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► **To cite this version:**

Mechtild Mertz, Takao Itoh. A Study of the Wood Species of 73 Deity Sculptures of the Hunan Province, from the Patrice Fava Collection. Religions and local society - Interdisciplinary Studies Hunan Province, Cahiers d'Extrême-Asie 19, pp.183-214, 2010. halshs-02986891

**HAL Id: halshs-02986891**

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Submitted on 15 Oct 2021

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A STUDY OF THE WOOD SPECIES OF 73 DEITY SCULPTURES  
OF THE HUNAN PROVINCE, FROM THE PATRICE FAVA COLLECTION

Mechtild MERTZ and ITOH Takao 伊東隆夫

*Les auteurs ont étudié un ensemble de 73 statuettes de l'importante collection appartenant à Patrice Fava. Provenant de la province chinoise du Hunan, elles représentent des divinités, locales et nationales, des ancêtres et des maîtres. L'enquête a permis de déterminer les essences de bois utilisées pour le façonnage de l'âme des sculptures, en analysant au microscope la microstructure anatomique des échantillons prélevés sur chaque pièce. L'article présente les méthodes utilisées pour l'analyse, et les résultats obtenus (prélèvements selon différents plans de coupe, préparation des échantillons, microstructure et identification des essences).*

*Les conclusions mettent en valeur trois essences principales : le peuplier (Populus sp.), le camphrier (Cinnamomum camphora) et le noyer ailé (Pterocarya sp.), dont les propriétés mécaniques et l'aire de distribution en Chine sont également présentées. Enfin, les auteurs abordent les liens possibles entre le choix de ces essences, les zones d'utilisation des bois à l'intérieur de la province du Hunan, l'époque de fabrication, et, lorsque c'est possible, l'artisan sculpteur ou son atelier.*

## I. Introduction

The present work is the demonstration of a new interdisciplinary approach linking an art- and religious-historical approach with a method from the wood sciences. This method, involving new vocabulary based on wood anatomy, offers an opportunity to introduce basic notions of wood, a complex material which, in spite of its omnipresence in daily life, is easily passed over. We therefore decided to give an introduction on the anatomical structure of wood, followed by the procedure of wood identification, before presenting the identified wood species used for the deity sculptures of Hunan 湖南 province and the interpretation of the results.

We investigated a selection of 73 sculptures from the Patrice Fava collection in Peking, consisting of a total of 909 deity sculptures originating from Hunan province. They are made of plain wood, attaining a height of about 20cm and coated by polychrome paint layers. The oldest sculpture of the entire Fava collection dates back to 1673, and as production was never interrupted, the latest sculpture dates of about 1980. The statues are raised on domestic altars for veneration. Taller ones, of about 40cm to over 1m, were probably installed in temples for a communitarian worship. Today, such statues can also be found on family altars, which receive high ranking Buddhist and Taoist deities, such as Guanyin 觀音, the Goddess of Mercy, Nanyue shengdi 南嶽聖帝, the god of the Southern Peak, Guanyu 關羽, the

*Cahiers d'Extrême-Asie* 19 (2010) : ??-??

martial god, Zhao yuanshuai 趙元帥, the heavenly marshal and god of wealth, as well as divinities of a more modest rank like the god and goddess of the hearth, the patron of guilds, such as the carpenters' guild (Lu Ban 魯班), or the god of medicine (Yaowang 藥王). They were often accompanied by more local divinities like Zhang Wulang 張五郎, represented upside down, the god of the hunters and chief of a horde of soldiers fighting malefic powers, local heroes and particularly a group of divinized ancestors, close and distant relatives (from fathers and mothers to the first ancestors), as well as religious masters (from ancestral masters up to the direct initiation masters), most of whom are exorcist masters (*fasbi* 法師, locally called *shigong* 師公)<sup>1</sup>.

What makes this collection particularly interesting is the fact that most of the sculptures are precisely dated and the original location known. Unlike a similar collection from Fujian province, commissioned at the end of the 19<sup>th</sup> century by J. J. M. de Groot for Emile Guimet in France and E. J. Brill in the Netherlands, and now preserved in the Museum d'histoire naturelle of Lyon and in the Ethnological Museum of Leiden respectively, the sculptures from Hunan contain, in a cavity in the back, written documents called consecration certificates (*yizhi* 意旨). These mention precisely the location and the denomination of the represented figure, the names of the donor and of the sculptor, as well as the consecration date.

Such a well-dated and localized collection is particularly interesting for us, as it allows an in-depth investigation of the wood species the statues were made of. Is the choice of the wood species related to the fabrication period? Is it related to the location or to a specific workshop or sculptor? Our representative selection of 73 sculptures covers different fabrication periods, geographical distribution areas inside Hunan province, as well as different iconographical representations, such as the divinities of the national pantheon, local divinities, ancestors and masters. Before moving on, we shall give a brief introduction to wood in general and to the methods applied for its identification. These methods, which can be applied to all kinds of wooden art and archaeological objects, are the illustration of an approach that contributes to the interpretation of ancient Chinese wooden artifacts.

Wood is the lignified part of trees and shrubs, and makes up the major part of the stem and branches. The stem or trunk of the tree is composed from its center outwards by the pith (*moëlle*), the heartwood or duramen, the sapwood (*aubier*), the cambium and the bark (fig. 1). The pith is the central medulla of the stem, which is usually omitted in woodworking. The heartwood is the older, harder and non-living central part of the wood, which usually is darker in color and denser than the surrounding sapwood. It yields the material for artifacts. The sapwood is the living part of the tree where the sap is conducted, and is situated between the heartwood and the bark. It is usually lighter in color than the heartwood. It is less resistant to infestation by insects and therefore is likewise avoided in the manufacturing of wooden artifacts. The cambium is the wood-forming cell layer

1. See Alain Arrault, "Analytic essay on the domestic statuary of central Hunan: The cult to divinities, parents and masters", *Journal of Chinese Religions*, 36 (2008), pp. 1-53.

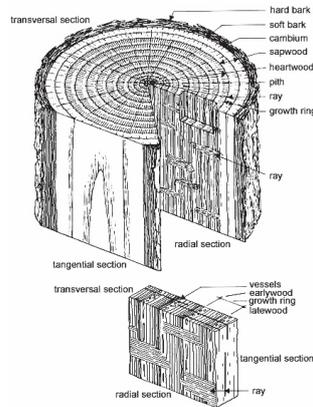


Fig. 1: Macroscopic features of wood (modified from *Dokumentation Holz, Teile Massivholz, Holzschutz, Zürich, Lignum, 1966*).

situated between the wood and the bark. Through cell division it forms new cell layers of the wood, which annually adds new concentric layers forming the annual tree rings. In the first portion of the growing season, it forms the so-called earlywood, with larger and thinner-walled cells, and in the second portion, so-called latewood, with thicker-walled cells thus completing the annual growth ring. For wood identification, it is ideal to obtain a complete tree ring, or at least a tree ring boundary, although it is not always possible, as samples have to be small. The bark is the outer protective layer of the stem and also omitted.

Wood identification is based on the observation of the anatomical—that means the cellular—structure of the wood. Wood is a complex material consisting of different cell types, which are organized in specific patterns. These patterns vary from species to species, or more precisely from genus to genus, allowing us to distinguish them from each other and to perform the wood identification.

The different cell types composing the wood are mainly vertically orientated, such as the vessels (conducting cells), fibers (supporting cells), and axial parenchyma (storage cells). The horizontally orientated cells are the ray cells (horizontal storage cells). Shape, size and arrangement of the different cell types are the object of observation and play a determinant role in wood identification.

## II. Methods

A small wood sample is taken from inside the cavity in the back of each sculpture by means of a scalpel, in such a way as not to harm the integrity of the sculpture. The sample size is about half the size of a match or smaller. The samples are then soaked into water for two days in order to soften them. For the following preparation of the microscopic slides, thin hand sections are taken from the sample by

means of a double-edged razor blade in transverse, radial and tangential directions (about 20 to 50 µm thick). The small flakes are carefully placed on a water drop on the slide glass. After the removal of excess water and the application of a drop of the water-soluble slide-mounting medium Gum-chloral<sup>2</sup>, a cover glass is placed on the slide glass. After some days of desiccation, the slides are ready to be studied under the microscope. We used an Olympus BX51 with a magnification of 40 to 400x, provided with a digital camera Olympus DP70.

### III. Results of the wood identification of the 73 sculptures

From the observation of the 73 slides, we identified three different wood species. In the following are described the anatomical features and the key characteristics that led to the identification of each wood. In general, wood identifications can be done at the genus level. In some cases, and only with a good knowledge of the indigenous timber tree species, it is possible to identify the wood at the species level. For the identified wood species of the 73 sculptures, we provide the scientific or Latin name, the scholar or standard names in Chinese and Japanese, as well as the vernacular (timber) names in English, French, Chinese and Japanese. A list of all the sculptures can be found in Table 2 at the end of the text. In an “Appendix of Microscopic Photos” we represent a selection of 38 statues, of which the samples are best preserved, by the cross, radial and tangential sections.

A: 38 samples showed the following features:

#### Cross section:

- Growth ring boundaries distinct.
- Wood diffuse to sometimes slightly semi-ring porous.
- Pores solitary or in radial multiples of 2-4, sometimes in clusters.

#### Radial section:

- Vessel perforation plates simple.
- Rays homogeneous.
- Vessel-ray pits large, only in marginal ray cells.

#### Tangential section:

- Rays uniseriate, homogeneous.
- Ray height 4-21 cells.

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2. Gum-chloral is made up of 40 g of Arabic gum powder, 50 g of chloral hydrate, 20 ml of glycerin and 50 ml of distilled H<sub>2</sub>O. The ingredients are mixed in the given order, and care is taken to completely dissolve one before adding the next. The mixture is then filtered or centrifuged. The solution is kept in sealed vials made of plastic or glass.

The above-described features show a diffuse porous wood with homogeneous uniseriate rays and large vessel-ray pits in the marginal ray cells, which is a key characteristic of *Populus* sp.:

	Genus	Family
Scientific or Latin name:	<i>Populus</i> sp.	SALICACEAE
Chin. standard name:	<i>yang shu</i> 楊屬	<i>liu ke</i> 柳科
Jap. standard name:	<i>yamanarasbi zoku</i> ヤマナラシ属	<i>yanagi ka</i> ヤナギ科
Vernacular names		
English:	poplar	willow family
French:	peuplier	famille des saules
Chinese:	<i>yang mu</i> 楊木	<i>liu ke</i> 柳科
Japanese:	<i>yamanarasbi</i> ヤマナラシ, <i>popura</i> ポプラ	<i>yanagi ka</i> ヤナギ科

B: 20 samples showed the following features:

#### Cross section:

- Growth ring boundaries distinct (some samples were too small, so the growth ring boundary could not be observed).
- Wood semi-ring porous.
- Vessels solitary, sometimes radially aligned by two.
- Vessel outline round to slightly angular.
- Vessel diameter 70-110  $\mu\text{m}$ .
- Axial parenchyma vasicentric, diffuse at growth ring margin.
- Numerous oil cells.

#### Radial section:

- Vessel perforation plates simple.
- Vessel-ray pits with reduced borders: large, rounded to slightly angular and/or kidney-shape like.
- Rays heterogeneous (Kribs II (-III))<sup>3</sup>.
- Oil cells present.
- Tyloses present.

3. Different wood species show different cellular compositions of rays. The terms "homogeneous" and "heterogeneous" are used to describe ray tissue as a whole. They were coined by the wood scientist David A. Kribs, *Commercial Foreign Woods on the American Market*, New York, Dover publications, 1968, describing the composition of rays by procumbent, square and upright cells. The rays are classified into homogeneous rays, composed only by procumbent cells, and in heterogeneous rays, composed by procumbent, square and/or upright cells (best observed in the radial section). The heterogeneous rays are further divided in type I, II, or III according to the specific composition of cell types. Although other systems coexist, the system of Kribs is mainly used by Chinese wood anatomists.

**Tangential section:**

- Rays 1-2(3) seriate.
- Rays (3)6-14(25) cells high, showing a great variation in ray heights.
- Rays heterogeneous (Kribs II (-III)).
- Numerous oil cells.

The fact that the wood is semi-ring porous, that there is a relatively great variation of ray heights, the abundance of axial parenchyma cells around the vessels of a relatively large diameter, the presence of axial parenchyma cells at the growth ring boundary, the abundance of large oil cells, and the presence of tyloses are all key characteristics of *Cinnamomum camphora*:

	Species	Family
Scientific or Latin name:	<i>Cinnamomum camphora</i>	LAURACEAE
Chin. standard name:	<i>zhang (shu)</i> 樟(樹)	<i>zhang ke</i> 樟科
Jap. standard name:	<i>kusunoki</i> クスノキ	<i>kusunoki ka</i> クスノキ科
Vernacular names		
English:	camphorwood	laurel family
French:	camphrier	famille des lauriers
Chinese:	<i>zhang mu</i> 樟木	<i>zhang ke</i> 樟科
Japanese:	<i>kusunoki</i> クスノキ, <i>kusu</i> クス, <i>kusu</i> 樟, <i>kusu</i> 楠	<i>kusunoki ka</i> クスノキ科

C: Seven samples show some features of *Cinnamomum* sp. Compared with *Cinnamomum camphora*, the other camphortree species (*Cinnamomum* spp.) are not semi-ring porous but diffuse porous, and the axial parenchyma is hardly observed at the growth ring margin. Due to the fact that the samples were too small, not all the features such as oil cells, distribution of the axial parenchyma, and especially the tree ring boundary could be observed. Thus, we cannot exclude the identification of other woods belonging to the laurel family, such as the *Machilus* sp. (*run nan shu* 潤楠屬) or the very precious *Phoebe* sp. (*nan shu* 楠屬). Our identification is LAURACEAE with a high probability of *Cinnamomum* sp.

D: 3 samples showed some of the features seen in *Cinnamomum camphora*, but due to their very limited size, we were unable to ascertain the identification and thus cannot exclude other types of woods belonging to the laurel family, such as the *Machilus* sp. (*run nan shu* 潤楠屬) or the very precious *Phoebe* sp. (*nan shu* 楠屬). In this instance too, our identification is LAURACEAE, with a possibility of *Cinnamomum camphora*.

E: 3 samples were too small, so that the size and shape of the anatomical features could not be clearly discerned. Some of the features, such as solitary vessels, axial parenchyma associated with the vessels, heterogeneous 2-3 seriate rays and especially oil cells, could be observed, but they were too sporadic to distinguish between the

different genera of the laurel family. We can only ascertain that the woods belong to the LAURACEAE:

	Family
Scientific or Latin name:	LAURACEAE
Chin. standard name:	<i>zhang ke</i> 樟科
Jap. standard name:	<i>kusunoki ka</i> クスノキ科
Vernacular names	
English:	laurel family
French:	famille des lauriers
Chinese:	<i>zhang ke</i> 樟科
Japanese:	<i>kusunoki ka</i> クスノキ科

F: 2 samples showed the following features:

#### Cross section:

- Growth ring boundaries cannot be seen and porosity cannot be distinguished due to the limited size of the sample.
- Vessels solitary, diameter 100  $\mu\text{m}$ .
- Axial parenchyma in narrow bands tangentially distributed, showing a net-like structure with the rays.

#### Radial section:

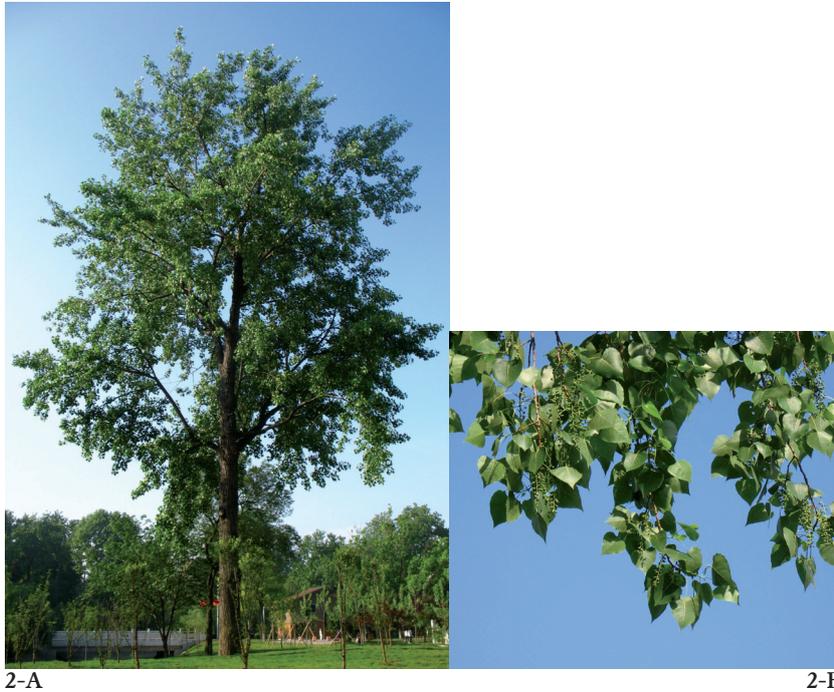
- Vessel perforation plates simple.
- Rays homogeneous to slightly heterogeneous (Kribs III).
- Vessel-ray pits with much reduced borders to apparently simple, alternate, outline angular.
- Intervessel pits alternate, outline polygonal.

#### Tangential section:

- Rays 1-2(3) cells wide, homogeneous.
- Ray height 3-21, up to 30 cells.

The key characteristics of the above-described features refer to *Pterocarya* sp.:

	Genus	Family
Scientific or Latin name:	<i>Pterocarya</i> sp.	JUGLANDACEAE
Chin. standard name:	<i>feng yang shu</i> 楓楊屬	<i>bu tao ke</i> 胡桃科
Jap. standard name:	<i>sawagurumi zoku</i> サワグルミ属	<i>kurumi ka</i> クルミ科
Vernacular names		
English:	wingnut	walnut family
French:	noyer ailé, pterocaryier	famille des noyers
Chinese:	<i>feng yang mu</i> 楓楊木	<i>bu tao ke</i> 胡桃科
Japanese:	<i>sawagurumi</i> サワグルミ	<i>kurumi ka</i> クルミ科



2-A  
 Fig. 2: A. Poplar tree, *Populus* sp., Nanjing Forestry University campus. B. Detail of leaves with fruiting branchlets in May (Photos: Zhai Shengcheng 翟胜丞).  
 2-B

The result of the wood identification of the 73 deity sculptures revealed that:

- 38 sculptures were made of *Populus* sp.
- 20 sculptures of *Cinnamomum camphora*
- 7 sculptures of LAURACEAE, possibly *Cinnamomum* sp.
- 3 sculptures of LAURACEAE, possibly *Cinnamomum camphora*
- 3 sculptures of LAURACEAE
- 2 sculptures of *Pterocarya* sp.

#### IV. Discussion

We will first introduce the identified wood species by describing their habit, habitat and usage, as well as technical aspects, and symbolic meaning, respectively. For poplar and wingnut, which could only be identified to the genus level, it is interesting to discuss which species are the most probable candidates among those naturally distributed in Hunan province. Furthermore, we try to determine whether there exists a relationship between the wood species and the workshop where a statue was made, its consecration date or its consecration place.

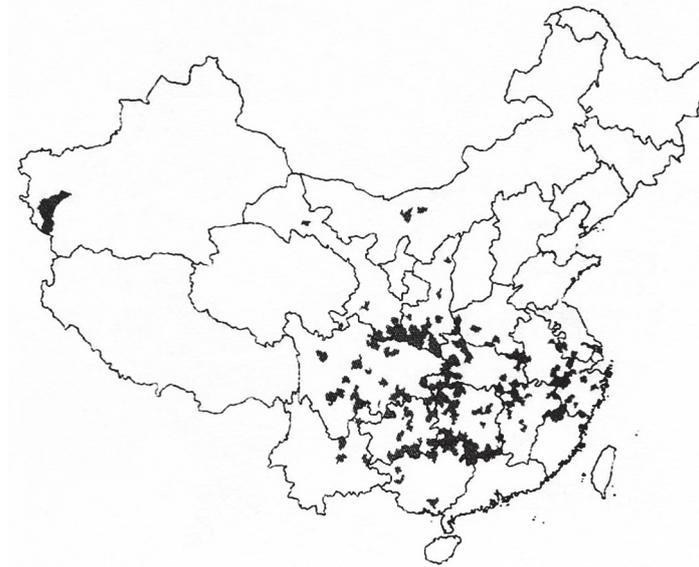


Fig. 3: Natural distribution of the Chinese aspen *Populus adenopoda*, a probable candidate of the sculptures made of poplar (modified from Fu Ligu 傅立國, Hong Tao 洪濤, eds., *Zhongguo gaodeng zhiwu* 中國高等植物 (*Higher Plants of China*), 13 vols., Qingdao 青島, Qingdao chubanshe 青島出版社, 2000 and ongoing, vol. V, p. 289).

#### IV.1. Identified wood species

##### *Populus* sp. (poplar)

According to the *Flora of China*<sup>4</sup>, out of 100 species of *Populus* (fig. 2) worldwide, 71 exist in China, of which 47 are endemic. The poplars together with the willows are primarily restricted to the temperate regions of the Northern Hemisphere<sup>5</sup>. Only one poplar species, which is also an important timber tree, is well distributed in the more southern Hunan province, which makes it a most probable candidate for the sculptures we identified. It is the Chinese aspen *Populus adenopoda* (*xiang ye yang* 響葉楊), a tree that can reach up to 30 m of height (fig. 3). It is used for timber, construction, furniture making and farm tools, a clear sign of its solidity. It grows on mountain slopes at an altitude of 300–2500 m.<sup>6</sup>

4. *Flora of China*: <<http://www.efloras.org>>, accessed on February 20th, 2012.

5. Li Hui-Lin, “The Weeping Willow and Lombardy Poplar”, *Morris Arboretum Bulletin*, 9 (1) (March 1958), p. 3.

6. Besides Hunan province, this tree is also distributed in the provinces of Anhui 安徽, Fujian 福建, Guangxi 廣西, Guizhou 貴州, Hebei 河北, Henan 河南, Hubei 湖北, Jiangsu 江蘇,

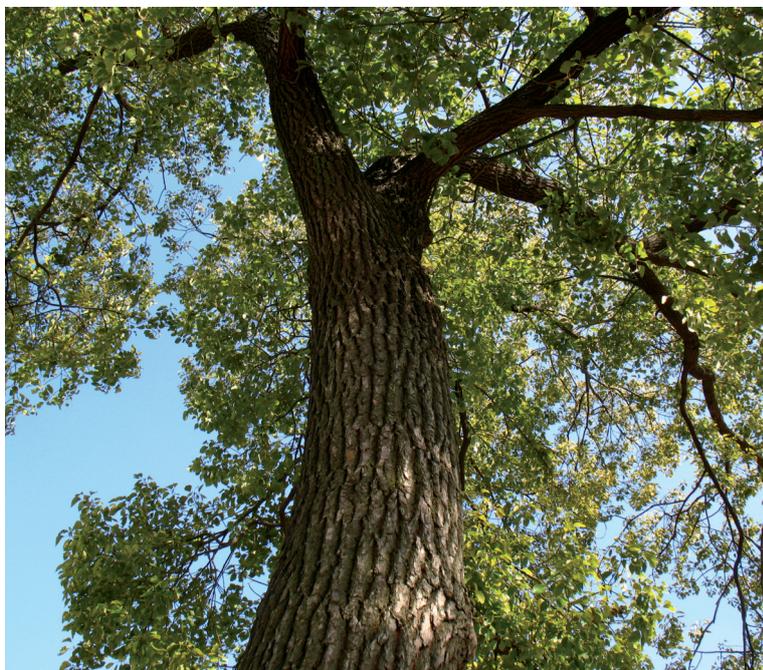


Fig. 4: A. Camphortree, *Cinnamomum camphora*, Nanjing Forestry University campus. B. Detail of leaves in March (Photo: Zhai Shengcheng).

*Populus adenopoda* belongs to the group of white poplars or aspens<sup>7</sup>. According to Li Hui-Lin, it is one of the many poplar species, which have been cultivated since very ancient times. He describes the poplars and the willows as having been useful to mankind since prehistoric times: “In China, the poplar has been considered since the most ancient times as one of the five official memorial trees, the one reserved for the graves of the common people.”<sup>8</sup> In the *Qimin yaoshu* 齊民要術 (*Main techniques for the welfare of the people*)<sup>9</sup>, the white poplar is described as having “its nature extreme and its strength running straight, made for building material, it will withstand turning forces, even at its end.”<sup>10</sup> A strong wood, it was used for

Jiangxi 江西, Shaanxi 陝西, Sichuan 四川, Yunnan 雲南 and Zhejiang 浙江.

7. Cheng Junqing 成俊卿, Yang Jiaju 楊家駒, Liu Peng 劉鵬, *Zhongguo mucai zhi* 中國木材志, Beijing 北京, Zhongguo linye chubanshe 中國林業出版社, 1985, p. 576.

8. Li Hui-Lin, art. cit., p. 4.

9. The *Qimin yaoshu* is the best preserved of Ancient China’s agricultural texts. It was written by Jia Sixie 賈思勰, an official of the Northern Wei Dynasty (386–534). According to some accounts, it is believed to have been completed in the second year of the Wu Ding era (武定) of the Eastern Wei (544). Another source sets the completion between 533 and 544 (Wikipedia <[http://en.wikipedia.org/wiki/Qi\\_Min\\_Yao\\_Shu](http://en.wikipedia.org/wiki/Qi_Min_Yao_Shu)>, accessed 3/3/2010).

10. Phoebe Fu, John Chapman, Brenda Vale, “Timber in Ancient China, wood work and

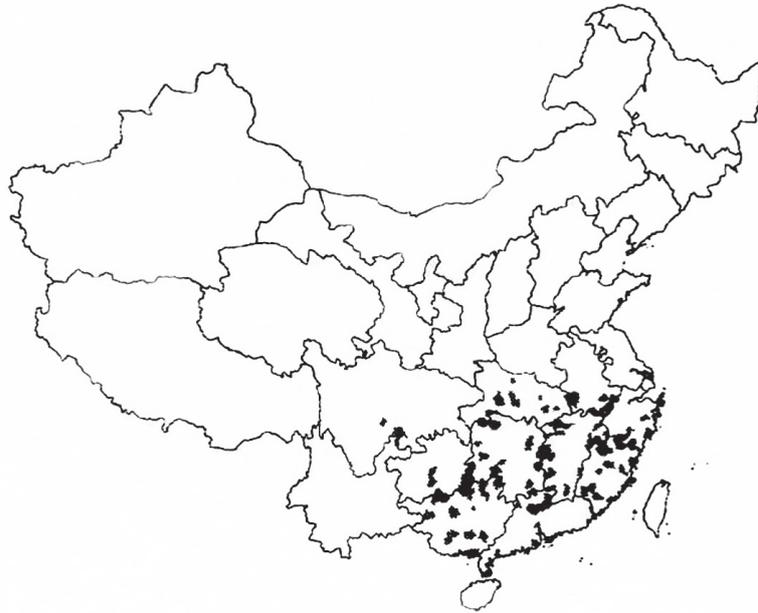


Fig. 5: Natural distribution of camphorwood, *Cinnamomum camphora*, in China (modified from Fu Likuo, Hong Tao, eds., *op. cit.*, vol. III, p. 254).

rafters and ridge beams. Compared with camphorwood, poplar is soft. According to a Japanese craftsman, it is easy to carve, but due to its softness, out-sticking small parts may easily break off.<sup>11</sup>

#### *Cinnamomum camphora* (camphorwood)

In the case of camphorwood, we were able to identify down to the species level, which is only possible if one is well acquainted with the forest flora of China and well trained in the anatomy of Chinese woods. When confronted with doubt, we limited the identification to the family level – LAURACEAE.

*Cinnamomum camphora* is an important timber tree in China as well as in Japan (fig. 4). It can grow to a height of up to 30-40m and is distributed throughout southeastern China (fig. 5).

Due to its interlocked grain, the wood does not split easily and therefore is suitable for carving. In the 6<sup>th</sup> century, right after the introduction of Buddhism

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wood processing as recorded in ancient texts”, *New Zealand Timber Design Journal*, Issue 3, Vol.12 (2004), p. 5.

11. Interview with the sculptor Yano Masaki 矢野磨砂樹, January 10, 2009.

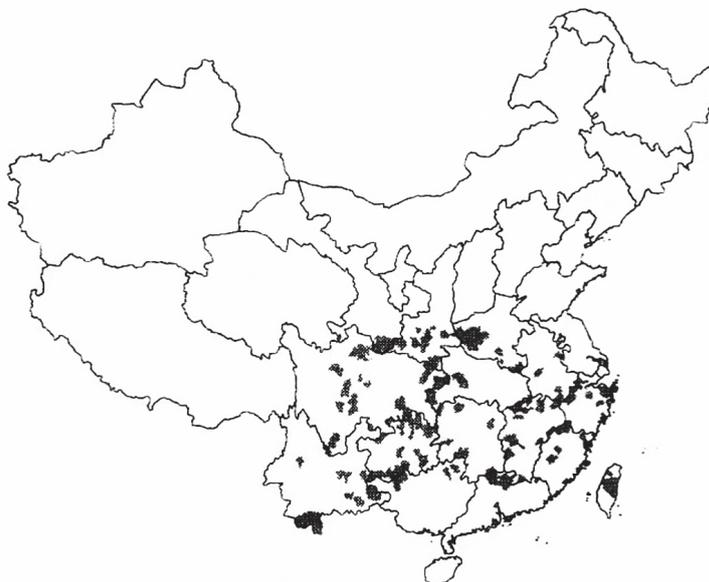


Fig. 6: Natural distribution of Chinese wingnut, *Pterocarya stenoptera*, a probable candidate for the sculptures made of wingnut. (modified from Fu Likuo, Hong Tao, eds., *op. cit.*, vol. IV, p. 169).

in Japan, camphorwood was the only specie used for wooden Buddhist images.<sup>12</sup> In the 1950s, about 600 Buddhist sculptures were identified by wood scientist Kohara Jirō 小原二郎 in cooperation with the art historian Kuno Takeshi 久野健, thus creating the basis of a spatio-temporal mapping of the different wood species used in Japanese Buddhist sculpture<sup>13</sup>. By questioning Japanese traditional craftsmen<sup>14</sup> working with camphorwood, we learn that it is the best and also the most expensive material for carving, when compared with poplar and wingnut. Even nowadays it is often used for carvings in temple buildings. Although the wood is sturdy due to its interlocked grain, it is suitable for carving because it hardly splits. The wood has to be well-seasoned as it warps and cracks easily during the drying process, and it can only be safely processed after good seasoning. Its resistance to insects is also a highly appreciated property.

12. See François Berthier, *La g n se de la sculpture bouddhique*, Aurillac, Publications Orientalistes de France, 1979, pp. 135-152.

13. See Kohara Jirō 小原二郎, *Ki no bunka* 木の文化 (Culture of Wood), Tōkyō, Kajima kenkyūjo shuppankai 鹿島研究所出版會, 1972; and by the same author "Nihon chōkoku yōzai chōsa shiryō" 日本彫刻用材調査資料 (Data on the Investigation of the Wood Material used for Japanese Sculpture), *Bijutsu kenkyū* 美術研究, 229 (1963), pp. 74-83.

14. Interview with the sculptor Yano Masaki, January 10, 2009. See also Mechtild Mertz, *Wood and Traditional Woodworking in Japan*, Ōtsu 大津, Kaiseisha Press 海青社, 2011.



Fig. 7: A. Stem of Chinese wingnut, *Pterocarya stenoptera*, Nanjing Forestry University campus. B. Detail of fruiting spikes with nutlets in May. (Photo: Zhai Shengcheng)

*Pterocarya* sp. (wingnut)

The *Flora of China* enumerates five species of *Pterocarya* growing in China, of which two are endemic. Only the Chinese wingnut *Pterocarya stenoptera* (feng yang 楓楊) grows naturally in Hunan province<sup>15</sup>. It can reach a height of up to 30m and grows in forests on mountain slopes or riverbanks at an altitude from near sea level to 1500 m (fig. 6). It too is a probable candidate for the sculptures we identified.

This tree (fig. 7) is widely cultivated as a shade tree and it has many uses such as furniture, ships, tea boxes, wooden clogs and farming tools.<sup>16</sup> According to a Japanese craftsman, it is less good than camphorwood but better than poplar.<sup>17</sup> The grain resembles that of walnut and is suitable for carvings that do not require too fine details.

15. It is also found in Anhui, Fujian, Gansu 甘肅, Guangdong 廣東, Guangxi, Guizhou, Hainan 海南, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning 遼寧, Shaanxi, Shandong 山東, Shanxi, Sichuan, Taiwan 臺灣, Yunnan and Zhejiang, as well as in Japan and Korea.

16. Cheng Junqing *et al.*, *op. cit.*, p. 351.

17. Interview with the sculptor Yano Masaki, January 10, 2009.

#### IV.2. Do the consecration dates, places and the workshops affect the wood choice?

After having drawn this broader picture of the three identified wood species, let us turn to the question of whether a relation exists between the former and the consecration dates, the consecration places and the workshops where the identified sculptures were made.<sup>18</sup> It is especially interesting to take into consideration the statues made of poplar and of camphorwood, for only two statues of our sample were made of wingnut, a fact which does not allow for a conclusive evaluation.

##### *Date*

The oldest sculptures date from the end of the Ming period (1368-1644). Their numbers increase progressively during the 17<sup>th</sup> and 18<sup>th</sup> centuries, and reach a peak from the middle of the 19<sup>th</sup> century to the beginning of the 20<sup>th</sup> century. Although there is a strong decrease from 1949, year of the proclamation of the People's Republic of China, the production of such sculptures did not stop even during the Cultural Revolution (1966-1976). The fabrication restarted in the 1980s and became particularly popular in the 2000s. We are in fact facing a phenomenon which, in spite of some discontinuities, lasted over four centuries.

Of the 73 sculptures we identified, the oldest dates back to 1687 (T0413, No. 65) and the latest to 1992 (T0553, No. 44).<sup>19</sup> Both are made from camphorwood. The second oldest dates from 1777 (T0259, No. 20) and is made from poplar. The two sculptures made of wingnut date from 1904 (T0729, No. 59; and T0831, No. 60). Both poplar and camphorwood sculptures have been produced simultaneously from the beginnings until nowadays, and it is impossible to discern a clear preference for one or the other type of wood during a specific period. If we compare the ratio between poplar and the laurel family/camphorwood, we can observe a slight change of balance. Until 1842, the ratio is 23 poplars against 11 camphortree/trees from the laurel family, whereas from 1844 to the present, the ratio is almost reverse: 15 poplars against 23 camphortree/trees from the laurel family. Because the number of sculptures we identified is limited, we do not intend to make any affirmation on this point. Nevertheless, the fact that poplar prevails in earlier sculptures, and camphorwood in more recent ones, is an interesting information, and should be taken into consideration in further investigations.

##### *Place*

The sculptures originate from the center of Hunan, a region which comprises the districts of Yiyang 益陽, Shaoyang 邵陽, Anhua 安化, Xinhua 新化, Ningxiang 寧鄉,

18. On the iconography, place and date of the sculptures, see A. Arrault, ed., "Les statuettes religieuses du Hunan," on-line database, 2006.

19. The first number is the Fava collection inventory number attributed by the EFEO, while the second is the serial number of the wood identifications.

Xiangtan 湘潭, Xiangxiang 湘鄉, and Liling 醴陵.<sup>20</sup> One of the sculptures identified comes from the district of Fuzhou 撫州 in the central eastern part of Jiangxi province.

In Hunan, the above-outlined area is considered to be the cradle of the Meishan 梅山 culture, which is not always clearly defined but is based on hunting, fishing and husbandry. Its history is marked by the superposition of non-Chinese minorities (the Miao 苗, the Yao 瑶, etc.), of Chinese migrants from neighboring provinces, particularly Jiangxi, of officials and their troupes in charge of “pacification,” and of literati imparting “civilization.”

In what follows, we will try to investigate the relationship between the identified species of wood and the 9 districts over which the 73 sculptures are distributed. We are proceeding from north to south and from west to east. The sculptures made from camphorwood (*Cinnamomum camphora*) have been aggregated to those made of laurel family wood (LAURACEAE). Table 1 presents the number of sculptures for each identified wood species, according to their district of origin in Hunan province (and the one sculpture from Jiangxi province).

District	Total number of identifications per district	<i>Cinnamomum camphora</i> LAURACEAE or <i>C. camphora</i> LAURACEAE	Populus sp.	Pterocarya sp.
All districts	73	33 20 <i>Cinnamomum camphora</i> 10 LAURACEAE or <i>C. camphora</i> 3 LAURACEAE	38	2
Yiyang 益陽	3	1 <i>Cinnamomum camphora</i> 1 LAURACEAE or <i>C. camphora</i> 1 LAURACEAE		
Anhua 安化	29	3 <i>Cinnamomum camphora</i>	24	2
Xinhua 新化	20	7 <i>Cinnamomum camphora</i> 3 LAURACEAE or <i>C. camphora</i>	10	
Shaoyang 邵陽	2	1 LAURACEAE or <i>C. camphora</i>	1	
Ningxiang 寧鄉	12	4 <i>Cinnamomum camphora</i> 4 LAURACEAE or <i>C. camphora</i> 2 LAURACEAE	2	
Xiangtan 湘潭	-			
Xiangxiang 湘鄉	2	1 <i>Cinnamomum camphora</i>	1	
Liling 醴陵	1	1 LAURACEAE or <i>C. camphora</i>		
Fuzhou 撫州 (Jiangxi)	1	1 <i>Cinnamomum camphora</i>		
Not precised	3	3 <i>Cinnamomum camphora</i>		

Table 1: Number of sculptures per identified wood species, classified according to their district of origin within Hunan province (with one sculpture from Jiangxi province).

20. See map at the beginning of the volume.

The most represented districts are Anhua (29 statues), Xinhua (20) and Ningxiang (12). Among the 29 statues in Anhua, 24 are made from poplar, 3 from camphorwood and 2 from wingnut. In Xinhua, poplar and LAURACEAE/*Cinnamomum camphora* are represented equally (10 statues each). The ratio in Ningxiang is reversed, with 10 statues made from LAURACEAE/*Cinnamomum camphora* and only 2 from poplar, although the total number of statues is lower. The remaining 11 statues are distributed over the districts of Xiangxiang, Liling and Fuzhou (Jiangxi province), but cannot be taken into account due to their too limited number. Compared with the relatively evenly distributed utilization of camphorwood and poplar for deity statues all over Hunan province, it is very interesting to point out the dominance of poplar in Anhua district. This could be related to the predominance of poplar trees in that district, or of poplar wood offered on the market, or to a local tradition passed down within a lineage of sculptors, as will be discussed in the following paragraph. Economic reasons may also play a role. The same remarks can be made for camphorwood, which occupies a more important position in the districts of Xinhua and Ningxiang.

### *Sculptors*

The name of the sculptor is sometimes mentioned on the consecration certificate. It is often introduced by the title *chushi* 處士 or *danqing chushi* 丹青處士 (local artisan or local artisan of “colors”), meaning the person who carves the statue or writes the certificate. If not otherwise mentioned, the *chushi* is also the one in charge of the consecration of the sculptures. This makes him both an artisan and a religious actor, and his name is mentioned on many of the consecration certificates. Due to the time period and geographical area covered by the 73 identified statues, it is difficult to discern workshops or lineages of sculptor families. Although in the better represented districts of Anhua, Xinhua and Ningxiang, some family names appear repeatedly – for example Chen 陳, Zhang 張 and Lu 陸 in Anhua –, it is impossible to argue that they belong to a same family or clan. Nevertheless, it is interesting to underline the attempt made by Michela Bussotti to show possible filiations, like those of the Hu 胡, Wu 吳 and Zhou 周 families in Anhua.<sup>21</sup> Bussotti mentions Hu Ju’nan 胡巨南, the author of one sculpture (T0165) we identified as being made of poplar. She also mentions Wu Zhenxiang 吳禎祥, who made 12 pieces, out of which we identified one (T0448) as being made of poplar, and Zhou Yaoxian 周耀先, who made 22 pieces, out of which we identified one (T0202) as being made of poplar. For a better understanding of the possible relationships between sculptors, workshops or lineages and the wood species (*Fig. 8*) they selected, a broader sample will have to be analyzed and interviews made with artisans of existing workshops.

21. Alain Arrault, Michela Bussotti, “Statuettes religieuses et certificats de consécration en Chine du Sud,” *Arts asiatiques*, 63 (2008), pp. 52-54.



Fig. 8: Master of exorcism (*fashi* 法師), a sculpture made of camphorwood by the sculptor Long Songlin 龍松林 of Yangxi 洋溪 village (about 10 km from present Xinhua) in Xinhua district (Photo Alain Arrault).

## V. Conclusion

Poplar, camphorwood and wingnut have been used for the carving of deity sculptures. Although the limited number of tested sculptures does not allow for general comments on the use of a particular wood species in specific workshops or during specific periods of production, it appears that poplar was favored in Anhua district, camphorwood in Ningxiang, while both were equally used in Xinhua. Besides the mechanical properties of the specific wood species, the question of economic and iconographic criteria for wood selection by the sculptors remains open and should be further explored, including for modern productions.

The results on the identification of the wood species of statues of divinities from Hunan province are part of a broader research devoted to Chinese and Japanese religious sculptures, which we initiated a few years ago thanks to a grant from the Japan Society for the Promotion of Science (日本学術振興會), and in cooperation with the Agency for Cultural Affairs (*Bunka-chō* 文化廳) and the Laboratory for Conservation of National Treasures of Japan (*Bijutsu-in* 美術院). The general scope

is to study all possible links through the ages between the wood species used for religious sculptures and their production areas in Japan (where this approach was initiated nearly 60 years ago for Buddhist sculptures<sup>22</sup>), in China and in Korea. We think that such an approach, by opening a new research field for art historians and archaeologists, will not only contribute to a deeper understanding of religious sculptures in East Asia, but also notably help in the restoration of the sculptures, as it is the case of the Laboratory for Conservation of National Treasures of Japan.

Wood identification of important cultural properties in Japan is well established in the fields of art history and archaeology, but only when it will be considered in the broader context including China and Korea will it give new impulses to East Asian art- and religious-historical research.

### Acknowledgements

We would like to thank Alain Arrault for his cooperation in the wood identification process and for his constant support for the edition of this paper. Our thanks also go to Patrice Fava who graciously placed his collection at our disposal for the investigation, and to Cui Jie, who helped with the sampling. We are also indebted to the wood anatomists Li Dagang 李大綱, Pan Biao 潘彪 and Luo Jiayan 駱嘉言 of Nanjing Forestry University for their precious help for the identification. Our thanks also go to Kawakami Midori 川上緑 (Okubo 大久保, Hyōgo prefecture 兵庫縣, Japan) for the preparation of the microscopic slides.

22. See the two works by Kohara Jirō, “Nihon chōkoku yōzai chōsa shiryō,” and *Ki no bunka*; Kaneko Hiroaki 金子啓明, Iwasa Mitsuharu 岩佐光晴, Noshiro Shūichi 能城修一, Fujii Tomoyuki 藤井智之, “Nihon kodai ni okeru mokuchōzō no jushu to yōzaikan I: nana-hachi seiki wo chūshin ni” 日本古代における木彫像の樹種と用材観 I —— 7・8世紀を中心に [Wood Types and Material Selection for Japanese Wooden Statues of the Ancient Period - I (Particularly the 7<sup>th</sup>-8<sup>th</sup> Century)], *MUSEUM Tōkyō kokuritsu hakubutsukan kenkyūshi* 東京国立博物館研究誌 (Tōkyō National Museum Research Journal), No. 555 (1998), p. 3-54; and Kaneko Hiroaki *et al.*, “Nihon kodai ni okeru mokuchōzō no jushu to yōzaikan II: hachi-kyū seiki o chūshin ni” 日本古代における木彫像の樹種と用材観 II —— 8・9世紀を中心に [Wood Types and Material Selection for Japanese Wooden Statues of the Ancient Period: II (Particularly the 8<sup>th</sup>-9<sup>th</sup> Century)], *MUSEUM Tōkyō kokuritsu hakubutsukan kenkyūshi* 東京国立博物館研究誌 (Tōkyō National Museum Research Journal), No. 583 (2003), pp. 5-44.

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Table 2: Overview over the 73 identified deity sculptures organized by inventory numbers. The numbers marked by a star are represented in the following *Appendix of Microscopic Photos*.

<i>Inven- tory number</i>	<i>Year</i>	<i>Identity (as written on the consecra- tion paper)</i>	<i>Type of the sculpture</i>	<i>Sculptor</i>	<i>Province</i>	<i>District/ Town</i>	<i>Wood species</i>
T0112	1792	陳法隆 Chen Falong, ancestor	exorcist master		Hunan	新化縣 Xinhua	<i>Populus</i> sp.
T0123	1899	文威遠 Wen Weiyuan (civil name)	initiated man (statue with liturgi- cal instru- ments)		Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0132	1902	龍沙通 Long Sha- tong (civil name)	initiated man (statue with liturgi- cal instru- ments)		Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0134	1898	顏君法靈 Yan jun Fal- ing, master	exorcist master		Hunan	寧鄉縣 Ningxi- iang	<i>Populus</i> sp.
T0135*	1873	王君法通 Wang jun Fatong	exorcist master		Hunan	安化縣 Anhua	<i>Cinna- momum camphora</i>
T0144	1788	李真人 Li zhenren	deity	[熊] 常泰 <處士> [Xiong] Changtai (local craftsman)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0157	1903	劉法晟 Liu Fasheng, master	exorcist master		Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0165	1828	熊君法靈 Xiong jun Faling	exorcist master	胡巨南 <中梅弟子> Hu Ju'nan (disciple of Middle Mei- shan)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0171	1816	周門魯氏 Ms Zhou nee Lu, mother	initiated man (statue of a man with liturgi- cal instru- ments)	鄧槐清 <丹青> Deng Huaiqing (painter)	Hunan	新化縣 Xinhua	<i>Populus</i> sp.

T0173	1823	劉君大法 Liu jun Dafa	exorcist master	李定國 <畫匠> Li Dingguo (painter)	Hunan	安化縣 Anhua	<i>Populus sp.</i>
T0186*	1810	孟公太尉 Meng gong taiwei Meng the Great Protec- tor	deity	蘇道元 <丹青弟 子> Su Daoyuan (disciple of painting)	Hunan	安化縣 Anhua	<i>Populus sp.</i>
T0191	1782	夏法輪 Xia Falun	exorcist master	陸惠安 <處士> Lu Hui'an (local crafts- man)	Hunan	安化縣 Anhua	<i>Populus sp.</i>
T0202	1900	熊君法 [ ] Xiong jun Fa [ ]	exorcist master	周耀先 <中梅 弟子> Zhou Yaox- ian (disciple of Middle Meis- han)	Hunan	安化縣 Anhua	<i>Populus sp.</i>
T0230	1794	(羅) 法顯 (Luo) Faxian, ancestor	exorcist master		Hunan	湘鄉縣 Xiangx- iang	<i>Populus sp.</i>
T0233	1905	李公蒲鋁 Li gong Pulü (civil name)	initiated man ( statue with liturgi- cal instru- ments)		Hunan	安化縣 Anhua	<i>Populus sp.</i>
T0254*	1953	[劉] 華序佛名 法卿 道名 [ ] [ ] 卿 [巫] [名] 法卿 [Liu] Huaxu, buddhist name Faqing, taoist name [ ] qing, "sha- man" name Faqing, father	buddhist, taoist and "shaman"	陸遠美 [ ] <處 士> Lu Yuanmei (local crafts- man)	Hunan	新化縣 Xinhua	<i>Cinna- momum camphora</i>
T0259	1777	陽天礼 Yang Tianli (civil name)	initiated man (statue with liturgi- cal gar- ments)		Hunan	邵陽縣 Shaoy- ang	<i>Populus sp.</i>

T0286*	1781	肖法元 Xiao Fayuan	exorcist master	[陸][ ]安 <處 士> Lu [ ]an (local craftsman) [may be Lu Hui'an 陸 惠安, see T0191]	Hunan	新化縣 Xinhua	<i>Cinna- momum camphora</i>
T0339*	無	吳法 [學] Wu Fa[xue]	exorcist master		Hunan	新化縣 Xinhua	<i>Cinna- momum camphora</i>
T0341*	1904	龔君 [ ]秋 奏 名 法岡 Gong jun [ ] qiu, initiation name Fawang	exorcist master		Hunan	益陽縣 Yiyang	LAURA- CEAE
T0371*	1879	彭法清 Peng Faqing	exorcist master	[陸][先]春 <處[士]> Lu Xianchun (local craftsman)	Hunan	新化縣 Xinhua	<i>Cinna- momum camphora</i>
T0403*	1832	楊門魏氏 Ms. Yang née Wei, mother	?	劉清河 <本省處 士> Liu Qinghe (local craftsman of this prov- ince)	Hunan	寧鄉縣 Ningxi- iang	<i>Cinna- momum camphora</i>
T0408*	1826	無	initiated man (statue with liturgi- cal instru- ments)		Hunan	寧鄉縣 Ningxi- iang	<i>Cinna- momum camphora</i>
T0413*	1687	無	initiated man (statue with liturgi- cal instru- ments)			無 not speci- fied	<i>Cinna- momum camphora</i>
T0416*	1903	周法口 Zhou Fa[ ]	exorcist master	陳繼芳 <處士> Chen Jifang (local crafts- man)	Hunan	新化縣 Xinhua	<i>Cinna- momum camphora</i>
T0420	無	無	initiated man (statue with liturgi- cal instru- ments)		Hunan	安化縣 Anhua	<i>Populus</i> sp.

T0428	1926	南[嶽] [聖]帝 Nan[yue] [sheng]di God of the Southern Peak	deity	王容光 <[處]士> Wang Rongguang (local crafts- man)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0430*	1899	趙公元 [帥] Zhao gong yuanshuai Marshal Zhao	deity	朱衣堂主人謹疏 chief of the Hall of Zhuyi composed with respect	Hunan	安化縣 Anhua	<i>Cinna- momum camphora</i>
T0434*	1884	九天東廚司命 府君 Jiutian dong- chu siming fujun Kitchen God	deity		Hunan	寧鄉縣 Ningx- iang	LAURA- CEAE maybe <i>Cinna- momum</i> sp.
T0448	1883	周君法道 Zhou jun Fadao	exorcist master	吳 [禎] [祥] <中梅弟子> Wu Zhenxiang (disciple of Middle Meis- han)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0469*	1844	蕭萬華 Xiao Wanhua (civil name)	initiated man (statue with liturgi- cal instru- ment)		Hunan	邵陽縣 Shaoy- ang	LAURA- CEAE maybe <i>Cinna- momum camphora</i>
T0480*	無	(關公) Guan gong	deity		Hunan	無 not speci- fied	<i>Cinna- momum camphora</i>
T0484*	1937	劉君法陞 Liu jun Fasheng	exorcist master	陳法旺 <丹青[ 處]仕> Chen Fawang (local craftsman of painting)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0489*	1882	許 [ ] (仙) 君 Xu [ ](xian) jun Immortal Lord Xu Xun	deity		Jiangxi	撫州縣 Fuzhou	<i>Cinna- momum camphora</i>
T0518*	1799	趙大元帥 Zhao da yuanshuai Great Mar- shal Zhao	deity		Hunan	無 not speci- fied	<i>Cinna- momum camphora</i>

T0522*	1906	爐頭七寶五顯 靈官大帝 Lutou qibao wuxian ling- guan dadi Great Emperor of the Smithy	deity	唐月恒 Tang Yueheng	Hunan	寧鄉縣 Ningx- iang	LAURA- CEAE
T0525	1826	周公道生 Zhou gong Daosheng (civil name)	initiated man (statue with liturgi- cal instru- ments)		Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0532	1900	康立佑 Kang Liyou (civil name)	initiated man (statue with liturgi- cal instru- ments)		Hunan	新化縣 Xinhua	<i>Populus</i> sp.
T0546*	1930	[五] 皇上聖靈 官大帝 [Wu]huang shangsheng lingguan dadi Great Emperor of the Five Saintly Offi- cials ?	deity		Hunan	益陽縣 Yiyang	<i>Cinna- momum camphora</i>
T0550*	1795	李萬三郎 Li Wan sanlang	local deity		Hunan	新化縣 Xinhua	<i>Cinna- momum camphora</i>
T0553	1992	張治 (治) 像 (相) 公 Zhang Ye Xianggong Kitchen God	deity		Hunan	寧鄉縣 Ningx- iang	<i>Cinna- momum camphora</i>
T0568*	1902	王公盛心 字 亮貞 Wang gong Shengxin, style name Liangzhen, Father and master (civil name)	initiated man (statue with liturgi- cal instru- ments)	陳繼芳 <丹青處 士> Chen Jifang (local craftsman of painting)	Hunan	新化縣 Xinhua	LAURA- CEAE maybe <i>Cinna- momum camphora</i>

T0570*	1833	中宮土地 Zhonggong tudi God of Earth	deity		Hunan	醴陵縣 Liling	LAURA- CEAE maybe <i>Cinnamo- mum</i> sp.
T0578	1898	金公庭輝 Jin gong Tinghui (civil name)	initiated man (statue with liturgi- cal instru- ments)	彭輝之 <處士> Peng Huizhi (local crafts- man)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0582*	1807	曹志明 奏名 法 [ ] Cao Zhim- ing, initiation name Fa [ ], uncle	exorcist master	張行元 <處士 弟子> Zhang Xingyuan (disciple of craftwork)	Hunan	新化縣 Xinhua	<i>Populus</i> sp.
T0592	1803	張君道雷 Zhang jun Daolei, uncle	initiated man (statue with liturgi- cal instru- ments)	陳法清 <中梅處 士> Chen Fa- qing (local crafts- man of Middle Meishan) [張]道 雷 親筆 <此符後 人[ ]> [Zhang] Daolei has written them [the talis- mans] with his own brush	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0600*	1836	雷公大帝 Lei gong dadi Great emperor of Thunder	deity	陳 [益] [ ] 氏 <[ 處] 士> Chen Yi... (local craftsman)	Hunan	新化縣 Xinhua	LAURA- CEAE maybe <i>Cinnamo- mum</i> sp.
T0618	1983	魯班 Lu Ban, god of carpenters	deity	鄧明初 <接教弟 子> Deng Min- gchu (disciple)	Hunan	寧鄉縣 Ningx- iang	<i>Populus</i> sp.
T0622*	1963	□法忠 [ ]Fazhong	exorcist master		Hunan	寧鄉縣 Ningx- iang	<i>Cinna- momum camphora</i>
T0623	1805	康元進 Kang Yuanjin, master (civil name)	initiated man (statue with liturgi- cal instru- ment)	[吳] <(處)士> [Wu] (local craftsman)	Hunan	新化縣 Xinhua	<i>Populus</i> sp.

T0625	1836	亢君步雲 Kang jun Buyun (civil name)	initiated man (statue with liturgi- cal instru- ments)	姚法妙 [ ] <本處 楮士> Yao Famiao (in charge of paper money of this place)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0635	1839	王[政]德 Wang [Zheng]de, Ancestor (civil name)	initiated man (statue with liturgi- cal instru- ments)	張說盛 <處士> (T0635-2-1) Zhang Shuosh- eng (local craftsman) 張說 [ ] 書 [畫] <處士弟子> (T0635-2-2) Zhang Shuo... wrote and painted (disciple of craftwork)	Hunan	新化縣 Xinhua	<i>Populus</i> sp.
T0671*	1901	鄧公代賢 字 榮 昌 號 百世 錄 名 遠興 Deng gong Daixian, style name Rongchang, surname Baishi, ordi- nation name Yuanxing, father	taoist priest	[鄧]永綿 <孝男> [Deng] Yong- mian (pious son)	Hunan	寧鄉縣 Ningx- iang	LAURA- CEAE
T0681*	1803	天妃大聖二娘 Tianfei dash- eng erniang The Second Saintly Cele- stial Concu- bine	deity		Hunan	湘鄉縣 Xiangx- iang	<i>Cinna- momum camphora</i>
T0682*	1804	南嶽司天 [昭] 聖帝安邦護國 天尊 Nanyue sitian [zhao]shengdi anbang huguo tianzun God of the Southern Peak	deity		Hunan	寧鄉縣 Ningx- iang	LAURA- CEAE maybe <i>Cinnamo- mum</i> sp.

T0705	1902	龍公伯其 Long gong Boqi, grand father (civil name)	initiated man (statue with liturgi- cal instru- ments)		Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0706	1842	陳君妙清 Chen jun Miaoqing	initiated man (statue with liturgi- cal instru- ments)	劉美南 <處士弟 子> Liu Meinan (disciple of craftwork)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0707	1903	康法騰 Kang Fateng	exorcist master		Hunan	新化縣 Xinhua	<i>Populus</i> sp.
T0729*	1904	袁君妙成 Yuan jun Miaocheng (civil name)	initiated man (statue with liturgi- cal instru- ments)	王德光 <刊士> Wang Deguang (engraver)	Hunan	安化縣 Anhua	<i>Pterocarya</i> sp.
T0746*	1857	歐陽煥華 名曉 字 光楚 奏名 法應 Ouyang Huanhua, personal name Xiao, style name Guangchu, initiation name Faying	exorcist master	述觴 述觚 <膝下 男> (T0746-5-1) [Ouyang] Shuy- ang, [Ouyang] Shugu (kneeling sons)	Hunan	寧鄉縣 Ningx- iang	LAURA- CEAE maybe <i>Cinna- momum camphora</i>
T0751*	1814	文應魁 奏名 文 法高 Wen Yingkui, initiation name Wen Fagao, uncle	exorcist master	張斯鳳 <處士 > (T0751-2-2) Zhang Sifeng (local crafts- man) 趙瑞臣 <處士> Zhao Ruichen (local crafts- man) [inscrip- tion on statue]	Hunan	安化縣 Anhua	<i>Cinna- momum camphora</i>
T0752	1841	玉皇大帝 Yuhuang dadi Jade emperor	deity	陳慶堂 <處士> Chen Qingtang (local crafts- man)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0756	1800	王 [聞]妙 Wang [Wen] miao (civil name)	initiated man (statue with liturgi- cal instru- ments)	劉弟元 <處士> Liu Diyuan (local crafts- man)	Hunan	新化縣 Xinhua	<i>Populus</i> sp.

T0757	1823	譚君法榮 Tan jun Farong	exorcist master	張說盛 <處士> Zhang Shuosheng (local craftsman)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0781	1840	賀公法雷 He gong Falei, father	exorcist master	劉景華 <丹青處 士> Liu Jinghua (local craftsman of painting) 劉錦華 <處士前[ 卿]> Liu Jinhua (craftsman of ???)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0788*	1902	楊德云字漢東 奏名法云 Yang Deyun, style name Handong, initiation name Fayun, father	exorcist master	廖法祥 Liao Faxiang	Hunan	寧鄉縣 Ningxiang	LAURA- CEAE maybe <i>Cinnamo- mum</i> sp.
T0813	1795	熊氏 夫人 Ms. Xiong	initiated woman (statue with liturgical instrument)	余志鰲 <謹意弟 子> Yu Zhi'ao (respectful disciple)	Hunan	安化縣 Anhua	<i>Populus</i> sp.
T0818*	1837	曹志禹 Cao Zhiyu (civil name)	initiated man (statue with liturgi- cal instru- ments)		Hunan	新化縣 Xinhua	LAURA- CEAE maybe <i>Cinnamo- mum</i> sp.
T0820	1827	黃行玉 Huang Xingyu (civil name)	initiated man (statue with liturgi- cal instru- ments)		Hunan	新化縣 Xinhua	<i>Populus</i> sp.
T0823*	1798	張五郎 Zhang Wul- ang	local deity	劉續瞻 <處士> Liu Xushan (local crafts- man)	Hunan	新化縣 Xinhua	<i>Cinna- momum camphora</i>
T0831*	1904	劉君法通 Liu jun Fatong	exorcist master	王德光 <丹青> Wang Deguang (painter)	Hunan	安化縣 Anhua	<i>Pterocarya</i> sp.

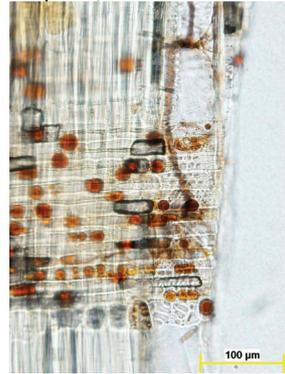
T0833*	1805	謝之碧 字 有圭 Xie Zhibi, style name Yougui, ancestor (civil name)	initiated man (statue with liturgi- cal instru- ments)	彭[兆]元 [][] [] <處士> Peng [Zhao] yuan (local craftsman)	Hunan	新化縣 Xinhua	<i>Populus</i> sp.
T0835*	1898	蕭君法顯 Xiao jun Faxian	exorcist master		Hunan	益陽縣 Yiyang	LAURA- CEAE maybe <i>Cinnamo- mum</i> sp.

APPENDIX OF MICROSCOPIC PHOTOS of a selection of 38 sculptures listed by inventory number, identified wood species, showing the cross, radial and tangential sections respectively, and their magnification.

1. EFEO-T0135, *Cinnamomum camphora*, cross section



2. EFEO-T0135, *Cinnamomum camphora*, radial section



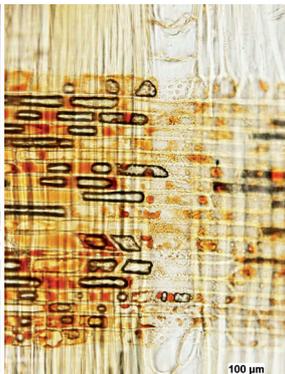
3. EFEO-T0135, *Cinnamomum camphora*, tangential section



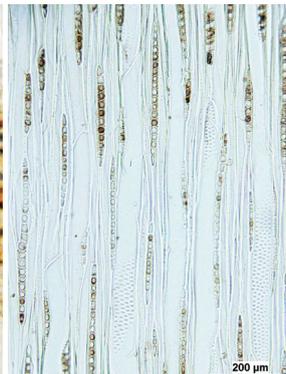
4. EFEO-T0186, *Populus* sp., cross section



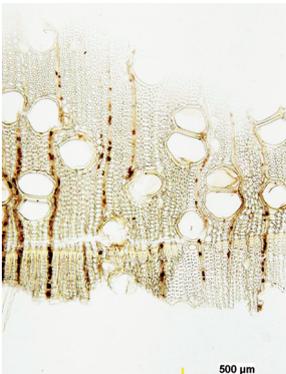
5. EFEO-T0186, *Populus* sp., radial section



6. EFEO-T0186, *Populus* sp., tangential section



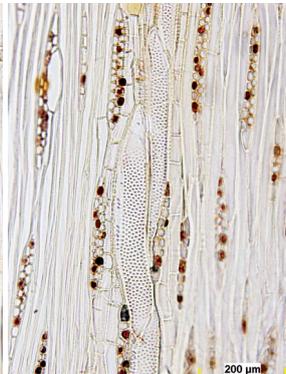
7. EFEO-T0254, *Cinnamomum camphora*, cross section

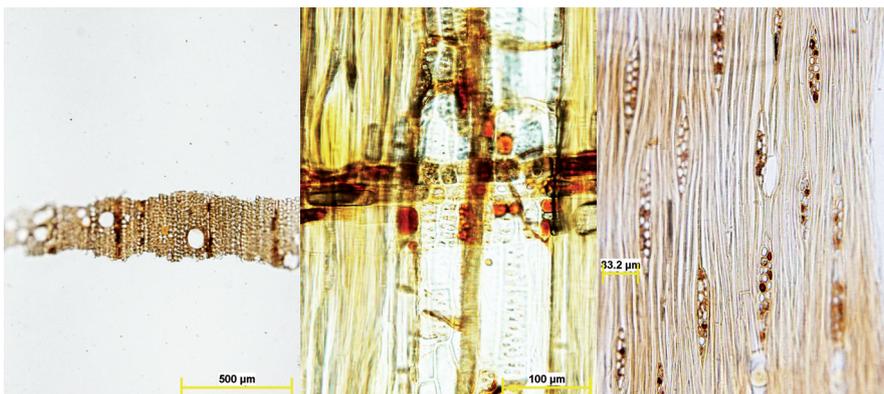


8. EFEO-T0254, *Cinnamomum camphora*, radial section



9. EFEO-T0254, *Cinnamomum camphora*, tangential section



10. EFEO-T0286, *Cinnamomum campbora*, cross section11. EFEO-T0286, *Cinnamomum campbora*, radial section12. EFEO-T0286, *Cinnamomum campbora*, tangential section13. EFEO-T0339, *Cinnamomum campbora*, cross section14. EFEO-T0339, *Cinnamomum campbora*, radial section15. EFEO-T0339, *Cinnamomum campbora*, tangential section

16. EFEO-T0341, LAURACEAE, cross section

17. EFEO-T0341, LAURACEAE, radial section

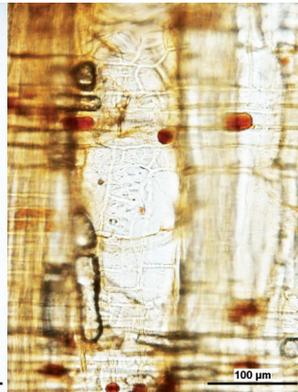
18. EFEO-T0341, LAURACEAE, tangential section



19. EFEO-T0371, *Cinnamomum camphora*, cross section



20. EFEO-T0371, *Cinnamomum camphora*, radial section



21. EFEO-T0371, *Cinnamomum camphora*, tangential section



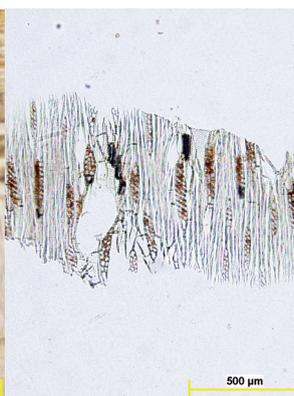
22. EFEO-T0403, *Cinnamomum camphora*, cross section



23. EFEO-T0403, *Cinnamomum camphora*, radial section



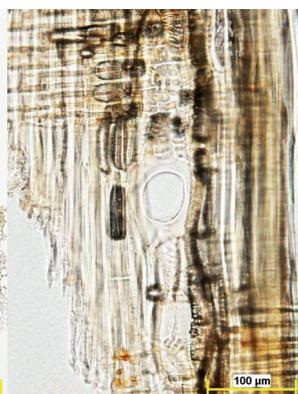
24. EFEO-T0403, *Cinnamomum camphora*, tangential section



25. EFEO-T0408, *Cinnamomum camphora*, cross section



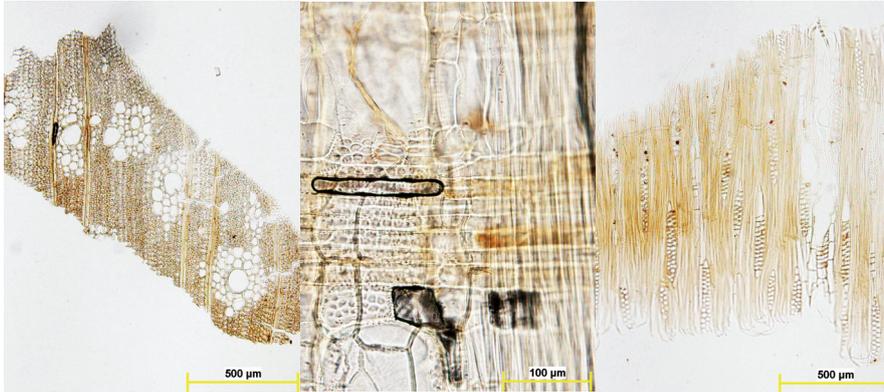
26. EFEO-T0408, *Cinnamomum camphora*, radial section



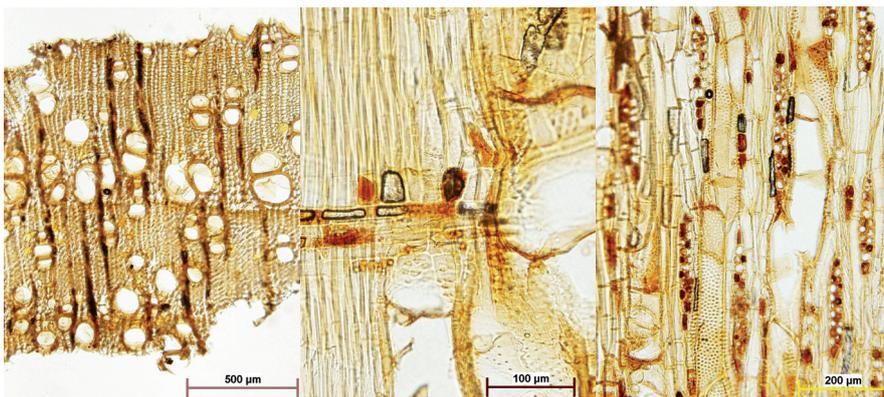
27. EFEO-T0408, *Cinnamomum camphora*, tangential section



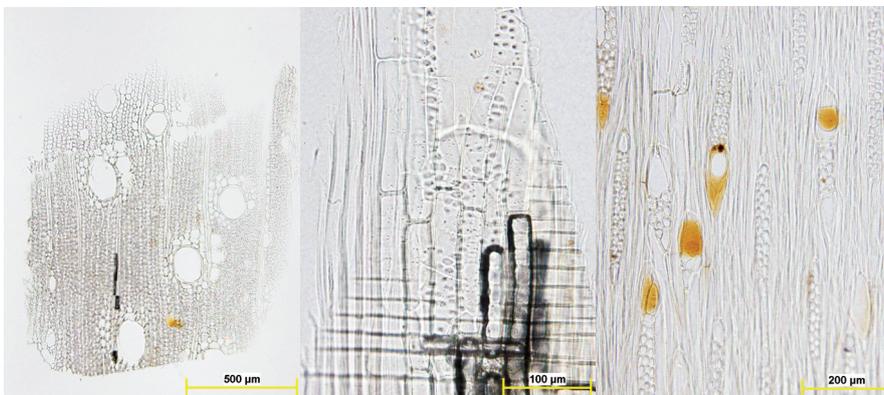
28. EFEO-T0413, *Cinnamomum campbora*, cross section    29. EFEO-T0413, *Cinnamomum campbora*, radial section    30. EFEO-T0413, *Cinnamomum campbora*, tangential section



31. EFEO-T0416, *Cinnamomum campbora*, cross section    32. EFEO-T0416, *Cinnamomum campbora*, radial section    33. EFEO-T0416, *Cinnamomum campbora*, tangential section



34. EFEO-T0430, *Cinnamomum campbora*, cross section    35. EFEO-T0430, *Cinnamomum campbora*, radial section    36. EFEO-T0430, *Cinnamomum campbora*, tangential section



37. EFEO-T0434, LAURA-CEAE maybe *Cinnamomum* sp., cross section



38. EFEO-T0434, LAURA-CEAE maybe *Cinnamomum* sp., radial section



39. EFEO-T0434, LAURA-CEAE maybe *Cinnamomum* sp., tangential section



40. EFEO-T0469, LAURA-CEAE maybe *Cinnamomum camphora*, cross section



41. EFEO-T0469, LAURA-CEAE maybe *Cinnamomum camphora*, radial section



42. EFEO-T0469, LAURA-CEAE maybe *Cinnamomum camphora*, tangential section



43. EFEO-T0480, *Cinnamomum camphora*, cross section

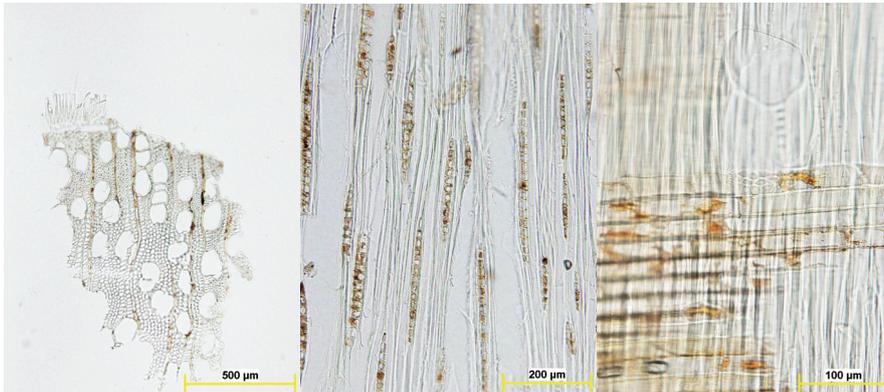
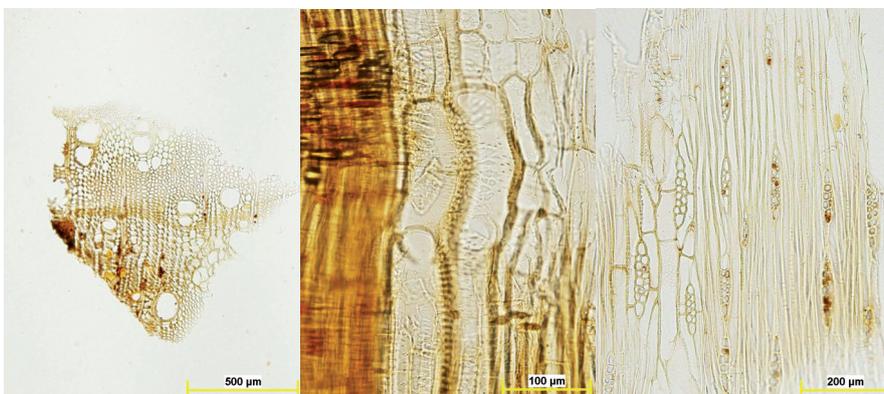


44. EFEO-T0480, *Cinnamomum camphora*, tangential section



45. EFEO-T0480, *Cinnamomum camphora*, tangential section

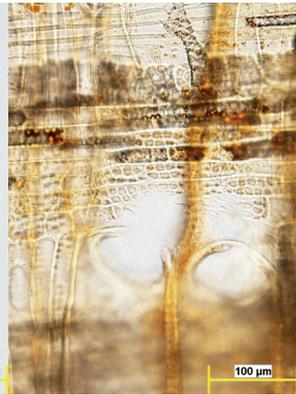


46. EFEO-T0484, *Populus* sp.,  
cross section47. EFEO-T0484, *Populus* sp.,  
radial section48. EFEO-T0484, *Populus* sp.,  
tangential section49. EFEO-T0489, *Cinnamomum*  
*camphora*, cross section50. EFEO-T0489, *Cinnamomum*  
*camphora*, radial section51. EFEO-T0489, *Cinnamomum*  
*camphora*, tangential section52. EFEO-T0518, *Cinnamomum*  
*camphora*, cross section53. EFEO-T0518, *Cinnamomum*  
*camphora*, radial section54. EFEO-T0518, *Cinnamomum*  
*camphora*, tangential section

55. EFEO-T0522, LAURA-CEAE, cross section



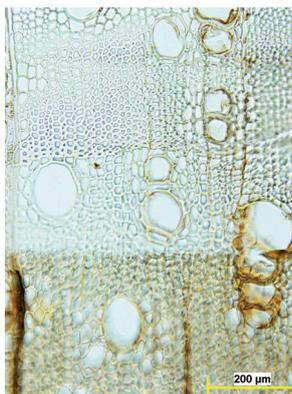
56. EFEO-T0522, LAURA-CEAE, radial section



57. EFEO-T0522, LAURA-CEAE, tangential section



58. EFEO-T0546, *Cinnamomum camphora*, cross section



59. EFEO-T0546, *Cinnamomum camphora*, radial section



60. EFEO-T0546, *Cinnamomum camphora*, tangential section



61. EFEO-T0550, *Cinnamomum camphora*, cross section



62. EFEO-T0550, *Cinnamomum camphora*, radial section



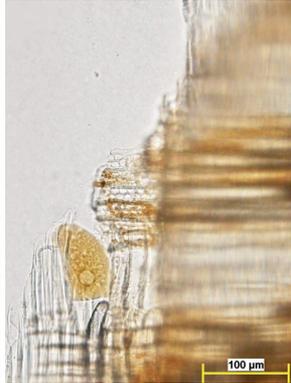
63. EFEO-T0550, *Cinnamomum camphora*, tangential section



64. EFEO-T0568, LAURACEAE maybe *Cinnamomum camphora*, cross section



65. EFEO-T0568, LAURACEAE maybe *Cinnamomum camphora*, radial section



66. EFEO-T0568, LAURACEAE maybe *Cinnamomum camphora*, tangential section



67. EFEO-T0570, LAURACEAE maybe *Cinnamomum* sp., cross section



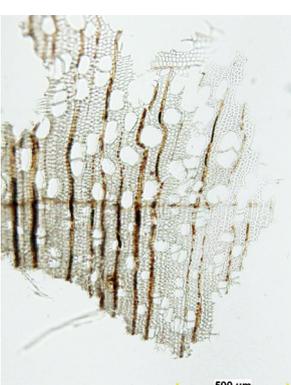
68. EFEO-T0570, LAURACEAE maybe *Cinnamomum* sp., radial section



69. EFEO-T0570, LAURACEAE maybe *Cinnamomum* sp., tang. section



70. EFEO-T0582, *Populus* sp., cross section



71. EFEO-T0582, *Populus* sp., radial section



72. EFEO-T0582, *Populus* sp., tangential section



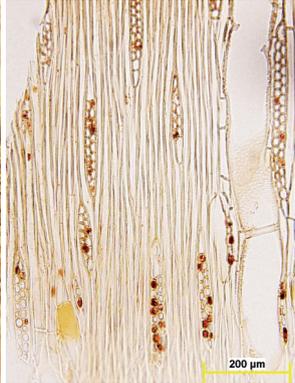
73. EFEO-T0600, LAURA-CEAE maybe *Cinnamomum* sp., cross section



74. EFEO-T0600, LAURA-CEAE maybe *Cinnamomum* sp., radial section



75. EFEO-T0600, LAURA-CEAE maybe *Cinnamomum* sp., tang. section



76. EFEO-T0622, *Cinnamomum camphora*, cross section



77. EFEO-T0622, *Cinnamomum camphora*, radial section



78. EFEO-T0622, *Cinnamomum camphora*, tangential section



79. EFEO-T0671, LAURA-CEAE, cross section

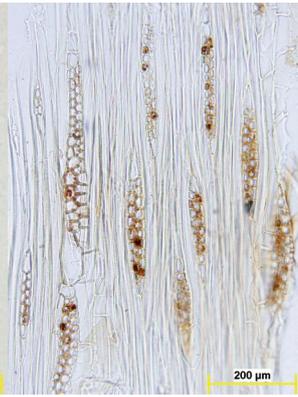
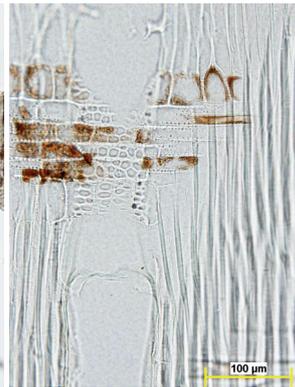
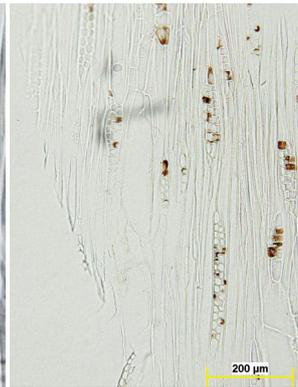
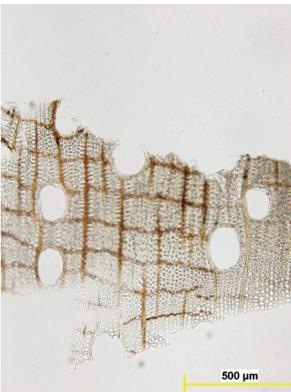


80. EFEO-T0671, LAURA-CEAE, radial section

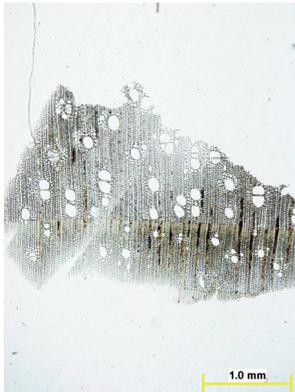


81. EFEO-T0671, LAURA-CEAE, tangential section



82. EFEO-T0681, *Cinnamomum campbora*, cross section83. EFEO-T0681, *Cinnamomum campbora*, radial section84. EFEO-T0681, *Cinnamomum campbora*, tangential section85. EFEO-T0682, LAURACEAE maybe *Cinnamomum* sp., cross section86. EFEO-T0682, LAURACEAE maybe *Cinnamomum* sp., radial section87. EFEO-T0682, LAURACEAE maybe *Cinnamomum* sp., tangential section88. EFEO-T0729, *Pterocarya* sp., cross section89. EFEO-T0729, *Pterocarya* sp., radial section90. EFEO-T0729, *Pterocarya* sp., tangential section

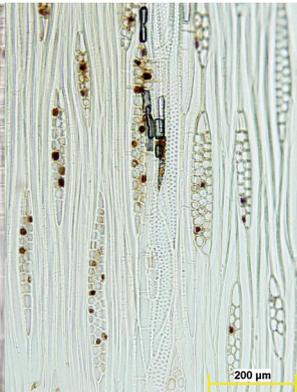
91. EFEO-T0746, *Cinnamomum campbora*, cross section



92. EFEO-T0746, *Cinnamomum campbora*, radial section



93. EFEO-T0746, *Cinnamomum campbora*, tangential section



94. EFEO-T0751, *Cinnamomum campbora*, cross section



95. EFEO-T0751, *Cinnamomum campbora*, radial section



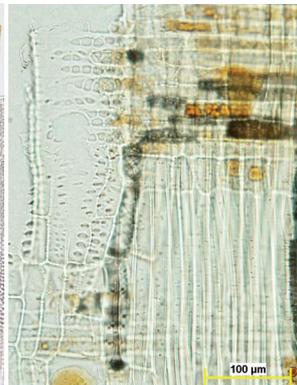
96. EFEO-T0751, *Cinnamomum campbora*, tangential section



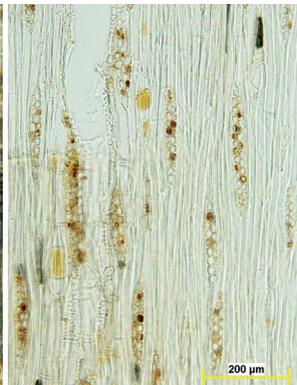
97. EFEO-T0788, LAURACEAE maybe *Cinnamomum* sp., cross section



98. EFEO-T0788, LAURACEAE maybe *Cinnamomum* sp., radial section



99. EFEO-T0788, LAURACEAE maybe *Cinnamomum* sp., tang. section



100. EFEO-T0818, LAURACEAE maybe *Cinnamomum* sp., cross section



101. EFEO-T0818, LAURACEAE maybe *Cinnamomum* sp., radial section



102. EFEO-T0818, LAURACEAE maybe *Cinnamomum* sp., tang. section



103. EFEO-T0823, LAURACEAE maybe *Cinnamomum* sp., cross section



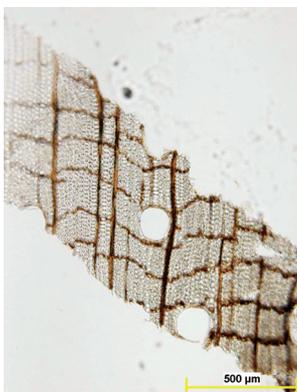
104. EFEO-T0823, LAURACEAE maybe *Cinnamomum* sp., radial section



105. EFEO-T0823, LAURACEAE maybe *Cinnamomum* sp., tang. section



106. EFEO-T0831, *Pterocarya* sp., cross section



107. EFEO-T0831, *Pterocarya* sp., radial section



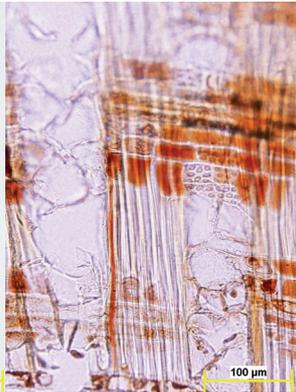
108. EFEO-T0831, *Pterocarya* sp., tangential section



109. EFEO-T0833, *Populus* sp.,  
cross section



110. EFEO-T0833, *Populus* sp.,  
radial section



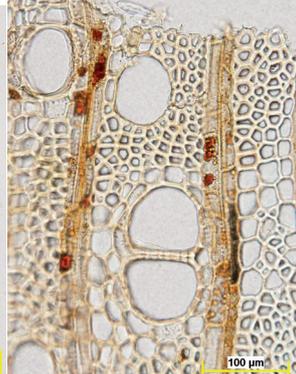
111. EFEO-T0833, *Populus* sp.,  
tangential section



112. EFEO-T0835, LAURA-  
CEAE maybe *Cinnamomum* sp.,  
cross section



113. EFEO-T0835, LAURA-  
CEAE maybe *Cinnamomum* sp.,  
cross section



114. EFEO-T0835, LAURA-  
CEAE maybe *Cinnamomum* sp.,  
radial section

