

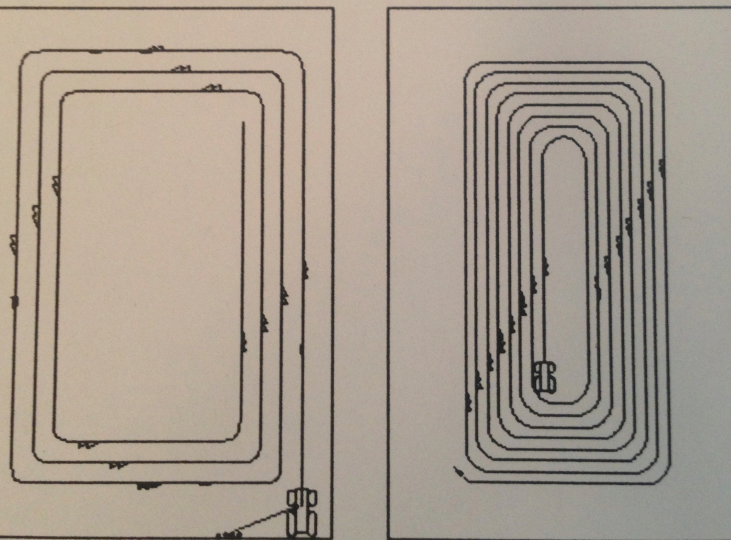
Satellite Images Prove Ancient Chinese Bronze Maps

For over a thousand years the elite aristocracy of earliest China considered their bronze ritual vessels to be their prized possessions. Satellite imaging proves that the bronzes were used as maps for land transfers.

These are circuitous, up and back or headland and working in lands.

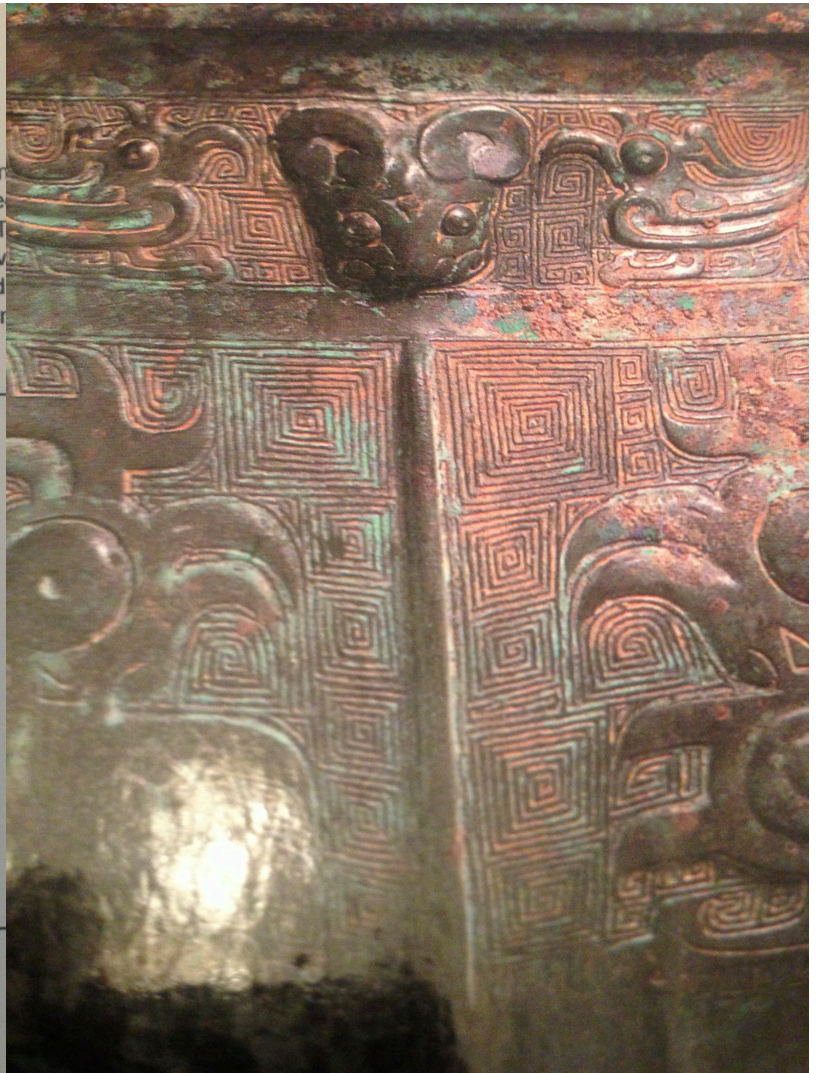
Circuitous pattern

In a circuitous pattern the machine begins working along a boundary. It continues along the other boundaries of the land, returning to its starting point. This pattern works from the outside to the center of the field and is the most commonly used system for ploughing in Asia. It is commonly used with offset discs. This is the system that most animals are accustomed to. It requires more spatial judgment by the operator than working in a land type system. The result is that the field ends up with a large cut out furrow in the center. Over time this results in a long oblong saucer shaped depression in the center that is hard to drain and a source of soil erosion. A solution to this problem is to work the field in lands



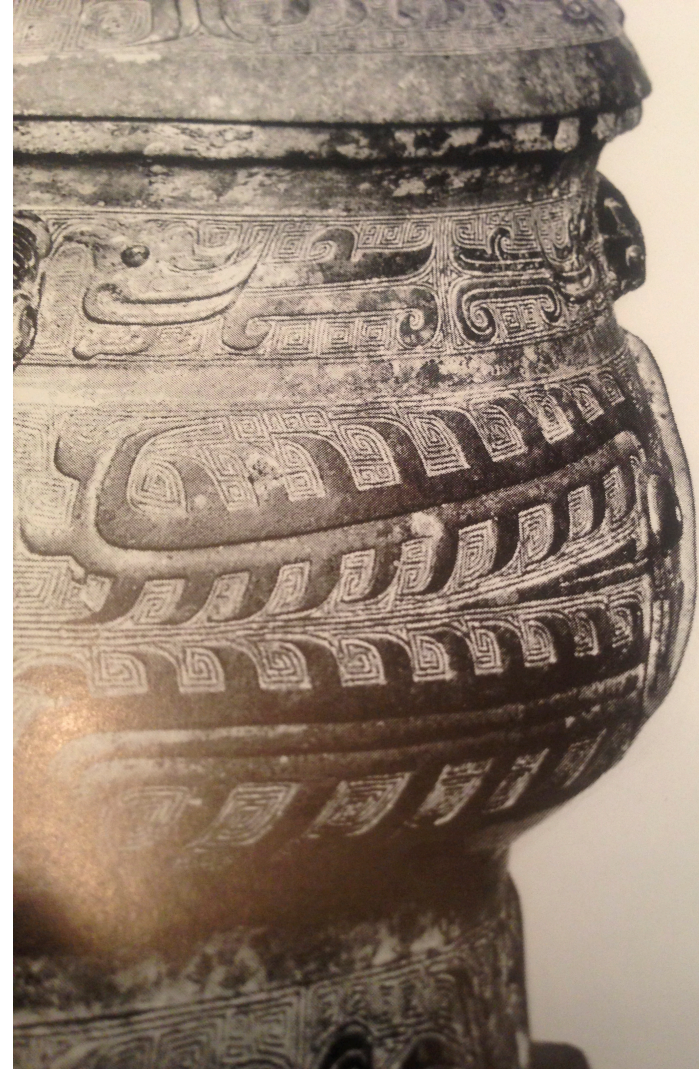
Circuitous Pattern

and back or headland pattern



Spiral ploughing was the common practice and is evidenced on many of the bronzes.

But the sophistication of early Chinese survey methods can only be appreciated when we look carefully at bronzes and compare them to satellite images of the area

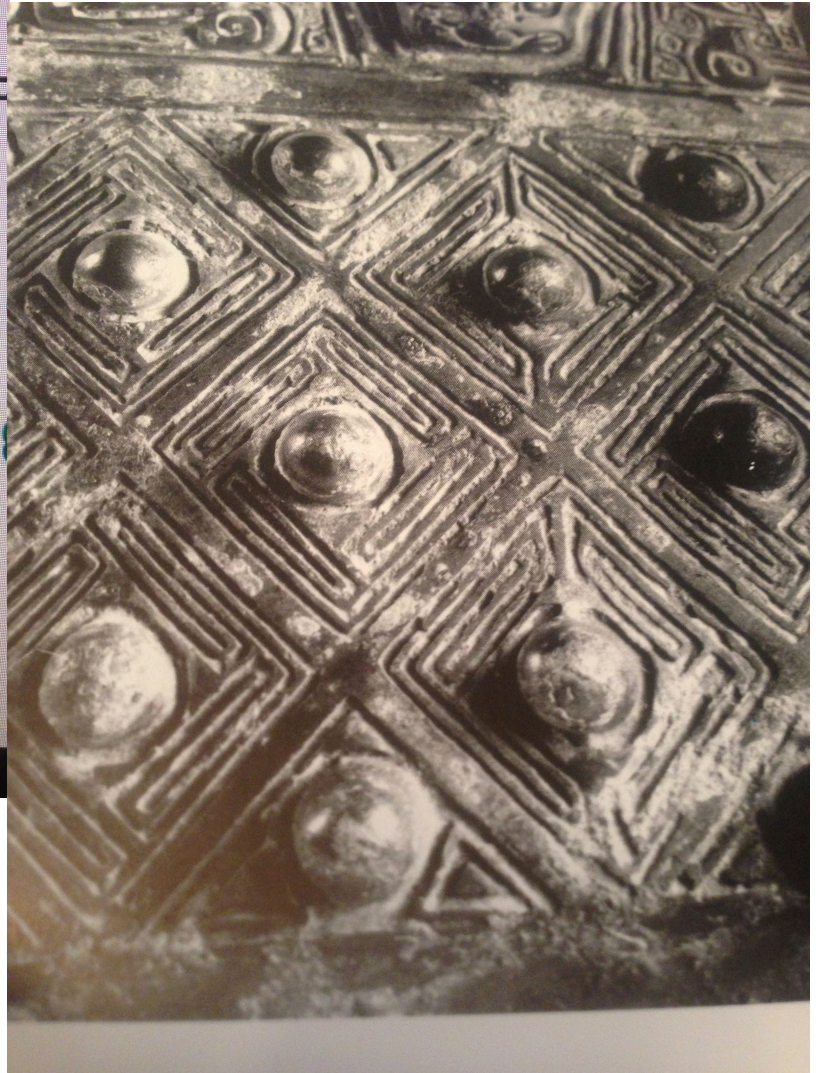


(near Yanshi China, an area of prominence during the Early Western Zhou).

A closer look at the satellite image shows that there is even today agricultural land between the “feathers” of the birds on the bronzes.

Calculations on the productivity of the land demonstrate that this bronze vessel was title to property which would produce enough for over 2,000 families. This figure fits comfortably within the historical matrix of the early Western Zhou.

And when we look at this POU from the late Shang, we find that it represents an orchard, with the familiar orchard planting pattern and the intercropping and irrigation used in agriculture to this day.



The most probable candidate for this orchard would have been mulberry, to fit into the large silk production process, with an intercropping of mung bean or berseem.

Details on this research will be presented in November at the American Society of Agronomy Annual Meeting in Tampa on November 6, 2013 at 1:00 pm.