

# Jiang Xiang for Injuries and Cardiovascular Disease

## Acronychia and Dalbergia as Sources and in Naming

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Jiang Zhen Xiang, or Jiang Xiang in its shortened version, is a native plant of China, infrequently included in traditional Chinese herbalism though more often found in modern formulas. It is usually used either as a powder to be swallowed directly with water or as crude heartwood cut into thin sticks to be made as a decoction by brief boiling. The primary traditional use is to treat injuries. This herb was first listed in the *Jing Shi Zheng Lei Ben Cao* (Herbal for Emergencies; a book of the Song Dynasty period). Because of somewhat limited uses, it does not appear in much of the English language literature about Chinese herbs, as those books tend to focus on the more frequently used items.

The botanical identification of the herb varies. Two species are mentioned, *Acronychia pedunculata* and *Dalbergia odorifera*, and they are unrelated plants; both have red colored heartwood and strong fragrance. Investigations into early literature suggest that the original herb is *Acronychia pedunculata*, a member of the Rutaceae (the plant Family that yields citrus trees). Primary reasons for suspecting this as the original herb is the wider growing region and the botanical references in early 20<sup>th</sup> Century texts that present botanical nomenclature rather than just the Chinese herb name.

One of the earliest English references to the herb as used in Asia is in **Medicinal Plants of East and Southeast Asia** (compiled by Lily Perry, a botanist at MIT, 1980). The medicinal herbs are laid out in this lengthy text by botanical family name and then by genera within the Family, with species names given in most cases. Under, *Acronychia pedunculata* there is just one line referring to use in China: “The wood is used as an anodyne and a styptic against severe wounds and fractured bones.” The Medicinal Plants book also lists the genus *Dalbergia*, a member of the Fabaceae (previously called Leguminosae); with regard to China, the wood is not mentioned at all, but there is a statement about this tree: “China: the powdered bark of the stem and root of *D. hupana* is recommended to treat scabies and other parasitic skin diseases.” Although not specified, this refers to the topical application of the powder as a poultice that was noted in the *Ben Cao Gang Mu* (1596). The information about Chinese usage of herbs in Perry’s summary generally comes from the period 1950s to 1970s, so these minor entries show the still limited application of Zheng Xiang.



A modern Hong Kong botanical reference plate (left) lists *Acronychia pedunculata* for Jiang Zhen Xiang (Chinese characters in parentheses at the top). A medicated patch to be applied topically to bruises (*die da* remedies are “hit medicines”); box front pictured next page) lists multiple ingredients and for Jiang Xiang the label has *Acronychia pedunculata*. The medicated patch ingredients are also made into capsules. Thus, in contemporary products for injury, *Acronychia* is still mentioned.

The *Ben Cao Gang Mu* has an illustration of the herb, clearly labeled as Zheng Zhen Xiang, which has a bare minimum of graphic specificity, a tall tree topped with leaves (next page, top left). A photo of a large *Dalbergia odorifera* tree and close up of its leaves (top pair) would appear to confirm that this old illustration points to a *Dalbergia* species. Yet, the photos of *Acronychia pedunculata* tree and leaves, just below, are also consistent with the *Ben Cao* illustration. So, a firm identification of the material used centuries ago is elusive.



A 1979 Chinese language Materia Medica lists *Acronychia pedunculata* for Jiang Xiang and does not have an entry for *Dalbergia*. The first major Materia Medica of Chinese herbs in English was **Oriental Materia Medica** by Hsu and Hsu (1986); it is divided by the modern traditional Chinese medicine (TCM) categories. In the section of herbs that vitalize blood circulation, Acronychiae Lignum is the reference name, with the

common name acronychia, and saying that “it is the dried heartwood of *Acronychia pedunculata*” and explaining the original Chinese name this way: “when it is burned as incense it will cause the immortal spirits to descend to earth.” [*jiang* means descend; *xiang* means fragrance]. The Daoist story is that the incense smoke invokes the descent from the sky of the crane, a symbol of immortality. In **Oriental Materia Medica**, the actions of the herb are indicated as “moves stagnation, promotes blood circulation, controls bleeding, disperses swelling, relieves pain, removes evil qi.” *Dalbergia* receives no mention in this extensive book. The



1986 five volume guide Chinese Medicinal Herbs of Hong Kong, lists Jiang Zhen Xiang as *Acronychia pedunculata*, but mentions in passing *Dalbergia odorifera* as a possible substitute.

A booklet, Prescriptions on Silk and Paper (by the current author, 1990), described prepared formulas to illustrate formulation principles. In the section on injury, the modern formula San Qi 17 is listed, and the common name acronychia is used for the ingredient Jiang Zhen Xiang. Likewise, in the booklet Chinese Herbal Therapies for Immune Disorders (1986), the modern Chinese formula Coronary Heart II (Guanxin II), used in the treatment of cardiovascular disease, and the derived formula Salvia Shou Wu, specify acronychia for Jiang Xiang. Guanxin II is a five herb formula with Dan Shen, Jiang Xiang, Chuan Xiong, Chi Shao, and Hong Hua. In the booklet Golden Mirror of Chinese Medicine (1990), San Qi 17 is again listed with acronychia specified for the ingredient Jiang Xiang. The use of the term acronychia was based on the prevalence of this name in the literature that appeared frequently at the time.

In some works, *Dalbergia odorifera* is specified as the source of Jiang Xiang, and this occurs, for example, in much of the more recent literature on Guanxin II, such as in the book from Chinese University of Hong Kong, **An Enumeration of Chinese Materia Medica** by Hu Shiuying (1980), and in the Hong Kong publication from the same University, Abstracts of Chinese Medicine (1986-1995). Also, in the Journal of Traditional Chinese Medicine (English version) which began in 1981, *Dalbergia* is listed as the ingredient in the combination Dan Shen Compound Injection (Dan Shen plus Jiang Xiang). A 1989 Illustrated Materia Medica of China (in Chinese) lists *Dalbergia odorifera* for Jiang Xiang but does not mention *Acronychia*.

Thus, sometime around 1980, there developed a split in the naming of Jiang Xiang which leaned increasingly toward dalbergia by the 1990s. Whether the source material for this ingredient was always changing along with the naming is unclear, because most books about Chinese herbs list a botanical name that is looked up in another book, rather than based on a formal botanical identification of the plant material actually in use.

In the Western literature, the shift in common name for this herb to dalbergia was introduced in the book that became a textbook for students of Oriental Medicine called **Oriental Medicine Materia Medica** (revised edition) by Bensky and Gamble, 1993. Under Jiang Xiang the authors list the alternative name Jiang Zhen Xiang, but give *only* the botanical name *Dalbergia odorifera*, and make no mention of *Acronychia*, even though they give the original source text as the **Zheng Lei Ben Cao**, clearly referring to the same herb. As a result of this shift in designation in the English language texts, dalbergia became the name that was typically referenced for the source material *Acronychia* as well as for the source material *Dalbergia*. Since the Bensky and Gamble text became a standard for students in the late 1990s while the older texts were either out of print or falling out of use, the name acronychia faded.

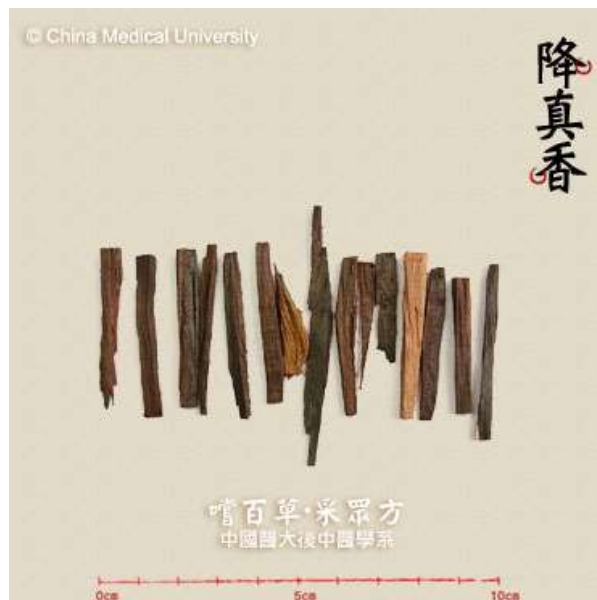
The common name for labeling of herb formulas, such as San Qi 17 and Salvia Shou Wu, was shifted to dalbergia, though acronychia had been specified in all the other literature about this formula. When placing requests for the herb Jiang Xiang for purposes of manufacturing, the common name dalbergia was used, but the specific herb *Acronychia pedunculata* was indicated as required for the botanical sourcing. The common name dalbergia was adopted so that users of the formula could easily seek out modern information about the herb.

This naming change that had occurred with Chinese medicine journal articles and in modern textbooks did not influence people outside the field of Chinese herbalism. For example, in the 2005 translation of a Ming Dynasty text (**Stories to Caution the World: A Ming Dynasty Collection** by Feng Menglong) there is reference to Jiang Xiang and the author indicates in a footnote that this is “fragrant wood,” *Acronychia pedunculata*, a small forest tree in the Rutaceae Family.

During the transitional period, some authors simply used both names; for example, in the book **The Healing Power of Chinese Herbs and Medicinal Recipes** by Joseph P. Hou, an ingredients list for a formula included “acronychia (dalbergia).” Confusion has sometimes reigned. In the Asian Anti-Cancer Materia Database (2004), for Zhang Jian Xiang photos of the plant are those of *Acronychia pedunculata*, and the botanical name given is that; yet, for the active constituents list, the names clearly refer to ingredients found in *Dalbergia odorifera*, such as dalbergin, nordalbergin, isodalbergin, methyl dalbergin, dalberginone, etc. The confusion comes from having different texts making reference to the same Chinese herb name, but not making a clear distinction about the botanical source material.

The use of common names (like acronychia or dalbergia) that may not match the genus name has occurred with greater frequency in recent years as reference texts change their preferred designations and as source materials change, sometimes when they are required to change, such as for endangered species listing. This situation with common English names is being worked out gradually, but reference to the pinyin and, when available, the full botanical name, is the preferred means of assuring the intended material is being referenced.

Because of relatively rare use of the herbs and few mentions in the literature, calling Zheng Xiang or Jiang Zhen Xiang acronychia or calling it dalbergia was not an issue of concern until now. In 2017 *Dalbergia* species were listed in CITES II (second appendix to the Convention on International Trade in Endangered Species). While the CITES II list does not mention the Chinese species *odorifera*, authorities are banning trade in all *Dalbergia* (most of which is used for making redwood furnishing, guitars, and other goods, not for herbal medicine). Thus, reference to dalbergia is now a concern when importing the Chinese herb. Going forward, Jiang Xiang and Jiang Zhen Xiang should be specified as acronychia and not as dalbergia, and *Acronychia pedunculata* should continue to be used as the source material and not *Dalbergia odorifera*.



Jiang Zhen Xiang botanical illustration (*Acronychia* shown) and photo of pieces of the heartwood as found on the Chinese market.