

In the cross field of wood science and human sciences: microscopic wood identification of important cultural properties

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The present research project, supported by the Japan Society for the Promotion of Science (JSPS), focuses on the microscopic wood identification of important cultural properties, more precisely on Japanese and Chinese Buddhist sculptures, as well as excavated wooden artefacts. The wood identification of Japanese Buddhist sculptures already looks back onto a history of more than forty years [1]. Furthermore, this research has been adopted as a basic approach by Japanese art historians in the last ten years [2]. However, wooden Buddhist sculptures from China and Korea, the two empires from where Buddhism has been introduced to Japan, have not yet been the object of wood identification. The present research is the beginning of a broad investigation in order to fill this gap. The aim is not only to find out the wood species the sculptures are made of and the analysis of the results, but also to introduce this approach to the community of art historians of East Asian art worldwide.

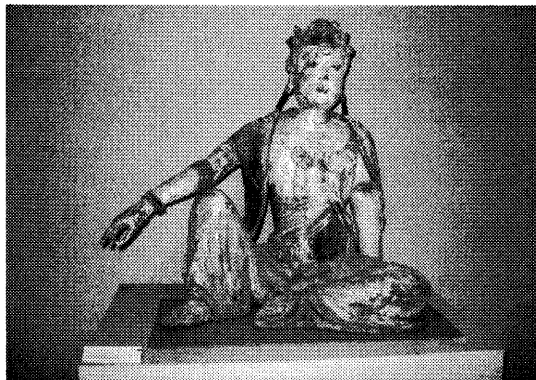


Fig. 1. Watermoon Kannon identified as willow, *Salix* sp., China, Song Dynasty, around 1200, h=90cm. Rietberg Museum, Zurich.

Nowadays, a great number of Chinese wooden Buddhist sculptures is preserved in Western Museums. In order to obtain the precious samples we had to collaborate with Museums in Europe and in the USA, such as the Guimet Museum in Paris, the Rietberg Museum in Zurich, the Royal Museum of Art in Brussels or the Spencer Museum in Kansas. In total we collected samples from 45 Buddhist and 7 Taoist sculptures. The samples had to be extremely tiny and were taken “invisibly”, viz in hollowed-out parts, on the bottom of the sculpture or in cracks. The wood species identified throughout our research can be seen in table 1. This is the first time that Chinese wooden sculptures have been identified on a larger scale. The final results will be presented this fall at the Third Forbes Symposium on Scientific Research in the Field of Asian Art at the Freer Gallery of art of the Smithsonian Institute and thus introduced to the human sciences.

A further project is the identification of excavated shipwreck parts from the Takashima Underwater Site (Nagasaki prefecture). Most of them belonged to the war fleet of the Mongol Emperor Kublai Kahn which sank in 1281 in front of the Japanese coast after a devastating typhoon. This research is done in cooperation with A. Matsuo of the Takashima Board of Education and with T. Mitsutani of the Cultural Properties Research Institute, Nara.

Table 1. Woods of Buddhist sculptures

China	Japan
<i>Salix</i> sp.	<i>Cinnamomum camphora</i>
<i>Paulownia</i> sp.	<i>Chamaecyparis obtusa</i>
<i>Tilia</i> sp.	<i>Torreya nucifera</i>
<i>Populus</i> sp.	<i>Cercidiphyllum japonicum</i>
<i>Populus euphratica</i>	<i>Zelkova serrata</i>
<i>Liquidambar formosana</i>	<i>Magnolia obovata</i>

REFERENCES

- [1] Kohara Jiro (1972) *Ki no bunka* [the culture of wood], 217p. (in Japanese)
- [2] Kaneko H., Iwasa M., Noshiro S., Fuji, T. Wood Types and Material Selection for Japanese Wooden Statues of the Ancient Period - I (Particularly the 7th-8th Century) and II (Particularly the 8th-9th Century) MUSEUM (1998) No. 555:3-54 and (2003) No. 583:5-44 (in Japanese)