

Newly-Discovered Okinawan *Sūchūma* Tally Sticks Containing Pictographs

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Abstract:

This short paper will discuss several previously-unknown tally sticks containing Okinawan *sūchūma* numerals, which are stored in the archives of the National Ethnology Museum in Osaka, Japan. No attempts to read them have yet been made. Three are easily read using the values established by previous research; one of these also contains pictographs that may be *kaida* writing, until now known only to exist on Yonaguni and in the Yaeyama islands. Another uses what may be a heretofore-unknown system. A speculative attempt at reading the numbers written on it will be made.

1. Two kinds of tally symbols called *sūchūma*

Sūchūmā is the local name for two systems of written numerals used until about the beginning of the twentieth century in the Ryukyu islands: one on the main island of Okinawa, and the other in the Yaeyamas, Yonaguni, and Miyako; the latter was further incorporated into the *kaida* system of writing used for record keeping in that area during the same period.

The word is surely related to Chinese 蘇州碼 (*su¹chou¹ma³*), meaning “Suchou digits” and being one name for a system of commercial numerals in wide use in China and less often in Japan well into the twentieth century, and still seen on occasion to indicate prices in Cantonese-speaking China and Hong Kong in particular.

This notation in turn derives from a system of rod-based numerals, itself created from a representation of physical wooden rods manipulated on counting boards, used for calculation in China in the preceding centuries. Developed in the first millennium BC in parallel with the standard character numerals (Needham 1959: 7-8), the original system of pure horizontal and vertical lines began to give way to abbreviated forms (particularly for 4 ㄨ, 5 ㄨ, and 9 ㄨ), which are what will be seen today on the rare occasions that this system is still in use.

	1	2	3	4	5	6	7	8	9
Units						⊥	⊥⊥	⊥⊥⊥	⊥⊥⊥⊥
Hundreds									
Ten thousands									
Tens	—	==	≡≡	≡≡≡	≡≡≡≡	⊥	⊥	⊥	⊥
Thousands									

Original unabbreviated *su¹chou¹ma³* digits (Needham 1959).

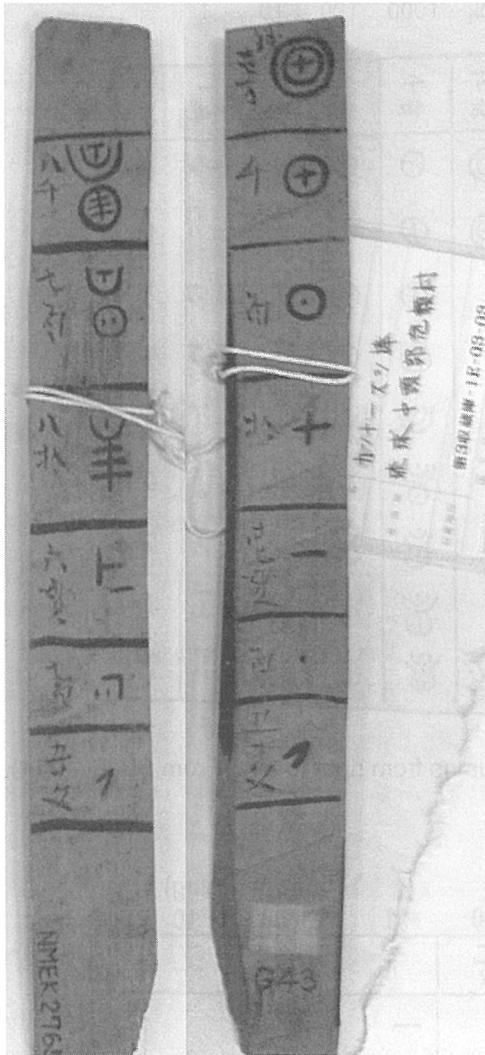
When, and in what way, the Okinawans were first exposed to this Chinese system of numeration is unclear, but Toshiichi Sudō (1944: 225ff.), who visited the area in the mid-1930s, believes that Naha merchants' exposure to Chinese writing methods were the impetus (translation by the present author):

“The merchants around Naha must surely have learned these Chinese numerals from early on. These digits, which differ from *kanji* numerals, were created in approximately the 13th century with influence from Indian numerals. Today [1944] in China and on the main island of Taiwan, merchants and others still use them. During the early Ming dynasty [the late 1300s], they saw extensive use by Suchou merchants, who called them *anma* 暗碼 or *Suchou-ma* 蘇州碼. I feel that this word *sūchūma* passed into the Ryukyuan language as a word for symbols that express quantities; thus, *sūchūma* developed from 蘇州碼. Before the establishment of the *han* [Japanese provinces; i.e. the feudal era, which began after the battle of Sekigahara in 1600], their use was supposedly limited to a small area, but by the feudal era, they had expanded all over Ryukyu, and were used by ordinary people who knew nothing of regular [i.e. Chinese/Japanese] writing. Yonaguni island [more accurately, Yonaguni and the Yaeyamas –ed.], which was isolated both socially and geographically, was the only place where the distinctive innovation of pictographic *kaida-di* occurred.” (225)

While there are still several elderly people alive in the Yaeyamas and Yonaguni who remember the use of *kaida* writing and the rectangular boards with that area's variation of *sūchūma*, and while *warazan* ropes are somewhat well known as a cultural artifact, the Okinawan *sūchūma* tally numerals and the sticks they were written on have nearly been forgotten. Chamberlain (1898) notes the reticence of islanders to discuss it even then; it was seen as inferior and primitive in contrast to Chinese and Japanese writing.

Basil Chamberlain visited Okinawa in 1893 and became the first writer to introduce the native tally sticks of Okinawa to the world outside Japan with his 1898 article *A quinary system of notation employed in Luchu on the wooden tallies termed Shō-chū-ma* in the Journal of the Anthropological Institute of Great Britain and Ireland. Chamberlain acquired sticks displaying three different forms of *sūchūma* from the main Okinawan island. These sticks have survived intact in the 115 years up to the present and are stored today in the archives of the National Ethnology Museum in Osaka, Japan.

Four additional sticks, today in the same collection but not described by Chamberlain, are shorter and flatter and have writing only on the two main faces. Two of these function as a guide to the system, with each unit from 100 *hyō* down to 5 *shaku* of rice written once each; the other two contain a more complex amount using a variety of symbols, and will be described here for the first time.

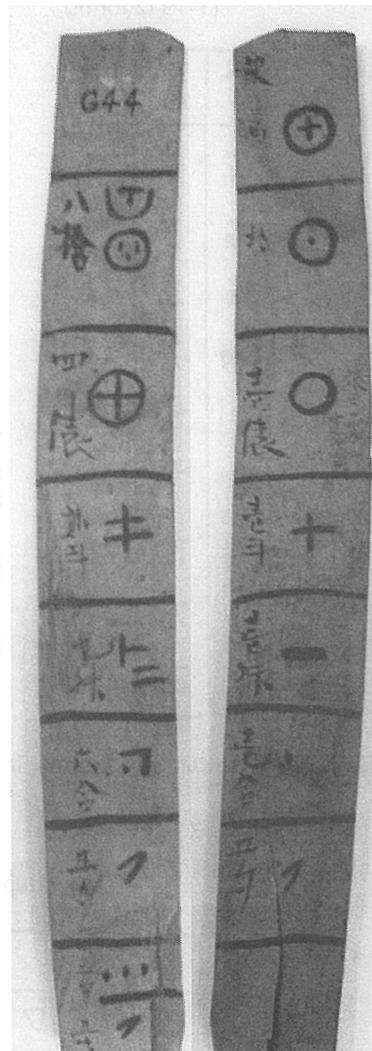


First “guide stick”: money

Samples of each unit on the reverse (right) and value to be recorded on the obverse (left). Both have Japanese equivalents, in formal-style *kanji*, appended to the left of the *sūchūma*.

Sample values (right): 10,000 壹万, 1000 千, 100 百, 10 拾, 1 *kan* 壹貫, 100 百, 50 *mon* 五十文.

Recorded value (left): **8786 *kan* 750 *mon*.**



Second “guide stick”: rice

Samples of each unit on the reverse (right) and value to be recorded on the obverse (left). Japanese equivalents are appended here as well.

Sample values (right): 100 百, 10 拾, 1 *hyō* 壹俵, 1 *to* 壹斗, 1 *shō* 壹升, 1 *gō* 壹合, 5 *shaku* 五勺. (Note that 5 *sai* 五才, the smallest unit, is not listed here, though the value on the opposite side makes use of it, and that “8 *shaku*” is separated into two cells.

Recorded value (left): 84 *hyō*, 2 *to*, 7 *shō*, 6 *gō*, 5 *shaku*, 3 *shaku*, 5 *sai* → **84 *hyō*, 2 *to*, 7 *shō*, 6 *gō*, 8 *shaku*, 5 *sai*.**

2. Basic *sūchūma* forms

Sticks like these were used to count money, rice, and firewood until the late nineteenth century, with the system differing slightly depending on what was being counted. As we will see, the second stick addressed in this paper is used to count money. See the accompanying illustration page for basic forms and “money count” forms, as recorded by Toshiichi Sudō (1944: 258ff.) during his own trip to Okinawa.

Money was measured in *kan* (Japanese 貫; Shuri Okinawan *kwang* as romanized by Chamberlain (1893)), subdivided into 1000 *mon* (文; *mung*), with 50 *mon* being the smallest unit. Rice was measured in a variant of the familiar Japanese system of *hyō* (45 liters or 2.5 *to*; 1/4 of a *koku* 石, which was rarely used in Okinawa) down through the *to* (18 liters), *shō* (1.8 l), *gō* (180 ml), *shaku* (18 ml), to *sai* (1.8 milliliters).

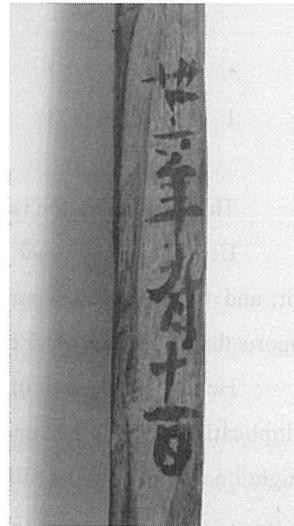
3.1 The “guide” sticks

The guide sticks (illustrated on the preceding pages; numbered K 2765 in the museum’s catalog) teach users the system by including each symbol written once, each in its own cell, on one of the faces, with a more complex expression on the other face.

One stick measures money and contains a guide to the “money count” *sūchūma* on one side and the value **8786 kan 750 mon** on the other. The other stick does the same with the “rice count”; its value is **84 hyō, 2 to, 7 shō, 6 gō, 8 shaku, 5 sai**. Note that the *shaku* are split into one cell with 5 *shaku* and another containing three more.

3.2 The “September 11, 1903” stick

The longest of these samples is this 50 cm-long, 2 cm-wide stick, numbered K 2763 in the museum’s catalog. Japanese writing on the side of the stick clearly indicates a date: 卅六年九月十一日; year 36, month 9, day 11, or **September 11, 1903** (Meiji 36)¹. These characters seem to have been written by someone familiar with traditional *kanji* stroke order; we must consider not just that this could be the date the stick was written, but also that it could be the date that it was filed or saved by a future archivist.



¹ It is fortuitous that the year is as high as 36, which allows readers to confidently assume that this year is in Japan’s Meiji era. Chinese era names were also known in Okinawa during the 19th century, but the Kuang-hsü (光緒) emperor was in his 34th year when he died in 1908, and no emperor had reigned for 36 years or more since the Chien-lung (乾隆) in 1735-1796. That era would mean a date of 1770 for this stick, which, while not entirely impossible, is much less probable given the nineteenth-century origins of the other Okinawan material in this collection.

The “main” faces are shown on the following page. Among the *sūchūma* are what appear to be the Japanese numerals 1, 2, and 3 (一、二、三). These will be used to choose which side is the obverse and which is the reverse.

It is immediately apparent that this stick contains markings not seen in any of the established systems. Conventionally, a circle is used to mean 100 units, and the half-circle 50 units; similarly, a dotted circle is 1000 units and a half-circle with a dot inside 500 units. This stick, however, contains half-circles with multiple dots inside, and half-circle-plus-multiple-dot combinations surrounded by large circles. Nothing of this complexity is seen in the other systems. Let us propose possible values for the symbols seen on this stick.

No more than four dots are seen in any cell, and dots can appear with or without a half-circle. Sudō (1944: 260) records an L-shape, in various orientations, being used for both 500 *mon* (*mung*) and 5 *kan* (*kwang*); given the crossed lines (十) being used for 10 units as in Chinese and Japanese, this is consistent with regular Okinawan practice of splitting the larger unit in half: 十 can become any of 𠄎, 𠄏, 𠄐, 𠄑 or 𠄒, 𠄓, 𠄔, 𠄕 depending on whether the “cut” is made diagonally, removing two of the four line parts, or directly through the center line, leaving both it and the upper or lower part of the cross intact.

Half-circles are used for 5 in some cases, with dots indicating additional units, but below the circle. If we accept a different position for the dots – inside the half-circle – these cells would then contain numbers ranging from 1 (one dot) to 9 (half-circle plus four dots), as follows:

•	••	•••	••••	⤿	⤿	⤿	⤿•	⤿••
1	2	3	4	5	6	7	8	9

This still leaves the issue of the outer circles unaddressed.

Using the traditional values would mean that no cell contains more than one significant digit, and would have several orders of magnitude represented in the same list. This further supports the idea of the outer circles *not* meaning that the inner portion is multiplied by ten.

Here I wish to propose a system in which the outer circle is additive rather than multiplicative. Doing this, and allowing for the possibility that 5 may be either a curved line or a straight line, we obtain the following values:



(1) 12, 7, 13, 5?, 16, 14, 17, 7, 16?, 17, 18, 19, 12, 4, 4, 14



(2) 14, 12, 17, 3, 15, 13, 12, 15?, 15?, 15, 15, 12, 6, 16



(3) 6, 16, 17, 17, 16, 13, 16, 15, 7, 14?, 8, 16, 12, 3, 12, 11, 12, 17, 12, 15, 6, 14, 12, 13?, 12, 13, 16



Near the bottom of the reverse side is what appears to be a phrase in Japanese phonetic *katakana*, though its meaning is unclear. It appears to say タキノユエタキノユエノサカテ *ta ki no yu e ta ki no yu e no sa ka te*. The タ *ta* in the middle could be シ *shi*, and the final *kana* could also be チ *chi* or ラ *ra*. Its meaning, however, remains unclear.

3.3 Pictographs appended to an Okinawan *sūchūma* tally stick: a bridge to *kaida* writing?

This tally stick from the village of Awase (泡瀬村) on the main Okinawan island – once part of Misato (*Njatu*) district (美里間切) and currently amalgamated with Okinawa City – is unlike any other that has been discovered. It shows pictograph-like signs to the left of the numerical *sūchūma*, which themselves conform to the system described by Chamberlain. Its catalog number in the museum's archives is K 2764. (An earlier cataloger has written the number G42 at what he thought was the base, but given what is written on the stick, that end is clearly the top.)



One side shows a simple string of numbers. Using the values we have just established, the first two can be read as 4000 and 500, making **4500**. The next string ends in the small V-shaped mark that denotes 50 mon; this establishes that the expression belongs to the money count. We see 4000, 300, 45, 4 *kwang*, 900, 50 *mung*, making **4349 kan 950 mon**. Continuing to use the money count, the next group of symbols adds to **137 kan 700 mon**, followed by the short **23 kan** at the end.

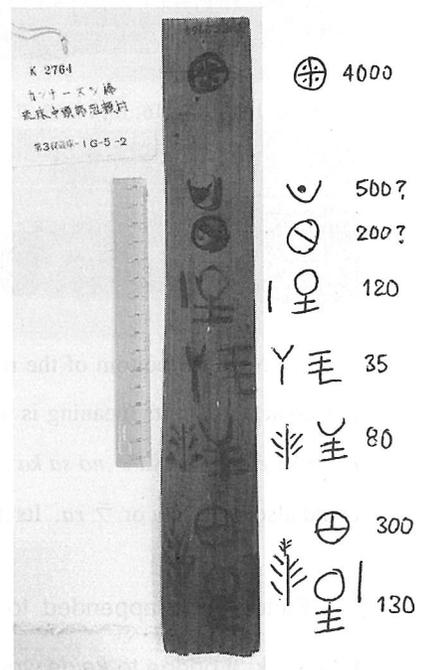
It is the opposite side that contains the pictographs. The top two – a vertical line and a vertical line with a forking branch at the top – are not yet identifiable with the evidence now available, but the bottom two resemble the *kaida* symbols for “garlic” or “carrot” ( and  , respectively, with an alternative form  existing for “carrot”). A second example of the vertical stick follows in the bottom right corner, to the right of the main *sūchūma*.

The first character on this side is **4000**, whether it be *kan* (using the money count) or bundles (using the firewood count). The two characters that follow after the gap could be 500 and 200 for a total of **700**, though their forms are blurred.

Following them are **120** of whatever is represented by the vertical stick, **35** of whatever is represented by the forked stick, then **80** of the vegetable, then **300** and **130** of the vegetable (if it applies to both) or **300** of the vegetable and **130** of the vertical stick.

4. Conclusion

The two “guide sticks” conform perfectly to existing knowledge of how quantities were expressed in this native Okinawan system of pre-writing. The “September 11, 1903” stick and the stick containing pictographs, on the other hand, may be evidence that Okinawans used a wider variety of pre- and partial writing than was previously known. Pictographs have until now only



been seen on Yonaguni and in the Yaeyamas, where they are used along with numerals and family symbols as part of the *kaida* writing system. While the forms of the pictographs are basic enough that their resemblance to *kaida* writing could be coincidental, this tally stick might also be evidence of contact between users of the two systems.

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象形文字を含む沖縄のスーチューマ木簡

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キーワード: 沖縄、スーチューマ、不完全な表記法、記標文字、カイダー字

要旨

本稿は、大阪・国立民族学博物館に保管されている木簡を取り上げる。木簡は沖縄の本島からのもので、スーチューマ（蘇州碼）で書かれている。四本のうち、三本は先行研究を参考にすると容易に解読でき、その一つには八重山・与那国島の「カイダー字」らしき象形文字が含まれている。残りの一本は今まで知られていない表記法で書かれている可能性がある。数字と推測されるであろうこの記号の読み方を提示する。

(ローザ・マーク)

