

these manuscripts referred to a specific plant, the safflower (*Carthamus tinctorius* L. [not to be confused with the better known dye/spice saffron]; Chin.: “red indigo flower” [*honglan hua* 紅藍花], “yellow indigo” [*huang lan* 黃藍], or “red flower” [*hong hua*]).²

Apart from its medicinal function, the main use of the safflower was for making a brilliant red textile dye derived from its petals. The petals were also used to make a cosmetic cream, or rouge (*yanzhi* 胭脂), to color the face. The safflower was also well known as an oleaginous plant, the oil being extracted from its seeds.³ The plant first was cultivated in ancient Egypt and later adapted by Persian farmers, at the latest during the time of Cyrus the Great (580–529 BC).⁴ Then it spread slowly from Central Asia to the Pacific shores, which it only reached around the end of the first millennium of our era. It is not easy to separate fact from fiction with respect to the introduction of this plant into the Chinese world. Unknown in early Chinese times, safflower was not introduced to the empire until the third century AD, through Persia and Central Asia.⁵ This is the historical truth, such as can be determined through the study of texts. The popular legend that Zhang Qian 張遷 brought safflower to China from the western areas (*xiyu* 西域) during the reign of Han Wudi (141–87 BC) is not reliable. This legend appeared long after the presumed facts and progressively expanded through compilations and quotations – favorite exercises of Chinese scholars.⁶ Nevertheless, since safflower was introduced from Iran along the Silk Road, it is not at all strange to find this plant cultivated and its by-products commonly used at Dunhuang, one of the main Silk Road oasis cities of the medieval period.

² The starting-point of Wang’s identification was the correct reading of the character *lan* 藍 (instead of *yan* 鹽, “salt,” as scholars used to read it before) in one of the most important manuscripts for the study of safflower at Dunhuang; see Chinese manuscripts from Dunhuang, Collection of the Institute of Oriental Studies of the Academy of Sciences of Russia, St. Petersburg (hereafter, Dx.), no. 2168. For more details, see Wang Kexiao 王克孝, “Dx. 2168 hao xieben chutan, yi lan de kaozheng wei zhu” Dx. 2168 號寫本初探以藍的考證為主, in *Dunhuangxue jikan* 敦煌學集刊 (1993.2), pp. 15, 24–30. About safflower, see also the article “*Honglan hua*” in the *Compendium of Materia Medica* (Li Shizhen 李時珍, *Bencao gangmu* 本草綱目 [1596]; Chen Guiting 陳貴廷, ed., *Bencao gangmu tongshi* 本草綱目通釋 (Beijing: Xueyuan chubanshe, 1992) 15, pp. 775–79.

³ Pliny, *Naturalis historiae*, xv, 7; and xxi, 53.

⁴ Charles Joret, *Les plantes dans l’antiquité et au moyen âge* (Paris: Librairie Emile Bouillon) 1 (1897), p. 49; 2 (1904), pp. 70, 104.

⁵ See Berthold Laufer, *Sino-Iranica: Chinese Contributions to the History of Civilization in Ancient Iran* (Chicago: Field Museum of Natural History, 1929), pp. 324–28. Laufer’s masterpiece is still the only comprehensive book on the introduction of Iranian plants into China that we have. It still merits serving as starting-point for any investigation of this kind.

⁶ A detailed discussion of this point is found in Eric Trombert, “Des fleurs rouges en galette: Une plante tinctoriale dans la Chine ancienne: le carthame,” *JAs* 285.2 (1997), pp. 514–20.

RED FLOWERS AND RED INDIGO

In the Dunhuang economic manuscripts (private contracts, monastery accounts, census registers, and so forth), although references to safflower are few, careful analysis reveals two main facts. First, during the Tang and Five Dynasties period, farmers in Dunhuang already grew the plant, especially on land owned by monasteries.⁷ Second, according to several manuscripts, people in Dunhuang used safflower to obtain two main by-products: “red flower” (*hong hua*), and “red indigo” (*honglan*). The connotation of these terms is very vague. Fortunately, a manuscript list of offerings received by the Liantai Monastery 蓮臺寺 can help us to understand the meaning of these two words.⁸ It records all offerings received by the Monastery from the third day of the first Chinese lunar month to the eighth day of the second, in the *guiyou* year (February 17 to March 24, 793) and is comprised of two parts: first, a list of materials measured by volume, and, second, materials measured by weight. The product called “red indigo,” donated in volume totaling 7 *shi* 石 and 3 *dou* 斗,⁹ was recorded in the first part along with grains (wheat, barley, hempseeds, and the like). The product called “red flower,” donation weighing 121 pounds (*jin* 斤), was recorded in the second part. It is probably fair to say that Dunhuang people at that time were careful in their use of terms for products, unlike the usages in compendia of *materia medica* that mix without distinction the three phrases “red indigo flower,” “yellow indigo,” and “red flower” to designate the plant in question.¹⁰ Moreover, in all Dunhuang manuscripts, the means of calculation are standardized, red flower being calculated by weight and red indigo by volume. Thus “red indigo” designates seeds for oil pressing since it is listed among seeds and grain, materials always measured by volume.

⁷ See for example Dx. 2168, land tax document of the sector of the Mengshou canal of the Dunhuang district, “Dunhuangxian Mengshouqu” 敦煌縣孟受渠; Chinese manuscripts from Dunhuang, Stein Collection of the British Library (hereafter, S.), London, no. 6064. This is a draft copy of the management report of the Bao'en Monastery 報恩寺 for an unknown year, early-9th c. These documents are analysed in Trombert, “Des fleurs rouges en galette,” pp. 535–37.

⁸ See P. 2567 V°.

⁹ *Shi* and *dou* were units of volume measure of liquids or grains; 1 *shi* (about 60 liters during the Tang era) = 10 *dou*.

¹⁰ “Red indigo flower is red flower 紅藍花即紅花也”; see Shang Zhijun 尚誌鈞, ed., *Bencao tujing* 本草圖經 (1061) by Su Song 蘇頌 (Hefei: Anhui kexue jishu chubanshe, 1994), p. 240. “Yellow indigo is another name for [red indigo flower] [紅藍花] 一名黃藍”; see Tang Shenwei 唐慎微, *Chongxiu zhenghe jingshi zhenglei beiyong bencao* 重修政和經史正類備用本草 (1249) (Shanghai: Renmin weisheng chubanshe, 1957), p. 226.

The most interesting document on “red indigo” (oil-bearing seeds) is not a monastic document, but instead an administrative report from the public granary 倉 of Shazhou 沙州, the name of the administrative region of Dunhuang at that time.¹¹ This manuscript includes detailed goods lists for items in the warehouse in 788 and 789, containing altogether twenty-six different kinds of goods (all are foodstuffs) and reflecting accurately the local resources in Dunhuang. Among the reserves stored at the end of the year 788, the amount of “red indigo” is very high (195.325 *shi*), surpassing that of hempseed, *huangma* 黃麻 (144.43 *shi*). This information is noteworthy because in most accounting manuscripts in Dunhuang hempseed is the only local source for oil mentioned. Of course, information from only one year is not representative, but the document has changed our understanding of oil resources in Dunhuang: from it, we learn that apart from hempseed oil, people in Dunhuang used another kind of oleaginous plant, safflower. The quality of hempseed oil generally is poor; and actually, according to most Dunhuang manuscripts, it was used for both cooking and lighting. It is well known, however, that safflower oil was and is a high-quality oil; it is good for the digestion and supplies many nutritive elements.¹² Since safflower is not a high-yielding plant with regard to oil production, and since it was not cultivated at Dunhuang as widely as hemp,¹³ we can surmise that safflower oil was only used by members of the upper classes.

In his agricultural treatise *Qimin yaoshu* 齊民要術, written circa 535, Jia Sixie 賈思勰 described the uses of safflower seeds, but offered no more than a point about its use as a lubricant for cartwheels and in making candles.¹⁴ Apart from this treatise, descriptions of the use of safflower seeds can only be dated back to *Jile bian* 雞肋編, a writing of the Song-dynasty era.¹⁵ Therefore, Dunhuang manuscripts constitute the earliest documentation of the Chinese use of safflower-seed oil in cooking.

¹¹ The document survives in three fragments: P. 2763, 2654, and 3446.

¹² Dominique Cardon, *Le monde des teintures naturelles* (Paris: Belin, 2003), p. 64.

¹³ About hempseed oil production at Dunhuang, see Jiang Boqin 姜伯勤, *Tang Wudai Dunhuang sihu zhidu* 唐五代敦煌寺戶制度 (Beijing, Zhonghua shuju, 1987), pp. 246–68.

¹⁴ Miao Qiyu 繆啓愉, ed., *Qimin yaoshu jiaoshi* 齊民要術校釋 (Beijing: Nongye chubanshe, 1982; hereafter cited as *QM*), section 52, p. 263.

¹⁵ See Shiba Yoshinobu 斯波義信, *Sōdai shōgyōshi kenkyū* 宋代商業史研究 (Tokyo: Kazama shobō, 1968), pp. 186, 195.

RED FLOWERS AND ROUGE

I have already noted the frequent reference to red flower in the Dunhuang manuscripts. But what, precisely, does the term mean in this particular context? In order to understand the complexity of this question, we need to start from the process of producing red coloring dyestuff and rouge. Jia Sixie described this process in detail in *Qimin yaoshu*, showing a thorough knowledge of chemical reactions (see appendix). According to modern chemical knowledge, the safflower petal contains two types of coloring matter: one is yellow matter (safforgelg, accounting for about 30 percent of the total amount of the coloring matter), the other is red matter (carthamine, only about 0.5 percent). The difficulty in using safflower petals to produce coloring stuff is to separate out the yellow matter.¹⁶ As noted in the seventeenth-century technical treatise *Tiangong kaiwu* 天工開物, “true red comes out after separating out the yellow juice.”¹⁷ Our chemical knowledge tells us that two materials can be used to extract the yellow matter: one is water, another, more effective, material is an acidic solution. In the process described by Jia Sixie, both were used (in the second and third stages to make dyestuff, see the chart included in the appendix). In addition, we know that red matter can only be separated in an alkaline solution. Jia Sixie knew this as well (in the first stage to make rouge).

The question now is to which stage of production does the “red flower” recorded in Dunhuang manuscripts belong? Are they fresh petals, dyestuff, or rouge?

It is hard to believe that “red flower” means fresh petals for two reasons. The first is a technical problem. Since long ago, it has been widely known in western countries and in China, that safflower must be processed soon after the flowers are picked; otherwise the amount of red matter will quickly be reduced when it dries. *Qimin yaoshu* also emphasized that it should be processed immediately after harvest. This being the case, it is not possible to store fresh red flower in a warehouse. Besides, this kind of flower is harvested in the summer season (from May to July),¹⁸ therefore, the red flower recorded in the list of offerings stored in the Liantai Monastery,¹⁹ referring to the winter period (first and second lunar months), cannot be petals. The “red flower”

¹⁶ Cardon, *Le monde des teintures naturelles*, p. 61.

¹⁷ Pan Jixing 潘吉星, ed., *Tiangong kaiwu jiaozhu ji yanjiu* 天工開物校注及研究 (Chengdu: Ba Shu shushe, 1989), p. 344.

¹⁸ *QM*, section 52, p. 263; Han E 韓鄂, *Sishi zuanyao* 四時纂要 (750) (Tokyo: Yamamoto shoten, 1961), p. 87.

¹⁹ P. 2567 V°.

offered by an anonymous layman on the first day of the first month of the lunar year (roughly the end of January in the Western luni-solar calendar) cannot have been petals either.²⁰

The second reason is an economic consideration. On the basis of the various certificates of donations found at Dunhuang, it may be determined that any offering worth the drafting of such a certificate was at least one sheep, or one *shi* of grain (sixty liters), or one bolt of silk.²¹ In comparison with these offerings, if the red flowers mentioned in the documents were dried flowers, then the value of an offering of one or two pounds of petals seems to be too low.²² Actually, safflower is a very weak dyestuff, and such a small amount of petals can only produce a tiny quantity of coloring agent.²³

The monastic accounting manuscripts only record “red flower” and never mention rouge (*yanzhi*). Is it possible that red flower referred to rouge in the local dialect? People of the Tang period distinguished these two different products with two different nouns. In his *Comprehensive Canons of Administration* (*Tongdian* 通典), the Tang historian Du You 杜佑 mentioned the annual tribute paid to the central government by Hanzhong prefecture 漢中郡 in southern Shaanxi: “one hundred pounds of red flower (*hong hua*) and one pint of rouge (*yanzhi*).”²⁴ People in Dunhuang knew how to make such a distinction. I have checked many Dunhuang manuscripts and found the word “rouge” in a letter written at Dunhuang (quoted below). In short, I believe that “red flower” in Dunhuang refers neither to petals nor to rouge, but instead to a red dyestuff, namely the product of the fifth stage of the process of refining safflower as described in *Qimin yaoshu*.

I mentioned above that an anonymous layman donated one pound of red flower to a monastery. The amounts of red flower presented by other donors were also small (one or two pounds each). We have also noticed that within one month (the first month of the *guiyou* year), Lian-

²⁰ See P. 2863.

²¹ About the different types of offerings, see Jacques Gernet, *Buddhism in Chinese Society: An Economic History from the Fifth to the Tenth Centuries*, Franciscus Verellen, trans. (New York, Columbia U.P., 1995), pp. 200–6.

²² In addition to the certificate referred to above (P. 2863), we can mention another one written in favor of a donor who gave only two pounds of “flowers” (P. 3541 V° II.1). In comparison, the gift mentioned in the preceding certificate written on the same document is one bolt of red silk, a valuable product.

²³ On this point, see the translation of *Tiangong kaiwu* by E-tu Zen Sun and Shiou-chuan Sun, *Chinese Technology in the Seventeenth Century*, rpt. edn. (Mineola, N. Y.: Dover Publications, 1997), p. 78, n. 6.

²⁴ Du You *Tongdian* [801], Wang Wenjin 王文錦 et al., eds. (Beijing: Zhonghua shuju, 1988), p. 122.

tai Monastery received offerings totaling 121 pounds of red flower. In other words, dozens of devotees donated this product to a single monastery within a short period of time. These figures show that this product was quite common at Dunhuang. Since red flower is not a kind of fresh agricultural product but a processed product, this further shows that, first, a large amount of safflowers were grown in Dunhuang, and second that some of the people there had mastered the complicated techniques of processing dyestuff.

As far as I know, rouge is mentioned in only one manuscript of Dunhuang, a letter sent in the early-tenth century from the ruler of the Dunhuang region to the khan of the Uighurs, who had conquered Ganzhou 甘州, the prefecture situated to the east of Dunhuang. The letter also specified a list of gifts sent to the khan:

Superior quality rouge; an inlaid piece of jade weighing eight pounds; five bolts of white damask silk; two bolts of cotton from Anxi; eighteen bolts of cotton woven on a vertical loom; sixty bolts of standard hemp cloth. 上好燕脂; 表 (鑲) 玉壹團重捌斤; 白綿綾伍疋; 安西絁兩疋; 立機細絁拾捌疋; 官布陸拾疋.²⁵

If we carefully study this list, we discover that these six kinds of gifts are listed in order of their value. The cheapest item, hemp cloth, is at the bottom. Two types of cotton cloth are listed above the hemp cloth and cost a bit more. Above the cotton cloth is silk, and above that is an expensive jewel (an inlaid piece of jade). Rouge is listed above everything else perhaps because the scribe of this letter thought that rouge was the most precious item. Also, the amount and weight was specified for each item except for rouge. This may have something to do with the high value of rouge. The above mentioned list of tribute goods from Hanzhong also indicates the high value of rouge, which was much more precious than red dyestuff: this annual tribute was composed exclusively of these two products, but the amount of each one is completely different: 100 pounds for red flower, and only 1 pint (0.6 liter) for rouge (one hundred times less!).

Almost all gifts sent to the khan were special products from western Asia. According to the lending contracts preserved in the Dunhuang collections, cotton woven on a vertical loom was imported to Dunhuang from Gaochang 高昌 (in the region of Turfan).²⁶ At that time, inland

²⁵ P. 2992 V° 3.

²⁶ See Eric Trombert, *Le crédit à Dunhuang: Vie matérielle et société en Chine médiévale* (Paris: Collège de France et Institut des hautes études chinoises, 1995), pp. 119–21. About cotton in medieval China, see idem, “Une trajectoire d’Ouest en Est sur la Route de la soie: La diffusion du coton dans l’Asie Centrale sinisée (6^e–10^e siècles),” in *La Persia e l’Asia Centrale da*

China did not grow cotton, and Gaochang was well-known for its cotton production. “Cotton from Anxi” was a kind of textile product made in Kucha (Qiuci 龜茲), the most western oasis of Xinjiang, or made in Turfan with techniques initiated in Kucha. Jade was also a special product from the west (jade from Khotan 于闐 being the most famous). These special products from the western regions were transported eastward to Ganzhou via Dunhuang. What is of particular interest is that rouge is among these gifts.

USE OF DYESTUFF AND ROUGE IN DUNHUANG

Among the texts from Dunhuang, the type of document called “list of goods of the permanent assets of the samgha 常住庫雜物曆” reflects the property and economic situation in each monastery in a relatively reliable way. The goods recorded are not restricted to tools, furniture, religious implements, Buddha images, carpets, and clothes; there are also various kinds of wood, ironware, paper for manuscripts, and ink. I have examined these lists hoping to find mentions of dyestuff, but there seems to be only one such passage, in a list written during the Tibetan period.²⁷ It mentions two types of dyestuff: Indigo blue (*lan* 藍), and murasaki (*zicao* 紫草, namely “purple plant”; *Lithospermum erythrorhizon*, S. or Z.; also named Redroot gromwell). The Chinese knew from ancient times how to use the root of this plant to produce a purple dye.²⁸ The list also recorded several amounts of white-lead powder (*hufen* 胡粉, literally “powder of the *hu*-barbarians,” who in traditional references were any number of non-Chinese groups mostly from the north or west).

It is not uncommon for these documents to list white-lead powder with other dyestuffs, for this kind of material was not only used for the production of a kind of white cosmetic powder, but also for the production of red, rose, or purple cosmetic cream through tempering with several dyestuffs (for example, safflower or murasaki). The dictionary *Shiming* 釋名, written *circa* 200, and *Qimin yaoshu* both describe several production methods based on lead powder.²⁹ This product was a very precious raw material at Dunhuang. According to another manuscript of the Tibetan period, the value of one ounce (*liang* 兩) of lead powder was equivalent to the value of four *shi* of grain (the amount of

Alessandro al X secolo (Roma: Accademia Nazionale dei Lincei e Is.M.E.O.), pp. 205–27.

²⁷ P. 2706.

²⁸ See *QM*, section 53, pp. 272–74.

²⁹ Liu Xi 劉熙, *Shiming* 釋名 (CSJC edn., vol. 1151; Shanghai: Shanghai shangwu yinshuguan, 1936), pp. 75–76; *QM*, section 52, p. 264.

grain consumed by a five-member family for one month). On the Silk Road, lead powder was imported from the western regions by Sogdian merchants. This can be confirmed by the certificate of donations of a certain Kang Xiuhua 康秀華 on the eighth day of the fourth lunar month of an unknown year.³⁰ Kang Xiuhua was by origin a Sogdian from Samarkand. He paid 3 silver plates 銀盤子, 150 *shi* of grain and 4 pounds of lead powder to sponsor the making of a copy in Chinese of the *Mahāprajñāpāramitā sūtra* 大般若經. Here, we have found another example of a material used in dyeing or cosmetics, which was being traded along the Silk Road from West to East.

Textile products circulating in Dunhuang as means of payment were normally neither dyed nor rinsed. The most common product was *sheng juan* 生絹 (raw silk tabby). The bolt of *sheng juan* was commonly used as a kind of currency to pay taxes and to buy goods, but there were dyed products as well. According to economic manuscripts, the most popular colors were bright red (*fei* 絳) and purple (*zi* 紫), two colors that come from the above-mentioned plants – safflower and murasaki.

Three monastery lists or certificates of offerings have significant mentions of dyed textiles.³¹ Among all the products mentioned in them, whether silk, woolens (*he* 褐) or hemp cloth (*bu* 布), bolts or items of clothing, the most common colors are purple and red. Purple textiles include bolts of silk tabby (*juan*), of silk twill (*ling* 綾), of standard *shi* silk (*guanshi* 官絁), of brocade (*jin* 錦) and of woolens, as well as items of clothing such as shirts, gowns and monastic robes (*kaṣāya*). Products dyed bright red (*fei*) include bolts and clothes of silk tabby, silk twill, and woolens. Products dyed red (*hong*) include bolts and clothing of silk tabby, silk gauze (*luo* 羅), and hemp. There are also textiles of other colors such as yellow, black, blue, and white, but they appear in the documents with much less frequency than those of bright red and purple. Clothes of bright red and purple were not just for women, but also for men and members of the clergy. For instance, P. 2583 mentions one *kaṣāya* made with purple silk tabby 紫絹袈沙, probably reserved for a high-ranking monk. Safflower was commonly understood to be the best raw material for dyeing cloth bright red. A letter written in the third century by Xi Zuochi 習鑿齒, recorded that: “There are many red indigo (flowers) in mountains; northerners collect them for bright red and yellow dyeing.”³²

³⁰ P. 2912.

³¹ P. 3047, P. 2567, and P. 2583.

³² “Yu Xie shizhong shu” 與謝侍中書, quoted in *Shiji suoyin* 史記索隱 (see *Shiji* 史記 [Beijing: Zhonghua shuju, 1972], p. 2889). For other quotations of this text, e.g., *Beihu lu* 北戶錄, *Yunlu manchao* 雲麓漫鈔, see Trombert, “Des fleurs rouges en galette,” p. 522.

Descriptions of dyeing among Dunhuang manuscripts are very few. I can cite only a single instance that refers to bright red dye and purple dye, this being a manuscript list of expenditures of fuel wood written in 951. It describes work in the official mansion of the Shazhou government and clearly states that the outlays of fuel wood were for cooking food and for washing and ironing clothes.³³ There is also mentioned other work related to textile products:

On the eighteenth day, given to Gelang 歌郎 were 7 bundles of wood to cook (or boil) silk twill.

On the twentieth day, given to Qingnu 清奴 were 4 bundles for dyeing.

On the twenty-seventh day, given to Qingnu were 5 bundles for dyeing (cloth) purple.

On the twenty-eighth day, given to Qingnu were 4 bundles for dyeing (cloth) bright red.

The manuscript did not specify the names of the dyestuffs used, but it was most probably safflower and murasaki. Of particular note is that the three dyeing jobs were all done by the same person, Qingnu. No specific personal names were given for other jobs, and the name of Qingnu was not mentioned as performing other jobs; all of which suggests that Qingnu specialized in dyeing.

In the Tang and the subsequent Five Dynasties period, rouge was a common cosmetic. Smart girls normally wore rouge of bright red on their cheeks, giving by contrast their faces a white, tender appearance. Some silk paintings discovered in the same cave where the manuscripts were preserved illustrate the custom. At this point I turn to several examples of such paintings from the Musée Guimet in Paris.

EO. 1132 (silk painting from the Northern Song dynasty, “Guanyin under the Willow Tree”): in the lower part of the painting, there is an anonymous donor couple. We can clearly see the red makeup worn by the woman. This kind of makeup was not only used by women of the upper classes, but also by their handmaidens, as we can see in MG. 17775.³⁴

MG. 17775 (silk painting, dated 943, “Thousand-hands and Thousand-eyed Guanyin”): in the lower part of the painting, there is a woman donor and her handmaid, both wearing the red makeup, the detail of which is given here as figure 1.

³³ P. 3160.

³⁴ EO (“Extrême-Orient”) numbers correspond to the initial inventory of the Musée du Louvre, where the Pelliot collection was housed before being transferred into the Musée Guimet. MG numbers correspond to the complementary inventory drawn up by the Musée Guimet itself.

MG. 17778 (silk painting, Five dynasties, “Guanyin with Eleven Faces”). This painting tells us that rouge was not only used by secular women, but in fact a nun on the painting’s right side is the sister of the donor opposite her; her title, “*tantou sheli* of the Dacheng Monastery” 大乘寺檀頭閣梨 (perhaps the feminine equivalent of *bhadanta*), indicates her high-level position. There is rouge on her face and on the face of the young nun standing behind her. The makeup on these two nuns is not exceptional. There are similar cases in other paintings of Dunhuang. For instance, MG. 17664 (silk painting, Northern Song, “Ksitigarbha”). Among six people (who may be from the same family) shown in the lower part of the painting, all the feminine donors, laywomen, and nuns wear the red makeup.

From the above paintings, we can assume that Buddhist rules did not prohibit nuns from wearing makeup. In paintings, even deities wear makeup. For instance, Marici 魔支天, represented in a paper painting from the Five Dynasties period (MG. 17693), and in an illustrated booklet from the same period (EO. 3566) is clearly wearing makeup. Under these circumstances, it is quite plausible that rouge was commonly stored in the monastic warehouses of Dunhuang.



Figure 1. “Thousand-hands, Thousand-eyes Guanyin”
Detail of donors; painting on silk, 943 AD. Musée
Guimet (MG. 17775). Photo courtesy Réunion des
Musées Nationaux.

From the Gansu corridor to the southeastern part of China, the route went through southern Shaanxi province to Sichuan and then to Guangdong.³⁵ But diffusion did not stop in Guangdong. In Western Europe,

The skills required to plant and process safflower were introduced to China gradually.

³⁵ About the expansion of safflower all over China and especially in the south, see the testimony of foreign Christian missionaries and travelers: *Mémoires concernant l’histoire, les sciences, les arts, les mœurs, les usages, etc., des Chinois, par les missionnaires de Pe-kin* (Paris, Nyon l’aîné), 5 (1780), p. 498. Paul Champion, *Industries anciennes et modernes de l’empire chinois* (Paris, Eugène Lacroix, 1869), pp. 81–84.

safflower had been introduced by the Arabs in medieval times first in Andalusia, then in France, in England, and in other countries – in southern France safflower was cultivated until World War II. It was commonly used in the dyeing industry, and in the early-twentieth century safflower rouge was still the favorite blush used by French ladies, under the name “vermillion d’Espagne” (Spanish vermillion). In the mid-nineteenth century, the French textile guild of Saint-Etienne sent an engineer named Isidore Hedde to Guangdong province. The purpose of his mission was to review the dyeing industry in China. According to his observations, the level of the dyeing techniques in Guangdong was very high, in particular with regard to the use of safflower. He subsequently brought back many new techniques to France. After testing specimens of safflower dyestuff brought back from southern China, Parisian dyers came to the conclusion that its quality was superior to the best Spanish safflower dyestuff.³⁶

The journey of safflower started from the eastern coast of the Mediterranean Sea, passed through Central Asia, reached the coast of the Pacific Ocean, and then came back to the West. Therefore, we can say that the diffusion of safflower is a typical history. Its case helps establish the fact that European and Asian continents were, through their material culture, closely linked during ancient times.

LIST OF ABBREVIATIONS

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| Dx. | Chinese manuscripts from Dunhuang, Collection of the Institute of Oriental Studies of the Academy of Sciences of Russia, St. Petersburg |
| P. | Chinese manuscripts from Dunhuang, Pelliot Collection of the Bibliothèque Nationale de France, Paris |
| QM | Miao Qiyu 繆啓愉, ed., <i>Qimin yaoshu jiaoshi</i> 齊民要術校釋 |
| S. | Chinese manuscripts from Dunhuang, Stein Collection of the British Library, London |

³⁶ Isidore Hedde, *Description méthodique des produits divers recueillis dans un voyage en Chine* (Saint-Etienne, Imprimerie de Théolier aîné, 1848), p. 173–75.

Appendix: The Processing of Safflower according to Qimin yaoshu

The following translated passage is found in *Qimin yaoshu jiaoshi* 齊民要術校釋 (Beijing: Nongye chubanshe, 1982), sect. 52, p. 263. A previous English translation of it confused safflower with bastard-saffron; see Shi Shenghan 石聲漢, *A Preliminary Survey of the Book Ch'i Min Yao Shu: An Agricultural Encyclopaedia of the 6th Century* (Beijing: Science Press, 1982), pp. 90–91.³⁷

Text in italics, below, represents the notes appended in Tang times. The chart that follows is my version of the flow of steps required to make red dyestuff and rouge, as described in the text.

The method of processing (reducing) [safflower] blossoms. Pick [blossoms], and pound them immediately with a pestle to make a homogeneous [paste]. Soak [the paste] in water. Squeeze in a cloth sack to remove the yellow juice. Pound again. Soak [the paste] in clear soured millet soup,³⁸ and squeeze in the cloth sack to remove the juice. Do not throw away [this second juice], and keep it for dyeing red.³⁹ When [the solid residue] has been squeezed thoroughly, put it into a jar, and cover with a cloth. At cockcrow, pound again to obtain a homogeneous mass. Spread it on a mat to dry in the sun. This is better than shaping into cakes. If [the paste] is shaped into cakes, it cannot be dried, and its color becomes dull owing to retained moisture.

The method of making rouge. Beforehand, burn *Kochia*, *Chenopodium*, and wormwood (*Artemisia apiacea*) into ashes. *Ordinary kitchen ashes may be used in lieu.* Pour hot water [on ashes] to obtain [by filtering] a clear liquid. *The primary strained liquids are too thick and strong. Don't use them; the flowers would be destroyed. They can be used only for laundry. Take the third strained liquid, and incorporate it thoroughly into the flower paste; it will give a brilliant color.* Knead the flower [paste]. *Knead about ten times until [the flowers] give up all [their pigments].* Squeeze in a cloth sack to extract the pure juice. Pour it in a porcelain bowl. Take two or three sour pomegranates. Remove the seeds; pound [the flesh]; add some extremely sour clear millet soup, and mix. Squeeze in a cloth sack to extract the juice. Mix it with the flower juice. *If no pomegranates are available, use good vinegar mixed with grain soup; or even very acid, clear grain soup alone if vinegar is not available either.* [In this liquid,] pour some white grain starch, as much as one sour jujube. *The more starch used, the more*

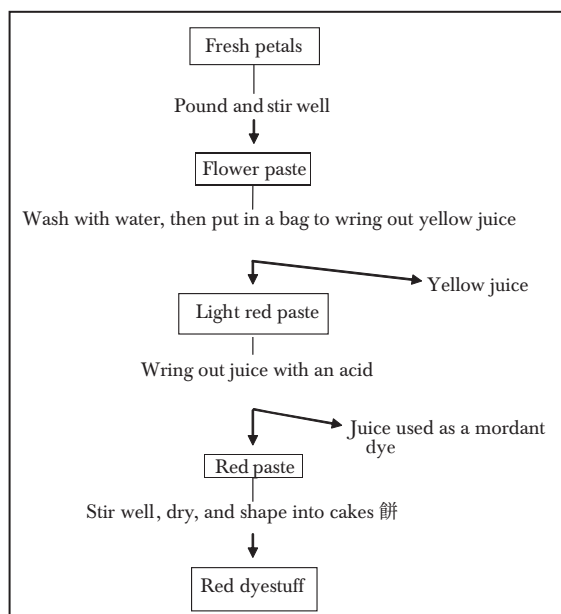
³⁷ For a detailed discussion of the method, see Trombert, "Des fleurs rouges en galette," pp. 541–43.

³⁸ Millet soup (*sufan jiang* 粟飯漿) is a slightly fermented meal containing lactic acid. It is still in use in China as a cold drink in summertime.

³⁹ Here, in the first stage of processing, the yellow juice is used as a mordant dye, before the textile fibers are treated with the red extract.

clear (white) [the product] will be. Stir forcefully and thoroughly for a long time with a clean, not greasy, bamboo stick. Cover with a lid until nighttime. Pour the clear liquid on top of the surface; stop pouring when the thick [paste] appears. Put [this paste] into a horn-shaped bag made of thin silk fabric, and hang it. The next day, when [the paste] is half-dried, nip it with the fingers into little petals like half a hempseed. Leave them to dry in the shade. This is the end of the process.

· METHOD FOR DYESTUFF ·



· METHOD FOR ROUGE ·

