

Comment

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East Asian Plows:

Comments on Three Presentations on Plows by Japanese and Korean Researchers

The 2nd International Symposium of the Kanagawa University 21st Century COE Program, “Systematization of Nonwritten Cultural Materials for the Study of Human Societies,” was held on October 28-29, 2006. As at the 1st international symposium in 2005, the meeting included a session organized by Prof. Michiaki Kōno. As it was titled “Tracing the Migration of East Asian Peoples Through a Comparative Study of Plow Shapes,” the session this time was more focused on East Asian plows. This theme was selected based on Prof. Kōno’s central thesis: “Culture is not always determined by natural environment, and we should pay heed to the dissemination of culture, especially the comparative study on the features of plow which was which brought as people migrated. The comparative study of plow shapes is a key to unravel migration history.”

This session featured four researchers from Japan, China and Korea, and as Prof. Kōno said, it was the first meeting of plow researchers from the three countries. It is beneficial to exchange research findings with experts from different countries, because we can have in-depth discussions and solidify the foundation for future research collaboration. Among the four researchers, Prof. Takeshi Watabe, Kwang-eon Kim and Michiaki Kōno reported on Chinese, Korean and Japanese plows respectively, and I acted as a commentator. Herein, I would like to offer my comments on their presentations.

1. Comments on “Traditional Chinese Plows and the Transfer of Their Technology”

Prof. Watabe’s presentation “Traditional Chinese Plows and the Transfer of Their Technology” showcases his brilliant work on the birth and evolution of plows in China. In the introduction, he claims that very few researchers, including Motonosuke Amano, Xin Zhou and me, have conducted extensive, systematic studies of traditional Chinese plows. Yet Prof. Watabe should also be counted as one such expert for his achievements in the study of Chinese plows. He further mentions, “Prof. Shaoting Yin of Yunnan University has published the outstanding works incorporating research results from his frequent fieldwork and archaeological and documentary studies.” However, such acclaim should be directed to Prof. Watabe himself, rather than me.

I began my research on slash-and-burn agriculture in the early 1980s and became intrigued by material culture including farm tools. When Prof. Watabe first visited Yunnan in 1987, he gave me his paper. It dealt with the plows depicted on carved stones of the Han Dynasty, and was an eye-opener for me. Later, in the early 1990s, I had two opportunities to take part in his fieldwork. This experience was invaluable, because I not only obtained myriad research materials but was also enlightened by his sincere attitude toward research and meticulous

investigation. Indeed, I look upon him as my mentor in plow studies.

His presentation was impressive especially in the following respects:

- ① The advent and development of plows in China are explicitly spelled out.
- ② His discussion about the stone plow, the bronze plow, ox cultivation, the two types of plows used in the Han Dynasty and the birth of the Lingnan plow is cogent, bolstered by firm historical evidence.
- ③ He presents a novel thesis that the dry farming technique, which was established in northern China, gradually entered the Lingnan region from the Eastern Han Dynasty onwards and plow agriculture was also brought to Lingnan from the northern region.
- ④ The origin and development of plows in China are discussed from the perspectives of both history (society, politics, economy, war, land system, law, taxation and people's migration) and technological advances (the invention and spread of copper, iron and steel and the progress of agricultural technology). Such a comprehensive study is a rare achievement in this field.
- ⑤ He introduces two theories about the genesis of the plow in China. The first is that it originated in West Asia, and the second is that it started in China. He further states that we have yet to conclude which theory is correct. His words remind us Chinese researchers that our viewpoint should not be narrowly centered on our own country. Research should be objective, with our view encompassing Southeast, South and West Asia, and furthermore, the whole world.

These five aspects manifest the significance of his presentation in plow studies. Indeed, I gained valuable insights from it. Since I do not have many chances to meet Prof. Watabe, I would like to make full use of this opportunity and ask for his opinions on some issues.

He argues that ancient Chinese plows (or to be more precisely, plows of the Han Dynasty) are divided into two groups, which show a clear difference in geographical distribution. He says that the quadrangular-frame plow is found in the Shanxi, Gansu and Inner Mongolia districts, while the triangular-frame plow is in Subei (northern half of Jiangsu Province as divided by the Huai River) and Shandong. He also mentions, "Since ancient times, the development of plowing and the improvement of plows in China mainly took place in areas north of the Qinling-Huaihe line. During the Warring States Period and the Han Dynasty, the Jiangnan and Lingnan regions were undeveloped and sparsely populated, and rice was grown in wet paddies with a farming method called *huogeng shuinou*. Little is known about this farming method, however, except that it was probably a method of direct seeding cultivation in which the plows were not used," and concludes that "a full-scale introduction of plowing technology to areas south of the Qinling and Huaihe line was brought about later by the outbreak of refugees and immigrants who arrived in massive numbers at around the end of the Eastern Han Dynasty to the Six Dynasties Period."

I would like to express my opinions on his argument:

- ① Although it may be scientifically plausible to divide China into north and south with the line connecting

Qinling and Huaihe, this division should not be overemphasized. Plains crisscrossed by rivers can be found, especially in the area along the Huaihe River. The region has had a well-developed traffic infrastructure and has been inhabited by a single tribe. Thus, it is unlikely that there is a major difference in culture or plow types between the two regions divided by the Huaihe River. If my supposition is true, it is highly possible that the triangular-frame plow depicted on carved stones of the Eastern Han Dynasty unearthed in Jiangsu Province was also used in southern Jiangsu, which belongs to Jiangnan (the region to the south of the Yangzi River).

- ② The coastal area of Jiangnan, located south of the Huaihe River, was one of the cradles of Chinese civilization, where the highly developed Liangzhu and Hemudu cultures blossomed in the Stone Age. During the Spring and Autumn Period, the states of Wu and Yue were built in this region, and society, the economy and culture flourished. This area was not an underdeveloped frontier. Thus, we should distinguish Jiangnan (the region to the south of the Yangzi River) from Huanan (Guangdong and Guangxi Province) when studying the ancient history of Jiangnan. Jiangnan comprises the coastal and lakeside plain region where civilization flowered and the remote inland and mountainous region that is reminiscent of the old adage "*xianggeng niaoyun* (elephants cultivate the land and birds weed)" and where people practiced the *huogeng shuinou* farming method. We should consider these two regions of Jiangnan separately.
- ③ If my argument above is correct and the region from southern Shandong to eastern Jiangnan is considered to have formed a single economic and cultural zone in ancient times, we can explain the birth and development of plows in this area. Many artifacts have been discovered in this region, including the *lei* and *si*, as well as the stone plow of the Neolithic Age, which is also called a *potuqi* (soil-breaking tool) and is the prototype of the plow. Moreover, the bronze plowshare of the Shang Dynasty, which is the only one of its kind found in China, was unearthed in this region (the bronze plowshare was a funerary object called a *mingqi*). Later, people started to use the no-sole triangular-frame straight-beam plow driven by oxen, as depicted on the carved stones of the Han Dynasty. Then, several centuries later, in the Tang Dynasty, the Jiangdong plow, the most typical plow in China, was invented based on the triangular-frame plow. It was the last plow type to appear in Chinese history. Prof. Wen-Hua Chen, an expert in Chinese agricultural archaeology, postulates that the *lei* and *si* evolved into the triangular-frame curved beam plow and further into the long-sole quadrangular-frame straight-beam plow. Although Prof. Chen's theory cannot be applied to every part of China, I think it reasonably explains the development of plows in the Huaihe and Jiangnan regions. Meanwhile, the paper by Prof. Kono states that plows in Osaka are of Chinese origin, and I believe they were brought to Japan from the Huaihe and Jiangnan regions.
- ④ Further studies are required to prove the theory that the plowing and harrowing techniques came into use in the Lingnan region as the dry farming method was brought from the northern part of China. I think it is undoubtedly true that the Eastern Han Dynasty introduced the plowing technique into the Lingnan and southwestern regions, the use of iron spread around that time, and the number of immigrants moving from north to south skyrocketed from the Eastern Han Dynasty onwards. Yet, according to my study, the no-sole triangular-frame curved-beam plow was dominant in China's southwestern and Huanan regions and northern Southeast Asia, although triangular and quadrangular-frame plow, short-sole and long-sole plow, straight and curved-beam plow also existed in these regions. These different types of plows were probably created

through adaptation to regional climates, but it is hard to unravel when and from where plows arrived in a region, when they were improved and when a particular type of plow was widely accepted. Meanwhile, Prof. Watabe says that the *liuzhou* (roller) is one of the farming tools that appear in the models of plowing and harrowing paddy fields discovered in the Lingnan region. I wonder whether the *liuzhou* was made of stone, because it is improbable that a stone roller was used in rice paddies. I think it makes sense if it was used to break soil in dry fields or to thresh grain.

- ⑤ As for geographical names, the concept of the term “Huabei” in his presentation is different from that used in China. Prof. Watabe refers to Northern China as the entire region north of the Qinling-Huaihe line. However, this area is generally called Beifang (northern part) in China. Gansu and Shanxi, which are part of Beifang, are regarded as the northwestern region and do not belong to Northern China. In China, the term Northern China usually refers to Hebei Province and its surrounding areas.

2. Comments on “Shapes of Korean Plows and Their Regional Features”

Observing Prof. Kim’s presentation “Shapes of Korean Plows and Their Regional Features,” I was enthralled by the richness of Korean plow culture and his meticulous research. Notably, he categorizes plows in various ways. Although I give much weight to classification, I categorize plows only according to shape and geographical distribution. In contrast, Prof. Kim classifies plows based not only on shape and geographical distribution, but also name, handle, method for adjusting the plowhead angle, and number of plowheads.

According to Prof. Kōno, Prof. Kim is an authority on folklore and farm tool studies, and his academic background is reflected in his papers. For example, his classification study of plow names is underpinned by his folkloristic viewpoint. Such a study is unattainable for non-folklorists, including Professors Kōno and Watabe and me. Prof. Kim says plows are called by no less than 67 names in Korea. The abundance of names embodies Korean heritage as well as people’s appreciation of the tool, which reaches far beyond the boundaries of plow studies. Indeed, plows, which form a category of nonwritten cultural materials, give a glimpse into Korean folk culture. For instance, in regions in the central east (Gangwon Province), center (northern Gyeonggi Province) and central west (Hwanghae Province), the word “plow” originally meant “tool” but also acquired the meaning of “male sexual organ.” The expression “to cultivate the fields with a plow” implies sexual activity, and the word “seed” bears the meaning of semen. Moreover, soil falling from a moldboard is called “cooked rice.” The name of a plow or its part not only indicates the object itself but also carries other connotations. Prof. Kim’s classification research on plow names has broadened the horizons of plow studies.

The theme of this session is “Tracing the Migration of East Asian Peoples Through a Comparative Study of Plow Shapes.” Korea has served as the bridge between China and Japan, and the study of Korean plows gives us deeper insights into the history of cultural interaction — a topic that has intrigued researchers. I look forward to further progress in this field.

3. Comments on “Japanese Plows of Korean, Chinese and Mixed Origin”

Prof. Kōno acts as the coordinator of plow studies in Kanagawa University 21st Century COE program. He has held two symposia, inviting plow researchers from Japan, China and Korea, and set up the International Forum on East Asian Plow Agriculture. His efforts brought about dialogue and communication among researchers from the three countries, and I believe international research collaboration in this field will be intensified.

I first met Prof. Kōno ten years ago at a symposium held by the Research Institute for Languages and Cultures of Asia and Africa, Tōkyō University of Foreign Studies. At the meeting, I gave a presentation entitled “Plow Types and Their Geographical Distribution in Yunnan Province.” Prof. Kōno began his research on plows in 1981, three years before I did. I have made little progress in plow studies over the last seven years, being snowed under with office chores and research on other topics. In contrast, Prof. Kōno has kept studying Japanese plows with all his might. I am deeply grateful that, whenever he writes a paper or makes new findings, he contacts me immediately. Moreover, he invited me to international symposia in the past two years, spurring me to work harder on my research. I have learned many things from him.

The hallmarks of Prof. Kōno’s presentation are his unparalleled style, unique point of view and concise, to-the-point discussion bolstered by profound knowledge. Even in this limited time, he lucidly mentions the genesis, characteristics, shape, classification, geographic distribution and history of the Japanese plow. His presentation is full of novel views and is especially impressive in the following respects:

- ① Farm tools are generally thought to have developed into the diverse forms we see today, with improvements continuously added to better fit the topography and soil characteristics. However, Prof. Kōno approached the subject from different angles and discovered that some farm tools have maintained their original shape for more than a millennium. He further revealed the following principles: Tools for producing products are less changeable than those used in daily life; among rice-farming tools, cultivation tools are less changeable than those for threshing or processing harvested rice; and among cultivation tools, plows or harrows drawn by oxen or horses are less changeable than hoes and spades handled by people. These facts carry tremendous significance; if the plow is one of the most unchangeable farm tools, a comparison of plows used in the 20th century may help determine the shape of ancient Japanese plows, and furthermore, trace the migration history of East Asian peoples.
- ② Every plow researcher puts weight on the classification of plows and, more often than not, classification is seen as the goal of study. In contrast, Prof. Kōno’s statement that “we must have a crystal-clear perception of why we classify and what information we want to obtain by doing so,” shows that, to him, classification is merely an analysis method.
- ③ According to the conventional theory, plows have been adapted to regional climates, and, as a result, no-sole plows came to be used in dry fields, while firmly-built long-sole plows were developed to cultivate rice paddies. However, Prof. Kōno’s study in Ōsaka and Fukuoka Prefectures contradicts this theory. He found that while no-sole plows were used in both fields and rice paddies in Fukuoka, long-sole plows served both purposes in Ōsaka. He surmises that the no-sole plow in Fukuoka was brought from Korea, while the long-sole plow was introduced from China and has since been used in Ōsaka.

- ④ Based on his findings, Prof. Kōno devised a new classification system that groups plows into those of Korean, Chinese and mixed origin.
- ⑤ The exploration of when and by whom Korean and Chinese plows were introduced into Japan turns plow studies from a mere analysis of agricultural functions of the tool itself into historical and folklore studies. In other words, if plow studies can help reconstruct historical events, including people's migration, the plow becomes more than a farm tool; it takes on the aspect of an invaluable "nonwritten cultural material for the study of human societies" that imparts historical information.

Prof. Kōno's research method is innovative and persuasive. Having said that, while it is relatively easy to explain people's migration and cultural dissemination in Japan, the situation is quite different in regions where various tribes reside. Moreover, even if the plow and other farm tools are deemed special nonwritten cultural materials, what they can reveal is limited to cultural history surrounding the tools themselves. Thus, the scope of study using these tools should not be unduly expanded.

It is a sheer joy to cultivate friendship through research activities. In this comment, I have stated my humble opinion, and if anything inappropriate is contained herein, I welcome any comments.