



## ARTICLES

### Abstracts

#### AGRICULTURAL TECHNOLOGY AND AGRARIAN CHANGE IN HAN CHINA

Francesca Bray

This article considers the interaction between technological development in agriculture and social change. In the early Han, a period of comparatively strong and centralized rule, the government encouraged and subsidized a particular type of agricultural development designed to benefit independent small-holders, thus discouraging the formation of large estates and maximizing the state's income from taxes. Later as the power of the landed gentry grew, large 'manorial' estates superseded independent small-holdings as the dominant mode of production despite government efforts to reverse this trend. The change in tenurial pattern was accompanied by marked changes in agricultural technology and production which became far more 'rational' and market oriented than had been possible in a small-holder economy.

#### 漢代中國的農作技術與農業變化

Francesca Bray

本文討論農業技術發展與社會變化的相互關係。漢初中央權盛，政府獎助自耕小農，遏抑大地主的形成，以提高政府稅收。以後地主士紳權力日益增長，大型「莊園式」的產業逐漸取代了小自然耕農所有制，這個趨勢雖然經政府努力加以逆轉，但大莊園仍然成為生產的主要方式。隨着所有型態的改變，農業技術和生產上也發生了顯著的變化，結果在「合理化」及市場取向方面的發展遠超在小農經濟體制下的可能成就。

#### THE SPINDLE-WHEEL: A CHOU CHINESE INVENTION

Dieter Kuhn

The early Chinese spindle-wheel was originally invented in conjunction with silk-technology and was linked to silk production, as pictured in some Han stone reliefs. It is concluded that the spindle-wheel is a Chinese invention which may be dated to the early years of the Warring States period. In the course of time people realized the advantages of the spindle-wheel and it was adopted for plant fiber production.

The spindle-wheel may have been brought to Europe at the same time as silk-technology was introduced, most probably in the second half of the first millenium A.D. Only when the continuously working spinning-wheel with flyer was invented in fifteenth century Europe did a better and more efficient spinning device become available.

中國古代的一錠手轉紡車，本來是跟造絲技術一起發明，而與絲的生產相關聯的；漢代石頭浮雕裡可以看到一些有關的圖像。本文的結論是：一錠手轉紡車是中國發明的，發明時間大約是戰國初年。等到一錠手轉紡車的便利大明之後，這種紡車便被用在植物纖維的織造上。

一錠手轉紡車傳到歐洲的年代大約與造絲技術的傳入同時，最可能的時間是公元後第六到第十世紀之間。十五世紀歐洲發明了有錠壳，能連續作業的紡輪之後，一錠手轉紡車才被這種更好的，效率更高的紡織機所取代。

THE SHANG STATE AS SEEN IN THE ORACLE-BONE INSCRIPTIONS

David N. Keightley

This paper was first prepared as a documentary appendix to "The Late Shang State: When, Where, and What?" (to be published in the conference volume, *The Origins of Chinese Civilization*), which, by analyzing a series of thirty-nine "state criteria" under the general headings of Sovereignty, Territoriality, Religion and Kinship, Alliance and Warfare, and Exchange, attempted to classify the state in developmental terms. The present paper presents the documentary evidence in more detail by translating and discussing characteristic inscriptions (generally from period I, the reign of Wu Ting) within each of the thirty-nine criteria. In so far as possible, the discussion focuses on the case of the Chou as a Shang state member. The evidence is particularly valuable because of the insights it gives into the daily activities of the Shang theocrat.

甲骨文中的商王朝

David N. Keightley

本文原是「晚商王朝，其時其地及其性質」一文（將發表於會議論文集《中國文化之起源》一書中）的文獻附錄部份。「晚商」一文在「主權」、「疆域」、「宗教」、「宗族」、「結盟」、「征伐」、「貢納」這幾個大項目下，分析了三十九項構成政治體制的基準，透過對發展程度的觀察，試着確定商代國家的型態。本文則譯述以上三十九個項目內具有代表性的甲骨文，進一步的引徵了文獻上的細節（這些甲骨文多半屬於第一期，即武丁之世）；在可能範圍內，把討論的焦點集中在商王朝的一個成員——周的活動上。因為這些證據讓我們了解到商代神權政體的日常活動，所以特別可貴。