

Sichuan Peppers and the Etymology of *Fagara* (Rutaceae)¹

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Sichuan Peppers and the Etymology of *Fagara* (Rutaceae). We present a synopsis of the history and derivation of *faraga* from its Arabic origin through confusion with the Chinese *fajiu*. *Fagara*, or *Zanthoxylum*, a medicinal spice, has a venerable history of human uses beginning in China, spreading through West Asia to Europe, and finally reaching the New World.

Los Pimientos de Sichuan y la Etimología de *Fagara* (Rutaceas). Nosotros presentamos un resumen de la historia y derivación de *fagara* a partir de su origen Arabe pasando por su confusión con el nombre Chino, *fajiu*. *Fagara*, o *Zanthoxylum*, una especia medicinal que tiene una venerable historia de usos humanos que comienzan en China, se propagan a travez del Asia Occidente hacia Europa llegando finalmente al Nuevo Mundo.

Key Words: Arabic, languages, medicines, spices, trade, loan words, *Zanthoxylum*.

Introduction

In this paper we trace the etymology of the *fagara*. This word, first used by Ibn Sina in the 1020s, is consistently associated with *Zanthoxylum*, a spice we now call Sichuan pepper. Sichuan peppers (*Zanthoxylum* spp.) add a characteristic tangy, aromatic taste to Chinese cuisine. Although most associated with Sichuan foods, the condiment is widely used throughout China (Mulherin 1988). The flavor has been compared to pepper (*Piper nigrum* Linnaeus), anise (*Illicium verum* Hooker f.), and lemon (*Citrus limon* [Linnaeus] Burman f.). Various species of *Zanthoxylum* have their own common names, including anise pepper, brown pepper, Chinese pepper, Japanese pepper, Nepal pepper, and so on. The five-spice mixture, which includes Sichuan pepper as a mandatory ingredient, is of ancient ubiquitous application in China and still is found in restaurants and stores (Bown 1995; Wertz 2007).

The Chinese name meaning Sichuan pepper appeared in a medicinal book printed in ca. 25

B.C.E. (Hsu 1986). In spite of that longevity, and despite Kaempfer (1712) and Linnaeus (1753) having named these plants, little was known about them. Westerners were not very familiar with the region of *Zanthoxylum* production until after the 1860s and 1870s, when Henry Hance and Carl Maximowicz recorded the most important Chinese species. The first record we have found of Chinese names in the English literature was Smith (1871). He called the spice “Pepperwort” and gave several local names, including 蜀椒 (Sichuan pepper). It was later that “Sichuan pepper” became a frequently-used term for the condiment. The name appeared in only two scientific papers in 1985, but is used increasingly in both cooking and scientific publications after that date, often spelled “Szechuan pepper,” following the old transcription.

Perhaps the first mention of *fagara*, what we now call Sichuan pepper, was made in the 1020s. Translated into Latin, what was written is, “*Fagara quid est Granum simile cicer, habens granum sicut mahaleb: & in concavitate eius est granum nigrum, sicut scebedenegi...*” (“*Fagara*, which is a grain similar to cicer, has a seed resembling mahaleb, and in its opening has a black grain, resembling hemp [seed]”) (Avicenna 1976). Ibn Sina, whose name is anglicized to Avicenna, was comparing

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these foreign *fagara* fruits with those well known to readers of his time—*cicer* (chick pea or garbanzo, *Cicer arietinum* Linnaeus), *mahaleb* (mahaleb cherry, *Prunus mahaleb* Linnaeus), and *schedenegi* (hemp, *Cannabis sativa* Linnaeus). All three have long been cultivated or gathered for food or other purposes in West Asia and northeastern Africa (Davidson 1999; Zohary and Hopf 1993).

Comparison with pepper (*Piper nigrum*) in the sequence of entries by Ibn Sina (*fagara*, *felfel*) and the description of the follicles suggests that the plants were *Zanthoxylum*. Indeed, most people have equated *fagara* with *Zanthoxylum*, including Burkill (1966), Devic (1876), Linnaeus (1753, 1759), Orta (1579), Quattrocchi (1999), Senning (2006), and Watt (1889).

Several species are used to adulterate the commercial product. There are 180–200 *Zanthoxylum* species in both the Eastern and Western Hemispheres (Hartley 2001; Kallunki 2004). Comparatively few taxa are used as a spice in the Old World, and those that are most common in commerce are native to temperate Asia. The dominant species of commerce are native in China, Japan, and Korea (Facciola 1990; GRIN 2008; Ohwi 1965). *Zanthoxylum bungeanum* Maximowicz (= *Z. bungei* Planchon) is almost endemic to China (provinces: Gansu, Hebei, Henan, Jiangsu, Liaoning, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Xizang, Yunnan, Zhejiang), but is also in Bhutan. *Z. simulans* Hance is endemic to China (Anhui, Fujian, Gansu, Guizhou, Henan, Hubei, Jiangxi, Qinghai, Shandong, Taiwan, Zhejiang) (TROPICOS 2008; Zhang and Hartley 2008). Although Chinese plants have been called *Z. piperitum* de Candolle, the latest studies indicate that this species is found only in Japan and maybe Korea (Turland 2008; Zhang and Hartley 2008). Of the 41 species in China, only *Z. bungeanum* is noted as being used as a condiment by Zhang and Hartley (2008). Other species of *Zanthoxylum* are used, however, as in Hawaii (Staples and Kristiansen 1999) and Nepal (Manandhar 2002).

Subsequent to Ibn Sina, Linnaeus used the word *fagara* twice—when he created *Schinus fagara* (Linnaeus 1753), and again in the generic name *Fagara* (Linnaeus 1759). His *Schinus fagara* is now *Zanthoxylum fagara* (Linnaeus) Sargent (Fig. 1). Taxonomic disposition of *Fagara* has varied, and it has been considered a separate genus or used as a synonym or infrageneric taxon of *Zanthoxylum* (e.g., Andrews 1952; Fish and



Fig. 1. *Zanthoxylum fagara* (Linnaeus) Sargent. Drawing by Penelope N. Honychurch-Billingham.

Waterman 1973; Fosberg 1958, 1959; Hartley 1966; Porter 1976).

There have been various ideas about the derivation of *Fagara*. Some have claimed that the word was of Arabic origin, while others thought that it came from Chinese. Beyond simple statements, none of these sources explores the reasons or history behind their claims. Only Helen Correll (Correll and Correll 1982) gave a hint at her reason: she wrote that *fagara* meant “a cursed tree.” Austin (2004) avoided discussing the derivation of the species name of *Zanthoxylum fagara*. Subsequently, questions from Felger sent us on a quest to explore the problem. In the following, we trace the appearance of *fagara* and explore its origin.

Arabic History

Ibn Sina (980–1037 C.E., usually anglicized as Avicenna) was born in what is now Uzbekistan (Naqib 2000). His *Canon of Medicine* was completed about 1025 and posthumously published in Arabic (Ibn Sina 1593). This book was translated

into Latin near the end of the 12th century and recently reprinted (Avicenna 1976). The text became a standard reference in medicine at European universities, being used until the end of the 17th century. In its various reincarnations, the text remains a critical early resource for data on plant use and trade between the Orient and the West Asia.

Ibn Sina first used *fagara* for a medicinal plant; he wrote the word *فاغرة* (*fagara*) (Ibn Sina 1593). The Arabic *غ* (*ghayn*) has no English equivalent; it is approximately “gh,” but also has been written as “g” in English transcriptions (Adwe and Samano 1986). Thus, the word *فاغرة* has been interpreted *fagara*, *faghara*, *fāghireh*, *faghureh*, and *faghira*.

Arabic-speakers in the 1020s recognized three classes of “peppers”—one was *fagara* (*Zanthoxylum*), another *ففال* (*felfel*, *Piper nigrum*), the third (*kabābah*, *Piper cubeba* Linnaeus) (Ibn Sina 1593). None of these medicinal spices grows in West Asia, and the Arabic countries obtained all through trade from farther east (e.g., Crawford 1868; Goitein 1954; Ibn Sina 1593; Watt 1889). Names of two of these peppers are loan-words into Arabic from the languages of their homelands. The Arabic *felfel* is derived from Sanskrit *pippali*, and is etymologically related to Hebrew *פלפל* *pilpel*, Yiddish *fefer*, Greek *πεπερι* *peperi*, and English pepper (Oxford English Dictionary 2008). The *kabābah* came from Hindu *kabab chini* (Chinese kabab) that also gave rise to English cubeb.

Ibn Sina (Avicenna 1976) wrote that *Fagara* was “... de asportatur de Sefale...” Watt (1889) translated that phrase as “brought from Sakāla,” and added that the city was located in Hindustan. He continued, “Sakāla or Sangla was an ancient town in the Punjab [in Pakistan], near the modern Sanglawala Tiba or Sangla Hill. It is the Sangla of Alexander, and was visited by the Chinese pilgrim Hwen Thsang [Xuanzang 玄奘] in A.D. 630.” Watt (1889) further recorded that Haji Zain el Attar, who wrote in C.E. 1368, gave a similar account of “*Fāghireh*,” and said that the Persians called the spice “*Kabābeh-i-kushādeh* (open-mouthed cubebes).” Because of these records, Watt (1889) thought that the Arabs “obtained the carpels of *Z. alatum* and *Z. acanthopodium* first from Northern India.” Burkill (1966) and Smith (1871) made similar statements, but added no sources.

Among those claiming that *fagara* is from Arabic are Barcia and de Echegaray (1887–1889), Devic

(1876), Quattrocchi (1999), Rodriguez-Navas (1903), Senning (2006), and Smith (1871). It is not clear whether they actually saw the text by Ibn Sina (1593) or if they took their statements from other publications.

The spoken word *فاغرة* *fagara* is confusing because of similar words in Arabic. There are at least three sound-alike words in the language: *فقر* *faqara* (*faqr*), to pierce, bore, perforate; *فقرة* *faqāra*, poor, needy; and *فقي* *faqir*, mendicant dervish, Sufi mendicant (Wehr 1971).

Arif (2008) wrote, “In colloquial Arabic *Fagara* is from *Fogr*, which is poor, poverty or a connotation of ‘needy.’ It is a mean word and more pejorative than slang. The person described hence is a ‘mean’ or ‘horrible’ person. The other meaning that comes to mind is ‘slut.’” Several sources list *faqara* or *faqr* as meaning “to pierce,” a concept and term that has been loaned to several other languages (Ba’lakakī 1972; Borhas n.d.; Leslau 1990; McGillivray and Halliday 1916; Takács 1999; Wehr 1961). That sense might be what Helen Correll in Correll and Correll (1982) had in mind with the translation “a cursed tree.” Anyone who has tried to examine flowers and fruits of this genus will have been pierced by the spines on the branches—and cursed the plants. Still, these pejorative and alternate meanings appear to have nothing to do with the fruits traded into the Arab world from farther east.

The mix-up apparently arose because of misunderstanding of the *غ* (*ghayn*), a sound that is mistaken for the *ق* (*qaaf*) in some areas (Gamal 2008). Indeed, *fagara* and *faqara* are based on distinct roots, i.e., *fgr* and *fqr*. In spite of the sound-alike words, the spelling *فاغرة* by Ibn Sina (1593) eliminates alternate meanings.

Older literature used the word *fagara* to refer to *Zanthoxylum* fruits (Ibn Sina 1593), but it has other meanings. Watt (1889) wrote that “*faghara*” meant “open-mouthed.” There is indeed a phrase “open-mouthed” in Arabic, *فاغر الفم* *fagara afam* (Ba’lakakī 1972; Lewin 1974). The spelling of *fagara* is the same as that written by Ibn Sina in the 1020s and must be the basis of the name used since that time for the spice made from *Zanthoxylum*. Moreover, the description is perfect for the fruits of that genus that are indeed “open” and gaping (Fig. 2, esp. 2b).

Chinese History

Three early documents included the word *Zanthoxylum* (Hsu 1986). The first was the 神農

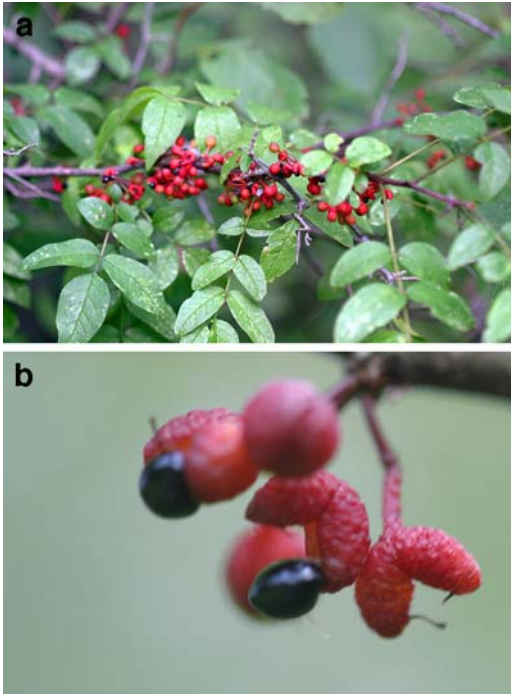


Fig. 2. a and b. Fruits of *Zanthoxylum americanum*. Photographs by Daniel Moerman; all rights reserved.

本草經 (*Shen nong ben cao jing*, Pinyin) [ca. 25 B.C.E.], which listed both 山椒 (*shan jiao*, Mandarin; *saan ziu*, Cantonese; mountain pepper) and 蜀椒 (*shu jiao*, Mandarin; *suk jiu*, Cantonese; Sichuan pepper). Next was the 本草經集注 (*Ben cao jing ji zhu*) [536 CE] that recorded 椒目 (*jiao mu*, Mandarin; *chiao mu*, Cantonese; pepper eyes). More than a millennium later, the 本草綱目 (*Ben cao gang mu*) [1590] referred to 花椒 (*hua jiao*, Mandarin; *fa ziu*, Cantonese; flower pepper). Probably the first Westerner to record an Oriental name for this pepper was Kaempfer (1712). Both Kaempfer and Thunberg and Wallich (1784) wrote the name as *sansio* (山椒 *sansho*, Japanese; mountain pepper).

Linnaeus (1753) recorded that his student Pehr Osbeck had found *Z. trifoliatum* (now *Eleutherococcus trifoliatum* [Linnaeus] S.Y. Hu) in China. Later, Osbeck (1757) added only that *Z. trifoliatum* grew near the shore. Linnaeus (1753) also cited Kaempfer (1712) when he recognized *Schinus fagara* and quoted him as writing its Japanese name *sansio* (mountain pepper). In this citation, Linnaeus confused the Old World Japanese plants Kaempfer was talking about with the New World *Z. fagara* (Little 1979).

Smith (1871) recorded several Chinese names for *Zanthoxylum*, including 花椒 (flower pepper), 川椒 (*chuan jiao*, Mandarin; *chyun jiu*, Cantonese; stream pepper), and 蜀椒 (Sichuan pepper) for what he called *Z. alatum* Roxburgh (now *Z. armatum* de Candolle). Subsequent publications have noted that the modern Chinese name of the Rutaceae is 花椒属 (flower pepper 属 = *shu* = family). Peng (2000) listed 山生椒 (mountain 生 = *sheng* = to grow pepper) for *Z. piperitum* and 刺花椒 (刺 = *ci*, thorn flower pepper) for *Z. simulans*, two Sichuan peppers of commerce. Several other species have 花椒 (flower pepper) as the basic element of common names, but with modifiers. Furthermore, the Chinese character 花 has alternate meanings. Among these are some 22 distinct interpretations, but each depends on the word it modifies (Chinese language 1998–2004; Mathews 1944). The meaning of 花 in the name 花椒 is consistently “flower.” Thus, the other possible interpretations are not applicable to these plants.

Katzer (2005) noted that some Chinese dialects render 花椒 as *fajiu* and that this gave rise to *fagara* through inaccurate transcription. Indeed, 花椒 is *faa ziu* in Jyutping (standardized Romanization of Cantonese), and *fá jiu*, *fa zeu*, and *fa ziau* in other transcriptions (Chinese language 1998–2004). Moreover, the occurrence of the name “*faghira*” (interpreted as “Abyssinian cube”) in a list of the spices shipped in 1135 from Aden, Yemen, to Cairo, Egypt, might support that interpretation (Goitein 1954). That trade also probably accounts for the wood of “*faghira*” found from the 13th century in Quseir, Upper Egypt (Guo 2004). These were trade items from China.

Geographic Range of Sichuan Peppers

There are *Zanthoxylum* native in Southern Asia, but none grow in West Asia (Chaudhary 2001; Davis 1967; Zohary and Feibrun-Dothan 1972). There are also species in northeastern Africa, particularly Ethiopia and Sudan (Andrews 1952; Boulos 1995; Gilbert 1989). The species in Southern Asia and Africa are not those that have been commonly used for spices and medicine. For example, Hassan-Ud-Din and Ghazanfar (1980) recorded that Pakistanis used *Z. armatum* “... twigs... as tooth brushes and the stems [are] made into walking sticks.”

Watt (1889) noted that Indians were not fond of applying the fruits of *Zanthoxylum* to season

food. He says, "The carpels are occasionally employed as a condiment." Earlier Roxburgh (1832) had recorded only medicinal uses for the plants. Thus, historically, it was the Chinese who made the most use of the fruits as a condiment.

Conclusions

When Linnaeus (1753) created the binomial *Schinus fagara*, it was his first use of *fagara*. There is little doubt that he took *fagara* from Arabic. At the time he was writing, Latin translations of Ibn Sina's book had been available for centuries. It seems likely that Linnaeus did not know the meaning of *fagara* but was aware that Ibn Sina had applied it to medicinal plants. Therefore, Linnaeus Latinized it to *fagara*, as it was in the Latin translation of the 1500s (Avicenna 1976).

Trade of "pepper" of various kinds between Europe and the East is well-documented along the spice routes through the Arabic world, and *fagara* would have simply been another of those. The data show that at least two "peppers" in West Asia obtained names as loan words sometime before Ibn Sina (1593) was writing their names in Arabic in the 1020s. *Felfel* came from Sanskrit *pippali*, *kabābah* from Hindu *kabab*.

Fagara is more problematical. While *Z. armatum* is considered native in northern Pakistan and nearby regions of China and other countries (one name is Nepal pepper), it is largely used as a medicine and rarely as a condiment. *Fagara*, probably like the other species, was imported from farther east into the Arabian countries, then was mentioned by Ibn Sina in the 1020s and other Arabs into the 1300s.

The word *fagara* might be from Chinese *fajiu*, but it has an applicable meaning in Arabic: "open-mouthed." Whether the application of *fagara* to *Zanthoxylum* spp. was influenced by Chinese is not clear. Perhaps the similarity of the words *fagara* and *fajiu* made the Arabic traders mistakenly think that the Chinese had used a word with the same meaning they knew from home.

Various factors make it possible that *fagara* as a name for *Zanthoxylum* in Arabic was influenced by Chinese *fajiu*. These factors are 1) the fact that two other peppers obtained in trade took their names as loan words, 2) the similarity of *fagara* with Cantonese *fajiu*, and 3) the fact that the plants to which Ibn Sina and other early Arabic authors applied *fagara* were imported from the East. While *fagara* is an early Arabic word, its

ancient human history is intimately tied up with the Chinese plants and their name.

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