Issues Related to the Introduction of Foreign Technology in Lock Manufacturing and Brass Production during the Transition from the Medieval to the Early Modern Period

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Japan’s foreign trade gradually shifted from the Namban trade to the vermilion-seal certificate trade in parallel with the transition from the medieval to the early modern period, during which a variety of foreign technologies were introduced into Japan through the encounter and fusion of Western and Eastern cultures. The process of how foreign technology was accepted and took root was complicated and diverse. The process is analyzed to get a glimpse of its character by using lock manufacturing and brass production as examples. The case study of the lock industry examines the second introduction stage from the end of the medieval period to the early modern period. The results elucidate the transition from the dominance of Asian-style locks to the introduction of European-style locks. Moreover, based on the unification of Asian-style locks and the presence of locks made of brass with a low concentration of zinc, this case study implies that the domestic production may have started relatively early. Regarding brass production, which required special instruments and techniques due to the properties of zinc gas generated in the metal smelting process, the case study examines collections of instruments that were apparently used for brass production, such as handled crucibles and lids, to determine when foreign technology was introduced. The results indicate that it was introduced in a few places as early as the first half of the 16th century and came into common use, though limited, from the late 16th to the early 17th century. Mixed metal production started in full scale in the mid-17th century. Furthermore, this article suggests that the production technology of Western-style locks was accepted in different ways. For example, the Japanese locks whose domestic production started in the 17th century and those excavated from early modern sites were modeled after European locks in external appearance but not in internal structure. The internal structure and lock system of the Japanese locks were the same as those of Asian locks. In light of the above, this article compares the maturity of production processes between the Western-style brass locks, keys, and metal corners of Namban-style lacquerware destined for export markets (a typical example of the fusion of Japanese and Western cultures at the end of the 16th century) and the unearthed locks and brass products. What has been discovered so far suggests that the production was limited in both scale and geographical distribution at that time. This remains an issue to be examined as the time of the establishment of the technology implied by the analysis of the archaeological artifacts is not
consistent with the initial peak of the production of lacquerware for export markets.

Key words: diversity in the acceptance of foreign technology, locks and keys in their second introduction phase, Asian– and European–style lock, brass production, Namban–style lacquerware destined for export markets