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Laang Spean cave (Battambang province): A tale of occupation in Cambodia from the Late Upper Pleistocene to Holocene

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ABSTRACT

Discovered and initially excavated by Cécile and Roland Mourer in the 1960s, Laang Spean cave was re-excavated in 2009 by the Franco-Cambodian Prehistoric Mission (MNHN-Ministry of Culture and Fine Arts, Phnom Penh). The large amount of archaeological remains collected during the previous excavations has been complemented by new discoveries, and a more complete sequence has been documented. The cultural layers included lithic artefacts, potteries, animal bones, and human burials. Three mains distinguishable occupational layers are recognized: Neolithic, Hoabinhian and Pre-Hoabinhian level. A solid chronological framework has been established by applying independent age techniques (¹⁴C and OSL dating) to a 5 m thick sequence. Laang Spean is the only prehistoric site associated with Hoabinhian stone tools discovered in a well defined stratigraphy in Cambodia. The chronological results and the amount and characteristics of the lithic series provide cultural, environmental, and spatial context for the Hoabinhian technocomplex in comparison to other sites in Mainland South East Asia.

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1. Introduction

Prehistory research in Cambodia is facing both a complicated and stimulating period: stimulating because of the increased amount of new research projects with associated new discoveries, and complicated because of the challenges involved in adjusting

the framework in response to new results and data. The Hoabinhian stone tool culture in Cambodia began with the discovery of Laang Spean prehistoric cave by R. and C. Mourer during their survey attempting to find human occupation in the karst area in the northwest in the 1960s (Mourer and Mourer, 1970a, 1970b; Mourer, 1977, 1994; Stark, 2004). From 2009, a subsequent investigation by the Franco-Cambodian Prehistoric Mission (FCPM) led to the documentation of several caves and rock shelters in the surrounding area of Laang Spean uncovering Hoabinhian tools, animal bones, and earthenware pottery. In South East Asia, many Hoabinhian sites including caves, rock shelters and coastal sites have also been documented, re-excavated or excavated, on the mainland (Moser, 2001; Marwick, 2007; Zeitoun et al., 2008; Bacon, 2012; Higham, 2013, 2014) and on several islands such as Sumatra in

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Indonesia (Bronson and Glover, 1984; McKinnon, 1991; Forestier et al., 2005; Bellwood, 2007). However, among these sites only few provided associated stratigraphic evidence, for example Hang Cho Cave and Con Moong Cave in North Vietnam (Yi et al., 2008; Rabett, 2012), Tham Hang in North Laos (Bacon, 2012), Tham Lod and Spirit Cave in North Thailand (Gorman, 1971; Schooncondej, 2006) and Moh Khiew cave in South Thailand (Pookajorn, 2001; Auetrakulvit et al., 2012).

Based on the recent excavation and new dating program, the site of Laang Spean is of great importance for the interpretation and understanding of the Hoabinhian technocomplex of South East Asia. The current French-Cambodian Prehistoric project at Laang Spean aims to explore climatic and environmental change during the Late Upper Pleistocene to Holocene period in the region, and addresses the question of cave use as a funerary space (Neolithic, surface soil) or a living space (Hoabinhian and pre-Hoabinhian settlements). Moreover, given its potential for archaeological research and cultural significance in the context of human evolution in the area, the site has the potential to be a reference for Hoabinhian sites in the region.

2. Geological context and location of the site

The area of Battambang is one of the three calcareous formations of Cambodia (Fig. 1) (Takaya, 1967). In this area, Upper Permian limestone occurs as relict hills up to 300 m in height. These limestone “Phnom”, a natural mountain in the Khmer language, are densely covered by vegetation and display strong “surficial karstification processes” (Laumanns, 2009). Due to weathering, they are surrounded by large accumulations of rock boulders, creating relatively steep slopes from the foot of the mountains up to a vertical cliff or the summit of the hill (Blondel, 1929; Demangeot and Schneider, 1973; Sotham, 1997; Laumanns, 2009).

Laang Spean is a stratified prehistoric site located in the north of Phnom Teak Treang (12°53'30.5" N; 102°55'38.4" E) in Baribor village, Treng Commune, Ratanakmundul district, around 40 km southwest of the present provincial capital of Battambang and

around 7 km from the public gathering place of Sdao village (Fig. 2). As one of many archaeologically rich caves and rock shelters in this limestone mountainous region of northwest Cambodia (Sophady, 2014) Laang Spean is the first major excavation in a long history of research beginning in 1965 to trace the archaeological, chronological, biological, geological and environmental history of northwest Cambodia and Mainland Southeast Asia. Phnom Teak Treang is a small, low, oval-shaped limestone hill almost in a state of dissolution. It measures about 300 m long (east-west) and 500 m wide (north-south) and is elevated about 100 m above the surrounding lowland (Fig. 3). The main cave is small, but contains many chambers with openings situated at different levels. It lies on the west side of the Sangke River, one of the tributaries of the Great Lake of Tonle Sap. The area is characterized by a flat alluvial plain with an elevation of about 30 m above sea level. The plain is intensively used for agriculture and has alluvial soil stretching from northeast to southwest along the Sangke River located about 4 km to the east. During the dry season, some parts of the river are shallow. The river beds are strewn with water rolled hornfels and sandstone, quartzite cobbles, and somewhat flattened shale cobbles, and represent the source materials for many of the stone tools discovered at the site. During visits to the caves in 2009, large amounts of stone tools and other archaeological remains were collected (Fig. 4). The surrounding area of Phnom is still currently infested with mine fields.

The name of this prehistoric site (Laang Spean meaning ‘bridge cave’) refers to the limestone roof at the back of the cave, in which limestone arches form a scenic natural bridge (Fig. 5) formed by natural collapse processes within the cave environment after a large block in the middle of the cave’s roof collapsed exposing the top of the cave. This event has covered a large surface at the middle of the cave floor with collapse material, making it difficult to conduct an excavation. This material has divided the cave surface into three main sections or chambers 1, 2, 3 and three sectors in chamber 2 (Fig. 6).

The main gallery of Laang Spean measures approximately 116 m long, 25 m wide and 30 m high from the cave floor to the cave roof.

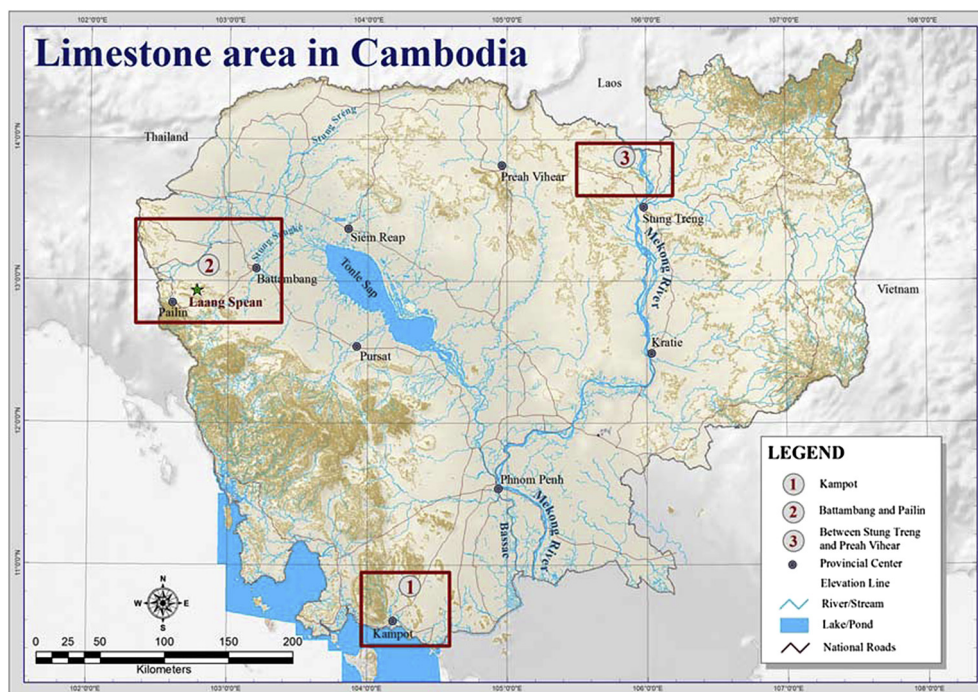


Fig. 1. Map of the Kingdom of Cambodia with the location of the Laang Spean cave prehistoric site. Outcrops of Permian limestone (“phnom”) are located (in grey). The site of Laang Spean is located near the Stoeng Sangkè, main tributary of the Tonle Sap lake (according to Fromaget, 1971; Samoth, 2013).

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