



ARTICLE

## Tokugawa Yoshimune and his healthcare projects

Regina Huebner

Independent scholar

Email: [regina.huebner@googlemail.com](mailto:regina.huebner@googlemail.com); <http://rbhuebner.com>

### Abstract

In Japanese scholarship, the notion of public health is closely associated with modernisation and the adoption of Western medicine in the nineteenth century, which influenced the centralisation of medical affairs and the establishment of hospitals. This article aims to challenge this assumption. A closer look at Japan's medical history shows that government institutions caring for the sick and destitute existed before the introduction of Western concepts of medicine. Furthermore, Japan had other ways of providing welfare, in addition to establishing hospitals. These included government-sponsored medical manuals designed to deliver healthcare via published texts, an aspect of welfare that has been neglected in the history of public health in Japan. This article fills this gap by illuminating and grasping lesser-known strands of healthcare delivery to enhance our understanding of the relationship between the state and medicine in early modern Japan. In particular, it examines welfare initiatives implemented by the tenth shogun, Tokugawa Yoshimune (r. 1716–1745), a prominent and well-researched figure in the history of Tokugawa Japan and a key player who laid the foundations of welfare in this era.

**Keywords:** Tokugawa Yoshimune; public health; medicine; Tokugawa Japan

In Japanese scholarship, the notion of public health is closely associated with modernisation and the adoption of Western medicine in the nineteenth century, which influenced the centralisation of medical affairs and establishment of hospitals. This article aims to challenge this assumption. A closer look at Japan's medical history shows that government institutions caring for the sick and destitute existed before the introduction of Western concepts of medicine. Furthermore, Japan had other ways of providing welfare, in addition to establishing hospitals. These included government-sponsored medical manuals designed to deliver healthcare via published texts, an aspect of welfare that has been neglected in the history of public health in Japan. This article fills this gap by illuminating and grasping lesser-known strands of healthcare delivery to enhance our understanding of the relationship between the state and medicine in early modern Japan. In particular, it examines welfare initiatives implemented by the tenth shogun, Tokugawa Yoshimune (r. 1716–1745), a prominent and well-researched figure in the history of Tokugawa Japan and a key player who laid the foundations of welfare in this era.<sup>1</sup> Before detailing

<sup>1</sup> For information on his life and activities, see Tsuji Tatsuya 辻達也, *Tokugawa Yoshimune* 徳川吉宗 (Tokyo, 1985); for a general overview of his reforms, see Tsuji Tatsuya, 'Politics in the eighteenth century', in *The Cambridge History of Japan*, vol. 4, (ed.) John Whitney Hall (Cambridge, 1991), pp. 445–456; to explore his engagement in botanical studies and Western learning, see Grant K. Goodman, *Japan and the Dutch 1600–1853* (Richmond, Surrey, 2000) and Grant K. Goodman, *Dodonaeus in Japan. Translation and the Scientific Mind in the Tokugawa Period*, (eds) W. E. Vande Walle and K. Kasaya (Kyoto, 2001).

his healthcare endeavours and publishing activities, I will give a brief definition of what is now generally understood by the term ‘public health’.

The World Health Organization defines public health as ‘the science and art of preventing disease, prolonging life and promoting human health through organised efforts and informed choices of society, organizations, public and private, communities and individuals’.<sup>2</sup> Its focus is ‘on the entire spectrum of health and wellbeing, not only the eradication of particular diseases’.<sup>3</sup> However, in Japanese and Western research on Japanese medical history, ideas about the meaning of public health and the areas it encompasses are generally associated with modernisation or the introduction of vaccinations and centralisation.<sup>4</sup> Some scholars absolve the government from any responsibility for providing social welfare by arguing that the extended family was entirely responsible for providing nursing care.<sup>5</sup> This public health debate is not confined to Japanese scholarship but reflects varying attitudes towards public health among historians and public health experts; it also reveals the ambiguity of the term ‘public health’ and its various concepts and definitions.<sup>6</sup> Historical and contemporary studies of public health in Europe and North America, for example, reveal positions that range from arguments in favour of restricting public health to the control of infectious diseases, to perceptions of public health in the wider context of social history, with scientists arguing that inequalities within a society are often the determinants of mortality differentials.<sup>7</sup>

What is striking in Japanese scholarship is that the majority of approaches focus on the shift from medical care practised and understood in an early modern society to that of a modern state confining itself in general to the determinants of centralisation, modernisation, and vaccination. Researchers often overlook the fact that a centralised healthcare administration, such as that established in the Meiji period (1868–1912), is not mandatory for the successful implementation of public health measures. This has been shown by healthcare endeavours in early modern domains, such as the Yonezawa domain.<sup>8</sup> Such studies also exclude other initiatives that could be attributed to public health, such as environmental measures involving urban sanitation and dam construction.<sup>9</sup> Finally, it

<sup>2</sup> World Health Organization, Regional Office for Europe, <http://www.euro.who.int/en/health-topics/Health-systems/public-health-services> (accessed 18 August 2023).

<sup>3</sup> *Ibid.*

<sup>4</sup> Ann Bowman Janetta, *The Vaccinators: Smallpox, Medical Knowledge, and the ‘Opening’ of Japan* (Stanford, CA, 2007), p. 176; Mahito Fukuda, ‘Public health in modern Japan: from regimen to hygiene’, in *The History of Public Health and the Modern State*, (ed.) Dorothy Porter (Amsterdam; Atlanta, GA, 1994), pp. 385 and 391.

<sup>5</sup> Naoki Ikegami, ‘Economic aspects of the doctor-patient relationship in Japan—from the eighteenth century until the emergence of social insurance’, in *History of the Doctor-Patient Relationship: Proceedings of the 14th International Symposium on the Comparative History of Medicine—East and West*, (eds) Shizu Sakai et al. (Susono-shi, 1995), p. 133; his arguments mostly rely on Sakai Shizu 酒井シヅ, *Nihon no iryōshi 日本の医療史* (History of Medical Care in Japan) (Tokyo, 1982).

<sup>6</sup> For an overview of the eventful history of ‘public health’ in the West and its reception by historians and scientists, see Christopher Hamlin, ‘Public health’, in *The Oxford Handbook of the History of Medicine*, (ed.) Mark Jackson (Oxford, 2011), pp. 411–428.

<sup>7</sup> *Ibid.*, p. 412; for the different approaches, see Richard Epstein, ‘Let the shoemaker stick to his last: a defense of the “old” public health’, *Perspectives in Biology and Medicine* 46 (2003), pp. 138–159; Ichiro Kawachi, Bruce P. Kennedy and Richard Wilkinson (eds), *The Society and Population Health Reader. Vol. 1: Income Inequality and Health* (New York, 1999).

<sup>8</sup> For the healthcare initiatives in the Yonezawa and other domains, see Kasai Sukeharu 笠井助治, *Kinsei hankō ni okeru shuppansho no kenkyū* 近世藩校に於ける出版書の研究 (Investigations into the Publications of Early Modern Domain Schools) (Tokyo, 1962), pp. 129–130 and pp. 298–299. To some extent, domains may also be regarded as centralised entities; for a discussion of the bakufu and domain system structure, see John Whitney Hall, ‘The bakuhan system’, in *The Cambridge History of Japan*, vol. 4, (ed.) Hall, pp. 128–182, and Harold Bolitho, ‘The han’, in *ibid.*, pp. 183–234.

<sup>9</sup> For an overview of the environmental challenges of early modern Japan and its way of dealing with them, see Conrad Totman, *Early Modern Japan* (Berkeley, 1993). The excrement industry played an essential role in

has rarely been noted that medical manuals can play a pivotal role in providing public healthcare by disseminating medical knowledge.

In focusing on Tokugawa Yoshimune's healthcare initiatives, I intend to show that providing public healthcare is a complex endeavour that cannot be attributed to one or two factors because it has several social and economic dimensions. In contrast to the West, where epidemics were the driving force behind public healthcare initiatives, Yoshimune appears to have been forced to take action by several serious fiscal and social problems, which he inherited as a consequence of the dynamic growth of the preceding Genroku era. The shogun was confronted by increasing numbers of poor and outcast people, part of a growing population that worked far from home as day labourers or servants. His strategies to improve this tenuous situation resulted in the so-called Kyōhō reforms, in which he promoted a new industry policy, lifted the ban on Dutch studies, and encouraged the reception of Western sciences. A substantial number of his reforms also involved public welfare. These healthcare projects can be divided into three major and overlapping areas: the enhancement of herb gardens containing medicinal herbs, the foundation of a hospital, and the publication of medical books for both experts and laymen.

### Herb gardens and the cultivation of medicinal plants

One essential initiative was to make medicine available to everyone by promoting the cultivation of medicinal plants and establishing herb gardens. The concept of cultivating medicinal plants was an attempt to counter several serious fiscal and social problems, first by reducing expensive imports of *materia medica* from China and other countries, and second by making herbal medicine available to the general public. These considerations are mentioned in the *Tokugawa Jikki* 徳川実紀 (the official record of the Tokugawa house), which notes that medicinal drugs from China and Western countries were very effective, but also expensive and in short supply. It was not easy for ordinary people to acquire them. To address this difficult situation, an order was issued to cultivate medicinal plants that would grow in local conditions.<sup>10</sup> Yoshimune was not the first shogun to appreciate the need to study botany and to cultivate medicinal herbs; this approach had already been introduced by Tokugawa Ieyasu 徳川家康 (r. 1603–1605):

[He] directed his attention to medicine and botany. When Yakuin Sōhaku<sup>11</sup> came over from Kyoto, they always dined together. Ieyasu also questioned Yoshida Sōjun about [Japanese] products, and on one occasion he asked for high-quality vermillion (*kōmyōju*), but all [of the samples] were of low quality. Since Sōjun's father had crossed the sea to China, he offered the vermillion his father brought with him, which was very much to Ieyasu's liking. What an honourable family, indeed. [...] Sōjun furthermore made 'purple snow' (*shisetsu*),<sup>12</sup> which he compounded based on

keeping the big metropolitan centres of Edo (Tōkyō) and Ōsaka clean; for more on this topic, which deserves closer attention, see David Howell, 'Fecal matters: prolegomenon to a history of shit in Japan', in *Japan at Nature's Edge. The Environmental Context of a Global Power*, (eds) Ian Jared Miller, Julia Adeney Thomas and Brett L. Walkers (Honolulu, 2013), pp. 137–151.

<sup>10</sup> 'Tokugawa Jikki, 'Yūtokuin dono gojikki furoku 有徳院殿御実紀附録 15', in *Kokushi taikai* 国史大系, (ed.) Narushima Motonao 成島司直, vols 38–47 (Tokyo, 1929–1935), vol. 46, p. 291.

<sup>11</sup> Also known as Seyakuin Sōhaku 施薬院宗伯 (1576–1663), a physician of the early Tokugawa period: *Nihon jinmei daijiten* 日本人名大辞典 (Unabridged Dictionary of Japanese Names) (Kodansha 2001), p. 1046.

<sup>12</sup> Also called *shisetsutan* 紫雪丹, a medicine that contains vermillion and serves as antipyretic to treat beriberi, abdominal pain, malign abscesses, and other ailments. *Nihon daijiten kankōkai* 日本大辞典刊行会 (ed.), *Nihon kokugo daijiten (shukusatsuban)* 日本国語大辞典[縮刷版] (Tokyo, 1982), vol. 5, p. 549d. It is still sold in China.

*Hejiju fang*, and presented it to him [Ieyasu]. This was much to his delight, and from there, through being told about its production, all doctors were able to make it. On another occasion, [Ieyasu] was given a thin solid, about one shaku (ca. 30cm) long, which resembled [the twig of] an oriental thuja (*konotegashiwa*) from a ship that came from China. Since its shape made it look like a rough horsetail or the needles of a thuja strung together, he thought it was strange and asked all of the physicians but nobody knew anything about it. Sōjun said that it must be an agatized coral (*menō no hana*) and when they checked it in the *Bencao gangmu*, it was, as expected, an agate. When [Ieyasu] was given the piece of coral from a ship en route, nobody was familiar with it, since at that time it still was something rare. He therefore made a drawing and asked all of the physicians for its name, which none of them could provide except for Sōjun, who said that it must be a piece of coral [...]<sup>13</sup>

This passage, which at first glance looks like a hymn of praise for Yoshida Sōjun 吉田宗恂 (1558–1610), provides some clues about the state of medical and botanical research and the role of foreign countries in contributing to an exchange of knowledge. The much-appreciated Sōjun was a physician who originally served Toyotomi Hidetsugu 豊臣秀次 (1568–1595) and later also Ieyasu, under whose aegis he became an adviser on botanical studies.<sup>14</sup> The *Sunpu Records* mention his engagement with Confucian studies under Fujiwara Seika 藤原惺窩 (1561–1619). His father, Yoshida Sōkei 吉田宗桂 (1512–1572), served as Ashikaga Yoshiharu's 足利義晴 (r. 1521–1546) personal physician and went twice to China. The first time was in 1539, when he stayed for two years to study medicine; the second time was in 1547, when he apparently impressed the Ming emperor Jiajing 嘉靖 (r. 1521–1567) with his medical skills and was therefore generously rewarded for his successful treatments.<sup>15</sup> There were also two Chinese medical works, Li Shizhen's 李時珍 *Bencao gangmu* 本草綱目 (Compendium of Materia Medica, 1596), which was donated to Ieyasu in 1607, and *Hejiju fang* 和劑局方 (Prescriptions of the Imperial Pharmacy, 1107–1110), originally a compilation of about 300 prescriptions.<sup>16</sup> Both works would prove important to the development of medical and botanical studies in seventeenth- and eighteenth-century Japan; these will be discussed in more detail below.<sup>17</sup>

The second shogun, Tokugawa Hidetada 徳川秀忠 (r. 1605–1623), was also very interested in botany, and particularly in flowers, an enthusiasm that led to the creation of flower gardens and the cultivation of *camellia japonica*. Under the rule of the third shogun, Tokugawa Iemitsu 徳川家光 (r. 1623–1651), medicinal gardens based on concepts laid out

<sup>13</sup> 'Tōshōgū gojikki 東照宮御実紀 22', *Kokushi taiki*, vol. 38, p. 346.

<sup>14</sup> Kosoto Hiroshi, *Nihon kanpō tenseki jiten* 日本漢方典籍辞典 (Encyclopaedia of Japanese Works on Kanpō Medicine) (Tokyo, 1999), p. 352.

<sup>15</sup> *Kokushi daijiten* 国史大辞典 (Encyclopaedia of Japanese History) (Tokyo 1993), vol. 14, p. 410. Yoshida House was also a famous money broker; see also Sugitatsu Yoshikatsu 杉立義一, *Kyō no ishiseki tanpō* 京の医史跡探訪 (Inquiry into the Medical History of Kyoto) (Kyoto, 1991), pp. 57–58.

<sup>16</sup> The number of formulas differ depending on the literature. According to Goldschmidt, the original text contained 297 formulas, whereas Kosoto specified 301; Asaf Goldschmidt, *The Evolution of Chinese Medicine: Song Dynasty, 960–1200* (London, 2009), p. 118; Hiroshi Kosoto, 'Volumes of knowledge: observations on Song-period printed medical texts', in *Tools of Culture. Japan's Cultural, Intellectual, Medical, and Technological Contacts in East Asia, 1000s–1500s*, (eds) Andrew E. Goble, Kenneth R. Robinson and Haruko Wakabayashi (Ann Arbor, 2009), p. 219.

<sup>17</sup> On the enormous influence of *Bencao gangmu* on the study of *materia medica* in Japan, see also Sugimoto Tsutomu 杉本つとむ, *Nihon honzōgaku no sekai. Shizen, iyaku, minzoku goi no tankyū* 日本本草学の世界, 自然 医薬 民族語彙の探究 (World of Japanese Materia Medica: In Search of Nature, Medicines, and People's Vocabulary) (Tokyo, 2011), pp. 22–61. In his work on Chinese *materia medica*, George Métaillé briefly outlines Chinese *materia medica* texts that became influential in Japan; see George Métaillé, *Traditional Botany: An Ethnobotanical Approach*. Part IV of Science and Civilisation in China, Vol. 6: Biology and Biological Technology, (ed.) Joseph Needham (Cambridge, 2015), pp. 545–567.

in the Taihō Code (703) were revitalised. Although the main purpose of this revival was to obtain medicines, it also enabled researchers to observe and test the medical efficacy of plants and to study different species, helping to distinguish between genuine medicinal plants and fakes. Fake medicines were a huge problem and botanical knowledge was indispensable in tackling this issue. The first two gardens were designed in Edo in 1638: the Northern Medicinal Garden (abandoned in 1681) and the Southern Medicinal Garden, which continued to exist as the Koishikawa Medicinal Garden and began to flourish under the aegis of Yoshimune. In 1640, the Northern and Southern medicinal gardens were created in Kyoto and other regions followed this example.<sup>18</sup> Until the era of Tokugawa Tsunayoshi 徳川綱吉 (r. 1680–1709), medicinal gardens were little more than ornamental exhibition gardens. However, they did promote the cultivation of rare plants, which appeared in books on herbalism, and were coveted as original objects to admire.<sup>19</sup>

Where Yoshimune differed from his predecessors was in his systematic and practical approach to medical and botanical studies. He sent out ‘commissioners for collecting medicinal herbs (*saiyakushi*), including Niwa Shōhaku 丹羽正伯 (1691–1756), Noro Genjō 野呂元丈 (1694–1761), Uemura Masakatsu 植村政勝 (1695–1777), and others to search for indigenous medicinal plants in every corner of the provinces’.<sup>20</sup> Niwa Shōhaku and Noro Genjō, as well as Matsuoka Gentatsu 松岡玄達 (1669–1747, also known as Joan 怨庵), were all disciples of the Confucian scholar and herbalist Inō Jakusui (1655–1715). They, together with Uemura Masakatsu and Abe Tomonoshin 安陪友之進 (1650–1753), would become central figures in the establishment and development of botanical studies; their names will appear again in connection to other Yoshimune projects.

What role did these ‘commissioners’ play in the effort to acquire an understanding of nature as the basis for developing various kinds of medicine? Essentially, these collectors were early botanists who received an order from the Bakufu to assess the medicinal value of the country’s flora and fauna and to cultivate selected plants in medicinal gardens. Niwa Shōhaku was the first commissioner to be given this assignment; in 1720, he, Noro Genjō, and several others went first to Hakone and later that year to Shinano (present-day Nagano), Kai (present-day Yamanashi), and Suruga (present-day Shizuoka). The following year, he went with Uemura Masakatsu to the provinces: Yamashiro (southern Kyoto Prefecture), Tanba (Kyoto and Hyogo), Tango (northern Kyoto Prefecture), Wakasa (western Fukui Prefecture), Ōmi (present-day Shiga), Mino (southern Gifu Prefecture), and all parts of Ōshū (comprising present-day Fukushima, Miyagi, Aomori, and Iwate prefectures, and part of Akita Prefecture).<sup>21</sup> The results of these investigations were reported in the nine-volume work *Shoshū saiyaku ki* 諸州採薬記 (Record of Drugs Collected from Various Provinces), also known as *Shokoku saiyaku ki* 諸国採薬記, which was compiled by Uemura Masakatsu and which he presented to Yoshimune in 1726. In total, it contains information about 27 provinces. For the most part, it describes temples, shrines, and famous places of natural beauty and historic interest. To a lesser extent, it discusses botanical findings and regional medicines.<sup>22</sup> The Tokugawa Jikki includes a short commentary on this endeavour:

Also Uemura Saheiji Masakatsu (guard of the medicinal herb garden in Komaba) has recently received the order to write down the topography and customs of the places

<sup>18</sup> Ueda Sanpei 上田三平, *Nihon yakuenshi no kenkyū* 日本薬園史の研究 (Research on the History of Japanese Medicinal Gardens) (Japan, 1972), pp. 12–13; for a list of medicinal gardens, see *ibid.*, p. 27.

<sup>19</sup> *Ibid.*, pp. 12 and 15.

<sup>20</sup> ‘Yūtokuin dono gojikki furoku 15’, *Kokushi taikai*, vol. 46, p. 291.

<sup>21</sup> Yasuda Ken 安田健, ‘Kaidai 解題 (Explanatory Notes)’, in *Saiyakushi* 採薬志 (Record on Collections of Medicinal Drugs) 1, vol. 6 of *Kinsei rekishi shiryō shūsei* 近世歴史資料集成, second series (Tokyo, 1994), p. 1251.

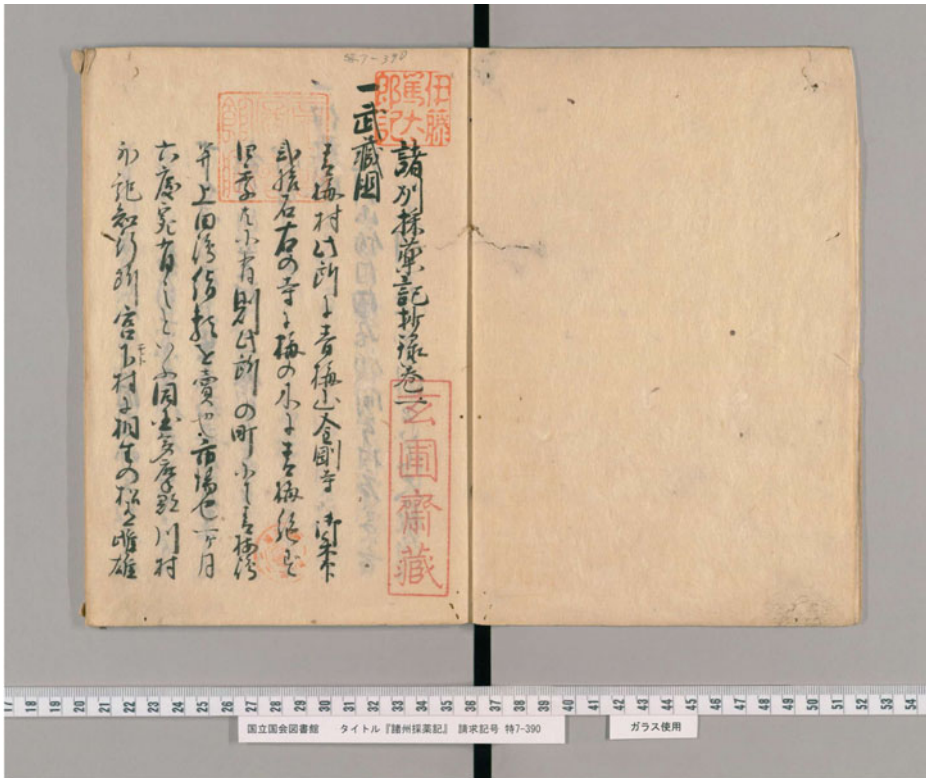
<sup>22</sup> Fukui Tamotsu 福井保, *Edo bakufu hensanmono* 江戸幕府編纂物 (Compiled Works of the Edo Bakufu) (Tokyo, 1983), p. 191. See also [Figure 1](#).



he visits while traveling through all of the provinces to collect medicinal drugs. Moreover, Narushima Dōchiku Nobuyuki noted that Masakatsu was ordered to make a report to ensure that the shōgun was well informed. In the eighth month of Kyōhō 11 (1726) it was finished and given to the shōgun.<sup>23</sup>

The report became excessively long and Masakatsu was asked to produce an abbreviated version; this was *Shoshū saiyakuki shōroku* 諸州採薬記抄録, which he gave to Yoshimune in 1740. In 1755, he gave a copy to the ninth shogun Tokugawa Ieshige 徳川家重 (r. 1745–1760).<sup>24</sup>

It was not the only report of its kind. The activity of collecting medicinal plants throughout the country did not stop when Yoshimune retired; instead, it continued until the end of the Tokugawa period and resulted in many books. Among them, we find works commissioned by the government, as well as texts that emerged without any connection to the Bakufu. Their content was not restricted to medicinal drugs, but dealt with botany more generally.<sup>25</sup>



**Figure 1.** A handwritten copy of *Shoshū saiyakuki*, 1790. Source: National Diet Library, Digital Collections.

<sup>23</sup> 'Yūtokuin dono gojikki furoku 10', *Kokushi taikai*, vol. 46, p. 244.

<sup>24</sup> Fukui, *Hensanmono*. Many handwritten copies of *Shoshū saiyakuki*, especially of the abbreviated version, have survived and have been digitised by the National Diet Library; see <http://dl.ndl.go.jp/search/searchResult?featureCode=all&searchWord=%E8%AB%B8%E5%B7%9E%E6%8E%A1%E8%96%AC%E8%A8%98&viewRestricted=0> (accessed 18 August 2023).

<sup>25</sup> Yasuda Ken, 'Kaidai', p. 1251. These botany surveys appear to have served a second purpose, in addition to collecting plants and minerals. They offered an ideal opportunity for spying; see Federico Marcon, *The Knowledge of Nature and the Nature of Knowledge in Early Modern Japan* (Chicago; London, 2015), pp. 125–126.

A major source of concern in the acquisition of *materia medica* was the circulation of fake drugs. Yoshimune was aware that the traders and merchants who assessed and sold medicinal drugs played a key role in acquiring and disseminating medicines: he therefore had to include them in plans to regulate the circulation of medicines. In 1722, the year after Niwa Shōhaku left to collect herbs, the Bakufu summoned Matsuoka Joan to Edo, where he met with officials and representatives of the Ōsaka, Sakai, and Shizuoka pharmacy guilds. The purpose of this meeting was to draft a list of items to be investigated and to hear the opinions of participants, which, Sōda believes, also reflected the business and market interests of the traders attending from Osaka and Sakai.<sup>26</sup> The result of this meeting was the establishment of an agency called *Wayakushu aratame kaisho* 和薬種改会所 (Committee for the Evaluation of Domestic Medicinal Drugs) to identify and verify indigenous drugs and to assess and control their quality. A committee of the same type, set up the following year in Ōsaka, expanded its investigations to medicines imported from China, including Western drugs brought to Japan on a Dutch East India Company vessel.<sup>27</sup> These committees did not last very long; they were abolished in 1738 for various reasons. One problem was that the regulation and supervision of medicinal drugs was becoming more logistically challenging, as the drugs had to be transported to Edo, examined, approved, and given a seal of warranty, before being sent back. As the pharmacy emerged as a place to obtain crude drugs, it created a new profession—the pharmacist—who became a powerful figure through his acquired knowledge of *materia medica* and the economic strength he acquired from that. As a consequence, it became more and more difficult for the Bakufu to intervene and control the quantity or quality of drugs.<sup>28</sup>

Yet not all business was left to the medical market. Another one of Yoshimune's projects was the cultivation of ginseng. Classified as one of the superior drugs in the Chinese herbal classic *Shennong bencao jing* 神農本草經 (Divine Farmer's Classic on *Materia Medica*, circa 200–250), ginseng was widely valued as a panacea and medicine offering regeneration and rejuvenation. It has many names in Japanese, reflecting its history; it is known as Koryō-ginseng (*kōrai ninjin* 高麗人參) or as Korean ginseng (*chōsen ninjin* 朝鮮人參) because it was first mentioned during the Tenpyō period (729–749), as a gift from the kingdom of Palhae (698–926). It was further described as otane-ginseng (*otane ninjin* 御種人參) after Yoshimune, or Jilin-ginseng (*kitsurin ninjin* 吉林人參) after its place of origin in China.<sup>29</sup> Since it was a very expensive medicine and in great demand in early modern Japan, many fake and inferior products circulated. A person caught selling fake ginseng generally faced death, as happened in 1730, when someone selling platycodon root dyed in green tea purporting to be the much sought-after ginseng root was caught and sentenced to death.<sup>30</sup>

The government's cultivation of ginseng turned out to be an arduous venture, due to the complex environment that the plant requires to grow. Yoshimune faced various difficulties before his botanical specialists finally succeeded. The specialist who was most successful at cultivating ginseng was Tamura Ransui 田村藍水 (1718–1776) and the

<sup>26</sup> Sōda Hajime 宗田一, 'Kinsei honzōgaku to kokusan yakushu 近世本草学と国産薬種 (Materia medica in the early modern period and the domestic production of crude drugs)', *Jitsugakushi kenkyū* 実学史研究 (Study of the History of Practical Learning) 1, 1984, p. 89.

<sup>27</sup> Kazuhiko Kasaya, 'The Tokugawa Bakufu's politics for the national production of medicines and Dodonaeus' "Crujdeboeck", in *Dodonaeus in Japan. Translation and the Scientific Mind in the Tokugawa Period*, (eds) W. E. Vande Walle and K. Kasaya (Leuven; Kyoto, 2001), pp. 174–175.

<sup>28</sup> Yoshioka Shin 吉岡信, *Edo no kigusuriya* 江戸の生薬屋 (Pharmacies in Edo) (Tokyo, 1994), p. 54.

<sup>29</sup> Suzuki Hiroshi 鈴木洋, *Kanpō no kusuri no jiten* 漢方のくすりの事典 (Dictionary of Kanpō Medicines) (Tokyo, 1995), pp. 319–320. For its other names, see also Imamura Tomo 今村鞆, *Ninjinshi* 人參史 (History of Ginseng) (Kyoto, 1971), vol. 7, especially pp. 40–42.

<sup>30</sup> Yoshioka, *Edo no kigusuriya*, p. 56.

successfully cultivated ginseng he finally produced was called ‘noble seed’ (*otane*) in honour of Yoshimune and distributed to every region.<sup>31</sup>

One of the oldest and most illustrious Tokugawa medicinal gardens, where the cultivation of plants was attempted and studied, was the shogunal garden at Koishikawa, mentioned above. In 1721, it was enlarged to ten times its former size, providing an area of 16.4 hectares for cultivating plants.<sup>32</sup> It is also at this location that another pillar of Yoshimune’s healthcare projects was pursued: the Koishikawa Sanatorium.

## Dispensary

In Holland, there is a location called ‘gasthuis’, which can be translated as an institution for sick people (*minjin byōin*). This location is immeasurable, huge, and the reason for this is that it hosts travellers who have come together here from abroad and also ill people of the country, regardless of their social status. It is similar to *Hiden’in* and *Seyakuin* which [both] were established by Shōmu Tennō, and the Koishikawa Sanatorium.<sup>33</sup>

In the above remarks, Morishima Chūryō 森島中良 (1756–1810) used the term ‘hospital’ (*byōin*) for the first time in *Kōmō zatsuwa* 紅毛雜話 (Gossip Stories about the Red-haired, 1787). The *Seyaku’in* 施薬院 or *Yaku’in* Morishima mentioned in this passage was a dispensary established in 730 in Nara, affiliated with the residence of the empress Kōmyō 光明皇后 (701–760). Although it had stopped functioning as a dispensary by 760 and was moved to Heian-kyō (Kyoto) in 836, Shinmura quotes from the *Ruiju sandai-kyaku* 類聚三代格 for the year 825 to show that the institution was still intact and organised into administrative ranks, which included the position of physician.<sup>34</sup> We know that, from the eleventh century onwards, the physician’s position was hereditary, held initially by the Tanba family of physicians and later, during the Muromachi period, partly by the Wake family. However, the *Seyaku’in* lost its essential function as a place of free medical treatment towards the end of the Heian period. Buddhist temples took over this task in the following centuries, providing some free treatment.<sup>35</sup> Indeed, there is evidence of such activities in the thirteenth century at the Gokurakuji Temple 極楽寺 in Kamakura, where the monk Ninshō 認性 (1217–1303), assisted by the Hōjō-clan, established extensive medical facilities.<sup>36</sup>

The second hospital mentioned is the *Hiden’in* 悲田院. Based on the Buddhist notion of ‘merit’ (J. *fukuden*; Skt. *puṇya-kṣetra*),<sup>37</sup> it served as a general establishment that cared for starving and destitute people and others who lacked family support. Japanese scholarship

<sup>31</sup> For a detailed account of the cultivation of ginseng, see Imamura, *Ninjinshi*, vol. 5; see also Kasaya, ‘The Tokugawa Bakufu’s politics’, pp. 175–180.

<sup>32</sup> Imamura, *Ninjinshi*, p. 173. See also Ōba Hideaki 大場秀章 (ed.), *Nihon shokubutsu kenkyū no rekishi. Koishikawa shokubutsuen sanbyakunen no ayumi* 日本博物研究の歴史.小石川植物園三百年の歩み (History of Japanese Botanical Studies. The Development of Three Hundred Years of Koishikawa Botanical Garden) (Tokyo, 1996); Ueno Masuzō 上野益三, *Nihon hakubutsugakushi* 日本博物学史 (History of Japan’s Natural History) (Tokyo, 1973).

<sup>33</sup> ‘Byōin’, *Kokushi daijiten*.

<sup>34</sup> Shinmura Taku 新村拓, *Nihon iryō shakaishi no kenkyū. Kodai chūsei no minshū seikatsu to iryō* 日本医療社会史の研究.古代中世の民衆生活と医療 (Study of Japan’s Social History of Medical Care: People’s Lives and Medical Care in Ancient Times and the Middle Ages) (Tokyo, 1985), p. 40.

<sup>35</sup> *Ibid.* The Wake and Tanba families were famous physicians, who also played an important role in the following centuries.

<sup>36</sup> Andrew E. Goble, ‘Kajiwara Shōzen (1265–1337) and the medical Silk Road: Chinese and Arabic influences on medieval Japanese medicine’, in *Tools of Culture*, Goble et al. (eds), p. 232.

<sup>37</sup> Literally ‘field of merit’; for the Sanskrit explanation, see <https://www.oxfordreference.com/display/10.1093/oi/authority.20110803100354938> (accessed 31 August 2023).



has not clearly identified the first such institution to be established. It is assumed that one of the four buildings inside the Shitennōji Temple complex built by Shōtoku Taishi 聖徳太子 (574–627) provided a treatment centre for destitute people; it is likely that the Kōfukuji Temple, founded in 669 by the Fujiwara clan as Yamashina-dera, incorporated such an institution. Empress Kōmyō is known to have established a *hiden'in* alongside the Seyaku'in in 730, but this served as a shelter for orphans and destitute people, in contrast to the Seyaku'in, which focused on treatment. Between the eighth and twelfth centuries, two such institutions existed in Heian-kyō and they were named the Western and Eastern Hiden'in, after the cardinal directions. These centres repeatedly burned down and were rebuilt; only the Eastern Hiden'in survived into the Middle Ages. In 1273, an institution known as Ango'in Hiden'in 安居院悲田院 appeared for the first time in the records of the Western Hiden'in. In the fifteenth century, the Ango'in became the crematorium of Emperor Go-Hanazono 後花園天皇 (1419–1471) and Hosokawa Katsumoto 細川勝元 (1430–1473), a famous deputy to the shogun. The activities of the Ango'in as a sub-temple of the Enryakuji Temple are well known; it is likely that a *hiden'in* was either attached to the living quarters of the Ango'in or established in its vicinity. Researchers believe that, between the end of the thirteenth and the beginning of the fourteenth centuries, only two *hiden'in* survived as government-level institutions caring for the needy:<sup>38</sup> the Eastern Hiden'in and the Ango'in Hiden'in.

Finally, the Koishikawa Sanatorium (*Koishikawa yōjōsho* 小石川養生所 or simply *Yōjōsho*) was established by Yoshimune in 1722. The impetus for creating this official dispensary was a petition from the city-physician Ogawa Shōsen 小川笙船 (1672–1760). In a letter that he posted in a complaints box in front of the Supreme Court of the shogunate (*Hyōjōsho* 評定所), Shōsen wrote, 'I would be very grateful and happy if the shōgun gave the order to establish a dispensary. There are extremely poor ill people to be seen in the quarters of the town and for these countless miserable people, such an institution would be a blessing.'<sup>39</sup> This concern is also detailed in the *Tokugawa Jikki*:

When the poor in remote regions, for example, become ill, they cannot rely on a doctor and many are likely to meet an untimely death. Since this deplorable state of affairs has lasted for a long time, a dispensary has been founded in Kyōhō 7 (1722) and it has been proclaimed that medicine should be granted upon application made by the incoming needy. Disciples of the medical staff as well as ordinary doctors do widely treat the sick. Since the orders were given that those who intended to test their skills should come to that place and practice without restriction, doctors and also patients came day by day in groups from other places. It was reported that medical treatment was extensively carried out.<sup>40</sup>

This institution, originally designed for 40 inpatients, was soon overcrowded. In 1724, for example, the number of inpatients increased to 57 and the number of outpatients to 314, forcing the sanatorium to stop admitting outpatients, due to a shortage of physicians.<sup>41</sup> Until 1843, the *Yōjōsho* was staffed by doctors in the service of the Bakufu; these were later replaced by 'ordinary' physicians (*machi'i*).<sup>42</sup> From 1830 onwards, the *Yōjōsho* also

<sup>38</sup> Shinmura, *Nihon iryō no shakaishi no kenkyū*, p. 37; *Kokushi daijiten*.

<sup>39</sup> 'Koishikawa yōjōsho no koto 小石川養生所之事 (About the Koishikawa Sanatorium)', *Sen'yō ruishū* 撰要類集 7-2, in Minami Kazuo 南和男, *Edo no shakai kōzō* 江戸の社会構造 (Edo's Social Structure) (Tokyo, 1969), p. 299.

<sup>40</sup> 'Yūtokuin dono gojikki furoku 15', *Kokushi taikai*, vol. 46, p. 289.

<sup>41</sup> For the figures, see *Kyōhō sen'yō ruishū*, in *Nihon iryōshi* 日本医療史 (History of Medical Care in Japan), (ed.) Shinmura Taku (Tokyo, 2006), p. 114. *Kyōhō sen'yō ruishū* is a collection of laws and ordinances from 1716–1753, digitised by the National Diet Library.

<sup>42</sup> *Ibid.*

became a training ground for physicians of the *Igakkan*, the Bakufu's medical academy, which was founded in 1791 through the takeover of a private medical school.<sup>43</sup> However, towards the end of the Tokugawa period, the image of the sanatorium as a place for the poor and sick was damaged. The institution, originally a place of treatment and care, deteriorated as a result of corruption and carelessness on the part of the nursing staff, doctors, and officials. In 1865, it was finally abandoned by the Bakufu, who left it in the care of the (Bakufu) physician Taki Yōan 多紀養安.<sup>44</sup> Today, a well is all that remains of Yoshimune's *Yōjōsho*.

It is difficult to assess the extent to which the *Yōjōsho* contributed to the welfare of ordinary people. Although it is hard to imagine that it greatly improved the dire situation of the poor and sick, it was nevertheless an important initiative, part of the move towards a more systematic approach to public healthcare. Given that it lasted until the end of the Tokugawa period and was not abandoned after Yoshimune's time as shogun, it must have retained some relevance for succeeding governments as a place of learning and public health.<sup>45</sup> Yoshimune also engaged in another activity that helped to enhance medical knowledge and expand welfare: the publication of medical texts and the dissemination of one self-help book in particular.

### Yoshimune and his publishing activities

He also always looks at medical books. Works like *Shenghui fang*, *Hejiju fang*, *Tong'ui pogam*, and *Waitai miyao* are always piled up at the right side of his seat.<sup>46</sup>

From the works mentioned in this passage we have already come across *Hejiju fang*, which was mentioned in connection with Ieyasu. Before discussing the works that Yoshimune commissioned or had revised for broad dissemination, it is useful to understand the works he was reading. Yoshimune seems to have appreciated the *Shenghui fang* and *Waitai miyao* discussed above. *Shenghui fang* 聖惠方 (Sacred and Beneficial Prescriptions) is the abbreviated title for *Taiping shenghui fang* 太平聖惠方 (Sacred and Beneficial Prescriptions of the Taiping Era, 992), a compilation of a huge 100-volume formulary that the Song emperor Taizong 太宗 (r. 976–997) commissioned in 978. It contains almost 1,700 formulas collected throughout the country, which Taizong wished to distribute as widely as possible.<sup>47</sup> The other work, *Waitai miyao* 外臺秘要 (Arcane Essentials from the Imperial Library), is a 40-volume book of prescriptions compiled in 752 by Wang

<sup>43</sup> It was also the setting of Shimizu Satomu's popular novel, *The Tales Of Dr Redbeard* (*Akahige shinryōtan* 赤ひげ診療譚, 1958), which was made into the film *Redbeard*, directed by Kurosawa Akira.

<sup>44</sup> Shinmura (ed.), *Nihon iryōshi*; it is unclear whether the Taki whom Yōan Shinmura mentions was a descendant of the influential Taki family of physicians, whose ancestry can be traced back to Tanba Yasuyori, a representative of an unknown branch of this family, or just a confused reference to Taki Antaku 多紀安琢 (1824–1876). No person of this name is mentioned in Mori Junsaburō 森潤三郎, 'Takishi no jiseki 多紀氏の事績 (Achievements of the Taki House)', in *Kōshōgaku ronkō: Edo no kosho to zōshoka no chōsa* 考証学論攷: 江戸の古書と蔵書家の調査 (About the Study of Evidence: Investigations into Edo's Old Documents and Book Collectors) (*Nihon shoshigaku taikai* 日本書誌学体系) (Kyoto, 1985), or the *Kansei chōshū shokafu* 寛政重修諸家譜 (Genealogies of Various Houses Compiled in the Kansei Period), 9 vols (Tokyo, 1922–1923).

<sup>45</sup> For more about the changing fortunes of the hospital, see Andō Yūichirō 安藤優一郎, *Edo no yōjōsho* 江戸の養生所 (Edo's Sanatorium) (Tokyo, 2005). Little research has been carried out in Western scholarship into the role of dispensaries and hospitals in Japan's medical history. In Japanese scholarship, the first steps in this field have been made by Shinmura Taku, who examined healthcare institutions of ancient times and the Middle Ages (see footnote 34).

<sup>46</sup> 'Yūtokuin dono gojikki furoku 15', *Kokushi taikai*, vol. 46, p. 290.

<sup>47</sup> Kosoto, 'Observations on Song-period printed medical texts', p. 213. See also Goldschmidt, *The Evolution of Chinese Medicine*, chapter 4.

Tao 王燾 (670–755) of the Tang Dynasty.<sup>48</sup> It contains prescriptions for use in internal medicine, surgery, obstetrics, and other fields, as well as information on collecting and preparing drugs, acupoints, and moxibustion. Wang opposed acupuncture, as he believed that it ‘can kill the living but cannot revive the dying’.<sup>49</sup>

It is the Chinese work *Hejiju fang* and the Korean manual *Tong’ui pogam* 東医宝鑑 (Mirror of the Treasures of Eastern Medicine, 1613) that Yoshimune considered important for the dissemination of medical knowledge. In 1724, he decided to make a Japanese version of the popular Korean work, and in 1732, he commissioned a translation of the Chinese work. Additionally, in 1729, he commissioned a self-help manual for ordinary people, *Fukyū ruihō* 普救類方 (Classified Methods for General Help). As it is no exaggeration to say that these works form the core of Yoshimune’s medical publishing, they will be described in more detail below.

### *Tong’ui pogam*

This Korean medical book was compiled by a famous Korean physician, Hō Chun 許浚 (1546–1615), and published in 1613, during the Chosŏn Dynasty. Fukui regards it as the most authoritative medical book in Korea, a view supported by the fact that most later Korean medical books expounded on its foundational knowledge.<sup>50</sup> The *Tong’ui pogam* is divided into one section that deals with internal medicine consisting of four booklets, a second section on external medicine comprising another four booklets, 11 booklets on difficult diseases, three on remedies, one on acupuncture and moxibustion, and two that simply provide a table of contents.<sup>51</sup> The official reason for its publication was that Sŏnjo 宣祖 of Chosŏn (r. 1567–1608) felt that the theories on diseases and the range of treatments, methods, and remedies developed by former generations were no longer able to meet the needs of the time. He therefore decided to compile an up-to-date anthology of medical knowledge. At the beginning of the Chosŏn Dynasty (1392–1910), *Hyangyak chipsŏng pang* 鄉藥集成方 (Compilation of Native Prescriptions, 1433) was considered the most influential text on Korean medicine. It is based on an earlier work, similarly called *Hyangyak chesaeng chipsŏng pang* 鄉藥濟生集成方 (Compilation of Benevolent Native Prescriptions, 1398), but it also draws on Chinese medical books. After the Korean kingdom came into contact with the amalgamated medicine of the Jin-Yuan period (1115–1368) and the newly established medicine of the Ming Dynasty (1368–1644), it viewed its own medical works as no longer up-to-date. Sŏnjo therefore decided to commission a new selection of medical works, assigning Hō Chun to the task in 1586. Together with other physicians, he set up an editorial office. This endeavour was interrupted by Toyotomi Hideyoshi’s invasions of Korea between 1592 and 1598, which dispersed Hō Chun’s collaborators in all directions. He therefore had no choice but to stop the project. After Hideyoshi’s withdrawal and repeated demands from Sŏnjo Hō Chun, he resumed work on the book and finished the section on internal medicine during Sŏnjo’s reign. He finally completed the work in 1610 under Kwanghaekun 光海君 of Chosŏn

<sup>48</sup> Also known as *Waitai biyao*.

<sup>49</sup> *Chinese-English Chinese Traditional Medical Word-Ocean Dictionary* 漢英中医辞海 (Taiyuan, 1995), p. 570; *Waitai miyao*, vol. 1 with a Foreword by Wang Tao, *Mingban fanke Songban jiaokan Waitai miyao fang* 明版翻刻宋版校勘外臺秘要方 (Ming Period published and Song Period revised edition of *Waitai miyao*), *Ju pingan yangshouyuan ban yingyin* 據平安養壽園版影印 (Pingan and Yangshouyuan edition) (Taipei, 752 [1980]), p. 55a.

<sup>50</sup> Fukui Tamotsu 福井保, *Edo bakufu kankōbutsu* 江戸幕府刊行物 (Publications of the Edo Bakufu) (Tokyo, 1985), p. 80.

<sup>51</sup> *Ibid.*

(r. 1608–1623) and published it three years later with the title *Tong'ui pogam*.<sup>52</sup> That the work took so long may reflect both a missed opportunity to discuss various methods and prescriptions with other physicians, and also the Japanese looting of books, which forced Hō Chun to draw more upon his personal experience as a physician.<sup>53</sup>

*Teisei tō'i hōgan* 訂正東医宝鑑 (The Revised Mirror of the Treasures of Eastern Medicine), as the Kyōhō edition of *Tong'ui pogam* was titled, was the edition created by Hosokawa Tōan 細川桃庵 (Motomichi 元通) (1648–1723), who corrected the original and added guiding marks for Japanese readers.<sup>54</sup> In the Afterword, Tōan tells the reader that he began revising the book in March 1722 and finished it in around December of the same year, receiving the rank of 'Second Monk' (*hōgen*) for his achievement.<sup>55</sup> Originally, Manase Yōan'in 曲直瀬養安院<sup>56</sup> was assigned to this task but he became ill and asked Tōan to make the revisions instead.<sup>57</sup> Tōan passed away the year before the first publication in 1724, when booksellers in Kyōto were encouraged to sell and disseminate it. It was reprinted in 1730 and sold at a reduced price so that commoners could afford it. There must have been considerable demand for the book after this, as Osaka requested the plates for a reprint, which came out in 1799. According to the *Tsūkō Ichiran* 通航一覽 (a compilation of sources documenting Japan's relations and negotiations with foreign countries), this 1799 reprint was once more exported to Qing China via Nagasaki in 1811 and 1837. In China, these volumes were in turn reprinted in 1890, and later, a Shanghai lithographic print edition was also produced.<sup>58</sup>

Numerous treatment methods and prescriptions in the *Tong'ui pogam* were drawn from Chinese medical works of the Song, Yuan, and Ming dynasties.<sup>59</sup> Drawing on the sources that influenced the text, Asami argues that it is less a medical book than a huge work on natural history. According to her, the text was heavily influenced by two famous works of the Ming Dynasty, the aforementioned *Bencao gangmu* and *Bencao pinhui jingyao* 本草品彙精要 (Essentials of Herbal Collections), compiled by Liu Wentai 劉文泰 (dates unknown) in 1505.<sup>60</sup> However, it is hard to believe that the latter influenced *Tong'ui pogam* since, according to another source, neither of Wang Daochun's supplements (王道純, ?–1644) were published before 1700.<sup>61</sup>

Setting aside the *Bencao gangmu*, the *Tong'ui pogam* relied on other sources that deserve closer attention. Asami does not seem to be aware of these texts, although they became

<sup>52</sup> Miki Sakae 三木栄, *Chōsen ishoshi* 朝鮮医書誌 (Bibliography of Korean Medical Books), 2nd edn (Ōsaka, 1973), pp. 98–99; see also the preface by Yi Chōngkyun 李廷龜 (dates unknown) to *Tong'ui pogam*, available at [http://archive.wul.waseda.ac.jp/kosho/ya09/ya09\\_00773/ya09\\_00773\\_0003/ya09\\_00773\\_0003.pdf](http://archive.wul.waseda.ac.jp/kosho/ya09/ya09_00773/ya09_00773_0003/ya09_00773_0003.pdf) (accessed 18 August 2023).

<sup>53</sup> Kornicki assumes that the invasions increased the supply and variety of printed copies of Chinese (medical) texts; see Peter Kornicki, 'Korean books in Japan: from the 1590s to the end of the Edo period', *Journal of the American Oriental Society* 133.1 (January–March 2013), p. 79.

<sup>54</sup> Fukui, *Edo bakufu kankōbutsu*, p. 80; the Kyōhō edition is included in the series Yasuda Ken and Asami Megumi (eds), *Kinsei rekishi shiryō shūsei* 近世歴史資料集成 5, vol. 5 (Tokyo, 2009). See also Figure 2.

<sup>55</sup> *Tong'ui pogam*, Afterword, p. 3a. Unless otherwise noted, all dates have been converted using the Gregorian calendar.

<sup>56</sup> Probably Manase Seikei 正珪 (1686–1748) who is also known as Manase Yōan'in.

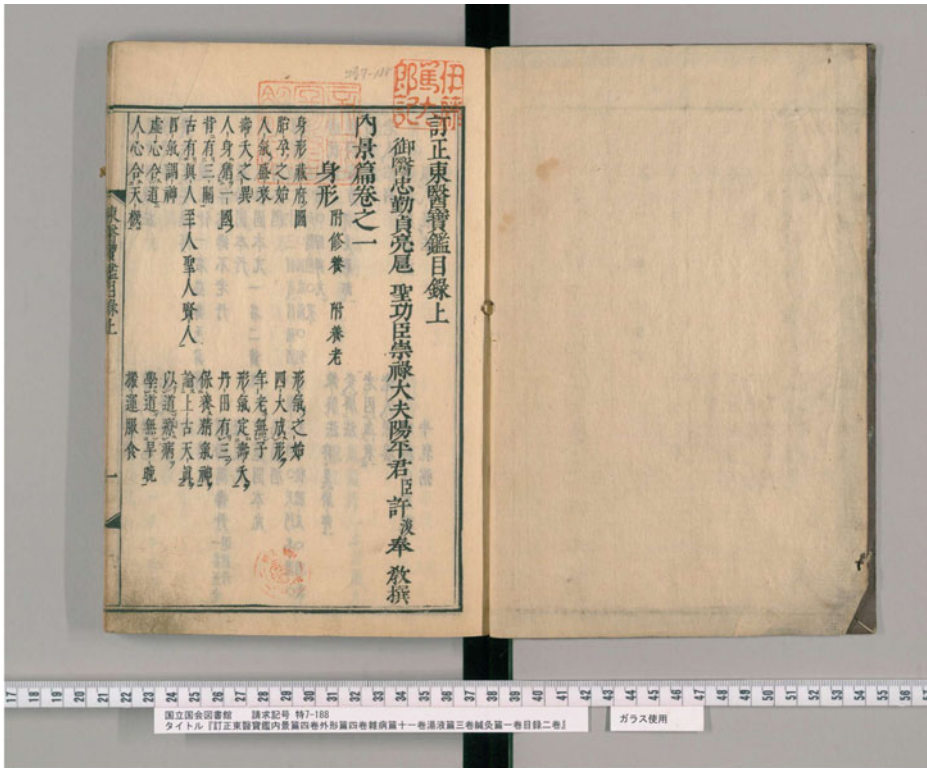
<sup>57</sup> *Shōsan nenpu* 商山年譜, in Kosoto Hiroshi 小曾戸洋 and Seki Nobuyuki 関信之, 'Bakufu ikan Hosokawa Tōan no jiseki 幕府医官細川桃庵の事績 (Achievements of the Bakufu physician Hosokawa Tōan)', *Nihon ishigaku zasshi* 日本医史学雑誌 (*Journal of Japanese History of Medicine*) 39 (1993.3), p. 35.

<sup>58</sup> Fukui, *Edo bakufu kankōbutsu*, pp. 80 and 83; see also Miki, *Chōsen ishoshi*, p. 101.

<sup>59</sup> A list of the main sources used is given in Miki, *Chōsen ishoshi*, p. 97.

<sup>60</sup> Asami, 'kaisetsuhen sakuinhen 解説編索引篇 (Explanation volume, Index bolume)', in *Igakuhen* 医学編, vol. 6 of *Kinsei rekishi shiryō shūsei*, fifth series, 近世歴史資料集成, (eds) Asami Megumi 浅見恵 and Yasuda Ken 安田健 (Tokyo, 2014), p. 3

<sup>61</sup> *Chinese-English Chinese Traditional Medical Word-Ocean Dictionary*, p. 489.



**Figure 2.** Revised Japanese edition of *Tong'ui pogam*, 1724. Source: National Diet Library, Digital Collections.

very popular during the Tokugawa period and inspired Japanese doctors to write many commentaries. These are the *Yixue rumen* 医学入門 (Introduction to Medicine, 1575) written by Li Chan 季梈 (in the late sixteenth to early seventeenth centuries) and *Wanbing huichun* 万病回春 (Return of the Ten-thousand Diseases in Springtime, 1587) written by Gong Tingxian 龔延賢 (1522–1619).

To begin with *Yixue rumen*, this text was one of the most influential introductory medical textbooks of the Ming Dynasty. After its initial publication in 1575, it was reprinted at least five more times, and during the Qing period, there were as many as 13 editions. This book had also a great impact on Tokugawa Japan, where it went through at least 16 editions.<sup>62</sup> *Wanbing huichun*, influenced by *Yixue rumen*,<sup>63</sup> enjoyed even greater popularity. This eight-volume work was reprinted at least 20 times from the beginning of the Keichō era (1596–1615) to the mid-Tokugawa period. It was also accompanied by several supplementary readers, of which *Manbyō kaishun shinan* 万病回春指南 (Instruction on the Return of the Ten-thousand Diseases in Springtime, 1688) by Okamoto Ippō 岡本一抱 (1654–1716) can be regarded as the most prominent.<sup>64</sup>

<sup>62</sup> Angela Leung, 'Medical instruction and popularization in Ming-Qing China', *Late Imperial China* 24.1 (2003), p. 135.

<sup>63</sup> *Ibid.*, p. 136.

<sup>64</sup> Kosoto Hiroshi, *Nihon kanpō tenseki jiten*, p. 364. For more information on Okamoto Ippō and the controversies about his easy-to-read treatises and commentaries written in kana for his students, see Daniel Trambaiolo, 'The languages of medical knowledge in Tokugawa Japan', in *Rethinking East Asian Languages, Vernaculars, and Literacies, 1000–1919*, (ed.) Benjamin A. Elman (Leiden; Boston, 2014), pp. 155–156.



The impact of *Bencao gangmu* on Japan was overwhelming. In 1607, it was donated to Tokugawa Ieyasu by the Neo-Confucian thinker Hayashi Razan 林羅山 (1583–1657), who obtained it in Nagasaki. Soon afterwards, in 1637, the first Japanese reprint was published, triggering a boom in botanical studies that ushered in the beginning of Japanese botany research.<sup>65</sup> One major achievement resulting from the study of the *Bencao* was Kaibara Ekiken's 貝原益軒 (1630–1714) *Yamato honzō* 大和本草 (Materia Medica of Japan, 1704). In this work, Ekiken did not merely translate *Bencao*'s content; he also showed evidence of his own fieldwork and experience, taking a first step towards what Endō has called independent Japanese studies on *materia medica*.<sup>66</sup> Ekiken was originally a Confucian philosopher in the service of the daimyō of the Fukuoka domain in Chikuzen Province (present-day Fukuoka Prefecture). Although he had no disciples and his teaching did not lead to the foundation of a school, a new tradition of botanical studies began to develop in Kyoto. It started with Inō Jakusui 稲生若水 (1655–1715), who is famous for his work *Shobutsu ruisan* 庶物類纂 (Classified Collection of All Things, 1747), which he compiled with his disciple, Niwa Shōhaku, whose name is already familiar from other Yoshimune projects and who completed the work after Jakusui's death.<sup>67</sup>

We do not know much about the actual impact of the *Tong'ui pogam* on forms of medicine practised in early modern Japan, apart from the fact that it was highly popular and many editions were published. What we do know, at least from the testimony of traditional medical practices in Korea, is that that *Tong'ui pogam* has not lost any of its appeal—even in the present day—as it was selected for UNESCO's Memory of the World Programme and has recently been translated into English.<sup>68</sup>

### Fukyū ruihō

The next book Yoshimune commissioned was a medical manual explicitly designed to be used as a practical guide by members of the general public who lacked access to a doctor. In contrast to *Tong'ui pogam* and *Hejju fang*, which are Japanese editions of a non-Japanese text, this text was an independent work. *Fukyū ruihō*, as the *Tokugawa Jikki* explains, was a handbook that aimed 'to help the indigent and others in distant provinces. Therefore, he [Yoshimune] ordered Bakufu physicians to gather many books, even those with strange formulae, for immediate use'.<sup>69</sup> For the compilation, he chose two physicians: Hayashi Ryōteki Motoakira, the physician in charge of the outer parts of the castle (*ban'i*), and Niwa Shōhaku Sadamoto, the physician in charge of the officials who maintained and repaired the shogunal palace (*kobushin ishi*). In 1729, Imaōji Chikaaki 今大路親顯 (1675–1735) was ordered to write a Foreword and the authors were paid ten silver pieces each for helping to compile this

<sup>65</sup> Mayanagi claims that the Jinling edition of *Bencao gangmu* came to Japan in 1604, while Watanabe et al. give the year as 1607. Mayanagi Makoto 真柳誠 and Tomobe Kazuhiro 友部和弘, 'Chūgoku iseki torai nendai sōmokuroku (Edo ki) 中国医籍渡来年代総目録 (江戸期) (Chronological list of Chinese medical books brought to Japan in the Edo period)', *Nihon Kenkyū* 日本研究 (Japan Studies) 7 (1992), p. 177; Watanabe Kōzō 渡辺幸三, *Honzōsho no kenkyū* 本草書の研究 (Study of *Materia Medica* Books) (Ōsaka, 1987), p. 136. See also Endō Shōji 遠藤正治, *Honzōgaku to yōgaku: Ono Ranzan gakutō no kenkyū* 本草学と洋学:小野蘭山学統の研究 (Studies of *Materia Medica* and Western Studies: An Investigation into Ono Ranzan) (Kyoto, 2003), pp. 157–158.

<sup>66</sup> Endō, *Honzōgaku to yōgaku*, p. 158.

<sup>67</sup> *Kokushi daijiten* 1, p. 762.

<sup>68</sup> Ahn Sang Woo and Kwon Ohmin (eds), *Dongui bogam: Treasured Mirror of Eastern Medicine*, (trans) Kim Namil and Cha Woong Seok et al. (Seoul, 2013).

<sup>69</sup> 'Yūdono gojikki furoku', *Kokushi taikēi*, vol. 46, p. 291.

book.<sup>70</sup> From a proclamation issued by the shogunate in 1730, we know that it was published in 12 separately bound volumes and that Yoshimune wished to have the whole manual sold at a fixed price so that poor people might be relieved from the torment of sickness by means of a book that would teach them about remedies and provide immediate help.<sup>71</sup>

The book itself is written in an easy-to-understand Japanese using mainly hiragana; the Chinese characters have furigana glosses to facilitate reading. In the Preface, the authors comment on the difficulties of adapting Chinese recipes to suit Japanese environmental realities—in other words, the challenge of finding appropriate plants and animals in Japan. At the beginning of the first book is a table of contents, in which diseases are arranged in accordance with the ‘*a capite ad calcem*’ classification system, which starts from the top of the body, listing eye, ear, and other diseases of the head. This classification follows a list of common diseases, as well as emergency cases, such as injuries and accidents. The illustrations in the final volume were made by the artist Kanō Tanenobu 狩野種信 (1666–1739), a painter from a prominent family.<sup>72</sup> The entries are structured so that the name of each disease is followed by a short description of the symptoms and then a range of treatments, with explanations of how to prepare remedies. The end of each entry mentions the source from which the recipe was taken. The following example, on ‘acute jaundice’ (*kyūō* 急黄) illustrates the way in which medical information drawn from various sources was adapted and incorporated into the text to provide the reader with an efficient method for carrying out necessary treatment:

Acute jaundice is a disease in which jaundice breaks out abruptly. The whole body becomes yellow, [the person is troubled with] an oppressed chest, breathing is arduous and harsh, and the symptoms are life-threatening.

It is good to grate fresh podophyllum versipelle root (*kikyū* 鬼臼), squeeze the juice, and drink it. If there is no fresh root, grind a dried one, and take it in water. *Bencao gangmu*<sup>73</sup> Another recipe is to break open a turnip (*kabura no mi* 蔓菁子),<sup>74</sup> cut it into small pieces and stir in water, then squeeze out the juice and drink it. When sneezing occurs, yellowish water comes out of the nostrils and defecation takes place; then healing takes place. *Ibid.*<sup>75</sup> Another beneficial recipe is to boil down Capillary wormwood (*inchin* 茵陳),<sup>76</sup> from which as much as possible should be taken *Weisheng yijian fang*.<sup>77</sup> Another beneficial recipe is to grind two pieces of sparrow excrement, put them into cold water, and drink the mixture. *Ibid.* Or steam a lily bulb, mix it with molasses (*mitsu*), and eat it. It would be best to grind it up, mix it with molasses, and then take it. One should use white spring lilies. *Ibid.*<sup>78</sup>

<sup>70</sup> ‘Yūdono gojikki’, *Kokushi taikei*, vol. 45, pp. 497 and 513, Imaōji was also known by the name Manase Genki 曲直瀬玄普; according to Kosoto, he also chose the title: Kosoto, *Nihon kanpō tenshō jiten*, p. 329.

<sup>71</sup> Takayanagi Shinzō 高柳真三 and Ishii Ryōsuke 石井良助 (eds), *Ofuregaki Kanpō shūsei* 御触書寛保集成 (Tokyo, [1934]), p. 994; Fukui, *Edo bakufu kankōbutsu*, p. 84.

<sup>72</sup> Kosoto, *Nihon kanpō tenshō jiten*, p. 329.

<sup>73</sup> Li Shizhen 李時珍, *Bencao gangmu* 本草綱目, two vols (Beijing, 1596 [1982]), 17, part II, p. 35a. The references in the original are provided in a small font in the translation.

<sup>74</sup> Also *kabuna*; there are basically two different varieties: European and Asian. For more on *Kabuna* and its historical significance, see Arioka Toshiyuki 有岡利幸, *Haru no nanakusa* 春の七草 (The Seven Spring Herbs) (Mono to ningen no bunkashi 物と人間の文化史 146) (Tokyo, 2008), pp. 169–187.

<sup>75</sup> *Bencao gangmu* 26, p. 43b.

<sup>76</sup> Ch. *yin chen*, botanical name: *artemisia capillaris* Thunb. Suzuki, *Kanpō no kusuri no jiten*, pp. 15–16; Dan Bensky and Andrew Gamble, *Chinese Herbal Medicine: Materia Medica* (Seattle, 1993), pp. 146–147.

<sup>77</sup> *Chinese-English Chinese Traditional Medical Word-Ocean Dictionary*, p. 199.

<sup>78</sup> Hayashi Ryōteki and Niwa Shōhaku, ‘Fukyū ruihō 普救類方 IV part 1’, in *Minkan chiryō* 民間治療 (Vernacular Therapies), vol. 1 of *Kinsei rekishi shiryō shūsei* 近世歴史資料集成, second series, (eds) Asami Megumi 浅見恵 and Yasuda Ken 安田健 (Tokyo, 1730 [1991]), pp. 13a–b. See also Figure 3.

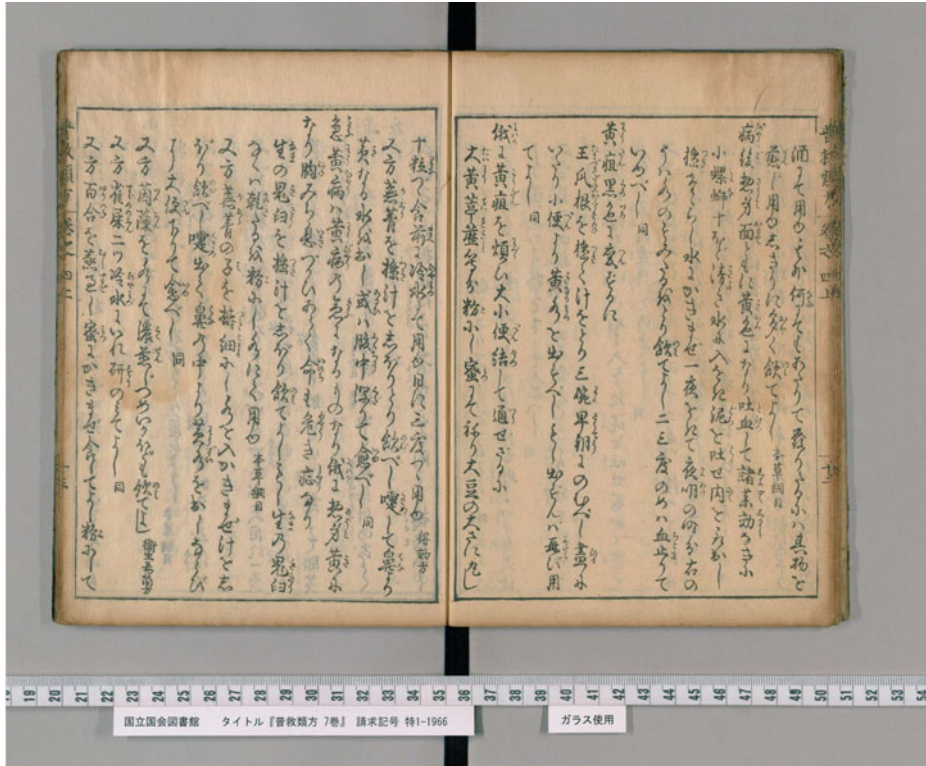


Figure 3. Original text of *Fukyū ruihō* (1729), vol. 4, part 1, pp. 12b–13a. Source: National Diet Library, Digital Collections.

Tsukamoto discovered that the authors did not always, or entirely, follow the prescriptions listed in the cited sources; they left some ingredients out and added others. He explains these changes or ‘adaption’ of recipes by referring to the authors’ own experience as physicians.<sup>79</sup> Applying his findings to the case of acute jaundice and comparing the first recipe (the ingestion of podophyllum versipelle root) with the recipe in *Bencao gangmu*, we do not find any change in the ingredients used. Instead, the authors of *Fukyū ruihō* failed, for some reason, to specify the amount of medicine to take, indicated as a small cup of fresh juice in the original text.<sup>80</sup> The fact that the ingredients are identical to those in the original recipe can be explained by the nature of the disease; however, it is not clear why the authors omitted the dosage, especially given the fact that podophyllum is a highly poisonous plant. Furthermore, the sources quoted in this passage illustrate, once again, the impact of the *Bencao gangmu*, apparently still going strong more than a hundred years after its introduction to Japan.

It is still an open question whether and to what extent *Fukyū ruihō* circulated among the populace. We know from the *Tokugawa Jikki* that Yoshimune ordered commercial publishers to sell it at a fixed price. However, it was not only important to ensure the distribution of works such as the self-help manual, it was also necessary, so as to reach a

<sup>79</sup> Tsukamoto Manabu 塚元学, *Tokai to inaka: Nihon bunka gaishi* 都会と田舎:日本文化外史 (City and Village: The Unofficial History of Japanese Culture) (Tokyo, 1991), p. 220.

<sup>80</sup> *Bencao gangmu* 1, pp. 1205–1206.

broad audience, for it to be affordable; that is to say, the potential reader had to be able to borrow or purchase it and, most importantly, had to be capable of reading it. Current scholarship suggests that eighteenth-century commoners were increasingly able to read easy texts, as literacy was becoming essential for practical purposes. Nevertheless, the question of whether such people had the resources to purchase books and how expensive those books would have been, in comparison to articles of daily use, remains to be answered.<sup>81</sup> A crucial role in the acquisition of knowledge was played by the lending libraries, of which Daisō, which was located in Nagoya, was the largest. *Fukyū ruihō* was listed in its catalogue and therefore available to those interested in medical matters.<sup>82</sup>

### Hejju fang

After the publication and dissemination of *Fukyū ruihō*, Yoshimune decided to print a revised version of the aforementioned *Hejju fang*. Originally a collection of about 300 prescriptions compiled by Chen Cheng 陳承 (eleventh century) and others, and enlarged and revised in 1151 under the name *Taiping huimin hejju fang* 太平惠民和劑局方 (Prescriptions of the Imperial Pharmacy of the Taiping era), the manual, among others, became crucial for standardising medicinal preparations and helping to make medical care more widely accessible to the masses in both China and Japan.<sup>83</sup>

To write the Kyōhō edition, the authors gathered together revised editions and original prints from earlier dates, including the Korean and Ming editions stored in Tokugawa Ieyasu's libraries and the Momijiyama Bunko, the Bakufu library in Edo, as well as editions belonging to Bakufu physicians. Physicians such as Imaōji Chikaaki, who also wrote the Foreword to *Fukyū ruihō*; the second-generation doctor Hosokawa Tōan (also known as Motonobu 元信, 1699–1761), whose father was responsible for the Japanese version of *Tong'ūi pogam*; Mochitsuki San'ei 望月三英; Niwa Shōhaku; and others worked on the revised edition for about seven years. In 1732, it was finally printed as *Zōkō taihei keimin wazai kyokuhō* 増広太平惠民和劑局方 (Enlarged Edition of Prescriptions of the Imperial Pharmacy of the Taiping era).<sup>84</sup>

As mentioned before, this Chinese source was already known to and appreciated by Ieyasu. When we look further back into Japan's past, we find that this text can be traced back as far as the Middle Ages. Prescriptions from the *Hejju fang* already appear in the thirteenth Japanese herbal dictionary *Honzō irohashō* 本草色葉鈔 (A Selection of *Materia Medica* in Iroha-order). Koremune Tomotoshi 惟宗具俊 (thirteenth century), who wrote

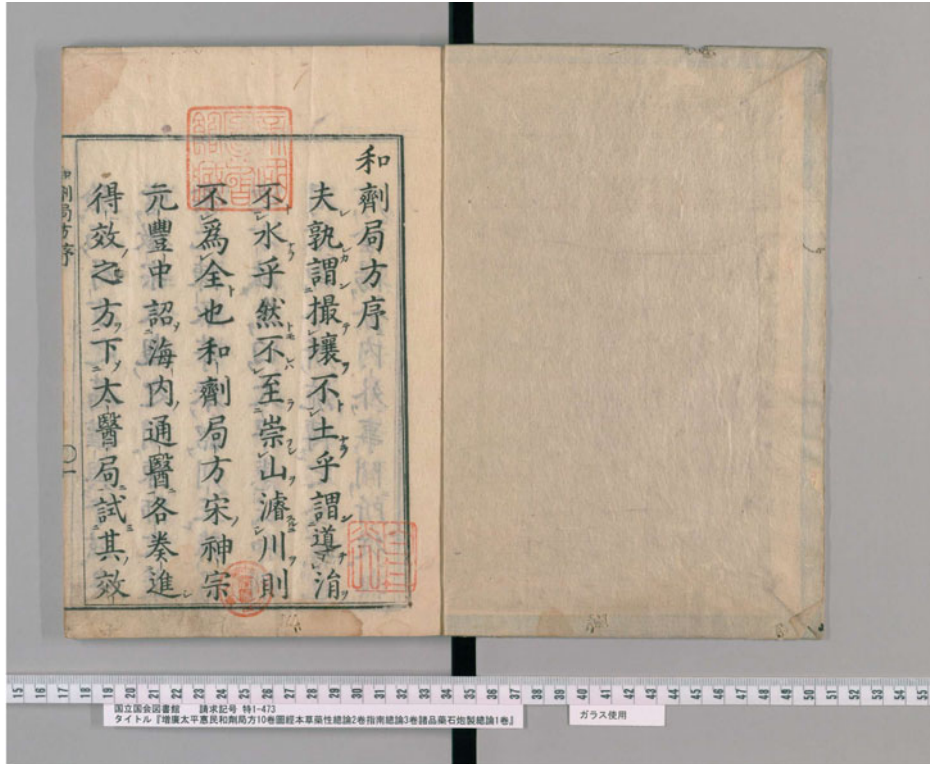
<sup>81</sup> For a discussion of literacy, see Peter Kornicki, *The Book in Japan: A Cultural History from the Beginnings to the Nineteenth Century* (Honolulu, 2001), pp. 273–274. May pursued questions of availability and literacy in the context of the commercialisation of literature: Ekkehard May, *Die Kommerzialisierung der Japanischen Literatur in der Späten Edo-Zeit* (Wiesbaden, 1983), pp. 108 and 112.

<sup>82</sup> Kornicki, *The Book in Japan*, pp. 395–397; Shibata Mitsuhiko 柴田光彦, *Daisō zōshomokuroku to kenkyū* 大惣蔵書目録と研究 (A Study on the Daisō Library Catalogue) (Nihon shoshigaku taikai 日本書誌学体系 27), 2 vols (Musashimurayama, 1983), p. 432.

<sup>83</sup> Yabuuchi Kiyoshi 藪内清 (ed.), *Sō Gen jidai no kagaku gijutsushi* 宋元時代の科学技術史 (History of Science in Song and Yuan Dynasties) (Kyōto, 1967), pp. 141–142; see also Masayoshi Sugimoto and David L. Swain, *Science and Culture in Traditional Japan* (Rutland, 1989), p. 138.

<sup>84</sup> *Zōkō taihei keimin wazai kyokuhō* 増広太平惠民和劑局方 (Enlarged Edition of Prescriptions of the Imperial Pharmacy of the Taiping era) (1732, Maekawa Kenheie edition). (Digitised by the National Diet Library.) Here, Fukui seems to have confused the generations of the Hosokawa family. It was not Hosokawa Tōan Motomichi who was involved in the revision, but his adopted son Hosokawa Tōan Motonobu. See Fukui, *Edo bakufu kankōbutsu*, p. 89. For more on the Hosokawa clan and its activities, see Kosoto Hiroshi 小曾戸洋 and Seki Nobuyuki 関信之, 'Bakufu ikan Hosokawa Tōan no jiseki 幕府医官細川桃庵 (The achievements of the Bakufu physician Hosokawa Tōan)', *Nihon ishigaku zasshi* 39 (1993.3), pp. 27–42. See also Figure 4.





**Figure 4.** *Zōkō taihei keimin wazai kyokuhō* (1789), vol. 1, Foreword, 1789. Source: National Diet Library, Digital Collections.

this eight-volume work, used the works that had most recently arrived from China, including the *Zhenglei bencao* 証類本草 (Collected Classified Materia Medica) written by Tang Shenwei 唐慎微 (1056–1093) and Zhang Zongjing’s 張仲景 famous *Shanghan lun* 傷寒論 (Treatise on Cold Damage Disorders) (150–219).<sup>85</sup> The monk and physician Kajiwara Shōzen 梶原性全 (1266–1337) also had access to at least one edition of this work, which he occasionally referred to in his *Man’anpō* 万安方 (Ten Thousand Safe Prescriptions), commenting that the ingredients in a prescription might differ slightly, depending on the edition.<sup>86</sup>

What makes the *Heji jufang* particularly interesting in this context is not so much the number of versions that physicians had access to but the fact that it contained—alongside approved medical knowledge from China—many prescriptions and ingredients drawn from the Arabic medical tradition. By analysing the formulas and their components, Nakamura and others have discovered that Arabic medicine had a significant influence on treatments covering ‘all forms of [disorders of] vital energy’ (*issaiki*), especially in the area of aromatic stomachics. These were known as *Jawarish* and were highly developed in Arabic medicine.<sup>87</sup>

<sup>85</sup> Kosoto, *Nihon kanpō tenseki jiten*, p. 349; Goble et al. (eds), *Tools of Culture*, p. 235.

<sup>86</sup> Goble et al. (eds), *Tools of Culture*.

<sup>87</sup> Nakamura Teruko 中村輝子, Matsuzaki Aiko 松崎亜衣子 and Endō Jirō 遠藤次郎, ‘Wazaikyokuhō ni okeru hōkōsei ken’iyaku no kentō: seiiki no igaku no eikyō nit suite 和劑局方における芳香性健胃薬の検討—西域の医学の影響について’ (Investigations into Aromatic stomachics in the *Hejiju fang*—On Western regions and their



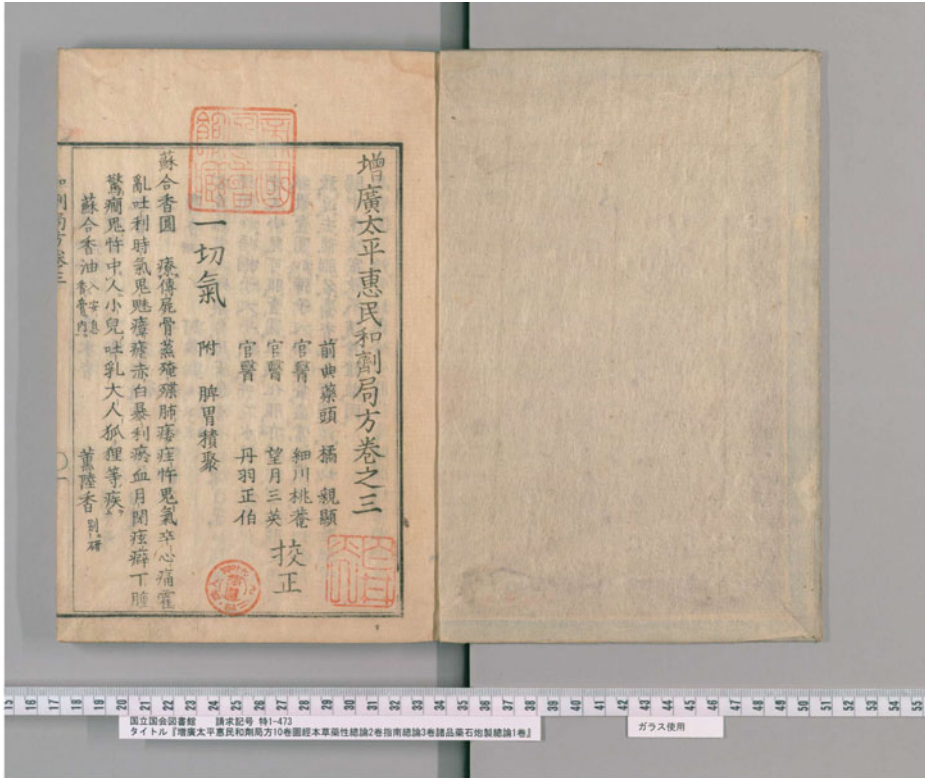


Figure 5. *Zōkō taihei keimin wazai kyokuhō* (1789), vol. 3, *Issaiki*. Source: National Diet Library, Digital Collections.

Having investigated these ‘Western’ prescriptions and ingredients—crude drugs originating from Middle East and India—in works by Shōzen and other medieval authors, Goble has concluded that Arabic medicine provided medieval Japan with a way of treating stomach and enteric ailments that was superior to anything previously available.<sup>88</sup> We can therefore conclude that Yoshimune also revived Arabic medicine with the publication of *Hejiju fang*; in this context, it would be interesting to find out to what extent this medicine was actually administered by professionals and how far it diffused into daily life as common medical knowledge.

## Conclusion

Investigating Yoshimune’s diverse activities brings us back to the initial question of whether they can be seen as an expression of public healthcare. If we look at the scale and systematic arrangement of his projects, which are undoubtedly impressive and were not pursued to the same extent by earlier governments, we can certainly

medical influences), *Yakushigaku zasshi* 薬史学雑誌 (Journal of the History of Drugs) 35.2 (2000), pp. 153–158; Nakamura Teruko, Matsuzaki Aiko and Endō Jirō, ‘Wazaikyokuhō issai kihen no kentō 和劑局方一切気篇の検討 (Hejiju fang—investigations into the chapter, “All disorders of vital energy”’, *Kanpō no rinshō* 漢方の臨床 (Clinical Practice of Kanpō Medicine) 47.11 (2000), pp. 119–126; Nakamura Teruko, Miyamoto Hirokazu and Endō Jirō, ‘Wazaikyokuhō ni mirareru seizai no tokuchō 和劑局方にみられる製剤の特徴 (Characteristics of the formulae in *Hejiju fang*)’, *Yakushigaku zasshi* 薬史学雑誌38.2 (2003), pp. 185–192; Goble et al. (eds), *Tools of Culture*, p. 244. See also Figure 5.

<sup>88</sup> Goble et al. (eds), *Tools of Culture*, pp. 245–249.

regard him as a pioneer of public welfare. While agreeing with Felix Gutzwiller and Fred Paccaud that the successful implementation of public health policies depends on the natural and social environment encountered,<sup>89</sup> we can affirm that Yoshimune's investigations into horticultural and botanical studies did help to improve people's access to medicines, particularly through the cultivation of ginseng, his most prominent undertaking. As the plant collector Matsui Shigeyasu 松井重康 (dates unknown) noted in his Foreword to 'The Records of Herb Collectors' (*Saiyakushi ki* 採薬使記, 1758), the government

has extended its reach to the ordinary people to help them in their sufferings. Presently, no physicians trust Japanese products but only esteem Chinese medicines; for curing diseases, however, our people cannot do anything but rely on medicines growing in our country. Even if those of humble origin know about the efficacy of Chinese products, they cannot be helped and have to die, either because the medicines are too expensive or else because the ship from China is delayed.<sup>90</sup>

Although it took Yoshimune about 30 years of trial and error to produce ginseng, seeds were finally distributed in many areas to people who wanted to cultivate them.<sup>91</sup> This policy not only provided income for the farmers who grew ginseng, but also satisfied medical demands for the plant, providing, as it did, an inexpensive and reliable product.<sup>92</sup>

One of the characteristics generally associated with public health is the establishment of facilities to care for the sick; such efforts are also apparent in Yoshimune's policies. The tenuous situation in an overcrowded Edo prompted him to act and establish a dispensary. In contrast to previous dispensaries, which were clearly founded in accordance with the Buddhist notion of merit, the creation of the Koishikawa sanatorium appears to have been less an act of religious devotion than a political and pragmatic move. Far more central to his healthcare politics than building an institution was his involvement in the publication of texts to enable the access and dissemination of medical knowledge, a point that has been largely neglected in the literature. These texts offered enormous potential for useful information in two ways; first, by enabling both professionals and amateurs to expand their knowledge and second, by applying this knowledge in daily life. These medical manuals can be classified both as writings addressed to a learned audience with the aim of expanding and deepening their medical knowledge—and also as texts written for the general population to be directly applied in daily life. In this regard, the *Shenghui fang*, *Hejiju fang*, *Tong'ui pogam*, and *Waitai miyao* belong to the first category of texts, while the *Fukyū ruihō* was clearly addressed to a wider audience to provide medical self-help.<sup>93</sup> The former were all more or less versions of recipes from Chinese sources that had been freshly evaluated and tested; the latter processed these sources and attempted to adapt the information they contained to the economic and social circumstances of the

<sup>89</sup> Felix Gutzwiller and Fred Paccaud (eds), *Sozial- und Präventivmedizin—Public Health*, 4th edn (Bern, 2011), p. 13.

<sup>90</sup> Ueda, *Nihon yakuenshi no kenkyū*, p. 14.

<sup>91</sup> Kasaya, 'The Tokugawa Bakufu's politics', p. 176; see also Kasaya, 'Arai Hakuseki to Tokugawa Yoshimune. Tokugawa jidai no seiji to honzō 新井白石と徳川吉宗—徳川時代の政治と本草 (Arai Hakuseki and Tokugawa Yoshimune. Politics and materia medica in the Tokugawa Period)', in *Mono no imēji: honzō to hakubutsugaku e no shōtai* 物のイメージ: 本草と植物学への招待 (The Image of Things: An Invitation into Materia Medica and Botanical Studies), (ed.) Yamada Keiji (Osaka, 1994).

<sup>92</sup> Kasaya, 'The Tokugawa Bakufu's politics', p. 179.

<sup>93</sup> For more information on medical texts in connection with learning in early modern Japan, see Senjurō Machi, 'The evolution of "learning" in early modern Japanese medicine', in *Listen, Copy, Read. Popular Learning in Early Modern Japan*, (eds) Annick Horiuchi and Matthias Hayek (Leiden; Boston, 2014), pp. 163–204.

time. In this sense, the publication of *Fukyū ruihō* in particular can be seen as an early attempt by the government to provide the population with medical knowledge as a welfare tool.

To sum up, this investigation of Yoshimune's welfare activities has shown how his initial response to a volatile social and economic situation at the beginning of his time in office developed into a dynamic welfare initiative, of which his healthcare activities became an important part. He drew on the ideas, projects, and experiences of previous governments in Japan and abroad. As Gutzwiller and Paccaud have argued, public health is a dynamic process that must be balanced and realised in concrete life situations.<sup>94</sup> That is exactly what Yoshimune achieved through his diverse endeavours.

**Conflicts of interest.** The author reports none.

---

<sup>94</sup> Gutzwiller and Paccaud, *Sozial- und Präventivmedizin*, p. 13.