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The *Ama* of Awaji Island and Iron Production

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Iron in *Fudoki*

In ancient times the whole island of Awaji was ruled as one *kuni* (province). It is thought that *Fudoki* gazetteers were compiled for each of the provinces, including Awaji Province. Unfortunately, *Awaji no Kuni Fudoki* is no longer extant, and we have to rely on other written sources such as *Kojiki* and *Nihon Shoki* for learning about the life of the island in ancient times. On the other hand, *Harima no Kuni Fudoki* exists in manuscript form for the province of Harima, which was the neighbouring province separated only by the Naruto Straits.

Several entries appear in *Harima Fudoki* concerning iron. Apart from saying that iron was produced in twelve valleys around 'Mt. Kaniwa' in Sayo *Kōri*, there is also a record of iron production in Shisawa *Kōri,* at both Shikikusa *Mura* in Kashiwano *Sato*, and in the Kanuchi River in Mikata *Sato*. The former is particularly informative insofar as it says that Wakebe no Inu discovered it, and that it was his descendants who first started offering it to the Court as tribute during the reign of King Kōtoku (r. 645–654). These records of iron production in *Harima Fudoki* have been verified by archaeological finds of structures and objects related to iron production in the eighth century at excavations carried out at the Kanaya Nakadoi and Sako Sites, the Kajiya Site, Nagatani B and C Sites, and the Nishi Shimono Ironworks Site (Sayō-chō, Sayō-gun): all located in the vicinity of Mt. Ōnade, which is inferred to be the present-day name for 'Mt. Kaniwa'.

The technology for processing the raw materials for iron smithing was acquired from overseas, being introduced into the Japanese archipelago during the Yayoi Period. This was before iron extraction itself began. However, the technology underwent drastic changes in the ensuing Kofun Period due to techniques brought by continental immigrants, as is recorded in *Harima Fudoki*. Sites have been discovered in the Harima region dating from the Kofun Period that are connected with both immigrants and iron: at the Kamiwaki Site (Nishi-ku, Kōbe-shi), for example, objects associated with people of continental provenance have been excavated, including the slag that is produced in smelting and working iron, and Korean-style pottery, along with the tuyères of bellows. It is difficult to identify these archaeological sites precisely with the continental immigrants recorded in *Harima Fudoki*, but we anticipate the discovery of sites in future that will make that possible.

Ironworking villages in the Yayoi Period: the Gossa Kaito Site

Sites where iron objects were produced in the Yayoi Period have been discovered in rapid succession on Awaji Island in recent years. One of these is the Gossa Kaito Site (Awaji-shi), where excavations in 2007–2008 revealed twelve iron forges or smithies dating from the late Yayoi Period. These comprise more than half of the 23 such forges found to date, and rather than call these the 'village blacksmiths', it might be more apposite to call them 'a village of blacksmiths.' The smithies that were making iron goods were centred around a large pit-dwelling type of building 10 metres in diameter. Judging by the fact that it was such a huge building constructed for the purpose, they must have been putting a great deal of effort into iron production.

The production of iron objects there seems to have been a relatively simple process: they used stone tools and a furnace of simple structure, whereby charcoal was piled up on the floor of the building as fuel. They cut off slabs and bars of the raw material (ingots of pig iron) heated in the furnace, shaped them by bending them, and finished them by sharpening into a blade. This ironware was infinitely superior to the stone tools that had been used until then. Arrowheads penetrated more deeply, and were more effective for hunting game and as weapons of war. Also woodworking tools of iron such as chisels, drills and planes could do much more intricate work than their stone counterparts, and that led to the birth of new local industries and products. That is well demonstrated by the Aoya Kamijichi Site in Tottori Prefecture, where they found both a variety of iron tools for woodwork and the intricate wooden products that had been fashioned using them. The majority of the innumerable iron objects made at the Gossa Kaito Site included many small woodworking tools, apart from arrowheads. The fact that there was not a single

agricultural implement among them shows that the main usage of ironware was for non-agricultural activities.

It is believed that the technology for this kind of ironware production was transmitted to Japan from more advanced areas such as the Korean Peninsula. That is clear from the fact that slab-shaped iron axes made on the Korean Peninsula have been excavated from these smithies. Full-scale iron production technology was not yet seen in the Japanese archipelago, and they even had to rely on other countries such as the Korean Peninsula for import of the raw materials. The sea surrounding Awaji Island was the means by which iron making was introduced.

The marine network and blacksmith forges: The Funaki Site

Approximately 6 kilometres to the northeast of the Gossa Kaito Site lies the Funaki Site, and it is similarly the site of a settlement that commenced in the Late Yayoi Period, located on a hill at 150–200 metres above sea level. It occupied a large area of about 40 hectares, and was continuously settled until the end of the Final Yayoi Period (Shōnaishiki Period):[1] the time of its demise might even have coincided with the era of Queen Himiko. The settlement carried on even after the disappearance of surrounding sites. Moreover, it had several distinctive characteristics that were not seen in nearby archaeological sites, such as that it contained some rare finds, including fragments of bronze mirrors that were manufactured in Henan Province in China.

Buildings for blacksmiths' forges were found here too. The excavation found forges and ironworking implements, and insofar as there was a large number of small iron tools such as arrowheads, it showed that ironware production was carried out there that used similar techniques to those of the Gossa Kaito Site. However, it differed from Gossa Kaito insofar as the ironware included a vast number of thin needle-shaped iron objects. It is not certain what these were used for, but it seems that they were making ironware for use in the production of some kind of intricate craftwork.

Another big difference was that the objects included fishing tackle such as iron fishing spears and fish hooks. The production of these necessitated the command of a high level of technique that existed in only a few locations. Short fishing spears were also found that had been manufactured using techniques known to have derived from Kyūshū, and these are all thought to have come from other regions.

In addition to these iron fishing implements, there were lots of octopus pots and earthenware urns for salt production. This assemblage shows that despite being located on a hill, this settlement was closely associated with the sea. The background to its acquisition both of ironworking technology and of the raw materials for ironware production is that it was closely connected with people who belonged to a network that crossed the ocean.

Iron in the Kofun Period: the Uryū and Kidohara Sites

More advanced technology for ironware production than in the Yayoi Period was introduced in the Kofun Period, and the knowledge and skills of continental immigrants were indispensable for establishing it. Such technology was taken to Awaji Island in the fifth century.

At the Uryū Site (Minami Awaji-shi) items were found that had not been seen previously in Yayoi Period blacksmiths' forges: large bowl-shaped lumps of slag and the tuyères of bellows. From these it was evident that by now they were able to maintain forges at higher temperatures, thereby removing more impurities from the pig iron and increasing the purity of the iron. With this technology they were able to produce more varied ironwares. Unusual items of iron were found at the Kidohara Site (also in Minami Awaji-shi), such as the iron ingots that were the raw material for blacksmiths, and tweezer-like objects. No structures were found to link these with ironware production, but they were appraised as iron items used in rituals along with objects made of talc.

Korean-style pottery was found at both of these sites, so continental immigrants are regarded as having contributed to the transmission of new blacksmithing techniques and rare iron objects here. The two sites also have in common that they contained salt-making pots, and can therefore be regarded as being associated with people who worked by or at the sea.

Ironware production and the *ama* (seafarers) of Awaji Island

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[1] Translator's note: Shōnaishiki refers to a type of pottery that was produced in the Kinki district at the end of the Yayoi Period and into the beginning of the Kofun Period.

It was the presence of continental immigrants who brought new techniques that was behind ironware production in the Kofun Period. The presence of blacksmiths' forges, items of iron and items of continental provenance at the Uryū and Kidohara Sites proves that continental immigrants were there who transmitted a new ironware culture to Awaji Island. *Nihon Shoki* records the presence of *ama* seafarers in Awaji Island at that time, at place names that still exist there such as 'Awaji', 'Mihara' and 'Noshima'. The salt-making pots that these sites have in common evoke the contribution made by people whose place of work was the sea in bringing to Japan continental immigrants and their ironware culture. This endorses what is written in *Nihon Shoki* about the *ama* people.

Ironware production was carried out prior to that, in the Yayoi Period. The ironware production that we see at the Gossa Kaito and Funaki Sites shows that they acquired both the techniques used in more advanced areas and the raw materials that were produced in those areas, and then they themselves produced an assortment of sharp tools by processing those raw materials. In such a society where sea routes were the most important method of linking regions together, the power of people who controlled the networks across the sea was crucial when it came to acquiring the techniques and raw materials for ironware manufacture. The connection between the various iron objects and the fishing implements found at the Funaki Site tells us that people who worked at sea were indispensable for maintaining ironware production, and that in the Kofun Period those people were probably the seafarers known as *ama*.

At any rate, in order to understand the history of iron in Awaji Island, it is important to know of its connection with people who worked at sea: probably they were the *ama,* who contributed to ironware production that had such an enormous influence on history. Those activities of the *ama* in Awaji Island might have been described in *Awaji no Kuni Fudoki*.