

## 研究成果 Findings of Research projects

### 環境變遷的研究

2002年3月中國科學院地質與地球物理研究所的專家實地考察沙下的發掘現場，在南部的發掘區進行系統樣本採集，配合光釋光年代測定，以地球化學和物理學的研究方法，分析沙下南部發掘區的環境變遷。此外，2002年7月展開景觀變化的研究，透過早期的航空照片、地質研究、鑽探和土壤成份等分析，探討遺址的地理環境的形成和演變。



利用鑽探工具採集土壤樣本  
Collecting soil samples by the hand auger

研究結果顯示全新世初期的沙下及鄰近地區尚未經歷海侵，陸地接連至羊洲及瀝西洲一帶。至距今約八千至六千年時，海平面開始上昇，沙下遺址的北部逐漸形成上昇沙堤，亦是埋藏大部份史前文化堆積的地區。至距今約三千三百至二千九百年，海平面斷續上昇，海水淹沒沙下遺址南部的部份地區，海灘沉積物覆蓋遺址南部原來人類遺留的陶器和石器。至距今約二千九百至二千三百年，海平面逐漸下降，遺址大部份的地區變成陸地，形成現今的海岸線。

### Investigating the Environmental Changes

In March 2002, experts from the Institutes of Geology and Geophysics of the Chinese Academy of Sciences inspected the excavation area and collected samples systematically at the southern part of the Sha Ha site. The experts analyzed the environmental changes at the southern part of the site using the methodology of geochemistry and geophysics together with the results of the Optical Stimulated Luminescence dating method. In July 2002,



研究員到探方內採集樣本  
Collecting samples at a trench

another research project was conducted to study the formation and evolution of the landscape by examining early aerial photographs, geological data, bore data and soil composition.

Results of both projects revealed that the Sha Ha site and its surroundings, which were once connected with Yeung Chau and Kau Sai Chau by land, had not yet experienced the transgression of the Early Holocene. Around 8,000 to 6,000 years ago, the sea level began to rise. A raised sandbar was formed at the northern part of the site, in which most prehistoric cultural deposits were located. About 3,300 to 2,900 years ago, the southern part of the site became partially submerged, covering the pottery and stone implements left by the early inhabitants with marine deposits. About 2,900 to 2,300 years ago, the sea level gradually receded. The present coastline was formed with most of the Sha Ha site turning into terrain.



考古學家討論發掘現場的進度  
Archaeologists discussing the excavation progress



從探方剖面的不同文化層採集土壤樣本  
Collecting soil samples of different cultural layers from a section