**Biwa of the Heirloom of Kishu-Tokugawa Family**

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This article reports the research on the *biwa* in the musical instrument collection of the heirloom of the Kishu-Tokugawa Family held at the National Museum of Japanese History in 2009 and discusses the research results. This research was conducted on 22 pieces of Japanese *biwa* excluding Chinese pipa among 23 pieces of *biwa* in the same collection.

The first purpose of this research was to provide the basic data through observation and measurement, which was used to study the characteristics of *biwa* as musical instruments. The second purpose was to clarify the structure and manufacturing technique of *biwa* through radiography of the body and observation of the inside of sō (back board) with a small camera. The third purpose was to observe the characters written in sumi ink inside the back board using a small camera. In the body of *biwa*, information written in sumi ink about the manufacturing and repair of the instrument was often found. It has a higher authenticity than the information of the accompanying documents, which may have been replaced or created.

The outcomes of the research conducted for the purposes described above are as follows:

First, it was considered appropriate to classify the *biwa* into the following three groups: large-, medium- and small-sizes, based on the measurement results. There were eight medium-sized *biwa* of more than 80 cm but less than 90 cm, and this size of *biwa* may often have been used as with large-sized *biwa*. Conventionally, medium-sized *biwa* and small-sized *biwa* of less than 80 cm were hardly discussed. There are few small-sized *biwa*, which had particular uses. So they should be separated from medium-sized *biwa* from now.

Next, the basic structure of *biwa* could be observed using the Unkaku (H-46-103) that was disassembled, and through the observation and radiography of the inside of body with a small camera, the special structure of *biwa* was revealed.

Furthermore, the adhesive traces of 5 frets show that 3 pieces of *biwa* were obviously used as the *heikebiwa*. Judging from the documents and the shape of plectrum, it is considered that the 3 pieces of *biwa* were added to this collection so that they were used as the *gagakubiwa*. Basically, the *heikebiwa* is similar to the medium-sized *biwa* of Gagaku. The differences are in the accessorrial parts such as the moon-shaped decoration on the plectrum-face, frets and upper bridge. Therefore, it was found that it
was possible to use the *heikebiwa* as the *gagakubiwa*.

Many other things such as the ideas on manufacturing of details and the repair method were clarified through the observation. Also, it was found that the plectrum, which had been considered to be the plectrum for *heikebiwa*, was the plectrum for the *mōsōbiwa* in the Satsuma Domain, and one aspect of the musical instrument history of the *satsunabiwa* was revealed.

The measurement results of this research can be used in various ways. The effectiveness of the observation of the inside of the sō (back board) and the radiography was verified, which indicates the future direction of instrument research for *biwa*.

Key words: *gagakubiwa*, *heikebiwa*, Nameplate in sō (back board).
Measurement of musical instruments, Study of musical instruments