

THE LEMON IN CHINA AND ELSEWHERE

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OF THE NUMEROUS useful fruits that we owe to India the lemon is the most democratic and the most widely known. It has become a denizen of this world and, with its Indic name, has penetrated even into the darkest parts of Africa and the tropical jungles of South America. Next to the word "tobacco," the word type "lemon," of Indic origin, is the most universal, reverberating from every tongue of the globe. To cite a few examples—Tukano *erimoá* and Tuyuka *uinimoá* (of the Betoya group in South America on the Upper Rio Negro) are derived from Portuguese *limão*. Tupi, the lingua franca of Brazil, which has adopted many loan-words from the Portuguese, upholds the word for lemon in the form *limaw*, although the liquid *l* is foreign to the language (Tatevin, *La langue Tapihiya*, 1910, p. 142). Along the east coast of Africa we hear *limao* or *ndimu* for the fruit, *mlimao* for the tree.

It was heretofore supposed that the lemon is of recent origin in China, introduced by "foreigners." It will be shown that this conception of the matter is erroneous and that Chinese acquaintance with the lemon dates from the middle of the twelfth century under the Sung dynasty.

Dr. W. T. Swingle, in his revision of the genera *Citrus* and *Poncirus* in China (in C. S. Sargent, *Plantae Wilsonianae*, 1914, II, pp. 127-137), has restored for the lemon the name *Citrus limonia* Osbeck on the ground that this is the oldest available name for the lemon (1765), i. e. in our botanical literature. He says that the lemon is still commonly grown and sold in pots as in Osbeck's day (see also his article "Citrus" in Bailey's *Cyclopedia of Horticulture*, 1914, p. 781).¹

¹ Lemons are pointed out in our literature on China prior to Osbeck's time. We read in Du Halde's *Description of the Empire of China* (London, 1738, I, p. 317): "Lemons and citrons are very common in some southern provinces, and extraordinary large; but these are scarce ever eaten, being only made use of for ornaments in houses, where they put seven or eight in a china dish, to please the sight and smell; however, they are exceeding good when candy'd. Another sort of limon, not much larger than a walnut, is likewise in great esteem; it is round, green, and sharp, being reckon'd

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F. P. Smith (*Contributions towards the Materia Medica etc. of China*, 1871, p. 131) cites *ning-mung* 檸檬 ("lemon") and observes, "No mention is known to be made of the lemon in the *Pen ts'ao*. The characters here given are from English dictionaries." He further gives *ning-mung chi* 汁, "lemon-juice" as "a name introduced by foreigners and applied to lime juice as well," and *ning-mung-shwi* 水 ("lemonade").

De Candolle (*Origin of Cultivated Plants*, p. 179) doubts whether the area originally covered by the lemon includes China or the Malay Archipelago, and continues, "Loureiro mentions *Citrus medica* in Cochinchina only as a cultivated plant, and Bretschneider tells us that the lemon has Chinese names which do not exist in the ancient writings and for which the written characters are complicated, indications of a foreign species. It may, he says, have been introduced." In his article "The Study and Value of Chinese Botanical Works" (*Chinese Recorder*, 1870, p. 178), Bretschneider wrote as follows: "The common lemon-tree at Peking is frequently raised in a dwarf form in pots as an ornamental shrub and also on account of the lemons which it produces and which do not differ from our European lemons. It is called 香桃 *siang t'ao* ['aromatic peach']² and may have been introduced. This name is not in Chinese books. The name 檸檬 *ning-mêng* given to the lemon in Bridgman's *Chrestomathy* (p. 443) is not to be found either in Chinese books. Perhaps by these sounds the Hindustan name of the lemon, being *nee-moo*, is rendered."

In *Mesny's Chinese Miscellany* (Shanghai, IV, 1905, p. 8) we read, "Lemonade, *ning meng shui*, *Ho-lan shui* 荷蘭水,³ *ch'ang*

excellent for ragous. The tree that bears them is sometimes put in boxes, and serves to adorn the outward courts or halls of houses."

² MacGillivray, in his *Mandarin-Romanized Dictionary* (2nd ed., 1907, p. 261) lists 香圓 or 椽 as vernacular names of the lemon, but these, properly speaking, refer to the Buddha-hand citrus (*Citrus sarcodactylus*) 香椽。俗作圓 (see *Pen ts'ao kang mu*, chap. 30, p. 13). Giles No. 4256 renders *hiang yüan* by "lemon," but under No. 13,738 defines it as "the Chinese citron—a variety of *Citrus medica* L." Perrot and Hurrier (*Matière médicale et pharmacopée sino-annamites*, p. 137) explain *hiang yüan* as *Citrus decumana*.

³ This, as a matter of fact, is a general term for soda water and proves nothing in favor of an introduction of the lemon through Hollanders, as possibly might be inferred from the name.

sheng kuo shui 長生菓水. In western China the true lemon grows and the fruit remains on the tree for years, hence its name *ch'ang sheng kuo*, i. e. long life fruit. This name is, however, given to peanuts or groundnuts at Shanghai."

G. A. Stuart (*Chinese Materia Medica*, 1911, p. 117) writes, "The lemon has been called by the same name by foreigners in China, as well as by the names *ning-meng* 檸檬 and *li-meng* 黎檬. But it is pretty certain that the lemon does not grow in China proper, or at least has been but lately introduced, and therefore it is not named." All this turns out to be erroneous.

It is correct, as stated by F. P. Smith, that the lemon is not mentioned in the *Pen ts'ao kang mu* of Li Shi-chen. This is accounted for by the fact that Li Shi-chen was not a botanist, but a herbalist and pharmacologist, his interest in plants and fruits being limited to their use in the pharmacopœa, and as the lemon was not medicinally employed up to his time, it failed to receive a place in his work. What F. P. Smith and his successors did not note, however, is that the lemon is clearly described in the *Pen ts'ao kang mu shi i* (chap. 7, p. 60b) and in the *Chi wu ming shi t'u k'ao* (sect. 果, chap. 16, p. 82). The former work gives extracts from the *Ling nan tsa ki* and *Yüe yü*; the latter cites the *Kwei hai yü heng chi*, *Ling nan tsa ki*, and *Nan yüe pi ki*. Yet neither points out the fundamental text of the *Ling wai tai ta*.⁴

The earliest reference to the lemon in Chinese records is made by Fan Ch'eng-ta 范成大 (A. D. 1126-93), in his *Kwei hai yü heng chi* 桂海虞衡志 (preface dated A. D. 1175; ed. of *Chi pu tsu chai ts'ung shu*, p. 25b), who writes as follows: "The *li-mung* fruit 黎檬子 has the size of a large plum; again, it resembles a small orange, and is exceedingly sour to the taste." No further information is given. The *Kü lu* 橘錄, a treatise on oranges, edited in A. D. 1178 (translated by Kiang Kang-hu and Hagerty in *T'oung Pao*, 1923, pp. 63-96) is reticent as to the lemon.

The earliest important description of the lemon is contained in the *Ling wai tai ta* 嶺外代答, written by Chou K'ü-fei 周去非 in A. D. 1178 (ed. of *Chi pu tsu chai ts'ung shu*, chap. 8, p. 8b). In a notice on the fruits cultivated in southern China at this time,

⁴The present case goes to show conclusively that a plant cannot be assumed to be unknown to the Chinese simply for the reason that it is not mentioned in the *Pen ts'ao* literature.

the author mentions the *li-mung* fruit 黎蒙子 as "being of the size of a large plum; again, it resembles a small orange, and is exceedingly sour to the taste" (same definition as in *Kwei hai yü heng chi*), and continues, "Some people say that it has come to us from the southern barbarians 或云自南蕃來. The people of P'an-yü (Canton) do not use vinegar in large quantity, but avail themselves in particular of the juice of this fruit, which is well known for its sourness, squeezing the juice out with a spoon. They also boil it in honey, soak it in a brine, and dry it at the sun when it is ready for consumption."⁵

There is no doubt that the lemon is visualized in this text and that the Cantonese made a sensible use of it. The Arabs also preserved lemons in salt (Ibn Baṭūṭa, transl. by Defrémery and Sanguinetti, III, p. 126). The lemon, we may conclude, was introduced into what is now Kwang-tung Province under the Sung dynasty, probably in the first part of the twelfth century, possibly a little earlier, since Fan Ch'eng-ta and Chou K'ü-fei met it in the south as a well established cultivation. The tradition that it came to China from the "Southern Barbarians," vague as it may be, is entirely credible, and is confirmed by the non-Chinese name *li-mung* which was received with the fruit from some foreign people. The *Shanghai Medical Dictionary* classifies it "among fruits of the Barbarians" 夷果. Prior to the twelfth century the lemon must therefore have migrated from India to Indo-China and possibly the Malay Archipelago. The form *li-mung* is phonetically too simple, and its congeners of almost identical structure are too widely diffused to afford a clue as to the particular nation or country from which the southern Chinese might have derived the fruit. One fact stands out clearly, and this is that *li-mung*, unlike numerous

⁵ There is good reason to believe that this text has been pointed out here for the first time. It has remained unknown to the editors of the *T'u shu tsi ch'eng*, to the *Pen ts'ao kang mu shi i*, *Chi wu ming shi t'u k'ao*, *T's'e yüan*, and the *Shanghai Botanical and Medical Dictionaries*. The *T'u shu tsi ch'eng* has devoted no article to the subject, being content to quote Fan Ch'eng-ta's definition of *li-mung tse* without any additional text and placing it among "miscellaneous fruit-trees" (XX, chap. 313, *tsa kwo mu pu hui k'ao*, p. 4) and again among "fruits" (XX, chap. 15, *kwo pu hui k'ao* 2, p. 10), in this case without citation of the source. Even J. Matsumura (*Shokubutsu-me-i*, pt. 1, p. 86) cites the Chinese names for *Citrus limonia* merely from recent works such as *Ling nan tsa ki*, *Kwang-tung sin yü*, *Kweng k'ün fang p'u*, and *Hwa i k'ao*, but has neglected the *Ling wai 'ai ta*.

other Indic plant names, is not a bookish transcription based on Sanskrit, but was orally received together with the plant through an intermediate tongue from a mediaeval Indic vernacular. Sanskrit *nimbū* or *nimbūka* is probably based on the vernacular forms: Bengali *lebu*, *nebu*; Konkani *limbo*, *nimbo*, *nimbu*; Oriya *nembu*; Hindī *nībū*, *limbu*, *limu*; Panjabi *nimbu*; Marathi *nībū*; Gujarati *libu*; Nepali *nibu* or *nību*, Assamese *nemu*.⁶ Old Javanese and Bali *limo*; Malay *limon*, *limau*, *limaw*; Dayak *liman*; Sunda and Makasar *lemo*; Nias *dima*; Formosa *rīma*.

It should be emphasized right here that the Buddhists had nothing whatever to do with the propagation of the fruit or its name. Buddhist texts and lexicographical literature are reticent as to both, and the conclusion to be drawn from this and other facts inevitably is that at the time Buddhism was diffused from India to China the lemon was not yet cultivated in India. It is noteworthy also that the Chinese have never been aware of the fact that the lemon is a native of India; India is never referred to in connection with it. Only recently have they learned this fact from us. Both the *Ts'e yüan* and the *Shanghai Botanical Dictionary* (*Chi wu hio ta ts'e tien*, p. 516) point out that the lemon originally grows in India, but foolishly do not say a word about its cultivation in China. It is clear that this cultivation was firmly established in Kwang-tung Province in the second half of the twelfth century when Chou K'ü-fei wrote, for the fruit was then extensively used for culinary purposes at Canton. Neither at that nor at any later time do we hear of any importation of lemons into the country.⁷

⁶ Mr. Edwin H. Tuttle has kindly favored me with the following note on the Dravidian names of the lemon: "I find Kanara *ilimiñci* 'lemon,' *nimbe* 'lime'; Tamil *elumiccai* 'lemon' or 'lime'; Telugu *nimma* 'lemon' or 'lime'; Tulu *nimbe*, *limbe*, *limbi* 'lemon.' Kanara regularly has *i* for *e* before *i* or *u*: *ilimiñci* comes from a form with initial *e*. Weak *i* and *u* interchange often in Tamil; *elu-* may come from **eli-*. Telugu regularly has *mm* for *mb*, and often *n* for *l* or *r* near a nasal. Kanara final *e*, Telugu final *a* and Tulu final *ε* (very open *e* or *æ*) probably represent *-as*. I think a basis **limbas* might be assumed for all of the words given above. Native initial *l* is unknown in Tamil and unusual in Kanara; *ilimiñci* and *elumiccai* may have come from Telugu **limma*; the ending looks like Sanskrit *icchaka*. Sanskrit *nimbū* may have come from Dravidian **limbās*, which might be an older form of **limbas*."

⁷ I have searched through the *Mong liang lu* (A. D. 1274) of Wu Tse-mu, the *Tung king mong hwa lu* of Mong Yüan-lao, and the *Wu lin kiu shi* of Chou

The *Ling nan tsa ki* 嶺南雜記, a record of the geography and productions of Kwang-tung Province, written by Wu Chen-fang 吳震方 in the seventeenth century (Wylie, *Notes*, p. 63), gives the following information (*Siao fang hu chai*, IX, p. 194; also in *Lung wei pi shu* and *Shwo ling*):

“The fruit *i-mu* 宜母 resembles the orange, but is sour. It is much used as a condiment to food. It improves the breath, and is grateful to the stomach. Women, who during the time of pregnancy feel uneasy, will be comfortable after eating this fruit. Hence it has received the name *i-mu* (‘beneficial to the mother’). It is also called *i-mung-tse* 宜濛子. It is prepared in the form of a liquid sweet or sour, that dispels the heat (i. e. it is cooling) and that is styled *kie k’o shwi* 解渴水 (‘thirst-allaying water,’ i. e. lemonade). Wu Lai 吳萊 of the Yüan period is the author of a song entitled ‘lemon hot water song’ (i. e. a song in praise of hot lemonade).”⁸

The *Nan yüe pi ki* 南越筆記, written by Li Tiao-yüan 李調元 in the eighteenth century, contains the following text:⁹ “The fruit *li-mung* 黎檬子 is also called *i-mu* 宜母. It resembles the orange (*ch’eng* 橙, *Citrus aurantium* L., now *Citrus sinensis* Osbeck), but is smaller in size. It ripens in the second or third month when it is yellow in color. It is exceedingly sour of taste. Pregnant women, when their liver is empty, have a craving for this fruit, whence its name *i-mu* (‘beneficial to the mother’). At the time of the Yüan dynasty, Li-chi-wan 荔支灣 in Kwang-chou (Canton) was an imperial fruit orchard, where eight hundred large and small lemon-trees (*li-mu* 里木) had been planted for

Mi in the hope of lighting upon the use of *li-mung tse* in the Hangchow of the Sung, but so far in vain. I am looking for further evidence before hazarding the conclusion that the lemon was unknown in central China under the Sung.

⁸ Wu Lai, styled Yüan-ying 淵穎, lived during the thirteenth century. He is the author of the *Nan hai ku tsi ki* 南海古蹟記. His writings were collected under the title *Yüan-ying tsi* 淵穎集.

⁹ The text in question is reprinted in the *Chi wu ming shi t’u k’ao*, sect. 果, chap. 16, p. 82. The *Pen ts’ao kang mu shi i* (chap. 7, p. 60b) ascribes the same text (with a few insignificant variants) to the *Yüe yü* 粵語. The *Nan yüe pi ki* is reprinted in the *Han-hai* collection and in *Siao fang hu chai*, IX (the above text on p. 277).

the purpose of making lemonade (*k'ò shwi* 渴水).¹⁰ The word *li-mu* designates the same fruit as *i-mu tse* 宜母子, also called *li-mung tse* 黎濛子. In the poem of Wu Lai it is said that the officials in charge of the gardens of Kwang-chou sent lemonade (*k'ò shwi*) as tribute to the imperial court. When weather and wind are hot during the summer, a wine made from lemons and various flowers makes a 'sweet dew beverage' (*kan lu tsiang* 甘露漿).¹¹ In the countries [other reading: gardens] of the south they boil 'red dragon marrow' 赤龍髓¹² and cover this with lemons, squeezing the water out and boiling it with sugar. The Mongols call lemonade *she-li-pie* 舍里別 [a transcription of Arabic *sherbet*]. It is also styled 'medicinal fruit' (*yao kwo* 藥果). During the hot season people endeavor to buy lemons up for storage purposes; they keep for several years and still yield juice, which is a good substitute for vinegar."¹³

The *Hwa i hwa mu niao shou chen wan k'ao* 華夷花木鳥獸珍玩考 (chap. 10, p. 2) of 1581¹⁴ contains a note of the

¹⁰ According to the *Kwang-tung sin yü* 廣東新語 (chap. 17, p. 12b), *Li-chi-wan* was the name of one of the famous gardens of Canton, situated five *li* west of the city.

¹¹ The term *kan lu* ("sweet dew") denotes (1) a heavenly dew as a symbol of universal peace (under the Han); (2) the nectar of the gods, rendering Skr. *amṛta*; (3) the manna furnished by *Hedysarum alhagi* and other manna-like substances (*Sino-Iranica*, pp. 343-350), hence also used as translation of the Biblical manna; (4) the tuber of *Stachys sieboldi*; (5) hard sugar (*Hwa i k'ao*, chap. 5, p. 29).

¹² I do not know what this vegetal substance is; it is not listed in any of the relevant sources.

¹³ The *Yüe yü* contains a notice to the effect that lemons put in a brine keep for years and change their color to black; juice from such lemons can heal wounds and "fire resulting from cold phlegm" 寒痰火. The same clause is found in the *Kwang-tung sin yü* (chap. 25, p. 33), which for the rest offers the same text as the *Nan yüe pi ki*.

¹⁴ The title means "Researches into the botany, zoology, and mineralogy (including some art crafts) of China and foreign countries." The various chapters are grouped under subtitles as they deal with plants, animals, or precious stones. This book, written by Shen Mou-kwan 慎懋官 whose preface and postscript are dated 1581, is a mine of curious information, although most data are quoted from earlier works. A copy of the original edition of this now very rare book is in the Library of Congress to which I am grateful for its loan. It is usually cited under the abbreviated title *Hwa i k'ao*. See also Wylie, *Notes on Chinese Lit.*, p. 168.

lemon under the heading *i-mu tse* and begins by saying that in an ancient record it is also called *li siang tse* 梨橡子. The first element of this compound means "pear"; the second refers to a species of oak (*Quercus bungeana* or *chinensis*). It is difficult to see how a combination of these two plant names could be used for designating the lemon tree. I believe that *siang* is an error for *yüan* 緣 (above, note 2) and *li* ("pear") for 黎 used in *li-mung*. The text of the *Hwa i k'ao* then continues, "In shape the lemon is like a sweet orange, but in taste it is sour. In the third year of the period Ta-te 大德 (A. D. 1299) of the Yüan dynasty, the officials in charge of sugar manufacture in the Ts'üan-chou circuit [in Fukiên] reported that they used lemons (*li-mu tse*, as above), by a process of boiling the juice, in the preparation of sherbet (*she-li-pie*), which is the Mongol word for lemonade (*k'o shwi* 渴水). Of course, all fruit juices can be prepared in this manner, but only the lemon is sour in flavor and remains unchangeable for a long time. The word *li-mu tse* is identical with *i-mu tse*. At the time of the Yüan there was to the east of the city of P'an-yü (Canton) a lotus pond called Nan Hai ('southern sea'), and to the west of the city there was Li-chi-wan, with an imperial fruit orchard, where eight hundred lemon trees of various sizes had been planted. In the seventh year of the period Ta-te (A. D. 1303) the tribute gift (of lemonade) came to an end. At present this garden is the dwelling-place of common people."

This text is given as a quotation from the *Kwang chou chi* 廣州志 ("Records of Canton"), not to be confounded with the two *Kwang chou ki* 記 listed by Bretschneider (*Bot. sin.*, pt. 1, No. 377).

The form *li-mu* 里木 of the Mongol period is obviously based on Persian *limū* ليمو, Persian being the lingua franca of the Far East during that memorable epoch. This form is not registered in any of our dictionaries, not even by Palladius, nor in the *Ts'e yüan*. Solely the *Shanghai Botanical and Medical Dictionaries* list it as a synonym of *i-mu*, but without any reference to the source. It would be interesting to trace this *li-mu* in the *Yüan shi* and other historical sources concerning the Mongol period.

At the time of the Yüan dynasty *she-li-pie* (as above) or *she-li-pa* 舍里八 (Arabic *sharbat* or *sherbet*) was a beverage favorite with the Mongol emperors, who appointed a special official charged

with its preparation and called *she-li-pa-chi* (in Mongol probably *šarbači*). Mar Sergius, a Nestorian Christian, who founded a Nestorian church at Chen-kiang in A. D. 1281, was reputed, as were also his ancestors, for his ability to prepare sherbet, and the emperor bestowed upon him a diploma in form of a golden tablet, granting to him the privilege of specially applying himself to that occupation. In A. D. 1268 the emperor Kubilai ordered Mar Sergius to come to Peking post-haste, in order to present sherbet, and he received ample reward for this service. *She-li-pa* is defined as "a beverage made of fragrant fruits boiled in water and mixed with honey" in the Chinese text in question, a chronicle of Chen-kiang fu written in the period Chi-shun (A. D. 1330-32), and *she-li-pa-chi* as the name of an office. Mar Sergius was obliged to send annually to the court from Chen-kiang forty jars of sherbet prepared from the juices of grape, quince, and orange, as the beverage was believed to have curative power. In 1272 Mar Sergius, together with the minister Sai-tien-chi, traveled to Yün-nan Province; in 1275, to the provinces of Che-kiang and Fu-kien, always for the purpose of preparing sherbet (Palladius, "Traces of Christianity in China and Mongolia," *Chinese Recorder*, VI, 1875, pp. 108-110; Palladius identifies *she-li-pa* with the Persian *sherbet*, but the word is of Arabic origin; cf. also Moule and L. Giles, *T'oung Pao*, 1915, pp. 633-635, 647, 653).

It follows from the above texts of the *Hwa i k'ao* and *Nan yüe pi ki* that lemon is to be added to the fruits which entered into the making of sherbet under the Yüan and that the word *sherbet* was then used principally in the sense of lemonade. Lemons were likewise so used in the Near East. Peter Mundy (*Travels*, I, p. 63, Hakluyt Soc. ed.), in 1620, describes the Turkish sherbet as "a drink made of sugar, juice of lemons and water." Sir Thomas Herbert (about 1630) wrote, "Their liquor may perhaps better delight you; 'tis faire water, sugar, rose-water, and juyce of lemons mixt, called sherbets or zerbets, wholesome and potable." John Fryer (*New Account of East India and Persia*, III, pp. 137, 149), who traveled in the East from 1672 to 1681, writes with reference to Persia that "the usual drink is sherbet made of water, juice of lemmons, and ambergreece [ambergris]" and that "sherbets are made of almost all tart pleasing fruits as the juice of pomegranets, lemmons, citrons, oranges, prunellas."

A. Bergé (*Dict. persan-français*, p. 237) gives for شربت *sharbat* the meaning "limonade, sorbet." As is well known, the series *sharbat*, *sherbet*, *sharāb* represents the ancestor of our words *sherbet*, *syrup*, and *shrab* (Osmanli *shorbet* migrating into Italian as *sorbetto*, hence French *sorbet*, Spanish *sorbete*, Portuguese *sorvete*). In the same manner as we learned the use of water-ices from the Near East, the Chinese adopted it from Persians and Arabs, as witnessed by their word *she-li-pa* and the prominent role played by the Nestorians in this industry.¹⁵ After the fall of the Yüan dynasty, the word *she-li-pa*, which perhaps never was popular, sank into oblivion, but the preparation and use of sherbets have persisted in China to this day. In Peking they are known as *shu t'ang* 暑湯 (lit. "heat beverages," i. e. beverages to ward off the heat, cooling beverages), and during the summer months are sold by hucksters in the streets (at least this was the case under the Manchu dynasty 1900-10 when I lived in Peking).

"Among summer drinks there is the *swan mei t'ang* 酸梅湯, a decoction of a certain kind of green plum obtained from the south, which is taken during the hot months with ice as a cooling pleasant drink. It is sold everywhere in the streets. The plum is mixed with sugar and made into a dry paste, and is so sold in the dry fruit shops. It is also mixed with some *kwei hwa* 桂花, the flowers of the *Osmanthus fragrans* of Loureiro" (J. Dudgeon, *The Beverages of the Chinese*, Tientsin, 1895, p. 17; see also W. Grube, *Zur Pekinger Volkskunde*, p. 76).

Matsumura cites also the name *lo-mung-tse* 羅蒙子 from the *Yang-ch'un hien chi* 陽春縣志 as a synonym of the lemon. In the *Ling wai tai ta*, however (chap. 8, p. 9b), *lo-mung-tse* (*lo* being written 蘿) is given as a distinct fruit, described as "being yellow,

¹⁵ A strange confusion has been brought about by Hirth (*Chau Ju-kua*, pp. 115, 120, 121, 127) in regarding *se* 思 and *sha* 沙 as transcriptions of Arabic *sherbet*. Aside from the fact that this is phonetically impossible and that *she-li-pie* or *she-li-pa* are the correct transcriptions of the Arabic word, there is no question at all of sherbets in the text, but of "wines (i. e. alcoholic beverages) which are heating and stimulating." A sherbet is just the opposite, a non-alcoholic, cooled and cooling beverage. Peter Mundy says advisedly that sherbet is the ordinary drink of great men among the Turks, their law forbidding them wine. Ch'ang Te mentions orange juice mixed with sugar as the beverage of the caliph without giving the name sherbet (Bretschneider, *Med. Res.*, I, p. 140).

of the size of an orange or pumelo” 檳柚 (the former character is identical with 橙).

The origin of the form *ning-mung* (or *meng*), as given by F. Porter Smith, Bretschneider, and others, remains obscure. As far as I have been able to ascertain by interrogating Chinese, it is chiefly used in Kwang-tung and Fu-kien, while Shanghai and Peking men prefer *li-mung*. There is to my knowledge no authority for the characters 檸檬, as given by Bridgman, F. Porter Smith, and successors, although entered in all current dictionaries and even in the *Ts'e yüan*. The *Shanghai Botanical Dictionary* (*Chi wu hio ta ts'e tien*, p. 516) winds up its discourse on the lemon, which is poor enough (only the *Yüe yü* and *Ling nan tsa ki* are laid under contribution), by saying that “in recent times the lemon is generally called *ning-mung*” (same characters as those of F. Porter Smith). K'ang-hi's Dictionary does not give them; above all, however, there is no literary source that gives them, and I have searched for them long and patiently. The only work in which I found them is one of recent origin, the *O yu ji ki* 俄遊日記 (*Diary of a Journey to Russia*) by Miu Yu-sun 繆祐孫 (*Siao fang hu chai*, III, p. 416).

The Chinese nomenclature of the lemon may now be tabulated as follows:

黎檬子 *li-mung* or *li-mong tse* (Sung).—*Kwei hai yü heng chi* and *Ling wai tai ta*.

里木 *li-mu* (Yüan).—*Hwa i k'ao*, *Nan yüe pi ki*.

黎檬子 *li-mung tse*.—*Nan yüe pi ki* and K'ien-lung's *Polyglot Dictionary*, Appendix, chap. 3, p. 15b, with the following equivalents: Manchu *jušuč'i* (lit. “sour fruit”), Tibetan *li-meñ* or *li-mön siu* (transcription of Chinese),¹⁶ Mongol *küjiltai jimin* (“aromatic fruit”).

¹⁶ As to the acquaintance of the Tibetans with lemons, I have no personal experience. Jäschke, in his *Tibetan-English Dictionary*, cites *gam-bu-ra* (“citron, lemon”) as West-Tibetan; in his *Tibetisches Handwörterbuch*, which preceded the English edition, he has added Sanskrit *gambhira*, which according to Boehtlingk and Roth denotes “lemon-tree, lemon.” Chandra Das, in his *Tibetan-English Dictionary*, copied Jäschke's *gam-bu-ra* and joined to it Sanskrit *jambira*; *jambira*, of course, could never be transformed into a Tibetan *gam-bu-ra*; it denotes not the lemon, but *Citrus medica*. Jäschke, further, gives “*spyod-pad*, *dpyod-pad* (spelling uncertain), pronounced *čö-pe*” as a designation of the lemon; this is quite enigmatic

宜母 *i-mu*, by way of popular etymology with reference to an alleged medicinal virtue of the fruit.—*Ling nan tsa ki*.

宜濛子 *i-mung tse*, a compromise or missing link between the correct form *li-mung* and the popular *i-mu*.—*Ling nan tsa ki*.

舍里別 or 八 or *she-li-pie* or *pa*, sherbet, lemonade (Yüan).

解渴水 *kie* (*chieh*) *k'o shwi*, or merely *k'o shwi*, lemonade.—*Ling nan tsa ki*, *Nan yüe pi ki*.

ning-mung shwi or *li-mung shwi*, lemonade (modern colloquial).

The lemon is still cultivated in the provinces of Kwang-tung and Se-ch'wan. Mesny (above, p. —) refers to its cultivation in western China. A. Hosie (*Report on the Province of Se-ch'wan*, 1904, p. 17) specifies the district of Kin-t'ang 金堂 in the prefecture of Ch'eng-tu as the seat of lemon cultivation. Rockhill (*The Land of the Lamas*, p. 303) mentions a Catholic mission, near the famous Lu-ting suspension bridge in Se-ch'wan, where there was a fine vegetable garden around the vicarage, and he noticed in it pomelo and lemon trees laden with fruit, but he was told that it never matured. J. Anderson (*Report on the Expedition to Western Yün-nan*, 1871, p. 64) noted lemons at Bhamo. "The lemon is not grown in China as a fruit tree but only as a dwarf pot-plant, bearing as many fruits as can be got on it" (S. Couling, *Encycl. Sinica*, p. 410, after F. Meyer).

The "foreigner," who in the "introduction" of the lemon into China loomed so large in the minds of sinologists of the preceding generation that the Chinese sources were not even consulted, may have had his share in giving a fresh impetus to the cultivation of lemons in consequence of his greater demand for lemonade and lemon slices for tea, salads, and other dishes. The *Industrial Handbook of Kiangsu Province*, just issued by the Bureau of Foreign Trade (Shanghai, 1933, p. 220), contains the statement that "the import of lemons from the United States to Shanghai has increased from Haikwan Taels 96,523 in 1925 to H. Tls. 126,812 in 1928."

to me. Lama D. Kazi (*English-Tibetan Dictionary*) lists *čos-pad* as a Sikkim word for the lemon. If the lemon is known to Tibetans, it must be due to importation from India, Kashmir, or Sikkim. According to Risley's *Gazetteer of Sikkim* (p. 76), the lemon is cultivated there.

II

After this reconnaissance I determined to follow the trail of the lemon in the Chinese records relative to the countries of the Indian Ocean, in the expectation of lighting upon data that might enable us to trace the gradual stages of its migration back to its native home, India. This attempt proved disappointing, however. Works such as the *Ying yai sheng lan*, the *Tung si yang k'ao* (of which I have the original edition of 1618), the *Si yang ch'ao kung tien lu* (in *Pie hia chai ts'ung shu*) do not mention the lemon anywhere. Those who have not access to the Chinese sources may convince themselves by consulting the relevant translations of Phillips, Mayers, Groeneveldt, Pelliot, and Rockhill. Nor is the lemon listed as an article of import into China; Chao Ju-kwa and others maintain silence about it. This, however, is surprising only at first sight, but considering the fact that everywhere in the Far East and in India the lemon is merely planted in gardens here and there for local needs and that it is nowhere cultivated on a large scale, this situation becomes easily intelligible. Only in southern France, Italy, Spain, Portugal, California, and the West Indies has lemon culture developed into an industry of such a magnitude that it pays exportation. The Chinese, being matter-of-fact people, in visiting foreign countries were interested to know, first, on what the inhabitants subsisted (the inquiry as to whether they cultivated rice and other cereals was uppermost in their minds) and, second, what agricultural and other products lent themselves to exportation. The lemon did not come within this category and therefore remained unnoticed.

In the Philippines the lemon was established long before the times of Spanish colonization. Pigafetta, who accompanied Magellan on his circumnavigation of the globe (1519-22) mentions lemons (*limoni*) among the fruits of the island Zebu or Cebu (Blair and Robertson, *The Philippine Islands*, XXXIII, pp. 133, 187, 231). Miguel de Loarca (*Relacion de las Yslas Filipinas*, 1582) reports, "There are also many good oranges and lemons" (*op. cit.*, V, p. 171); they are likewise referred to by Antonio de Morga (*Sucesos de las Islas Filipinas*, 1609; *op. cit.*, XVI, p. 87). This excludes the notion held by some scholars of the preceding generation that the Malayan words for the lemon are derived from the Portuguese (e. g. W. Joest, *Das Holontalo*, 1883, p. 74).

H. Kern, in a brief article entitled "Limoen" first published in 1897-98 (reprinted in his *Verspreide Geschriften*, XII, pp. 151-153), regards Skr. *nimbū* as a sanskritization of Hindustani *nimbū*, which on its part should be a corrupted pronunciation of *limū*. He further points to Old Javanese *limo* occurring in the *Rāmāyaṇa*, developed from an older *limau*, and to the cognate words in other Malayan forms of speech. In Samoa, Fiji, and Mota there is a word *moli* meaning "orange," which according to Kern is the same word as *limo*. His conclusion is that Dutch *limoen* in its origin is a Malayo-Polynesian word which by way of Hindustan, Persia, and Arabia has found its way to Europe. This linguistic somersault is made without any regard to the botanical facts. If Kern's speculation were correct, the lemon tree would have to be regarded as a native of Malayo-Polynesia and as having been introduced from there to India. The reverse, however, is the case. According to G. Watt (*The Commercial Products of India*, 1908, p. 325), who calls the lemon *Citrus medica* L., var. *acida*, it is "undoubtedly a native of India." It grows wild in the forests of northern India, on the southern slopes of the Himalaya, especially in the valleys of Kumaon and Sikkim. In the valley of Nepal lemons grow most luxuriously and are of very fine flavor (*Imp. Gazetteer of India*, XIX, p. 47). How the plant spread from India to Malaysia we have no means of ascertaining; there are two possibilities—either by way of Indo-China or from southern India or Ceylon directly across the sea, possibly by both ways. A. de Candolle already emphasized the fact that nowhere in the Archipelago does the lemon occur in the wild state, but is only cultivated. The occurrence of the word *limo* in the Javanese version of the epic *Rāmāyaṇa* is merely an example of the application of the word in literature, but does not go to prove that the lemon was anciently known in Java, not to speak of cultivation; nor is it by any means certain that the word refers to our lemon (cf. W. Marsden, *History of Sumatra*, p. 100, where it follows from the names for various citrus fruits cited that *limau* is a general term covering all members of the Citrus family).

The task of elaborating a history of the lemon in India if such is possible must be left to competent Sanskrit scholars. The fact that it appears on the horizon of the Chinese as late as the twelfth century and that at about the same time it starts on its westward

migration leads me to think that the beginnings of its cultivation in India may fall in the early middle ages, say the fourth or fifth to the ninth century. The earliest reference to the lemon of India is made by the Arabic geographers of the tenth century (below, p. 158). It is significant that the Chinese Buddhist pilgrims to India, while they describe many plants of the country, are reticent as to the lemon and that it is not mentioned in Buddhist literature. It is not contained in the Bower Manuscript, but according to Watt in the work of Suśruta. The Petersburg Dictionary refers under *nimbū* to *Rājanighaṅṭu* (11,176) and *Bhāvaprakāśa* (2,38); the term *nimbūkaphalapānaka* goes to show that lemonade was known in India. François Bernier (*Travels in the Mogul Empire 1656-68*, transl. by A. Constable, 2d ed. by V. A. Smith, p. 253) refers to the excellent lemonade to which a wise man will here accustom himself and which costs little and may be drunk without injury.

The earliest references to lemons in India on the part of European travelers are by the two friars, Odoric of Pordenone and Jordanus. Odoric (1286-1331), on his visit to the island of Sillan (Ceylon), describes a pool full of precious stones and abounding in leeches. The king, he relates, allows the poor to search the water for the stones once or twice a year and to take whatever they can find. But that they may be able to enter the water in safety they bruise lemons and copiously anoint the whole body therewith, and after that when they dive into the water the leeches do not meddle with them (Yule, *Cathay*, 2d ed. by Cordier, II, pp. 171, 306, 347). As Yule annotates, Ibn Baṭūṭa writes that the people of Ceylon take care to keep ready a lemon and to squeeze its juice upon leeches that may drop upon them. Knox and Tennent corroborate Odoric's notice of lemon juice as the remedy for leech bites. Hence it is quite certain that the lemon is intended in Odoric's text and that the medicinal properties of lemon juice were anciently known in India. Another early mention of lemons in Ceylon is by Gabriel Quiroga de San Antonio (*Brève et véridique relation des événements du Cambodge*, ed. A. Cabaton, p. 178), who paid a visit to Ceylon in 1600. Friar Jordanus, in 1328, wrote that India, as regards fruit and other things is entirely different from Christendom, except that there be lemons in some places, as sweet as sugar, while there are other lemons sour like ours (Yule, *Hobson-Jobson*, p. 514).

It is said that the so-called Nabatean Agriculture, written in A. D. 903 by Ibn Wahshiyah (regarding this work see Carra de Vaux, *Les Penseurs de l'Islam*, II, pp. 296-300), contains an allusion to the lemon (Flückiger and Hanbury, *Pharmacographia*, 2d ed., 1879, p. 115, after Meyer, *Gesch. der Botanik*, III, p. 68). If this be true, it would be the earliest reference to the fruit in the literatures of the world. I note from E. Seidel (*Mechithar*, p. 216), however, that the word in the text thus translated is حسب which Seidel regards justly as a transcription of Khasia, a district in India known for Citrus cultivation. This being the case, it is not certain that the lemon is intended; it may be one of the many other species of Citrus as well.

The geographers Iṣṭakhrī and Ibn Haukal (toward the middle of the tenth century) are the first Arabic authors who attribute to Sind a fruit as large as an apple and very sour, called *līmūnah*. This information has been copied by Edrīsi of Cordova and Abu'l-Feda (Guyard, *Géographie d'Aboulféda*, II, pt. 2, p. 113; A. von Kremer, *Culturgesch. des Orients unter den Chalifen*, I, p. 312). According to von Kremer, the migration of the lemon from India to the Near East took place under the caliphate. The Arabs apparently transmitted it to Persia, Iraq, Syria, and Egypt. In regard to Persia see, for instance, G. Le Strange, *Description of the Province of Fars in Persia*, pp. 39, 47. In Syria the lemon was cultivated under the Mamluks in the thirteenth century (Gaudefroy-Demombynes, *La Syrie à l'époque des Mamelouks d'après les auteurs arabes*, p. 26).

Ibn al-Baiṭār of Malaga (A. D. 1197-1248; Leclerc, *Traité des simples*, III, pp. 255-262) gives a lengthy description of the lemon, its properties and uses, and it is noteworthy that he does not cite, as in most cases, his predecessors; but he evidently describes the plant and fruit from personal experience. He gives a recipe for the preparation of lemon syrup or lemonade as then was customary in Egypt: three or four ounces of lemon juice were mixed with a pound of sugar; this mass was heated, and water was added to it according to individual taste. Lemons are frequently mentioned in the Arabian Nights, and lemon trees in a garden of Egypt are described poetically in the story of Nūr ed-Dīn and Maryam (Night 846). In Morocco lemons were known in the fourteenth century,

according to Ibn Faḍl Allah al-ʿOmarī, 1301-49 (*Masālik el Absār* etc., transl. by Gaudefroy-Demombynes I, 1927, p. 175).

Documentary evidence as to how and when the lemon was introduced from the Near East into southern Europe is lacking. It is supposed that the Crusaders took it along from Palestine and that the Arabs transmitted it to Spain. The former supposition is based on the fact that Jacobus de Vitriaco (or Jacques de Vitry, about 1200) describes the lemon which he had seen in Palestine, but he does not say that he was instrumental in taking it to Europe.

Ibn el-ʿAwam, who lived at Seville in the twelfth century (Clément-Mullet, *Le Livre de l'agriculture*, 1864, I, p. 300), in his great work *Kitāb-el-felāhah*, mentions the lemon or citron tree (*limonier ou citronnier* in Mullet's translation), but does not say that it was cultivated in the Spain of his time, nor does he refer to lemonade; the chances are that the lemon is not visualized in his text. Perhaps it was to Sicily and southern Italy that the lemon was first transplanted through Arab agency. The fact of the transmission itself cannot be called into doubt, for it is upheld by the migration of the Arabic word *limūn*, *leimūn* ليمون into Italian *lima*, *limone* (Old Italian *lumia*, *lomia*); Spanish *lima*, *limon*; Portuguese *lime*, *limão*; Provençal and French *limon*; Rumanian *lemej*, *alemej*, *alimon*. The early English travelers to India also have preserved the vowel *i*: thus William Finch (in India 1608-11) spells *limmons*, Edward Terry (in India 1616-19) *limons* (see W. Foster, *Early Travels in India*, pp. 166, 297).

By the sixteenth century lemon culture was well established in Italy. Castore Durante (*Herbario nuovo*, Roma, 1585, p. 259) writes that lemons grow in great quantity in Calabria, in Puglia, and in the kingdom of Naples and are found in many gardens in Rome and neighboring places. From Italy lemons became known in Germany in the first half of the sixteenth century, and then and in the seventeenth century were still called *limone*, *lemone*, subsequently superseded by *citrone*. Around 1700 Germans became acquainted with lemonade (Kluge, *Etymol. Wörterbuch*). From about 1630 the *limonadiers* began to play a prominent role in France, subsequently taken over by the *café-tiers*—a subject treated in detail by Larousse (*Grand Dictionnaire*).

In England lemon trees were cultivated as early as the reign of James I (1603-25) as Lord Bacon mentions lemons, oranges, and

myrtles housed in hot country plants. In some parts of Devonshire lemon trees were trained to the walls, requiring no other care than to be covered with straw or mats during the winter. Being of a much hardier nature than the orange, the lemon was brought to greater perfection in England than the latter fruit (H. Phillips, *Pomarium Britannicum*, p. 229).

During the seventeenth century the lemon had completed its triumphal procession around the world. The great traveler Peter Mundy, in 1634 and 1638, found lemons in St. Helena, where there was a "Lemmon Valley because it leads to the place where lemmon trees are" (*Travels in Europe and Asia*, III, pp. 330, 412, Hakluyt Soc. ed.). Although St. Helena never had a native population, it has played a great role in the diffusion of cultivated plants. H. Phillips (*op. cit.*, p. 230) wrote in 1821 that "the lemons of St. Helena are the most esteemed, growing larger, and of a milder flavor than other kinds." In 1613 Rodrigues da Costa found citrons and lemons in Madagascar (*Collection des ouvrages anciens concernant Madagascar*, II, p. 12). Sir Thomas Roe (*Embassy to India 1615-19*, ed. W. Foster, pp. 9, 13) reported lemons on the Comoro Islands. In 1638 Mundy encountered lemons in Mauritius, Madagascar, and Mohilla, one of the Comoro group (II, pp. 14, 319; III, pp. 350, 369). On the island of Bourbon (then Mascaregne) lemons were observed by the Sieur D. B. (P. Oliver, *Voyages made by the Sieur D. B. 1669-72*, p. 86). On the east coast of Africa lemons were known much earlier: Ibn Baṭūṭa mentions lemon trees on the island Manbasa, two days' voyage from the land of the Swahili (Defrémery and Sanguinetti, *Voyages d'Ibn Batoutah*, II, p. 191).