematic production of large flakes that were later modified into handaxes and cleavers. The GBY technological studies examine intra-site and inter-site technological variability, providing a better understanding of the individual segments of the reduction process, from the application of different modes for the acquisition of large flakes to percussor types and the nature of the waste associated with production.

The observed variability, which includes a diachronic perspective, is thoroughly discussed and furnishes insight into the technological system, innovation and hominin abilities. These abilities throw light on aspects of Acheulian behavior, such as developed cognitive level, adaptability, social structure and communication – behavioral modes comparable to modern ones.

从以色列盖谢尔-贝诺-雅各布的阿舍利文化遗址来看技术体系和人类行为

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摘要: 阿舍利文化序列的研究, 就如分析盖谢尔-贝诺-雅各布遗址(GBY)的石器所看到的, 使我们能很好地了解远古技术体系的复杂性。本项研究分析了 15 个约 5 万年前的有代表性的考古遗址, 使得高分辨率的技术调查成为可能, 并阐明了以色列上约旦峡谷的这处古湖岸遗址的工艺水平和行为模式。其中, 重建起来的最详尽的系统是连锁操作, 或者说是在制造两面打制的工具(手斧和砍砸器)时缩减流程。该流程包括采集石材等原材料, 然后把材料运到湖边, 再将石材修理成石核及按流程做成大的石片进而改造为石斧和砍砸器等。GBY 遗址的技术研究项目分析了遗址内外呈现出的技术的多样性, 使我们更好地理解工具制造流程的每个环节——从获取大石片到打击石器这一系列的不同生产模式以及加工过程中的废弃物和产品相关联的本质。

我们已对所观察到的包含历史演变的多样性进行了认真讨论, 通过它们进而了解了技术系统、创新观念和早期人类的技能等问题。这些技能为阿舍利文化中类似现代人的行为模式的出现, 诸如发达的认知水平、适应性、社会结构和沟通交流等, 提供了可能。