

## A STUDY ON THE HISTORY AND MATERIALS OF TRADITIONAL CHINESE FURNITURE

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### **Abstract:**

*The paper represents an incursion into the history of traditional Chinese furniture, initiated 7000 years ago, providing a brief description of the most important wood species employed. The history of traditional Chinese furniture can be divided into four major historical periods (the youth period, the growth period, the development period and the maturity period) encompassing several dynasties such as: the Han Dynasty, the Song Dynasty, the Yuan Dynasty, the Ming Dynasty and the Qing Dynasty etc. Thus, traditional Chinese furniture varied and evolved from one historical period to another, expressing specific patterns of structure, style and skilfulness in terms of manufacturing, decoration and finishing for each period.*

*The differences of climate, culture and lifestyle between the North and the South China had a strong influence on the manufacture of Chinese furniture. These differences have been reflected not only in the style and dimensions of furniture but also in the local wood species employed. For instance, Hong Mu, (*Dalbergia cochinchinensis* Pierre), Ju Mu (*Zelkova Spach*) are specific to the south, while Zhang Mu (*Cinnamomum Camphora* (L.) Presl) and He Tao Qiu (*Juglans mandshurica* Maxim) where used in north. Moreover, imported wood species, such as Zi Tan (*Pterocarpus indicus.*), Huang Hua Li (*Dalbergia odorifera* T.Chen), were used alongside the local indigene ones throughout history.*

*Reflecting the aesthetic awareness and the spiritual specificity of the Chinese culture, traditional Chinese furniture represents a splendid example of artistic mastery, recognized as a valuable component of the world cultural heritage. Therefore, conservation of traditional Chinese furniture is of great importance and this can not be accomplished without its understanding in terms of significance, structure and materials.*

**Key words:** traditional Chinese furniture; history; Zi Tan; Huang Hua Li; Hong Mu; Ju Mu; Zhang Mu; He Tao Qiu.

### THE HISTORY OF TRADITIONAL CHINESE FURNITURE

The traditional Chinese furniture refers to the classical furniture manufactured throughout different historical periods of the Ancient China. The traditional Chinese furniture varied from one historical period to another, expressing specific patterns of style and skilfulness characteristic to each period. For example, furniture was “romantic” in the Han Dynasty, “delicate” in the Song Dynasty, “crude” in the Yuan Dynasty, “simple” in the Ming Dynasty, “complex” in the Qing Dynasty, and so on. The traditional Chinese furniture reflects China’s culture and superb artistry and represents a unique cultural heritage that belongs not only to China, but also to the entire world (Yu 2011).

The history of the traditional Chinese furniture is divided into four historical periods as follows: the youth period, the growth period, the development period and the maturity period, as presented in Table 1.

Table 1

**The four periods and most representative dynasties in the history of traditional Chinese furniture**  
(data processed after [http://en.wikipedia.org/wiki/History\\_of\\_China](http://en.wikipedia.org/wiki/History_of_China))

| Period             | Time                      | Dynasties   | Furniture characteristics                                  |
|--------------------|---------------------------|---|--|
| Youth period       | possible BC 5000 – BC 770 | 3 Sovereigns and 5 Emperors<br>Xia Dynasty 2100–1600 BC<br>Shang Dynasty 1600–1046 BC<br>Zhou Dynasty 1045–256 BC ( Western and Eastern )   | Mat-level furniture<br>Short furniture                     |
| Growth             | BC 770 – AD 220           | Eastern Zhou (‘Spring and Autumn’ period and Warring States period)<br>Qin Dynasty 221 BC–206 BC<br>Han Dynasty 206 BC–220 AD ( Eastern and Western)  | Short furniture,<br>Bronze furniture,<br>Folding furniture |
| Development period | AD 220 – AD 979           | Three Kingdoms 220–280 (Wei, Shu and Wu)<br>Jin Dynasty 265–420 ( Western Jin and Eastern Jin)<br>Southern and Northern Dynasties 420–589<br>Sui Dynasty 581–618<br>Tang Dynasty 618–907<br>5 Dynasties and 10 Kingdoms | Short and high furniture,                                  |
| Maturity period    | AD.960 – AD 1911          | Song Dynasty 960–1279 (Northern Song and Southern Song)<br>Yuan Dynasty 1271–1368<br>Ming Dynasty 1368–1644<br>Qing Dynasty 1644–1911   | High furniture   |

#### **The youth period**

Along this period furniture is simple; we can actually speak about a mat-level furniture, as a characteristic for this period. The Ancient Chinese used to dress formally and have a serious standing position on the mat. There were no chairs at this period and the other furniture items, such as desks and tables, were short. The lacquer finishing technique was already known.

Proofs of these are archaeological discoveries. In the period of 1973 -1977, the He Mu Du site located in Yu Yao, in the Zhe Jiang province was discovered. The site dates back to 7000 years. In the He Mu Du site, a wooden bowl with red lacquer was found (Fig. 1); this is the earliest article with lacquer discovered in China. Other articles of wood, with mortise and tenon joints (Fig. 2), were also discovered at the same time, suggesting furniture structures. Between 1978 and 1980, the Institute of Archaeology of the Chinese Academy of Social Sciences conducted an archaeological investigation that lead to the discovery of some wooden desks and tables in tombs dating back to 4000 years. They were the earliest articles of wooden furniture discovered in China (Nie 2000).



**Fig. 1**

*A wooden bowl with red lacquer from He Mu Du site (<http://hemudusite.com/cn/About-17.aspx>).*



**Fig. 1**

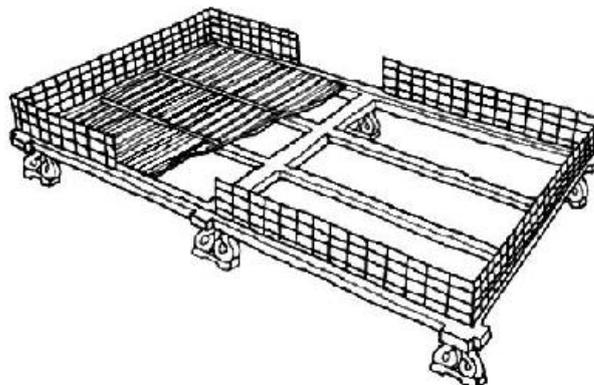
*Articles with tenon and joints from He Mu Du site (<http://hemudusite.com/cn/About-17.aspx>).*

### ***The growth period***

Furniture was also short in this period. In 1957 a short bed from the Chu tomb (Liu 1998) was discovered at Chang Tai Guan No.1 (historic site, in Xin Yang), in the Henan province (Fig. 3).

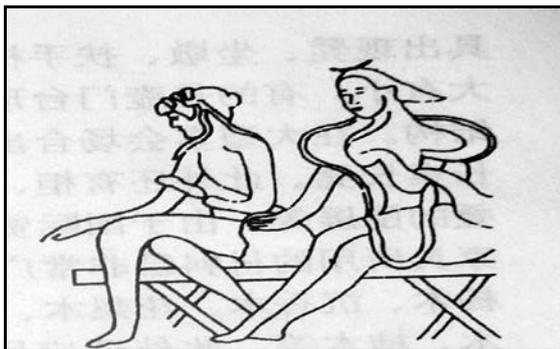
In the Spring and the Autumn period, bronze was the most popular material used for furniture for special uses. For instance bronze furniture was of major importance for worship and praying.

During the Han Dynasty, the folding furniture appeared as a consequence of the wars with the Nomadic tribes in the Northern regions (Fig. 4). The jade furniture, the bamboo furniture and the ceramic furniture were conceived in the same period.



**Fig. 3**

*A short wooden bed from Chu tomb (<http://www.cnwhtv.cn/show.php?contentid=14835>).*



**Fig. 4**

**The Han Dynasty furniture on murals in Dun Huang (Tang 1995).**

### **The development period**

The tall furniture appeared for the first time in this period. Throughout this period, Buddhism began to have a big influence on the decoration of furniture. Therefore, different from the pure black and red finishing, a new type of decoration was introduced, illustrating beast gods and clouds images on a dark green background. The Tang Dynasty was not only a time of peace and prosperity, but also a period open in the humanistic spirit in the Chinese history. In this period many local precious wood species, such as Huang Yang (*Alniphyllum Fortunei*), Nan Mu (*Phoebe zhennan* S. Lee and F. N. Wei), Shi Mu (*Ebenaceae Diospyros*), Zhang mu (*Cinnamomum Camphora* (L.) Presl), Shui Qu Liu (*Fraxinus mandshurica*), Sang Mu (*Morus alba* L), Bai Mu (*Cupressus funebris*), Tong Mu (*Aluerites Fordii* Hemsli), Tie Dao Mu (*Cassia Siamca*) were used as raw materials for different applications, including furniture. The high sitting furniture became very popular. At the same time, the furniture forms became more diverse and the screens became fashionable, as results from period paintings and documents (Yang 2000).

### **The maturity period**

Up to the Song Dynasty, tall furniture formed a relatively complete system. This included alcove beds (*Ba Bu Chuang*), cabinets, chairs, garment, tables, chests, cupboards and screens. The sitting position with the legs dropped was widely accepted, meaning that the reform of the living habits had come to an end (Zen 2011). Furniture was diverse, simple, upright and elegant in the Song Dynasty.

In early period of the Ming Dynasty, Zheng He led seven expeditions to the "Western" (the Indian) Ocean. From there, he brought many precious species of wood (imported wood species) which provided the material for the Ming furniture development. The Zi Tan (different species from *Pterocarpus spp.* and *Sandaum spp.*), Huang Hua Li (*Dalbergia odorifera*), Ji Chi Mu (*Millettia Leucantha*) were the most important species of wood that were used for the Ming furniture. The Ming Dynasty is considered the peak of development of the traditional Chinese furniture, two examples of elegant chairs from this period can be seen in Fig. 5 and Fig. 6 (Berliner 1996).



**Fig. 5**

**Round-back chair with sandalwood in 17th -18th century.**



**Fig. 6**

**Armchair with protruding crest rail and inward-curving legs 'official's hat chair'.**

During the Qing Dynasty, China became a semi-feudal and semi-colonial society. Meanwhile, the foreign trade increased a lot and the economy was relatively prosperous. The furniture of this period had its unique features, as more decorative materials were exploited and the craftwork became more skilful. For example Da Li stone and mother-of-pearl-inlaid and silver were used in this period. (Zen 2011)

### **SOME SPECIES OF WOOD USED IN CHINESE TRADITIONAL FURNITURE**

Similarly to the traditional Chinese architecture, wood is the main material used in the manufacture of furniture. However, the terminology for Chinese woods can be confusing. The famous specialist on Chinese traditional furniture, Wang Shi Xiang divided the species of wood used in the Chinese traditional furniture into 2 groups: hardwoods and softwoods (Wang 1989). Though, it has to be specified that this distinction between hardwoods and softwoods is a particular one in China and it differs from the usual meaning of these terms in Europe. In China, the term hardwood refers generally to tropical woods, whose density, hardness and imperviousness to boring insects qualify them as „hard”. The term softwoods is given in contrast to the other miscellaneous woods, though most of the wood species used in furniture manufacturing are hardwoods according to the western botanical language (Evarts 1996).

Before the Ming Dynasty almost exclusively Chinese wood species were used for furniture. After Zheng He's expeditions, lots of precious hardwoods were imported into China and employed for furniture manufacturing.

### **ZI TAN – Sandalwood (*Pterocarpus spp.* and *Sandaum spp.*)**

Sandalwood (*Pterocarpus indicus*) belongs to the *Santalaceae* family. There are about 15 species of this genus distributed throughout the tropics. Sandalwood has excellent physical features, small internal stress, minimal deformation and delicate fibres that are suitable for engraving. Since ancient times, sandalwood has been considered one of the most expensive woods in China, being mainly used in the Chinese traditional furniture and for other home-style articles. During the Ming Dynasty, the Chinese used to store for a long time a lot of sandalwood from Southeast Asia. This started to be used extensively for furniture during the Qing Dynasty, so that the sandalwood stock was already exhausted by the first half of this dynasty.

Based on historical records and analysis of the sandalwood specimen, the sandalwood used for furniture can be grouped into two categories: island sandalwood and mainland sandalwood.

Island sandalwood (*Pterocarpus santalinus*), also commonly known under various names such as: old sandalwood, rhino horns sandalwood, golden star sandalwood etc., is mainly produced in the islands of the Indian Ocean. The diameter of this tree species varies between 20 and 50cm. The island sandalwood has a straight, less hollowed trunk; a knock in its log would give rise to the crisp sound of metal. Its sapwood colour varies from white to tawny, while its heartwood colour is purplish red, with beautiful smooth black patterns. The island sandalwood is rich in *homoptercarpin* and raisin materials. Its fibrous tissue is flaky cross, while the vessels are often filled with silicon compounds. Its density is around 1.1-1.3g/cm<sup>3</sup>, and it has a smooth sour smell of incense when it is cut (Chen 1957).

Mainland sandalwood (*Santalum album L.*), also commonly known as: new sandalwood, bull fur sandalwood and chicken blood sandalwood, is mainly produced in the South China and some neighbour countries. The species trunk is more than 5 m high, and its diameter is about 15-30cm large. By comparison to the island sandalwood, the mainland sandalwood trunk is distorted and more hollowed. Its sapwood colour varies from white to tawny, while its heartwood colour is dark orange. Patterns are very fine and closely woven. Mainland sandalwood contains rich orange pigment and less raisin substance. The vessels are often

filled with silicon compounds. It has a density of  $1.1\text{g/cm}^3$ . Its fibrous tissue has nearly an S structure, similar to the fur on a bull's back; therefore, it is also called bull fur sandalwood. The mainland sandalwood furniture appeared in the second half of the Qing Dynasty.

Based on its specific patterns, the carpenters usually classify the sandalwood into three groups: golden stars sandalwood, chicken blood sandalwood and bull fur sandalwood, as shown in the following figures (Fig. 7).

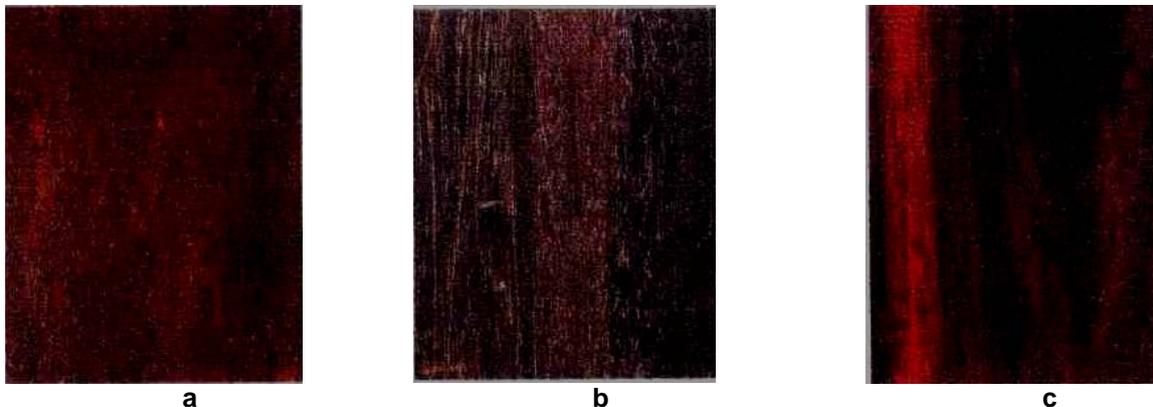


Fig. 7

**Three kinds of mainland sandalwood (*Santalum album* L.): a - Golden stars sandalwood; b - Chicken blood sandalwood; c - Bull fur sandalwood (after Yang 2002).**

#### **HUANG HUA LI - Yellow rose wood (*Dalbergia odorifera* T.Chen )**

Huang Hua Li is one of the most expensive species of wood in China. It is produced in South China, in the Hainan, Guangdong and Guangxi provinces (Kwong-Ming 1997). The color of its heartwood is pure or reddish-brown and it has obvious growth rings and a light flavor. The wood grain is staggered, while the structure is dense. Huang Hua Li is hard and very heavy, therefore the slicing is difficult. After finishing the texture gets beautiful and shiny. It has an aromatic odor, low moisture absorption and form stability during the drying process. Also, the heartwood is extremely naturally durable (Chen 1957). The yellow rose wood is an important species for the traditional Chinese furniture (Fig. 8), but it is also used in medicine. Its price rises significantly. By comparison with 2002, the price was 400 times higher in 2010 on the Chinese market.



Fig. 8

**Macroscopic features of Huang Hua Li (Yellow Rose Wood) and an example of furniture made of this species (<http://wenku.baidu.com/view/305d565e804d2b160b4ec072.html> and Berliner 1996).**

#### **HONG MU (*Dalbergia cochinchinensis* Pierre)**

Hong Mu means red wood and it encompasses a group of 33 species and 5 families. Therefore, in this narrow sense, Hong Mu is Suan Zhi Mu (*Dalbergia cochinchinensis* Pierre) (Chinese Rosewood Standard, 2000). Suan Zhi Mu makes part of *Dalbergia* species of the butterfly-shaped flowers, a subfamily of the legume genus. It is produced mainly in India and in the coastal provinces such as Guangdong and Hainan in China. The colour of its heartwood is orange-brown, purplish-brown or dark purple and it is improved by water soaking. This is hard, high density ( $1.1\text{-}1.3\text{g/cm}^3$ ) wood with oily and water-repellent surfaces. It

provides good material for the production of furniture and handicrafts. It is also called sour branch wood because of its sour smell. The furniture made of this wood is very durable, more than 100 hundred years old furniture items do not need any restoration except reconditioning of finishes.

#### **JU MU (*Zelkova Spach*)**

Ju Mu (*Zelkova Schneideriana*) belongs to *Zelkova Spach* and the *Ulmaceae* family. It is also called southern elm in China. It is produced in the Jinag Su and Zhe Jiang provinces. Although it is not as expensive and beautiful as Zi Tan and Huang Hua Li, it is the most used material for the traditional folk furniture. The density of the southern Chinese elm is between the densities of Zi Tan and Huang Hua Li. Based on wood's colour it can be divided into white southern Chinese elm, yellow southern Chinese elm and red southern Chinese elm or blood southern Chinese elm. After coating, the wood colour becomes darker and more elegant. It is widely used for Qing furniture in South China.

#### **ZHANG MU (*Cinnamomum Camphora (L.) Presl*)**

Zhang Mu is one of the species used for the traditional folk furniture. Due to the fact that the wood is rich in - camphor and it also has a strong smell of d-camphor it can protect clothes from silverfish and moths. The camphor wood is popular for being widely used for the manufacture of cabinets and wardrobe. The camphor wood tree can grow up to 50 meters in length and 1 meter in diameter. Its patterns are straight and uniform, and its density is about 510kg/m<sup>3</sup> (Chen 1957). Nowadays it is difficult to find tall camphor wood trees in China because the stock was used out 70 years ago.

#### **HETAOQIU (*Juglans mandshurica Maxim*)**

He Tao Qiu is one of the most important types of wood for the traditional folk furniture in East-North China. He Tao Qiu is also called wild walnut because it produces small walnut fruits. Its color is brown, while its sapwood colour is white or light yellow, and the heartwood is dark. The tree patterns are clear and uniform. Its density is about 610kg/m<sup>3</sup>.

#### **Others**

There are many other wood species used for traditional Chinese furniture, the macroscopic aspect of some of them being presented in Fig. 9.



**Fig. 9**

**Macroscopic features of the most representative wood species for Chinese furniture (after Yang 2002):**

**a - Rosewood (*Dalbergia cochinchinensis* Pierre); b- Iron Wood (*Cassia siamca*); c - Chicken Wing Wood (*Millettia Leucantha*); d - Chinese Southern Elm (*Zelkova Spach*); e - Elm (*Ulmus Rubra*); f - Teak (*Tectona grandis* L.F); g - Walnut (*Juglans mandshurica Maxim*); h -Camphor Wood (*Cinnamomum Camphora (L.) Presl*).**

Due to the culture, lifestyles and climate, there are big differences and variations between the Northern and the Southern parts of China with regards the traditional Chinese furniture. Therefore, a look on the species of wood present in the Northern and the Southern parts of China would illustrate these differences, as shown in the Table 2: Obviously, differences are referring mainly to the indigene local wood species in the two regions of China.

Table 2

**Representative Wood species for South and North Chinese traditional furniture**

| Species          | South                              |                      |  | North                             |                              |                                       |
|------------------|------------------------------------|----------------------|--|-----------------------------------|------------------------------|---------------------------------------|
|                  | Chinese name                       | English name         | Latin name                                 | Chinese name                      | English name                 | Latin name                            |
| Imported species | <b>Zi Tan*</b><br>(Hardwood)       | Sandalwood           | <i>Pterocarpus indicus.</i>                | <b>Zi Tan</b><br>(Hardwood)       | Sandalwood                   | <i>Pterocarpus indicus.</i>           |
|                  | <b>Huang Hua Li*</b><br>(Hardwood) | Yellow rose wood     | <i>Dalbergia odorifera</i><br>T.Chen       | <b>Huang Hua Li</b><br>(Hardwood) | Yellow rose wood             | <i>Dalbergia odorifera</i><br>T.Chen  |
|                  | <b>Suan Zhi Mu</b><br>(Hardwood)   | rose wood            | <i>Dalbergia cochinchinensis</i><br>Pierre | <b>Ji Chi Mu</b><br>(Hardwood)    | Phoenix or Chicken Wing Wood | <i>Millettia Leucantha</i>            |
| Indigene species | <b>Bai Mu</b><br>(Softwood)        | Cypress              | <i>Cupressus funebris</i>                  | <b>He Tao Qiu</b><br>(Softwood)   | Chinese walnut               | <i>Juglans mandshurica</i> Maxim      |
|                  | <b>Ju Mu</b><br>(Softwood)         | Chinese southern elm | <i>Zelkova Spach</i>                       | <b>Shui Qu Liu</b><br>(Softwood)  | Manchurian ash               | <i>Fraxinus mandshurica</i>           |
|                  | <b>Tong Mu</b><br>(Softwood)       | Paulownia            | <i>Paulownia Glabrata</i>                  | <b>Zhang Mu</b><br>(Softwood)     | Camphor Wood                 | <i>Cinnamomum Camphora</i> (L.) Presl |

Notes:

the terms *hardwood* and *softwood* in this table (in brackets beneath the common Chinese name) are employed in accordance to their particular significance for traditional Chinese furniture (see explanatory text under the heading 2) species marked with \*were also available and exploited as indigene species in the South of China, but these resources became very limited and exploitation totally stopped in 1998.

Wood species in shaded lines were selected for a research project

**CONCLUSIONS**

Primitive furniture appeared before the articulated words, while the culture had a great impact on furniture ever since the words were created. The traditional Chinese culture has promoted the unique area of the Chinese furniture while the art itself shows the aesthetic awareness and the spiritual specificity of the Chinese culture. As a main conclusion, it can be stated that the traditional Chinese furniture, experiencing an evolution of thousands of years, is engraved within the development of the national characteristics.

Wood has been the most important material for the development of the traditional Chinese furniture. We can see the evolution of Chinese furniture along different dynasties, noticing to our amazement that the materials have achieved so much value by depicting the superb humanistic spirit expressed in the traditional Chinese furniture and architecture.

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