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2021

DUTCH FORMULATIONS AND FAMILY SECRETS: MEDICINE AND THE MARKETPLACE IN EARLY MODERN JAPAN

Cooper, Claire Elise

Princeton, NJ : Princeton University

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DUTCH FORMULATIONS AND FAMILY SECRETS: MEDICINE AND THE MARKETPLACE IN EARLY MODERN JAPAN

Claire E. Cooper

A DISSERTATION
PRESENTED TO THE FACULTY
OF PRINCETON UNIVERSITY
IN CANDIDACY FOR THE DEGREE
OF DOCTOR OF PHILOSOPHY

RECOMMENDED FOR ACCEPTANCE BY
THE DEPARTMENT OF
EAST ASIAN STUDIES

Advisor: Federico Marcon

September 2021

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DUTCH FORMULATIONS AND FAMILY SECRETS:
MEDICINE AND THE MARKETPLACE IN EARLY MODERN JAPAN

Abstract

This dissertation explores Japanese commercial, intellectual, and material engagement with medicines imported by the United East India Company (VOC) and its successors from the seventeenth to nineteenth centuries. Medicinal substances sourced from across India, Southeast Asia, and the Middle East like cinnamon, cloves, and saffron constituted a major part of Dutch trade to Japan from the seventeenth century onward. Various disruptions and reorganizations of the Dutch trading network at the turn of the nineteenth century caused an increase in the supply of these goods to Japan. This coincided with renewed scholarly efforts to translate and adapt "Dutch medicine" (*ranpō*) for use by Japanese physicians, apothecaries, and consumers. Interest in and consumption of "Dutch medicine" peaked in the nineteenth century, and it was available across Japan as commercial medicine (*baiyaku*) sold in shops and by itinerant merchants.

Drawing from a wide range of visual, material, and textual sources in Japanese, Dutch, and literary Chinese, this study contributes to a better understanding of the objects, mechanisms, and agents involved in early modern global trade. The Dutch trade in medicinal substances was representative of the inherently hybrid and intra-Asian nature of the goods and ideas brought to Japan by the VOC and its successors. The adaptation and consumption of these products engaged a diverse group of historical actors beyond the socio-political elite, most notably apothecaries and merchants who leveraged growing interest in "Dutch medicine" to sell their wares. As a whole, this dissertation dismantles the teleological and Eurocentric narratives of *rangaku* and "Dutch influence" that have informed so many histories of early modern and modern Japan, instead offering an understanding of medicine and medical knowledge that is shaped by global circulations, local practices, and the diversity of the early modern marketplace.

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Acknowledgements

Completing my dissertation about medicine during an unprecedented global pandemic has brought about many unexpected events, all of which have only made me more grateful to everyone who has helped me reach this point. The first time I met Professor Federico Marcon, we chatted excitedly about elephants and cassowaries, and I knew that he would be a fantastic advisor for my somewhat unorthodox project. He provided me with the tools, support, and freedom to develop into my own scholar, and I am incredibly proud to be his first advisee. I only hope that I can cultivate the same intellectual curiosity in my own students that I have seen him spark in so many undergraduate and graduate courses. Both as a teacher and advisor, Professor He Bian's ability to cut through an argument in a few words has been awe-inspiring, and I have cherished her insight. In addition, her scholarship modeled how I might feasibly write my own history of medicine and commerce in early modern Japan, for which I am extremely grateful. When I determined that South and Southeast Asian context were needed, Professor Michael Laffan graciously agreed to guide me through the discipline despite my late entry into his classroom. His encyclopedic knowledge of global exchange and his sense of humor helped me throughout various parts of this process, and I aim to repay his help by continuing to demonstrate how we must integrate Indian Ocean studies into any history of East Asia. Finally, Professor Harold C. Cook was kind enough to join my committee after only reading an early and partial version of a chapter. His research on global trade, medicine, and culture has deeply influenced my own methodology, and I know that my project will be enriched because of his involvement and expertise. I thank them all for their help and feedback that will help me shape this project into a persuasive monograph.

My project has taken me to various parts of the world and required certain language training. My research has been supported by grants from the Fulbright U.S. Student Program, and the East Asian Studies Program at Princeton. The Princeton Institute for International and Regional Studies provided funding for summer language training in Dutch, and for dissertation completion. In addition, my thanks to the East Asian Studies department for funding my final semester. I am indebted to Haneda Masashi for overseeing my residency as a visiting fellow at the Institute for Advanced

Studies on Asia, and to Matsukata Fuyuko, Matsui Yoko, Oka Mihoko, and Okamoto Makoto at the Historiographical Institute for fielding all of my early questions about sources and archives related to the VOC. My thanks to the academics, curators, and archivists who aided my research: Wolfgang Michael at Kyushu University, Yohei Ideguchi and Kuga Takashi at the Matsūra Historical Museum, Tsuda Akira and Nakamura Sōta at the Kobe Municipal Museum, Furukawa Sōichi at the Takeo Municipal Library, Kimura Naoki at Nagasaki University, Isabel Tanaka-van Daalen at Tokyo University, and Keiko Suzuki at Ritsumeikan University.

I am also deeply indebted to the following people who contributed to my academic, paleographic, and pedagogical training: Anna Shields, Tom Conlan, Brian Steininger, Sheldon Garon, Andrew Watsky, and Paize Keulemans. I had a delightful cohort at Princeton and beyond, and am thankful to everyone who I learned with in classes, colloquia, and workshops and who are far too numerous to list here. My appreciation to my friends who have nourished me throughout this journey: Mai Yamaguchi, Nicholas Risteen, Luke Waring, John Alekna, Kent Cao, Alyssa Wang, Alexis Sanborn, Andrew Campana, Ed von Aderkas, Mariko Nakamura, Melody Rosenberg, and many more. Finally, all my love and thanks to my parents, who have tirelessly supported my pursuit of knowledge.

Introduction

> This text describes many hardships of its author from third month, fifth day of Meiwa 8 (1771), when he first began to work with the *Tafel Anatomia* alongside Professor Ranka [Maeno Ryōtaku] at his residence. Reading about these events that one can barely fathom, I was endlessly awestruck and filled with wonder, as though on a rudderless ship in the midst of a great ocean. Encountering the labors of those who came before us, being startled at their bravery, and feeling their sincerity - I was overcome with emotion and could do nothing but weep.

Thus wrote Fukuzawa Yukichi in his preface to the 1890 (Meiji 23) edition of Sugita Genpaku's *Rangaku kotohajime* [The beginning of Dutch studies]. Yukichi had overseen the original publication of the text in 1869 (Meiji 2), which Genpaku had completed a few years before his death in 1817. Until Yukichi's intervention, the work circulated only in manuscript form, and was enjoying a resurgence in the late nineteenth century. When the text held by the Sugita family was destroyed in the fires caused by the Ansei Earthquake in 1855, *Rangaku kotohajime* was thought to be lost forever until a copy was miraculously found in a shop in Hongō, Tokyo a few year later. Scholars around Japan rushed to reproduce the rediscovered manuscript in order to ensure that Genpaku's words would not be forgotten. While Yukichi found these actions admirable, he was insistent that the text should be preserved for future generations, prompting the creation of the 1869 printed version. Twenty-one years after its initial publication, Yukichi wrote this preface for the new edition with even grander hopes that the work would not only be read in Japan, but throughout the world.[1]

In *Rangaku kotohajime*, Sugita Genpaku recalled his arduous efforts to read and

[1] Sugita Genpaku, *Rangaku kotohajime* (Tokyo: Iwanami Shoten, 1976), 2-3.

translate the contents of *Ontleedkundige Tafelen* [Anatomical charts, 1734], the Dutch edition of Johan Adam Kulmus' *Tabulae Anatomicae* (1722). Genpaku and his friend Nakagawa Jun'an began to work with the more experienced linguist and scholar Maeno Ryōtaku to produce a Japanese translation of the text after they witnessed an autopsy that allegedly confirmed the veracity of the detailed anatomical illustrations within the text. Continuously stymied by the unknown terminology and physiology that they encountered, Genpaku and his collaborators ultimately only produced a partial translation, which was published as *Kaitai shinsho* [New book on anatomy, 1774 (An'ei 3)]. As narrated by Genpaku in *Rangaku kotohajime* nearly forty years later, this was a turning point in the intellectual landscape of Japan, leading to the firm establishment of "Dutch studies" as a respected and socially recognizable field.

In writing *Rangaku kotohajime,* Genpaku's motivations were not limited to describing these events but also canonizing his own intellectual achievements. After all, his story was the "beginning of Dutch studies." In reality, Genpaku was no pioneer, and his intellectual achievements paled in comparison to his commercialization of those accomplishments through the publication of books espousing his scholarly ability and his establishment of a private school to teach aspiring students of *rangaku.* Generations of scholars before Genpaku worked to translate and adapt Dutch-language medical texts, with manuscripts about humoral pathology and surgery circulating amongst Japanese scholars and physicians as early as the late seventeenth century.[2] Genpaku's actual

[2] For a detailed summary of manuscripts and printed versions, see Wolfgang Michel Zaitsu, "Shoki kōmō-ryū geka to ju'i Mukai Genshō ni tsuite," *Nihon ishigaku zasshi,* Vol. 56, No. 3 (2010): 367-385, "Kasuparu Schamberugeru to Kasuparu-ryū geka I," *Nihon ishigaku zasshi,* Vol. 42, No. 3 (1996): 41-65, and "Kasuparu Schamberugeru to Kasuparu-ryū geka II," *Nihon ishigaku zasshi,* Vol. 42, No. 4 (1996): 21-45.

contribution was his repositioning of "Dutch studies" to exclusively mean reading and translating Dutch texts. Both before Genpaku's entry into the intellectual landscape and long after his departure, a variety of other specialists pursued the study of Dutch things beyond language. By far, the most prolific practitioners of "Dutch studies" were physicians and apothecaries, who adapted medical texts, practices, and substances brought by the United East India Company (VOC) and its successors for use in Japan by specialists and non-specialists alike throughout the seventeenth to nineteenth centuries.

Fukuzawa Yukichi was the first of many to buy into Genpaku's self-aggrandizing vision, particularly because it conveniently suited his larger historical ambitions. The *samurai*-turned-reformer played a major role in shaping Japan's identity in the first decades of the Meiji era (1868-1912), advocating a total embrace of Western "culture and civilization" and a rejection of Japan's autocratic, "feudal" past. Yukichi was thus merciless in his positioning of Genpaku's story within the national history of Japan. At the end of his preface to the 1890 reprint, Yukichi wrote

> By distributing many thousands of copies of this reprinted text to the interested people of this realm, then "The Beginning of Dutch Studies" will become eternal. To do so will not only be exalting the meritorious deeds of those who came before us within our own country, but also showing that the germination of Western Culture had already begun amongst intellectual society a hundred and some odd years ago in this Asian nation of Japan. It will more than prove to the myriad nations of the world that our country's current progress is not simply a coincidence. Those reading this, foreign and Japanese alike, do not think this is merely a book about medicine!

In Yukichi's conception, *rangaku* was more than a discrete set of ideas and practices. It was a civilizational watershed. Proof of Japan's unique ability to adopt Western culture and to conform to contemporary civilizational standards, Yukichi molded Genpaku into

part of a grander national narrative. Thanks in large part to Yukichi's publication of *Rangaku kotohajime,* today Genpaku is not only considered the doyen of *rangaku* but the trailblazer for all of Western science in Japan. The translator of the only English version even chose to qualify the text as *The Dawn of Western Science in Japan.*[3] Genpaku was no longer just the person who popularized Dutch studies, but the pioneer who introduced all of Western science to early modern Japan.

Because of these early historiographical interventions, the Japanese adaptation of ideas and practices from the Dutch has been overwhelmingly discussed in terms of *rangaku* scholars and the importance of "Western science" on history after the Tokugawa period (1600-1868). Post-war historians largely viewed early modern engagement with European knowledge, however limited or inscrutable, as a notable reason for Japan's relatively quick modernization during the Meiji era.[4] Western learning and its proponents were "leading forces in the westernization of Japan," who moreover had the foresight to keep "alive the flame of Western Science and knowledge, often under conditions of great danger and difficulty, until they finally saw the triumph of their cause in 1868."[5]

In this way, historians of Japan were able to neatly sidestep "the Needham question" while still falling prey to its logical fallacy. For most of the twentieth century,

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[3] Sugita Genpaku, *The Dawn of Western science in Japan*: *Rangaku kotohajime,* trans. Matsumoto Ryōzō, ed Ogata Tomio (Tokyo: Hokuseidō Press, 1969).

[4] See C. R. Boxer, *Jan Compagnie in Japan, 1600-1850: an Essay on the Cultural, Artistic and Scientific Influence Exercised By the Hollanders in Japan From the Seventeenth to the Nineteenth Centuries* (The Hague: Nijhoff, 1950), Grant Goodman, *Japan and the Dutch, 1600-1853* (Richmond, Surrey: Curzon, 2000), John Z. Bowers, *Western Medical Pioneers in Feudal Japan* (Baltimore: Johns Hopkins Press, 1970), and Numata Jiro, *Western Learning: A Short History of the Study of Western Science in Early Modern Japan* (Trans. R.C.J. Bachofner. Tokyo: Japan-Netherlands Institute, 1992)

[5] Bowers, x. Boxer, xii-xiii.

scholars of East Asian science and medicine have sought to answer the "Needham question" that pondered why was there no "modern science" or scientific revolutions in China, Korea, or Japan despite widespread literacy and advanced intellectual activity. "The Needham question" hinged on a developmental understanding of human history, informed both by Marxism and modernization theory, in which science was a universal and superior form of knowledge that facilitated political, social, and cultural development.[6] Building from Kuhn's theories on revolution, historians of China and Japan sought out moments of paradigm shift, epistemic breakdowns, and intellectual rupture. East Asian knowledge practices, which relied on borrowing, adaptation, and accumulation from a diversity of cultures and intellectual traditions, failed to demonstrate these revolutionary aspects and so were relegated to the realm of "traditional science and medicine," standing in opposition to the modern sciences of the West.[7]

Science as defined by Needham was both modern and European, just as the *rangaku* described by Yukichi encompassed Western civilization norms. This conception of "Dutch studies" has artificially circumscribed the approaches and analyses of modern scholars when approaching the subject. Studies are generally limited to accepted categories – astronomy, mathematics, surgery, and so on – with goods and ideas that do not fall into this conception of European science and modernity ignored or dismissed as

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[6] Joseph Needham, *The Grand Titration: Science and Society in East and West* (Toronto: University of Toronto Press, 1969). For a full summary and rebuttal, see Benjamin A. Elman, *On Their Own Terms: Science in China, 1550-1900* (Cambridge: Harvard University Press, 2005) and Dagmar Schaffer, *The Crafting of the 10,000 Things Knowledge and Technology in Seventeenth-Century China* (Chicago: University of Chicago Press, 2011).

[7] G.E.R. Lloyd, *The Way and the World: Science and Medicine in Early China and Greece* (New Haven: Yale University Press, 2002). David C. Lindberg, *The Beginnings of Western Science: The European Scientific Tradition in Philosophical, Religious, and Institutional Context, prehistory to A.D. 1450*, 2nd ed. (Chicago: University of Chicago Press, 2007).

playful misconceptions.[8] The medical substances and ideas brought by the Dutch to Japan were treated as an appealing and unified field of study rather than a process of selective adaptation by Japanese actors. As Sugimoto and Swain described, in early modern Japan there was a "general mania for things Dutch" but "the actual practice in the field of medicine was eclectic, using traditional medicine where Dutch medicine was not yet known or accepted."[9] In other words, Dutch medicine, meaning European medicine, was inevitable, with only ignorance and inaccessibility delaying its adoption in early modern Japan.

This conflation of the particular aspects of Dutch studies in early modern Japan with universal modern, European science also resulted in a steady decline of studies about *rangaku* and related scientific and medical activities undertaken by Japanese actors. By the late twentieth century, concerns about Eurocentricity and teleology in the fields of regional studies prompted a re-examination of the triumphalist narrative of Western science, as well as a reconsideration of both the inevitability of Western influence in Asia and the bias inherent in Western sources. Historians in the fields of history of science and social history of medicine began questioning the concept that medical and scientific history were "the result of great discoveries, technological advances, or the achievements of great men free from intellectual, socioeconomic, or political influences."[10] In response

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[8] Timon Screech, *The Lens within the Heart: the Western scientific gaze and popular imagery in later Edo Japan* (Honolulu: University of Hawai'i Press, 2002). Martha Chaiklin, *Cultural Commerce and Dutch Commercial Culture: the influence of European material culture on Japan, 1700-1850* (Leiden : Research School CNWS, Leiden University, 2003.)

[9] Sugimoto Masayoshi and David L. Swain, *Science and culture in traditional Japan* (Rutland VT: Charles E. Tuttle Co, 1989), 373.

[10] See Marius B. Jansen, *Japan and Its World: Two Centuries of Change* (Princeton, N.J.: Princeton University Press, 1980), Iwao Seiichi, *Sakoku* (Tokyo: Chuo koronsha, 1971), and Ronald P. Toby, *State and Diplomacy in Early Modern Japan: Asia in the Development of the*

to these concerns, newer contributions to the study of early modern Japanese exchange have questioned the sovereignty and influence of both European actors and European thought, instead attempting to integrate these cultural, political, and intellectual encounters within frameworks that privileged indigenous systems of authority and knowledge.

The most recent analyses of *rangaku* have accordingly focused on the social aspects of knowledge creation, gathering, and dissemination rather than broader questions of modernization and cultural impact.[11] In particular, both Ann Jannetta and Ellen Nakamura sought to contextualize the generalized concept of *rangaku* by highlighting the concrete practice of *ranpō*, or Dutch medicine. In their histories of vaccinators and rural doctors, *ranpō* physicians adapted treatments that they learned about from European medical texts to address specific concerns such as smallpox and famine. While never privileging this foreign knowledge, they used it to supplement and improve upon existing treatments that derived from established East Asian medical practices. Yet, Jannetta and Nakamura's conceptions of *ranpō* physicians are still inherently progressive, as "agents

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Tokugawa Bakufu (Princeton, N.J.: Princeton University Press, 1984). Keir Waddington. *An Introduction to the Social History of Medicine: Europe Since 1500* (Basingstoke: Palgrave Macmillan, 2011), 3-4.

[11] See *Asian Port Cities, 1600-1800: Local and Foreign Cultural Interactions*, Ed. Haneda Masashi. (Singapore: NUS Press, 2009), Adam Clulow, *The Company and the Shogun: The Dutch Encounter with Tokugawa Japan* (New York: Columbia University Press, 2013), and Robert I. Hellyer, *Defining Engagement: Japan and Global Contexts, 1640-1868* (Cambridge, Mass.: Harvard University Press, 2009). Ann Bowman Jannetta, *The Vaccinators: Smallpox, Medical Knowledge, and the "Opening" of Japan* (Stanford, Calif.: Stanford University Press, 2007), Federico Marcon, *The Knowledge of Nature and the Nature of Knowledge in Early Modern Japan* (Chicago: University of Chicago, 2015), Maki Fukuoka, *The Premise of Fidelity: Science, Visuality, and Representing the real in nineteenth-century Japan* (Berkeley, Stanford University Press, 2012), and Ellen Gardner Nakamura, *Practical Pursuits: Takano Choei, Takahashi Keisaku, and Western Medicine in Nineteenth-Century Japan* (Cambridge, Mass: Harvard University Press, 2005).

of change" working to integrate a "new technology," or hoping to enact socio-economic reform during a time of political stagnation.[12]

Another symptom of this historical bias is the omission of material exchange. With the exception of texts, Japanese engagement with European knowledge is largely analyzed as purely intellectual activities consisting of translation, adaptation, and direct interactions between European and Japanese physicians.[13] This framework ignores the fact that the VOC and its successors did not come to Japan to teach or impart civilization, but rather to trade. *Ranpō*, *rangaku*, and all associated intellectual activities were secondary to this commercial engagement. Moreover, Japanese interest in particular practices and substances was heavily influenced by the global commodities brought to Japan by the VOC. Japanese interest in Dutch medicine was inherently linked to the fact that medicinal substances constituted one of the largest categories of goods trafficked by the VOC - not only in Japan, but across Asia.

Beyond histories of Japan, Harold Cook has explained the workings of this phenomena in regards to the Dutch adaptation and consumption of global medicinal substances and practices. “Modern science” and global commerce were intrinsically related, shaped by contemporary concerns and local actors rather than unstoppable historical trajectories. Pratik Chakrabarti has applied similar logic to the British empire, emphasizing the connection between global commodities and knowledge construction. Moreover, “commerce converted the items of maritime profit that Europeans found [in

[12] Jannetta, *The Vaccinators,* 3, 181-2. Nakamura, *Practical Pursuits*, 2-3, 175.

[13] See Boxer, *Jan Compagnie in Japan,* Grant Goodman, *Japan and the Dutch*, and Terrence Jackson, *Network of Knowledge: Western Science and the Tokugawa Information* (Honolulu: University of Hawai’i Press, 2015).

Asia], which became objects of their cultural and intellectual practices, and commodities of their medical knowledge."[14] For Europeans and Asian alike, medicine was global capital. For the early modern Japanese, removed from these direct imperial processes, their engagement with medicinal substances, ideas, and practiced brought by the Dutch was driven by far different contexts and motivations.

Studies of European trade in global medicinal substances is also stymied by a modern conception of what constitutes medicine. The "spice trade" so often discussed in histories of globalization was in fact predominantly a medicine trade.[15] Although substances known as spices were valuable because of their use as medicines, this application is commonly ignored due to the distinctly unmodern nature of medicines made using natural substances. Flora, fauna, and minerals were the not ingredients for proper "modern medicine," but belonged to alchemy, folk remedies, and traditional medicine. The idea that the *materia medica* and wünderkammer of European physicians and scholars might be shaped by practical medical and economic concerns rather than the idealized pursuit of knowledge has only recently become a serious subject of analysis. As Paula Findlen writes, "While [European] humanists who studied nature for the pure

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[14] Harold J. Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age* (New Haven: Yale University Press, 2007). Pratik Chakrabarti, *Materials and Medicine: Trade, Conquest and Therapeutics in the Eighteenth Century* (Manchester: Manchester University Press, 2010), 19.

[15] Owen Lattimore and Eleanor Holgate Lattimore. *Silks, Spices, and Empire: Asia Seen Through the Eyes of Its Discoverers* (New York: Delacorte Press, 1968), A. R. Disney, *Twilight of the Pepper Empire: Portuguese Trade In Southwest India In the Early Seventeenth Century* (Cambridge, Mass.: Harvard University Press, 1978), Michael Murrin, *Trade and Romance* (Chicago: The University of Chicago Press, 2014), *Global Goods and the Spanish Empire, 1492-1824: circulation, resistance and diversity*, ed. Bethany Aram, Ramón y Cajal et al (Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2014), and Piet C. Emmer and F. S Gaastra *The Organization of Interoceanic Trade in European Expansion, 1450-1800* (Aldershot, Hampshire: Variorum, 1996).

pleasure of extracting knowledge might scoff at those who used their knowledge to turn a profit, the fact remains that nature had always been a commodity to the rest of the world."[16]

This dissertation seeks to reconstruct early modern Japanese conceptions of intellectual and material exchange that were lost when actors like Fukuzawa Yukichi re-made Dutch medicine into Western Science around the turn of the twentieth century. The first two chapters survey Japanese history in terms of medicinal developments from earliest times to 1800, with a focus on intercultural exchange and trade. Chapter 1 discusses the initial adaptation of the East Asian medical system to Japan, and the importance of foreign actors, texts, and substances in constructing this system. Medicines imported from across Asia were studied and used by Japanese physicians since the eighth century. Medicinal pursuits were largely limited to the socio-political elite until the fifteenth century, centered first around the imperial court before dispersing to other privileged sites of medicinal activity. Long before the arrival of European physicians, the Japanese medical system was well-equipped to evaluate and selectively adapt particular practices from a diversity of intellectual and cultural sources. Chapter 2 focuses on the commercialization of medicine from the fifteenth century onwards. The growth of global trade, led by Chinese merchants and newer maritime actors like the Portuguese and Dutch, supported a burgeoning medicinal marketplace at the turn of the seventeenth century. The Japanese government, trade associations, and apothecaries developed a system that supplied consumers with imported goods and permitted a diverse group of

[16] Paula Findlen, "Inventing Nature: Commerce, Art, and Science in the early modern cabinet of curiosities" in *Merchants & Marvels: Commerce, Science, and Art In Early Modern Europe,* eds. Paula Smith and Pamela Smith and Paula Findlen (New York: Routledge, 2002), 301.

actors to be involved in making and selling medicine. Finally, this chapter introduces the role of apothecaries and medicinal merchants as material and intellectual intermediaries for scholars, physicians, and the Japanese public throughout the early modern era.

Chapter 3 analyzes the importance of medicine in the trade conducted by the United East India Company and Batavian government. Medicinal substances vied with silk and cotton textiles as the largest single category of goods imported by the VOC to Japan. Most of these medicines were the result of intra-Asian trade, and Japanese observers recognized the hybrid nature of the Company, with "Dutch products" referring to a diverse array of natural and manufactured goods from across Asia and Europe. The Japanese demand for medicinal products was furthermore relied upon by the United East India Company after a series of global political and economic shifts at the turn of the nineteenth century. Because of this, an increased supply of medicines filtered into the Japanese marketplace, coinciding with popular interest in *ranpō* and *rangaku.* As a whole, this chapter seeks to resolve an inherent contradiction in histories of exchange between the Japanese and the Dutch, namely that Japanese interest in and consumption of Dutch goods continued to grow after the supposed decline and end of the VOC in 1799.

Chapter 4 traces the development of Dutch medicine within Japan by Japanese actors. Particular encounters, substances, and texts shaped Dutch medicine in Japan, which was unique and not in any way reflective of a systematic attempt to adopt European science or medicine. This development began with an initial, mid-seventeenth century adoption of certain European surgical practices, and was supplemented by a turn of the nineteenth century movement focused more on Dutch-language pharmacopeia and *materia medica* texts. Like the intra-Asian products trafficked by the VOC, the

substances and methods adapted from Company surgeons and Dutch-language texts were shaped by global ideas and practices. Japanese scholars, physicians, and apothecaries translated and adapted these global medicines for use in Japanese, categorizing them as Dutch medicine.

Chapter 5 explores the world of medicines available for early modern Japanese consumers. Supported by mechanisms that permitted wide-scale trade in imported goods and involvement in the making of medicine, Japanese apothecaries leveraged a variety of cultural and intellectual lineages in order motivate customers to buy their medicine. These eclectic and vibrant practices are visible in a number of nineteenth century documentary sources, and demonstrate the sociability of these alternate medical sites. Dutch medicine was located amidst this commercial world of medicines. This chapter also studies two products in particular, theriac and Uruyusu, in order to demonstrate the variety of medical, intellectual, and material practices that shaped commercial Dutch medicines. Finally, a brief conclusion explores the fate of this marketplace amidst the institutional changes enforced by the Meiji government and shifting popular conceptions of intellectual value and medical lineages.

Chapter 1. Medicinal practices and practitioners in Japan to 1500

"Japanese Medicine" and the *Kojiki* Problem

Many histories of medicine in Japan open with the *Kojiki* [Record of Ancient Matters], which is generally dated to 712 CE (Wadō 5). Composed of three books that chronicle the creation of the world and gods, the rise of the first legendary rulers, and the consolidation of power within the Yamato court between the fourth and seventh centuries CE, the *Kojiki* is equal parts myth, legend, and genealogical chronicle. Due to its position as the oldest extant Japanese chronicle, modern scholars have combed its pages in search of earliest forms of medicine. Historians point to colorful stories of gods and emperors either healing or being healed through a mixture of divine and mundane practices and substances, collating lists of flora and fauna mentioned in the *Kojiki* that might have been used as medicine in prehistorical times. These developments in the "era of the gods" are often categorized as the essence of "Japanese medicine" before the influx of Chinese and Western practices.[1]

This particular framing of the *Kojiki* alongside *Daidō ruijuhō* [Classic formulas of the Daidō era, 808 (Daidō 3)] and *Kiranhō* [Golden orchid formulas, 868 (Jōgan 10)] is not reflective of the seventh and eighth century contexts in which the texts were produced. Instead, it resulted from the efforts of nineteenth century scholars actively remaking these sources into national texts. Adopting the same the philological and historical revisionism of Motoori Norinaga and Hirata Atsutane, physicians like

[1] See Shimizu Tōtarō, *Nihon yakugakushi* (Tokyo: Nanzandō, 1949), *Meiji-Zen Nihon Igaku-shi* (Tōkyō: Nihon Gakujutsu Shinkōkai, 1955), Hasegawa Hisashi, *Iyakuhin* (Tokyo: Nihon Keizai Hyōronsha, 1986), and Okazaki Kanzō, *Kusuri no rekishi* (Tōkyō : Kōdansha, 1976).

Morikawa Sōen and Ōta Kenryū read the *Kojiki* and other early medical texts produced in Japan through the lens of contemporary nineteenth century anxieties about Japanese culture and identity. Concerned with reconstructing Japanese medical practices that had purportedly been lost through the uncritical adaptation of foreign medicine, physicians and scholars like Sōen and Kenryū argued that eighth and ninth century sources represented "the authentic medicine of Japan, passed down from Sukunahikona and Ōnamuchi."[2]

Modern scholars, particularly those invested in bolstering this national narrative, adopted this same chronology, referencing the *Kojiki* in order to summarize Japanese medical practices prior to the seventh century. Histories traced the development of medicine from the primordial, "pure" Japanese practices to the long reign of "Chinese medicine," and finally to the ultimate adoption of Western medical norms. The only English-language survey of Japanese science and medicine categorizes scientific and medical developments in Japan as resulting entirely from either exchange or seclusion. "Cultural waves" from China and the West catapulted intellectual activities in Japan forward, while periods of "indigenous development" allowed for "domestic priorities" and the development of more nationalized forms of knowledge.[3]

Before the efforts of Morikawa Sōen and Hirata Atsutane, medieval and early modern histories celebrated the contributions of both Japanese and foreign medical practitioners. The civilizational developments of the Yayoi era (300BCE-300CE) were

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[2] Daniel Trambaiolo, "Native and Foreign in Tokugawa Medicine," *The Journal of Japanese Studies* 39, no. 2 (2013): 299-324. For more on this general movement, see Susan Burns, B*efore the Nation: Kokugaku and the Imagining of Community In Early Modern Japan.* (Durham, N.C.: Duke University Press, 2003)

[3] Sugimoto and Swain, *Science and Culture,* xxiv-xxvi, 103

even commonly credited to the arrival of the Chinese alchemist Xu Fu in the second century BCE, who was said to have ended his search for the elixir of immortality in Japan, bringing with him various agricultural, medicinal, and sericultural technologies.[4] Aside from fanciful stories like these, eighth and ninth century sources produced alongside the *Kojiki* attested to the importance of foreign medical practices and practitioners in Japan from the fifth century onwards. Moreover, flora and fauna from across Asia had been brought to the Japanese archipelago and cultivated there for millennia. "Japanese medicine" has thus always been the result of material and intellectual exchange, driven by the importation and adaptation of foreign practices, ideas, and materials.

Natural riches and continental contacts, earliest times to-600 CE

The most accurate depictions of the earliest medicinal practices in Japan consist of archaeological sites and artifacts, which attest to the consumption of various flora and fauna by the Japanese population throughout the Jōmon era (c. 7500-1000 BCE).[5] Many of the uniquely decorated pots from which the Jōmon period derives its name contain remnants of the substances stored or cooked in them, particularly in the mid- to late period (c.3500-1000 BCE) when warmer temperatures facilitated early attempts at the domestication of various plant species. Aside from the chestnuts and acorns that composed the primary diet of the largely hunter-gatherer society, pollen fossils also include many indigenous substances with medicinal properties that were cultivated

[4] Sōda Hajime, *Zusetsu Nihon iryō bunkashi.* (Kyōto: Shibunkaku Shuppan, 1989), 6.

[5] Periodization, particularly of these early eras, remains hotly contested amongst Japanese archaeologists and historians. I use the dates presented in the Cambridge History of Japan.

around Jōmon sites, such as mugwort, phellodendron, and spikenard.[6] Archaeological data also attests to the early introduction of various plants from across Asia to the Japanese archipelago during this time, most notably the Chinese lacquer tree (*toxicodendron vernicifluum*) and *cannabis sativa*. While archaeologists have generally confined their analyses of these products to the important technologies associated with them, namely lacquered objects and hempen rope, the Jōmon people doubtless made use of their medicinal properties as well.[7] Increased migration and exchange between the Japanese archipelago and the Korean peninsula drove the technological and agricultural development of the Yayoi era (1000 BCE - 300 CE).[8] Along with rice, barley, and millet, a variety of new species were brought to Japan during this time by migrant farmers from Korea and China. Along with famously peaches, plums, and cherries, camphor trees were also brought to the archipelago. The lumber of these trees was used to construct buildings, or heated to produce the fatty substances known as camphor, which had a variety of medicinal applications.[9]

Japan appeared for the first time in Chinese written records in the first century CE as the lands of Wo (J. Wa) after the civilizational advances of the Yayoi era led to a growing population and the consolidation of power by local leaders who courted the

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[6] Yoshikawa Masanobu and Kudo Yuichiro, "Vegetation History and Use of Plant resources in the middle to final Jomon periods," in *Bulletin of the National Museum of Japanese History*, Vol. 187 (July 2014): 177-179.

[7] Suzuki et al, "Jōmon jidai no urushi to sono kigen" in Bulletin of the National Museum of Japanese History, Vol. 187 (July 2014), 49-71. Kudo Yuichiro and Hitori Eri, "Jōmon aidai to asa shutsudo reishūsei" in *Bulletin of the National Museum of Japanese History*, Vol. 187 (July 2014), 425-440.

[8] For a more complete summary of the importance of Japan's relationship with the rest of East Asia, see Okazaki Takashi, "Japan and the continent" in *Cambridge History of Japan, Vol. 1*, eds. Delmer M. Brown (Cambridge: Cambridge University Press, 2008), 268-316.

[9] Hida Norio, "Nara jidai made no teien shokusai" in *Randosukēpu kenkyū* 62 (1998): 56-67.

legitimacy provided the most powerful state in East Asia. As with other tributary regions surveyed in Chinese texts, there was a consistent focus on the natural resources found in the various states of Wo, particularly items that might be offered to the imperial courts of Han, Wei, and Southern Song China. The thinker Wang Chong mentions Wo twice in the *Lunheng* [Discourse on Balance, c. 80 CE], both times specifying that the land was associated with the "aromatic plants" its envoys had brought to the kings of earlier eras.[10] While Wang's dating was certainly anachronistic, his choice to pair "aromatic plants" with Wo is intriguing, particularly since substances with strong odors were often described in early Chinese pharmacopeia as having unique healing or restorative abilities. The *Weizhi* [Records of Wei, 297] delved into more detail about the natural resources found in Wo. Its author described seas bursting with shellfish and pearls, mountains rich with cinnabar, and forests full of camphor trees, all of which were brought by envoys from Wo to the Chinese court in the mid-third-century. A few centuries later, the *Hou hanshu* [Records of the Later Han, c. 432] similarly emphasized Wo, whose king had now established hegemony in the region of Yamadai (J. Yamatai, Yamato), as a land known for its pearls, cinnabar, and abundant arboreal and agricultural resources.[11]

While the kings of Wo gained legitimacy from the titles bestowed by Chinese emperors, they still actively pursued strong relationships with the increasingly powerful states located in the Korean peninsula. Because of the predominance of Chinese records and the perennial importance of intellectual forms originating in China, many scholars

[10] Takashima Ken'ichi, "Prolegomena to the study of early Chinese transcription of Japanese," in *Monumenta Serica* 29 (1970): 228-263.

[11] Tsunoda Ryūsaku, *Japan in the Chinese dynastic histories: Later Han through the Ming Dynasties,* trans. Carrington L. Goodrich (California: PD&I, 1951), 1-3, 11-15.

tend to trace a direct path from Japan's appearance in Chinese records to the full-scale adoption of Chinese political and intellectual norms in the seventh and eighth centuries. However, the cultural watershed that occurred in seventh and eighth century Japan was not based solely in direct Sino-Japanese interaction, but also from diplomatic and economic exchange between the ascendant Yamato court and the Korean states of Kaya, Baekje, and later Silla. The close relationship between Wo and various Korean kings was even recognized in contemporary Chinese sources. For example, the *Song shu* [Record of Song, c.488] emphasized the importance of the alliance between the King of Wo and Baekje, with the former providing military support against Baekje's rivals of Silla and Koguryŏ, and the latter acting as political and cultural intermediary for the developing Yamato kingdom.[12]

Whereas migration and exchange between the Japanese archipelago and Korean peninsula had occurred for millennia, by the fifth century this movement of ideas, materials, and peoples was formalized as part of official diplomatic relations. Alongside material objects like bronze mirrors, weapons, and armor, particular political, religious, and intellectual expertise was sought by the Yamato court from its allies on the continent. In response, scholars and officials were sent to Japan who were well-versed in certain forms of knowledge, most notably Buddhism, Confucianism, and Daoism.[13] Medicine was part of this cultural education, with Korean physicians acting as the first specialized practitioners of medicine in Yamato Japan (300-710 CE). The earliest recorded instance

[12] Tsunoda, *Japan in the Chinese dynastic histories,* 22-24. For more, see Bruce Batten, *Gateway to Japan: Hakata in war and peace, 500-1300* (Honolulu : University Of Hawai'i Press, 2006), 12-18.

[13] Okazaki, *Kusuri no rekishi,* 308-312.

of this is found in the *Kojiki*, which claimed that in 414 a man from Silla known as Komuhachimu Kamu Kimu came to Japan as an emissary with a fleet of eighty-one ships. Well versed in medicinal treatments, Kimu healed Emperor Ingyō of an illness during his time at the court. Kimu's maritime entourage, the size of which was certainly aggrandized, highlighted the continued importance of material exchange between Japan and the continent, the evidence of which is found in keyhole tumuli (*kofun*) and other archaeological sites from this period. The *Nihon shoki* [Chronicles of Japan, 720 (Yōrō 4)] gave an account of a similar instance related to Korean physicians later in the fifth century. At the behest of the Yamato court, the "good doctor Tokoku" (*ryōi Tokoku*) arrived in Japan in 459. Originally hailing from the northern Korean state of Goguryeo, Tokoku had moved to Baekje to practice medicine before he was dispatched to Japan, where he settled somewhere in the Naniwa district near Osaka. Because of this, he would come to be referred to as *Naniwa no kusushi*, or the "Naniwa medicine teacher," in later sources.[14]

The first medical texts also arrived through the Korean peninsula. In 553, books on medicine, calendrical astronomy, and divination were sent from Baekje, along with a variety of medicinal substances. A year later, medical practitioners equipped to further teach on these subjects also arrived in Japan. Two pharmaceutical specialists (*kusutorishi*) named Han Ryōbu and Chō Uda accompanied the high-ranking teacher-physicians (*ihakase*) from Baekje, highlighting that materia medica was already recognized as a particular field of medicine in that culture.[15] In the following decade, this

[14] Sōda, *Nihon iryō bunkashi*, 23.

[15] Shinmura Taku, *Nihon iryōshi* (Tōkyō: Yoshikawa Kōbunkan, 2006), 20.

growing library of medical knowledge was supplemented upon the emigration man known as Zhi Cong (J. Chisō), who purported to be a descendant of a Chinese lord of Wu. Escaping various conflicts on the Korean peninsula in the 560s, Zhi Cong was commemorated in the *Shinsen shōjirokusho* [Newly selected record of titles and family names, 814] for bringing a vast library of around 160 medical texts to Japan, which he offered to the court. While Zhi Cong's library was lost sometime after the ninth century, the *Shinsen shōjirokusho* [Newly selected record of titles and family names, 814] and later medieval sources summarized it as consisting of "internal and external texts, books on medicine, and meridian and acupuncture charts" (*naigaiten yakusho meidō*).[16] From these descriptions, it is clear that the earliest medical ideas and practices brought to Japan conformed to the therapeutic system originating in China. It would be incorrect, however, to simply state that Japan adopted "Chinese medicine" without qualifying the characteristics of this intellectual system.

[16] For reference, I used an early modern published version of the text. Manta Shin'nō, *Shinsen* shōjirokushō (Pub. Unknown: Location unknown, 1669), 136r. Waseda University Library, Tokyo.



Figure 1 The entry for Zhi Cong's grandson, Zenna Ōmi or the "Yamato Medicine Lord" (yamato kusushi no ōmi), which detailed the medical library brought to Japan by Zhi Cong in the sixth century. Manta Shin'nō, Shinsen shōjirokushō (Pub. Unknown: Location unknown, 1669). Waseda University Library, Tokyo.

Qualifying "Chinese medicine" in early Japan

Chen Shou, author of the third century *Weizhi,* made an interesting observation along with his description of the riches found in the lands of Wo. He noted that despite the presence of products like ginger, citrus, and the fruit of the Japanese pepper tree in their land, the Wo people were "unaware of their unique flavors."[17] While many have interpreted this to mean simply that none in Wo had "tasted" such things, the phrase did not refer only to consumption but also classification. After all, it was the mythic *Shennong* [Divine Farmer] who was described in the *Huananzi* [Writings of the Huainan

[17] The substances recorded here refer to both traditional ginger (zingiber officinale) and zingiber mioga. The Japanese pepper tree, or Zanthoxylum piperitum, is native to Japan and Korea.

School, c. 120 BCE] as "tasting" plants in order to evaluate their medical effectiveness.[18] Chen Shou's observation thus spoke to another important development concurrent to Japan's entry into the historical records of East Asia: the study and classification of medicinal substances within China as part of the early codification of a system that in English is often referred to as "Chinese medicine" or "Traditional Chinese medicine (TCM)."

Like the aforementioned historiographical problems surrounding the *Kojiki*, many scholars have positioned the study and use of medicinal substances in China as a primordial practice, gesturing to the legendary *Shennong* as the originator of the study of materia medica. Although many of the foundational concepts related to physiology and etiology coalesced before the fourth century CE, the evaluation and classification of substances as part of the practice of medicine did not coalesce as a field until the Han period (202 BCE -220 CE). State-led efforts resulted in the canonization of older ideas about healing and the body, as well as integrated newer practices like the use of materia medica (*bencao).*[19]

The most important result of this intellectual consolidation was the *Huangdi neijing* [Yellow Emperor's Inner Canon, c. 200 CE], which codified the understanding of the human body as an organism ruled by related processes, such as the flow of *qi*, the interplay of *yin-yang*, and the effects of the five elemental agents of wood, fire, earth, metal, and water. Another influential work from this era was Zhang Zhongjing's

[18] Paul U. Unschuld, *Medicine in China: A history of pharmaceutics* (Berkeley: University of California Press, 1986), 11.

[19] He Bian, *Know Your Remedies: Pharmacy and culture in early modern China* (Princeton: Princeton University Press, 2020), 6.

Shanghan zabing lun [Treatise on cold-induced and other miscellaneous disease, c. 220 CE], which largely reiterated many psychological aspects of the *Huangdi neijing*, but further developed the importance of the environmental factors of cold, damp, dryness, and heat in diagnosing and treating ailments. While certain aspects of this system shifted over time, such as the inclusion of wind as the main pathogenic force, these basic frameworks about the body and healing remained fundamental for practitioners of medicine across East Asia.[20]

The health of one's body, like the rest of the universe, thus relied on a complex series of complementary and opposing forces, and it was the role of medicine to maintain balance amongst them.[21] Physicians and apothecaries were expected to diagnose the causes of certain ailments and apply the correct remedy based on this widespread understanding of natural philosophy. Blockages of *qi*, which should circulate freely in the body, were remedied through acupuncture on various meridians or organs to release the energy. Moxibustion, or the application and burning of dried mugwort to acupoints, provided a similar effect. Excesses of *yin* or *yang* in the body resulted in various physiological symptoms and were treated with substances and activities associated with the opposite energy. Diseases thought to be caused by cold and wind were countered by medicines that were qualified as warming, and so forth.

The specific qualification of certain substances as *yang*-dominant or warming was in turn based in the unique pharmaceutical taxonomy that developed in China between the

[20] Paul U. Unschuld, *Medicine in China: a history of ideas* (Berkeley: University of California Press, 1985), 74-82.

[21] Paul U. Unschuld, *Huang Di Nei Jing Ling Shu: The Ancient Classic on Needle Therapy*. (Oakland, California: University of California Press, 2016), 10-11.

first and sixth centuries. Although the compilation of some materia medica texts began in the Han period along with canonization of Shennong as the progenitor of this field of study, the first extant pharmacopeia with detailed information on medicine and its formulation was Tao Hongjing's *Bencaojing jizhu* [Collected commentary of materia medica, c.500 CE]. Like the *Huangdi neijing*, the text collated other works and concepts about pharmaceuticals that had percolated for some time. Through both his title and his preface, Tao Hongjing rejected ascribing the information collected in his book entirely to the tradition of "the Divine Farmer," instead praising the efforts of generations of materia medica specialists in producing and disseminating this knowledge.[22] It was the study of *bencao*, not Shennong, that defined the practice. In order to cement this, Tao Hongjing presented a standardized system of classification that could maintain older forms of knowledge as well as expand to include newer substances and ideas, thus creating the eclectic and flexible system that continues today.

In general, pharmacopeia consisted of encyclopedic entries on various medicines, detailing their places of origin, qualities, and uses. The *Bencaojing jizhu* and other texts associated with the Divine Farmer tradition divided substances primarily according to their form, including flora, fauna, mineral, and agricultural products. Mirroring the Chinese bureaucratic system, medicines were further classified into one of three ranks: the harmless and stimulating upper rank, the effective but potentially toxic middle rank, and curative but poisonous lower rank. Individual entries on medicines included information about their qualities: *yin* or *yang*-dominant, warming or cooling, damp or dry, and so on. While some substances were effective raw or alone, most were considered

[22] Unschuld, *Pharmaceutics,* 12.

the best compounded into the form of pills, powders, water- or wine-based decoctions, and pastes.

The *Bencaojing jizhu* also reflected the growth of maritime and overland trade after the Han era, detailing around 700 medicinal substances from East, Central and Southeast Asia like as betel nut, cinnamon, and sappanwood.[23] The presence of such products highlights the key element of this medical system. It was not entirely "Chinese" per se, but composed of goods and information sourced from across the world that were organized according to taxonomies developed by Chinese scholars like Tao Hongjing. The *Huangdi neijing* and *Bencaojing jizhu* presented ways of understanding the world using etiological and taxonomic systems developed in China, built upon frameworks that could just easily integrate new practices and substances as preserve old ones. Indeed, Chinese scholars had already integrated Ayurvedic knowledge and medicines into the earliest materia medica texts.[24] Similarly, when the intellectual norms of the Chinese state were adapted across Vietnam, Korea, and Japan, indigenous practices and products were also folded into this medical system. Newer substances from Europe and the Middle East that arrived from the eighth century onwards were similarly evaluated and qualified using the pre-existing categories established by Tao Hongjing and the relationships laid out in the *Huangdi neijing*.

What arrived in Japan from the sixth century onwards was thus an inherently flexible medical system that already included various global medical concepts and products. Officials from Baekje, particularly the pharmaceutical specialists, would have

[23] Unschuld , *Pharmaceutics,* 17-20.

[24] C. Pierce Salguero, *Translating Buddhist Medicine in Medieval China* (Philadelphia: University of Pennsylvania Press, 2014).

brought ideas and substances with them to Japan from across East and Southeast Asia similar to those found in the *Bencaojing jizhu*. Zhi Cong's sixth century library certainly included some form of the *Huangdi neijing*, which his meridian and acupuncture charts (*meidō-zu*) would have supplemented by visually presenting ideas about the body as a microcosm and highlighting the various conduits and major organs through which *qi* circulated.

Institutionalization, 600-800 CE

In this way, various aspects of the medical system originating in China were introduced to Japan long before the first formal embassies to the Chinese courts began in the early seventh century. Before this time, however, it was unlikely that Japanese physicians would have been capable of reading and practicing the medicine found in these texts without help from more knowledgeable practitioners. Chinese texts required a certain level of fluency in the language, as well as a general grasp of various scientific concepts. The need for specialists to help read and implement scientific practices continued into the seventh century, with one of the most famous cultural mediators, the Mahayana Buddhist monk Gwalleuk (J. Kanroku), arriving from Bakeje in 602. Expected to teach on various subjects, he came to Empress Suiko's court equipped with important texts on calendrical astronomy, geography, and *onmyōdō,* a practice that combined natural sciences, divination, and astrology.[25]

Alongside new arrivals like Gwalleuk, the descendants of Tokoku and Zhi Cong also distinguished themselves, and in the process cemented their families' positions as the

[25] Sōda, *Nihon iryō bunkashi,* 23-4.

progenitors of the first medical lineages in Japan. Tokoku's fifth generation descendant, Enichi, played an important role in advancing the study of medicine in Japan as a participant in three official embassies to China. While Tokoku was responsible for bringing the medicine practiced in fifth century Koguryeo and Baekje to Japan, Enichi returned from his time in Chang'an equipped with the newer medicinal ideas and texts circulating in Sui (581-618) and Tang China (618-907). Although Enichi was not alone in his efforts to further medicinal study during these early embassies, he was the first to receive imperial recognition of his efforts through the conferral of the family name of Kusushi, or "medicine teacher" in 623. The formalization of titles such as these heralded early state efforts to establish more centralized political, economic, and intellectual institutions in mid- to late-seventh-century Japan. Zenna Omi, the grandson of Zhi Cong, earned a similar commendation in 645 by presenting various medicinal substances, most notably milk products, to Emperor Kōtoku. Pleased by this demonstration, the emperor gave him the hereditary title of *Yamato kusushi no omi*, or "Yamato medicine lord." Physicians and apothecaries arriving from Baekje after the fall of the country to unified Silla-Tang forces in 663 also received formal ranks within the newly reformed imperial court.[26]

While there was clear precedent for the adoption of medicinal practices from the continent and the inclusion of medical specialists in the Japan court, no systematic attempts to educate physicians or disseminate medical knowledge beyond this small group of émigrés and their descendants began until the eighth century. After the unprecedented growth of the Tang empire and the fall of Baekje, Japanese emperors

[26] Shimizu, *Nihon yakugakushi,*13.

sought to bolster their state in the eyes of both domestic and foreign observers. They did this through enacting massive institutional reforms known as *ritsuryō*. Modeled after Chinese systems, these regulations centralized authority with the imperial court, designated a merit-based bureaucracy, and advanced elite education in service of the imperial government.[27] In particular, the Taihō reforms of 701 cemented the administrative organs of the imperial court, including the various roles and ranks of the officials who served the emperor.

In order to train the newly-formed ranks of imperial bureaucrats, the court oversaw the construction of three major schools in the capital of Nara at the turn of the eighth century. The largest was the Daigaku-ryō [Institute of Greater Learning] centered on Confucian studies, literature, and mathematics, all fundamental practices for officials hoping to serve the emperor. The Onmyō-ryō [Institute of Divination] focused on calendrical astronomy, timekeeping, and astrology. Finally, the Tenyaku-ryō [Institute of Medicine] taught materia medica, acupuncture, moxibustion, and massage, as well as overseeing the creation of medical texts and evaluation of medicinal substances submitted to the court.[28] Along with the Tenyaku-ryō, another bureau known as the Naiyakushi was also created within the Ministry of the Center. Like other services overseen by this Ministry, the Naiyakushi was responsible for the direct care of the emperor and his family.[29]

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[27] For more detail on the context and specific reforms, see William Wayne Farris, *Japan to 1600: A social and economic history* (Honolulu : University of Hawaii Press, 2009.), 27-37.

[28] Sugimoto and Swain, *Science and Culture,* 31-6.

[29] Shinmura, *Nihon iryōshi*, 22.

Generally, the Tenyaku-ryō was staffed by a dozen general physicians who taught students as well as treated the imperial court. Their students numbered around forty at any one time, with priority given to those from established medical lineages. In addition, six specialists in acupuncture and moxibustion worked at the Tenyaku-ryō, with twenty students between them. Lastly, two pharmaceutical specialists and six pharmaceutical students were also in residence, alongside a few workers who oversaw the medicinal garden. While the Naiyaku'shi only employed around five physicians and ten pharmaceutical specialists, it was common for physicians trained at the Tenyaku-ryō to serve within the Naiyaku'shi as well, putting into practice the concepts and medicines they had studied at the imperial institute.[30]

The legacy of foreign specialists and their descendants was cemented during the eighth century institutionalization of medicine. The *Shinsen shōjirokushō* documented that of the 1182 families working as imperial officials in the eighth century, 413 of these traced their origin back to China or Korea within a few generations. This ratio was even starker within the Tenyaku-ryō and Naiyaku'shi, where over seventy percent of the physicians and pharmaceutical specialists either emigrated from the continent or were directly descended from those who did.[31] The continued reliance on such figures is not surprising. Even as the imperial court created a system of medicine in service of the Japanese emperor, this system remained overwhelmingly based in foreign knowledge, actors, and texts.

[30] Shimizu, *Nihon yakugakushi,*14.

[31] Sōda, *Nihon iryō bunkashi,* 25.

As a whole, the first centuries of activity at the Tenyaku-ryō favored pragmatic applications over more obtuse theoretical concepts, with a clear focus on the study and evaluation of medicinal substances and compounds. Just as in the Daigaku-ryō and Onmyō'ryō, the curriculum at the Tenyaku-ryō was based in the same sources and materials as used in the schools of Tang China. Officials worked to translate and adapt Chinese texts for use by Japanese physicians, as well as produce Japanese pharmacopeia using Chinese models.[32] Early efforts at the imperial institutes centered on Tao Hongjing's *Bencaojing jizhu.* By the late eighth century, officials shifted their focus to the *Xinxiu bencao* [Newly revised materia medica, 659]. Often considered the first state pharmacopeia, the *Xinxiu bencao* was commissioned by the Tang court and purported to survey all the medicines known to within that expansive empire. Accordingly, it boasted entries on over 800 medicinal substances from across the Eurasian continent and Indian Ocean. Examples of this include theriac from Europe, saffron from the Middle East, and cardamom from South Asia, all of which expanded the pharmaceutical canon originally produced by Tao Hongjing.[33]

A little over a century after the compilation of *Xinxiu bencao*, Japanese scholars began working on adapting the text for the imperial court. According to the the *Shoku nihongi* [Continued chronicle of Japan, 797 (Enryaku 16)], by 787 (Enryaku 1) physicians at the Tenyaku-ryō had successfully corroborated the entries found in the *Xinxiu bencao* with the *Bencaojing jizhu*, finding that the newer text added over 100 new

[32] Shinmura, *Nihon iryōshi*, 25-27.

[33] For more, see Unschuld 1986, 44-50. Carla Nappi, "Bolatu's Pharmacy: Theriac in Early Modern China," *Early Science and Medicine* 14, No. 6 (2009): 741.

substances to the pharmaceutical canon.[34] While this relatively swift quantitative analysis was accurate, the actual process of translating and adapting the *Xinxiu bencao* was a far lengthier and more painstaking process. Japanese officials working at the Tenyaku-ryō not only had to grapple with novel substances like those detailed in the *Xinxiu bencao*, but also to needed to finish constructing a unified language for the identification, evaluation, and use of medicines. In addition, they had to ascertain whether the medicines found in the *Xinxiu bencao* were present in Japan, and then collate all the various names associated with those medicines in Japanese, Chinese, and presumably Korean. Imperial officials then had to determine formal translations or transliterations for foreign substances, and add indigenous Japanese substances to the pharmacopeia. As such, *Honzō wamyō* [Japanese names for materia medica], the first proper translation of the *Xinxiu bencao,* was not completed until 918. Even then, only half of the entries included Japanese names.[35]

A new world of medicines in eighth century Japan

These early state-led medical activities were aided by various imperial mandates regarding the collection of intellectual and material resources from within Japan and beyond. In 713, Empress Genmei decreed that the flora, fauna, and other products of each region under imperial rule should be documented for the use of the imperial court.[36] The resulting *fudoki* [provincial reports] produced between the eighth and tenth centuries

[34] Shimizu, *Nihon yakugakushi,*15-16.

[35] Federico Marcon, *The Knowledge of Nature and the Nature of Knowledge In Early Modern Japan* (Chicago: The University of Chicago Press, 2015), 30-31.

[36] Shimizu, *Nihon yakugakushi,* 20.

compiled agricultural, geographical, and historical information on various regions in accordance with this law. *Fudoki* highlighted substances that could be submitted to the government as taxes, such as rice, cloth, paper, and livestock. These lists heavily featured medicines as a valuable commodity demanded by the court and its institutions, detailing various substances found across Japan like kudzu, phellodendron, and gentian. Wooden tags (*mokkan*) excavated at the Tenyaku-ryō site in Kyoto, which would have originally been affixed to cargo containers holding Chinese rhubarb, cannabis, and borneol, document the variety of medicinal substances shipped to the capital from various regions as taxes and analyzed by imperial physicians.[37]

These efforts were not only concerned with the collection and dissemination of information about domestically produced substances, but also with determining the value of those medicinal products. *Fudoki* and other government documents worked to specify information about the relative value and demand for products from various Japanese provinces. Even in these early texts and taxonomies, Japanese officials clearly understood medicine and medicinal substances to be commodities. This conception of medicine was codified in the *Engishiki* [Engi-era Procedures, 927 (Enchō 5)], which included a section entitled "Miscellaneous medicines to be provided annually by various domains" (*shokoku shinnenryō zōyaku*). According to the instructions found in this text, individual provinces were required to submit certain quantities of specific medicinal substances to the Tenyaku-ryō as part of their annual taxes.[38] For instance, Bizen (Okayama) was expected

[37] Kosoto Hiroshi, *Kanpō no rekishi: Chūgoku, Nihon no dentō Igaku* (Tokyo: Taishūkan shoten, 1999), 97. See also Aoki Michiko Yamaguchi, *Records of Wind and Earth: a translation of Fudoki with introduction and commentaries* (Ann Arbor Michigan: Association for Asian Studies, 1997).

[38] Okazaki, *Kusuri no rekishi*, 64-5.

to send ten *kin* [5 kg] of spikenard, nine *kin* of magnolia bark, and eight *kin* of cannabis. These medicines would then be evaluated, stored, and compounded into therapeutic formulations at the Tenyaku-ryō, as well as distributed to various provincial capitals for use there.[39]

The documentation and commodification of indigenous medicinal substances paralleled the introduction of Japanese scholars and consumers to the global medicinal marketplace. As officials at the Tenyaku-ryō worked to read and adapt the *Xinxiu bencao*, increased diplomatic and commercial exchange brought many of the substances found in the pages of that pharmacopeia to Japan for the first time, aiding in the full-scale adaption of medicine from the continent.[40] Japanese actors benefitted from the overland and maritime trade that stretched across Eurasia and the Indian Ocean and converged in the markets of Tang China, providing access to a wealth of new global substances and ideas.

Until the late ninth century, records suggest that trade across East Asia was conducted largely under the guise of diplomatic exchange. Embassies equipped with important state figures and documents arrived at allied courts along with massive cargoes of goods, much in the same way Komuhachimu Kamu Kimu had in the early fifth century. While the most valuable objects were offered to the emperor, imperial officials and ranking nobility were capable of purchasing goods with approval from the court. Aside from the diplomatic and economic benefits such a system provided, it also maintained state control over continental goods and delimited maritime mobility to agents approved by the court. Between sending embassies to Tang China and receiving

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[39] Fujiwara no Tokihira, *Engishiki*, manuscript copy, National Diet Library, Tokyo.

[40] Wang Gangwu, T*he Nanhai Trade: the Early History of Chinese Trade in the South China Sea* (Singapore: Times Academic Press, 1998)

those from Silla and Balhae, official interstate trade supplied Japanese officials and physicians with medicines from East, Southeast, and South Asia that were central to their newly institutionalized medical system.[41] As such, scholars at the Tenyaku-ryō were capable of physically obtaining the same medicines they were studying in *bencao* texts over the course of the eighth century.

The first major instance of this dates to 742, when the Buddhist monk Jian Zhen (J. Ganjin) returned to Japan as part of an embassy to Tang China. The cargo of his ship included hundreds of pounds of medicinal incenses composed of musk from China, benzoin from Sumatra, and frankincense from South Asia. In addition, the ship also brought borneol, black pepper, and aloeswood from the wider Indonesian archipelago, as well as asafetida, a resin made from plants native to Iran and Afghanistan. All of these goods traveled from their countries of origin to the marketplaces of Chang'an, where they were purchased by members of the Japanese embassy and ultimately shipped to the government office (*dazaifu*) overseeing trade in the port of Hakata in northeastern Kyūshū.[42] Once there, this cargo went to the Tenyaku-ryō, where it was evaluated and compounded for use by the imperial court.

Other possible endpoints for imported medicines were prominent Buddhist temples tasked with providing medical care for the poor and ailing. Across Asia, Buddhism has been associated with healing since its inception in India. This association was further enhanced in Japan due to the direct involvement of Buddhist monks in the transmission of medical knowledge and objects. Alongside Gwaelluk and Jian Zhen,

[41] Tōno Haruyuki, *Kentōshisen: Higashi Ajia no naka de* (Tokyo: Asashi Shinbunsha, 1999).
[42] Kosoto, *Kanpō no rekishi,* 98-9.

monks from Tang China and Silla Korea like Fa Cang (J. Hōzō),and Fa Lian (J. Hōren) traveled to and from the imperial court extensively in the eighth century, bringing important texts and products as well as serving as teachers for other monks and imperial officials alike. Emperors granted many of these Buddhist intermediaries titles of *zō**kan* (monk officials), which put them on par with the imperial nobility and officially integrated them into the Japanese court.[43]

Aside from the mobility afforded to monks as they worked to spread Buddhism across Asia, there was also a connection between the religion and healing. In Buddhist thought, many ailments were believed to be curable through the intervention of monks, with treatments primarily consisting of spiritual therapies, such as prayer, exorcism, or the recitation of sutras. These were supplemented by bodily practices, such as diet, abstinence, or the use of medicines.[44] Certain institutions became well-known sites of healing in premodern Japan. Based on the concepts of kingly rule, in 593 Empress Suiko sponsored the construction of medical facilities called *seyaku'in* within the grounds of Shiten'nō-ji in Osaka to treat imperial subjects.[45] Using this precedent, successive emperors and nobility served as patrons for other medical activities at Buddhist temples through the construction of *seyaku'in* or the donation of necessary supplies. At such facilities, monks acted as *kanbyō'zō* (caregiver monks) who oversaw ailing

[43] Sōda, *Nihon iryō bunkashi,* 29-31, 95.

[44] C. Pierce Salguero and Andrew Macomber, "Introduction" in *Buddhist Healing in Medieval China and Japan*, eds. C. Pierce Salguero and Andrew Macomber (Honolulu: University of Hawai'i Press, 2020), 1-6.

[45] Originally there were three distinct services: the Hiden'in for the poor, the Ryōbyō'in for convalescence, and the Seyaku'in for general treatment and medicinal therapies. These would later be folded into the Seyaku'in.

parishioners.[46] In addition to the medicinal gardens cultivated at larger temples or *seyaku'in*, rich patrons also donated medicine for use by the caregivers. The earliest extant example of this is found in the collections of Hōryū-ji. A record produced in 749 entitled *Hōryū-ji garan engi narabi ni ruki shizaichō* [Ledger of holy items and valuable assets held by Hōryū-ji] listed imported goods like cinnamon, licorice, clove, storax, and sandalwood amongst its store of medicines.[47]



Figure 2 Cinnamon stored at the Shōsō'in dating to the eighth century. Shōsō'in Treasury, Nara. Source: The Imperial Household Agency.

[46] Katja Triplett, *Buddhism and medicine in Japan: a topical survey of a complex relationship 500-1600 CE* (Berlin: De Gruyter, 2019).

[47] Kosoto, *Kanpō no rekishi,* 101. The sandalwood in particular had certain trade markings that indicate that it likely originated in the Sassanian Empire.

The most impressive collection of eighth century medicines was preserved in the Shōsō'in or storehouse of Tōdai-ji in Nara. In 756 CE, Empress Kōmyō dedicated 21 chests of imported medicines to the temple in memory of her late husband, Emperor Shōmu.[48] Many of these donated medicines were native to China, such as musk, sweet gum, and hyssop, while others came from much farther away. There was black pepper, Indian frankincense, cinnamon, rhinoceros horn, betel nut, and shellac from India, Arabia and Persia, as well as clove from the Malukus Islands and oak gall from Turkey.[49] The substances stored in Tōdai-ji were primarily intended for use by the *seyaku'in* at Kōfuku-ji nearby, which had been established by Kōmyō's natal family, the influential Fujiwara clan. A wealth of documents recorded both the original status of the medicines as well as various requests made to remove certain quantities for compounding and consumption. Despite depletion over the millennium, around 40 of these substances remain extant in the Shōsō'in, and have undergone extensive chemical and forensic analysis determining their places of origin and qualities relative to modern examples of the products.

[48] Asahina Yasuhiko, *Shōsōin Yakubutsu* (Ōsaka: Shokubutsu bunken kankōkai, 1955).

[49] Sōda, *Nihon iryō bunkashi,* 35-7. Table adapted from Asahina Yasuhiko, *Shōsōin Yakubutsu*, 26-27, 490-501.

Table 1 Medicinal substances donated to the Shōsō'in in 756

Common name(s)	***Linnean Name* (if applicable)**	***Recorded name* (Characters)**	**Place(s) of origin**
Deer musk	*Moschus moschiferus*	*jakō* (麝香)	Central Asia, China
Rhinoceros horn	*Rhinoceros unicornis*	*saikaku* (犀角)	India, Malaysia, Indonesia
Laurel cherry	*Prunus undulata*	*zuikaku* (蕊核)	Southeast Asia
Corydalis, theiarlung	*Corydalis bungeana*	*shōsō* (小草)	China
Long pepper	*Piper longum*	*hihatsu* (畢撥)	Persia
Black pepper	*Piper nigrum*	*koshō* (胡椒)	Southern India, Southeast Asia
Calcite	n/a	*kansui seki* (寒水石)	Asia
Wild mango	*Spondias pinnata*	*amaroku* (阿麻勒)	Indochina, Philippines
Indian gooseberry, emblic myrobalan	*Phyllanthus emblica*	*anmara* (竜麻羅)	Sri Lanka, Malaysia, Vietnam, Southwest China
Figwort, kutki	*Picrorhiza kurroa*	*koku'ōren, ko'ōren* (黒黄蓮)	Nepal
Gypsum	n/a	*riseki* (理石)	Unknown
Limonate	n/a	*uyoryō* (禹餘粮)	Unknown
"Dragon bone" [deer antler]	Possibly *Cervocerus novorossiae*	*ryūkotsu* (龍骨)	Central Asia, Northern China
"White dragon bone" [fossilized deer bone]	Possibly *Cervocerus novorossiae*	*haku'ryūkotsu* (白龍骨)	Central Asia, Northern China
"Dragon horn" [fossilized deer antler]	Possibly *Cervocerus novorossiae*	*ryūkaku* (龍角)	Central Asia, Northern China
"Five-color dragon teeth" [elephant or mammoth tusk]	*Palaeoloxodon or parelephas*	*goshiki ryūshi* (五色龍歯)	Central Asia, Northern China
Dragone bone stone [Petrified wood]	n/a	*niryūkosseki* (似龍骨石)	Central Asia, Northern China
Dried bamboo fungus	*Omphalia lapidescens*	*raigan* (雷丸)	China
Hosta bulb, plantain lily bulb	*Agavoideae hosta*	*kikyū* (鬼臼)	Eastern China

Common name(s)	***Linnean Name*** **(if applicable)**	***Recorded name*** **(Characters)**	**Place(s) of origin**
Shellac, stick-lac	*Kerria lacca*	*shikō* (紫鉱)	Persia, India
Red clay	n/a	*shakusekishi* (赤石脂)	Unknown
Calcite stalactite	n/a	*shōnyūshō* (鍾乳床)	Unknown
Betel nut, areca nut	*Areca catechu*	*binrōshi* (檳榔子)	Southern China, Southeast Asia
Purging croton seeds	*Croton tiglium*	*hazu* (巴豆)	Arabia, Malaysia
Oak gall (made by Aleppo wasps)	*Quercus infectoria, (cynips quercusfolii)*	*mushokushi* (無食子)	Turkey, Persia
Magnolia bark	*Magnolia officinalis*	*kōboku* (厚朴)	China
Chinese milkwort	*Polygala tenuifolia*	*onji* (遠志)	Asia
Black myrobalan	*Terminalia chebula*	*kariroku* (呵梨勒)	Southwest China, India, Malaysia, Vietnam
Cinnamon	*Cinnamomum cassia*	*keishin* (桂心)	Southern China, Indonesia, Malabar
Blue daphne, lilac daphne	*daphne genkwa*	*genka* (芫花)	China
Ginseng	*Panax ginseng*	*ninjin* (人参)	Northeast China, Korea
Chinese rhubarb	*Rheum palmatum*	*dai'ō* (大黄)	Western China, Mongolia
Beeswax	n/a	*rōmitsu* (臘蜜)	Unknown
Licorice	*Glycyrrhiza glabra*	*kanzō* (甘草)	Arabia
Epsom salt	n/a	*bōshō* (芒消)	Unknown
Balsam, tacamahac	Resin of *Populus euphyratica* or *calophyllum inophyllum*	*kodōritsu* (胡同律)	Western China, Persia
Mica powder	n/a	*unmo'fun* (雲母粉)	Unknown
Unrefined salt	n/a	*jūen* (戎塩)	Unknown
Heartbreak grass root	*Gelsemium elegans*	*yakatsu* (治葛)	China
Orpiment, realgar	n/a	*oō* (雄黄)	Unknown
White quartz	n/a	*hakusekiei* (白石英)	Unknown
Talc	n/a	*kasseki* (滑石)	Unknown
Amber	n/a	*kohaku* (琥珀)	Unknown
Birthwort root, pipevine root	aristolochia contorta	*seimokkō, shōmokkō* (青木香)	Eastern China, Korea
Saussurea root, putchuk,	Saussurea costus	*mokkō* (木香)	India
Cloves	Eugenia aromatica	*chōkō* (丁香)	Maluku Islands (Indonesia)

Common name(s)	***Linnean Name*** **(if applicable)**	***Recorded name*** **(Characters)**	**Place(s) of origin**
Sappanwood	Biancaea sappan	*suhō* (蘇芳)	Thailand, Vietnam, Indonesia
Rosary pea, jequirity	abrus precatorius	*mosshokushi* (没食子)	South and Southeast Asia
Olibanum, frankincense	Resin of *Boswellia* Family trees and shrubs	*kunriku* (薫陸)	Arabia, India
"Purple powder" [Potash mica, Muscovite]	n/a	*shishoku'fun* (紫色粉)	Unknown
"White powder" [Calcium carbonate]	n/a	*hakushoku'fun* (白色粉)	Unknown
Gallstone of a pig	n/a	*jūtan* (獣膽)	Unknown
Cinnabar, red lead	n/a	*tan* (丹)	Unknown
Silver dust	n/a	*gindei* (銀泥)	Unknown

Table 2 Medicinal substances donated to the Shōsō'in in 756

In spite of the purported purpose of *seyaku'in* to serve the needy, the majority of requests for the medicines stored at Tōdai-ji originated from the imperial court.[50] Similarly, the beneficiaries of the spiritual treatments provided at *seyaku'in* mostly consisted of nobility, as seen in famous texts like *The Tale of Genji*. Even as global medicinal substances and ideas related to their use were introduced in great numbers to Japan over the course of the eighth century, access to such products and medical concepts related to them remained extremely limited. Indeed, the story of the medicines stored in the Shōsō'in is illustrative of the major themes defining medicine in Japan before the tenth century: activities were centered entirely upon the imperial court and the study of medicinal substances, with the only alternate sites of medicine consisting of influential temples that benefitted from noble patrons capable of accessing valuable imported goods from the continent.

[50] Shimizu, *Nihon yakugakushi,* 33.

Growth and Dispersal, 800-1200 CE

With this system in place, imperial physicians continued to work to adapt medical texts, materials, and practices for use in Japan throughout the Heian era (794-1185). The first books produced by Japanese physicians working at the Tenyaku-ryō demonstrated the continued focus on medicinal substances as well as the issue of language that troubled early medical activities. Taking inspiration from the *Xinxiu bencao* and its position as a state text, Emperor Heizei decreed that the senior physicians working at the Tenyaku-ryō should record medicinal substances and compounds used in Japan. In accordance with this order, a high-ranking physician at the Tenyaku-ryō, Wake no Hiroyo, compiled *Yakke taisō* [Primordial classic of medicine, 799 (Enryaku 18)]. Hiroyo claimed to have collected treatments from imperial officials, temples, and "common people" alike, although the only extant sections of the text largely adopt the same material and therapeutic schema seen in *Xinxiu bencao*. Over the next century, emperors ordered similar collections, resulting in works like *Daidō ruijuhō* [Classic formulas of the Daidō era, 808] and *Kinranh*ō [Golden orchid methods, 868], which supplemented the growing corpus of Japanese medicinal literature. Just as in *bencao* texts, these early Japanese pharmacopeia included substances from across Asia. However, the interchangeable use of words, measurements, and pronunciations from Chinese, Japanese and Korean oral and textual sources makes it difficult to fully reconstruct the medicines used by early Japanese doctors.[51]

By the tenth century, the efforts of generations of scholars trained at the Tenyaku-ryō, particularly those affiliated with the distinguished Wake or Tanba families, resulted

[51] Shinmura, *Nihon iryōshi*, 26-28.

in the first attempts at full-scale adaptations of *bencao* and theoretical texts. The *Honzō wamyō* [Japanese names for materia medica, 918] and the encyclopedic *Wamyō ruijushō* [Japanese names by classification, 938] provided standardized terminology for indigenous and imported medicinal substances that was based primarily in the *Xinxiu bencao*. In 984, Tanba Yasuyori completed *Ishinpō* [Core methods of medicine], which served as a partial translation of various physiological and etiological texts dating to the seventh century. Its contents derived most notably Chao Yuanfang's *Zhubing yuanhou lun* [General treatise on causes and appearance of disease, 610] and Sun Sumiao's extensive diagnostic and therapeutic text *Beiji qianjin yaofan*g [Essential formulae for emergencies worth a thousand gold, 640].[52] It is unknown when exactly these Sui and Tang sources came to Japan, although some attribute their arrival to the missions involving Kusushi Enichi in the seventh century. Both works were notable for their delineation of certain specializations within the medical canon, most importantly gynecology, obstetrics, and pediatrics. A century after the completion of *Ishinpō*, Yasuyori's grandson, Masatada, supplemented the work with the *Iryakushō* [Taxonomical survey of medicine, 1081], which sought to simplify the contents of the *Ishinpō* for use by Japanese physicians without extensive access to imported texts.[53]

Despite these initial forays into the more theoretical aspects of medicine, the imperial court and its medical institutions remained primarily invested in substances and formulations. Both the *Ishinpō and Iryakushō* included detailed information about optimal medicines to use once the cause of an ailment had been determined, most of

[52] Sōda, *Nihon iryō bunkashi,* 46-47.

[53] Sugimoto and Swain, *Science and Culture,* 140-141.

which still primarily derived from Sui and Tang texts. At some point before the end of the Heian era, Tang Shenwei's *Zhenglei bencao* [Classified materia medica, 1082] arrived in Japan, where it eventually became the primary pharmaceutical text used by imperial physicians and other medical practitioners until the late sixteenth century. Like the *Xinxiu bencao*, Tang Shenwei's text built upon the framework established by Tao Hongjing, expanding the number of substances in the pharmaceutical canon to over 1000. In addition to translating and adapting these expanded and simplified *bencao* from China, Japanese emperors continued to order the top physicians at the Tenyaku-ryō to create updated pharmacopeia once every few decades.[54]

These imperial physicians tended to favor the cinnabar-based treatments that were popular with their Chinese counterparts. While cinnabar, a form of mercury sulfide, was mined throughout Japan, Japanese physicians considered that the ore produced in China was generally of a higher quality and continued to import it to Japan throughout the premodern era. Thought to be imbued with anti-aging properties, cinnabar medicines featured heavily in the *Ishinpō* and other tenth century texts produced in Japan, and were intended for consumption by those hoping to prolong their rule. These medicines were typically compounded in liquid, powder, and pill form. As time passed specific formulations came to be known by a variety of euphemistic names, such as Kin'en [liquid gold], Kōsetsu [crimson snow], and Shinka [deification].[55]

Such products were part of a growing category of medicine known as *reiyaku* (miracle medicine), which served as some of the first named medicinal compounds that

[54] Shimizu, *Nihon yakugakushi,* 38.

[55] Sōda, *Nihon iryō bunkashi,* 43-4.

began to circulate around East Asia from the eighth century onward. Such names consisted of two to three Chinese characters, with the final character commonly describing the form in which the medicine was compounded, such as a pill (*en, gan*), powder (*san*), or salve (*kō*). For earlier formulations, these names were almost entirely euphemistic or poetic, and based in particular cultural associations. Named medicines were also associated with some lineage, such as a specific physician, emperor, Buddhist sect, or other respected source. Both a name and a lineage were required for *reiyaku*. In one of the few instances of a foreign specialist coming directly to the capital after the eighth century, in 1014 (Chōwa 10) the Song monk and physician Huiqing was summoned to the court due to his knowledge of eye illnesses and effective medicines. When imperial officials learned that the medicine he intended to administer to them had no name, they ultimately chose not to use it.[56] Centuries of medicinal education had taught these specialists that named medicines were ideal, and it was namelessness rather than effectiveness that ultimately led to their determination not to trust Huiqing's medicine.

[56] Andrew Edmund Goble, *Confluences of Medicine in Medieval Japan: Buddhist Healing, Chinese Knowledge, Islamic Formulas, and Wounds of War*. (Honolulu, University of Hawai'i Press, 2011), 5.

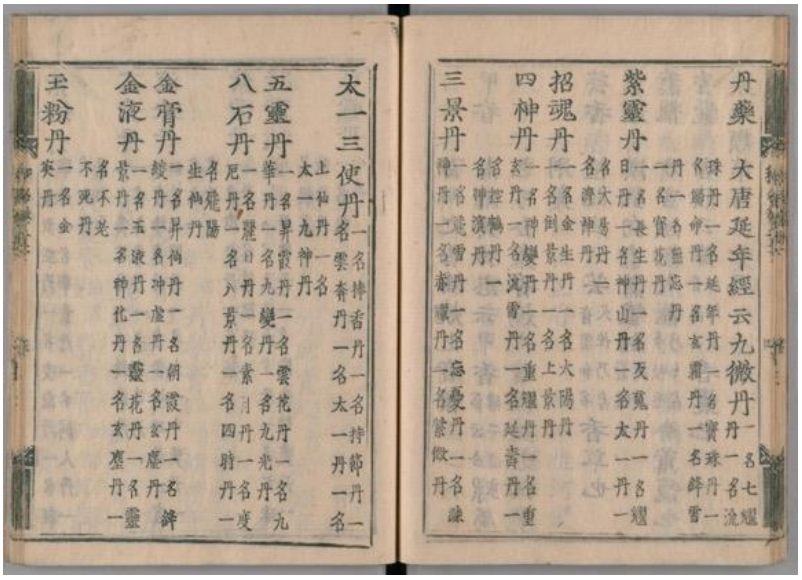

Figure 3 Cinnabar medicines (*tan'yaku*) and their various names listed in an early seventeenth century printed version of *Wamyō ruijūsho* [Japanese names by classification, 938]. Minamoto no Shitago, *Wamyō ruijūsho* (Location Unknown: Nawa Dōen, 1617). National Diet Library, Tokyo.

In general *reiyaku* served as panacea with semi-mystical properties, such as staving off death, restoring one's youth, and warding off disease. Aside from cinnabar-based *reiyaku,* other well-known medicines were Gin'en [liquid silver], the primary component of which was mercury, and Shisetsu [violet snow], which was composed of agarwood, cloves, licorice and more than a dozen other substances. Shisetsu illustrated not only the global nature of many medicines in premodern East Asia, but also the importance of a lineage in the popularity of certain *reiyaku.* While the name and formulation itself came from *bencao* texts, in Japan Shisetsu was associated more with the aforementioned Buddhist monk Jian Zhen, who the *Ishinpō* claimed had not only overseen the shipment of this product to Japan but also taught the head of the Tenyaku-ryō about its use and formulation.[57] This layering of particular historical conceptions with

[57] Sōda*, Nihon iryō bunkashi,* 31.

established global products epitomized the trade and consumption of *reiyaku* in premodern Japan.

While certain amounts of these medicines were compounded at the Tenyaku-ryō for the imperial court throughout the rest of the Heian era, *reiyaku* also continued to be imported into Japan from the continent. As state-led exchange dwindled by the turn of the tenth century, official regulations on trade also weakened. Private commercial ventures spearheaded by enterprising Chinese and Japanese merchants flourished, leading to an influx of familiar and novel medicines alike. Nearly three centuries after the end of formal diplomatic exchange with the continent, the courtier Nakayama Tadachika wrote in his diary about the arrival of Chinese ships in 1180 (Shōryaku 5), and how he was sending an attendant to go purchase medicines from amongst their cargo.[58] Tadachika notably omitted exactly where the medicinal merchants had made landfall, no doubt because they were using one of the many private ports that flourished after the tenth century. While trade continued at the formerly state-run institution of the *dazaifu* near Hakata, Chinese merchants were permitted to come there only once every three years. In response, private ports opened in northern Kyushū and southern Honshū on the estates of prominent nobility (*shōen*) that provided new outlets for trade and profit. Neither entirely illicit nor entirely legal, such ports relied on the power of the individual families to maintain operations.[59] Tadachika, a noble himself, was no doubt making use of this

[58] Shimizu, *Nihon yakugakushi,* 36.

[59] W. McCullough, *The Heian court, 794–1070,* in *The Cambridge History of Japan, Vol. 2, Heian Japan, eds.* D. Shively & W. McCullough (Cambridge: Cambridge University Press, 1999), 86-88.

system when he dispatched someone to go buy medicine for him from the newly arrived Chinese ships.

Such commercial ventures were reflected in contemporary literature as well as official records. The mid-eleventh century text *Shinsarugakuki* [Record of new monkey music] catalogued the members of a fictional mid-ranking noble family living in Kyoto, detailing their livelihoods and personalities in colorful and list-heavy prose. While the figures and stories were imagined, the text encapsulated various important aspects of late Heian popular culture in the capital and the various careers embraced by noble families who no longer solely relied on the imperial court for their employment. The imaginary Eighth Son, described as a head merchant, traded in a diverse array of products from China and Japan.[60] Unsurprisingly, many of these goods were medicinal in nature, including a number of named *reiyaku*.

> From China comes agarwood, deer musk, sandalwood, clove, licorice root, putchuk, borneol, rosewood, candlewood, sappanwood, and alum; compounded medicines like Kōsetsu [crimson snow], Shisetsu [violet snow], Kin'en-tan [liquid gold elixir], Gin'en-tan [liquid silver elixir] and Shikon-kō [violet gold oil]; purging croton, orpiment, myrobalan, betel nut, gamboge, indigo, dyes of purple, dark green, and sky blue; cinnabar, vermillion, and black pepper…

None of these medicines were new to Japan, but their presence in a source like the *Shinsarugakuki* demonstrated that the earlier efforts of Japanese physicians to standardize information relating to these imported substances were successful. The text's author, Fujiwara no Akihira, was a ranking member of the imperial court trained at the Daigaku-

[60] Fujiwara Akihira and Hisao Kawaguchi, *Shin sarugakuki* (Tōkyō: Heibonsha, 1983), 290-5.

ryō, but not a specialist in medicine by any means. His inclusion of such goods thus indicates that they enjoyed a certain degree of familiarity amongst the nobility in Kyoto.

Furthermore, the designation of these medicines as "Chinese" recalls the earlier issue of qualification. Like the majority of other sources produced after the tenth century, the *Shinsarugakuki* referred to these products as coming from "China," written using the character for the Tang court (*tō; kara*). Despite the fall of the Tang empire in 907, Japanese texts continued to refer to general Chinese goods, places, and peoples using that particular character for the rest of the premodern era. Rather than indicating a specific cultural or political group, the qualification was purely economic: Chinese goods arrived on Chinese ships brought by Chinese people to Japan. While the actual origins of the goods, ships, and merchants were far more geographically diverse, the role of the Chinese marketplace as a major center for the collection and dissemination of global products was the primary identifying factor for Japanese observers. This same method of qualification would later be applied to the European groups who began to conduct trade with Japan in the mid-sixteenth-century.

The merchant son and his medicinal wares listed in the *Shinsarugakuki* also illustrated the growing relevance of trade and the public marketplace in the late Heian era. The official embassies overseen by the imperial court to Sui and Tang China did not end in the tenth century because Japanese rulers were no longer interested in developing foreign exchange and trade, but rather because enough independent actors were able to take charge of such matters instead of the state. It was fiscally and logistically beneficial for the imperial court to no longer finance and organize embassies when private

merchants, Buddhist temples, and rich nobles were more than willing to obtain necessary foreign goods, exchange diplomatic letters, and transport personnel for training.

This growth of private trade paralleled the dispersal of medicinal activities away from the imperial court. Over a few centuries, imperial institutions had successfully developed a dedicated class of trained officials who now dominated court activities. By the mid-tenth-century, the Daigaku-ryō and Tenyaku-ryō accepted few students who were not already affiliated with influential noble lineages. Eventually this educational system transitioned into a hereditary one where specific families maintained certain disciplines in service to the emperor. While the Tenyaku-ryō was not formally disbanded until 1869, only members of the Wake and Tanba families were permitted to hold the positions and titles affiliated with it.[61] Earlier medical lineages, such as those associated with Tokoku and Zhi Cong, disappeared from the record, disregarded in favor of families who distinguished themselves at the height of imperial efforts to consolidate power in the Nara and Heian courts. By the end of the tenth century, the study of medicine at the court was no longer aimed at adapting and disseminating knowledge but maintaining socio-political status through the exercise of an exclusionary family practice (*kagaku*).[62] Just as with trade, however, the reduction of official, state-led educational activities did not lead to intellectual stagnation, but rather the strengthening of alternative sites and practitioners of medicine in Japan throughout the medieval era.

[61] Shinmura, *Nihon iryōshi,* 30.

[62] Sugimoto and Swain, *Science and Culture,* 115-117

The flourishing of Buddhist medicinal activity, 1200-1350

In 1185, the emperor ceded most of his economic, military, and political power to Minamoto no Yoritomo, the victor of a series of succession and intra-family disputes, thus ending five centuries of imperial rule and establishing the system of governance known as the shogunate or *bakufu*. Yoritomo and his successors were ceremonially granted the right to rule by the emperor and his court, who continued to reside in Kyoto and wield considerable influence. As a whole, the first *bakufu* maintained many of the legal and economic systems already established by the imperial court but instituted the de-centralization of rule through the use of trusted regional intermediaries like *shugo* and *jitō*. Intellectual activities mirrored these general trends throughout the Kamakura period (1185-1333). Physicians associated with the imperial court remained respected practitioners of their craft, but their focus remained on maintaining their own legitimacy rather than translating and adaptating newer material. Even the few newer texts produced within the court, such as Koremune Tomotoshi's *Honzō iroha shō* [Materia medica ordered in Japanese, 1284], remained virtually unknown beyond the closed network of imperial physicians until the early modern era.[63] Thus the medicine of imperial physicians remained largely inaccessible to the rest of Japan.

Dynamic engagement with new texts and practices arriving from the continent shifted to different intellectual centers, most notably Buddhist temples. By the eleventh century, temples were powerful socio-economic entities in their own right due to favorable taxation exemptions and connections with influential nobility. Notably, in 1259 the monk Ninshō founded the Shingon temple Gokuraku-ji in the newly established

[63] Goble, *Confluences of Medicine,* 27.

bakufu capital of Kamakura in eastern Japan. Actively adopting the precedent established by Empresses Suiko and Kōmyō centuries before, Ninshō and his shogunal patrons, the influential Hōjō family, built a *seyaku'in* at Gokuraku-ji, equipped with standard treatments facilities as well as a leprosarium. Although destroyed during the attempted imperial restoration of 1333, the facilities at Gokuraku-ji became famous for serving the medicinal needs of the members of the Kamakura *bakufu* as well as the growing population in the capital.[64]

Buddhist institutions utilized this reputation as sites of healing and medicine as they sought to expand their realm of influence beyond the socio-political elite. As religious historian Paul Demieville noted, the widespread acceptance of Buddhism in medieval Japan was largely due to its association with healing and "therapeutic elements," with monks positioned in stories as powerful healers.[65] Therapies still primarily consisted of prayer, exorcism, and other practices based in the concept that most ailments were caused by evil spirits, possession, or curses. Some Buddhist institutions also came to be known for novel treatments, such as medicinal baths, moxibustion, or revitalizing diets, which were treated as valuable secrets by the monks who formulated them. Larger temples or those equipped with a *seyaku'in* often cultivated medicinal substances on their grounds for use by the monks caring for parishioners.[66]

Beyond these therapeutic activities, Japanese monks also continued to act as important material and intellectual intermediaries, particularly because of their regular

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[64] Sugimoto and Swain, *Science and Culture,* 141.

[65] Paul Demieville, *Buddhism and Healing: Demiéville's Article 'Byō' from Hōbōgirin,* trans. Mark Tatz (Lanham, MD: University Press of America, 1985), 52.

[66] Shinmura, *Nihon iryōshi,* 38-40.

travel to study in the great Buddhist centers of China. As opposed to the Nara and Heian eras, these monks did not travel as emissaries of the imperial court or the Kamakura *bakufu*, but as individuals seeking knowledge. Although Myōan Eisai is typically remembered for his advancement of the Zen sect in Japan, the monk returned from his extensive travels in China in 1191 (Genkyū 2) not only with Zen texts but also with new medicinal ideas regarding the use of tea. Tea had been introduced to Japan sometime in the ninth century and cultivated in various regions as part of the annual offerings made to the imperial court. However, the use and consumption of tea was extremely limited before Eisai authored the instructional text *Kissa yōjōki* [Account of the health benefits of tea drinking, 1211 (Jōgen 5)].[67]

As seen in his choice of title, Eisai positioned tea itself as a form of medicine, in particular the kind of powdered green tea that had recently become popular on the continent. The first volume of the text borrowed heavily from established physiological frameworks and *bencao*. Eisai summarized the uses of tea in China and India, claiming that where acupuncture and moxibustion failed tea was able to balance the flow of *qi* across the various conduits within the body. Intriguingly, the second volume of *Kissa yōjōki* departed from tea entirely, instead focusing on formulations using mulberry, ginseng, cloves, and other substances that were effective against specific ailments like palsy, sores, and lack of appetite.[68]

[67] Sugimoto and Swain, *Science and Culture,* 143.

[68] Goble, *Confluences of Medicine,* 9. Sōda, *Nihon iryō bunkashi*, 71.

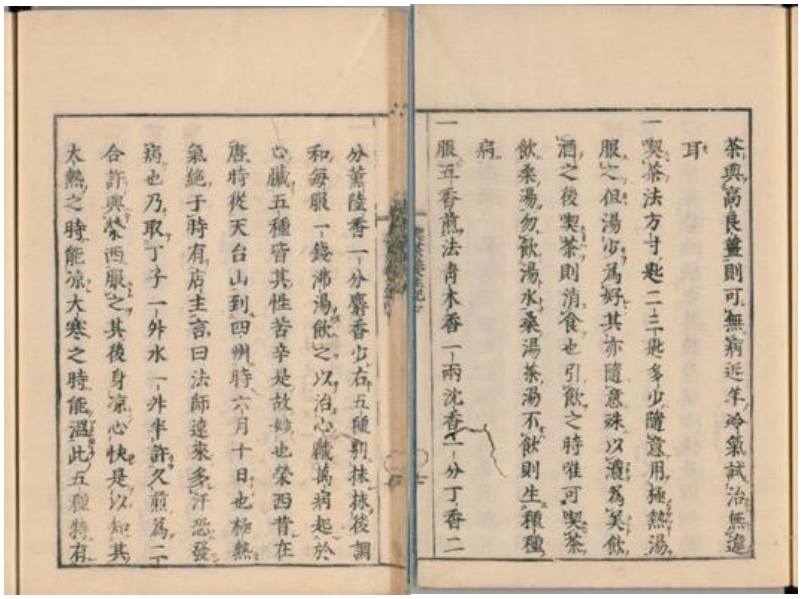

Figure 4 The final pages of *Kissa yōjōki*, featuring formulations using tea, cloves, agarwood, and other substances that Eisai encountered while in China. From the second volume of *Kissa yōjōki* (Kyoto: Zeni-ya Sōshirō, c. 1800). National Diet Library, Tokyo.

Although Eisai dedicated his treatise to the shogun Minamoto no Sanetomo after its completion, the leaders of the Kamakura *bakufu* did not order the translation, collation, and adaptation of medical texts in the same manner that their imperial predecessors had. The reason for this was pragmatic rather than ideological. The *bakufu* had little time or money to enact massive reforms, continuously facing political and military challenged from dissatisfied emperors, power-hungry regents, and, most notably, Yuan forces led by Khublai Khan. Instead of founding their own educational institutions, the officials of the *bakufu* relied on robust group of established specialists in Kyoto, who were capable of attending to specific intellectual needs that arose. As such, notable medicinal developments in Kamakura Japan were the result of individual activities like those undertaken by Eisai, who were exposed to new ideas through particular exposure to new texts, practices, and ideas.

Temples also served as the prime location for such intellectual activities. Reading and writing at various levels were required as part of a monk's duties, with certain temples even providing a basic education to the local community as well as to novices. While nowhere near as comprehensive as the education at the Daigaku-ryō or Tenyaku-ryō, this training and the libraries housed at temples facilitated the spread of knowledge across medieval Japan.[69] Aside from basic education, temples were also capable of providing access to costly imported texts, either through purchasing them or copying them from the collections held by their rich patrons. Such libraries differed depending on the temple's particular circumstances, such as sect, patronage, and lineage. For instance, Tōfuku-ji in Kyoto benefited from a connection to the imperial nobility through the Kujō family and from the intensive efforts of the monk Enni to spread Song-style Zen Buddhism to Japan. By 1280 (Kōan 3), Tōfuku-ji had built up a library of over 300 manuscripts and printed texts collected by Enni and other monks, around 30 of which were medical in nature.[70] While some older sources were found in this collection, the majority consisted of Song printed books. These notably included Chen Shiwen's *Taiping huimin hejiiju fang* [Pharmaceutical formulations for the peace and benefit of the people, 1110], which synthesized Islamic medicinal practices into the already eclectic system of East Asian medicine.[71] This text, known in Japanese as *Wazai kyokuhō*, became one of the most widely used pharmacopeia by monks from the Kamakura period onwards. In contrast, the imperial physicians of Kyoto favored the *Daguan Jinushi*

[69] Richard Rubinger, *Popular literacy in early modern Japan* (Honolulu: University of Hawai'i Press, 2007), 11-12.

[70] Kosoto, *Kanpō no rekishi,* 123.

[71] Goble, *Confluences of Medicine*, 11-12, 31-33.

zhenglei beiyong bencao [Classified and consolidated materia medica of the Daguan period, 1108], which presented a more orthodox set of substances and formulations.[72]

The library at Tōfuku-ji also illustrated the involvement of privileged temples in maritime trade. While the attempted invasions of Kubhlai Khan in 1274 and 1281 negated any formal, interstate exchange between the courts of Kamakura Japan and Yuan China, private trade continued to grow during this period. Much of this built upon the developments of the late Heian era. While the *bakufu* nominally limited the number of "Chinese vessels" that could call in port of Kamakura to five, it did little else to circumscribe trade and travel. Yuan merchants frequented the same private ports as their Song predecessors, with some even settling in areas around Hakata and Ōwata (Kōbe), indicating that their activities were substantial enough to warrant residency. At the same time, Japanese merchants also began increased maritime activity in the seas around the archipelago, leading to an abundance of actors in involved in thirteenth century trade.[73]

Books such as those detailed in the 1280 inventory of Tōfuku-ji could have been bought by monks like Enni during travels on the continent or purchased in Hakata. Alternately, influential institutions with rich patrons could commission ships and cargoes, as evidenced by the ship that sank off the coast of Sinan in Korea in 1323. Departing from Ningbo and intended for Hakata, this vessel was crewed by a mixture of Chinese, Korean, and Japanese sailors, and carried large quantities of sandalwood, pepper, cinnamon, betel nut, and galangal, many of which were preserved in the silt of Sinan bay. Wooden tags attached to this cargo indicated that the intended recipient was none other

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[72] Sōda, *Nihon iryō bunkashi,* 102. Marcon, *The Knowledge of Nature,* 31.

[73] Batten, *Gateway to Japan,* 122-3. Ethan Isaac Segal, *Coins, Trade, and the State*: *economic growth in early medieval Japan* (Cambridge: Harvard University Asia Center, 2011), 50-1.

than Tōfuku-ji.[74] Although no books survived the shipwreck, the presence of such medicinal products indicates that the monks of Tōfuku-ji were putting their library to work and actively formulating medicines using the pharmacopeia and manuals in their collection. Such efforts to collect and dispense medicines resulted in the eventual formation of a "Tōfuku-ji lineage" of physicians, which heralded the formation of other distinct medicinal legacies beyond the imperial court throughout the medieval era.[75] For well-connected temples and those designated as *seyaku'in,* the creation and dispensation of medicine to needy parishioners was somewhat common. By the fifteenth century, however, this practice was no longer entirely altruistic, with temples actively selling medicine to ailing parishioners and travelers in need.

The cultivation of Buddhist networks of trade and knowledge culminated in the most significant Kamakura medicinal texts, the *Ton'ishō* [On simple medicine, 1304 (Kagen 2)] and *Man'anpō* [Myriad formulations for relief, 1327 (Karyaku 2)]. Both of these were compiled by the monk Kajiwara Shōzen, who lived and worked at Gokuraku-ji during its heyday at the turn of the fourteenth century, when the renowned Kamakura temple was said to accommodate thousands of patients a year.[76] The *Ton'ishō* is the earliest extant text written entirely in Japanese rather than Chinese, crafted as a primer to medicinal study for those unfamiliar with the practice. As such, it represents one of the first conscious efforts to disseminate medical knowledge beyond the existing groups in Kyoto or those affiliated with temples. In contrast, the *Man'anpō* was written for more

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[74] Kim Pyong-gun, *Sinan pomulsŏn ŭi majimak taehanghae: pada rŭl nubin chungse ch'oego ŭi sangindŭl* (Sŏul T'ŭkpyolsi: Churyusŏng, 2014), 24, 320-332. Amino Yoshihiko, *Rethinking Japanese History* (University of Michigan: Center for Japanese Studies, 2012), 147.

[75] Goble, *Confluences of Medicine*, 12

[76] Sugimoto and Swain, *Science and Culture,* 141.

specialized practitioners entirely in Chinese and synthesized a wealth of Song and Yuan medical knowledge to create an updated and expanded manual of therapeutic substances and formulations.[77] Physiologically and etiologically, however, the *Man'anpō* retained the basic frameworks established Sui and Tang texts, such as the *Zhubing yuanhou lun.* Even as the pharmacopeia expanded with novel materials and approaches to medicine throughout the medieval era, the basic understanding to the body and healing remained the same as in earlier periods.[78]

Specialization and proliferation of medical practices, 1350-1550

Luckily, Shōzen's works survived the destruction of Gokuraku-ji in 1333 (Genkō 3), though it is unclear to what extent they were read and used outside of the Buddhist network of medical practitioners. Although the temple was eventually rebuilt, the *seyaku'in* and its healing practices never regained the popularity they had enjoyed in the thirteenth century.[79] This was mostly due to political circumstances. After the successful imperial restoration led by Emperor Go-Daigo ended rule by the Kamakura *bakufu*, the capital was moved back to Kyoto. In 1336 (Engen 1), dissatisfaction with Go-Daigo's rule resulted in the rise of the second *bakufu*. Unlike their predecessors, the Ashikaga maintained their seat of power in Kyoto in order to keep a close eye on the imperial court, leading to the decline of the former capital in Kamakura. Intellectually, however, the Muromachi period (1336-1573) continued in much the same manner as the previous era.

[77] Goble, *Confluences of Medicine*, 1-2. For specific information on texts, see 31-3.

[78] Shimizu, *Nihon yakugakushi,* 58.

[79] Sugimoto and Swain, *Science and Culture,* 141.

Monks and imperial physicians were joined by other actors involved in the translation and adaptation of medicine, while increased commercial activities undertaken by temples, merchants, and a growing group of civilian physicians led to the eventual flourishing of the medicinal marketplace around the turn of the sixteenth century.

After its establishment, the Ashikaga *bakufu* was hounded by continuous military disputes and civil conflict. The regional governance established in the Kamakura period was expanded, with local leaders granted more political, economic, and military authority in the hopes that they would make stronger allies for the Ashikaga as well as check any potential rivals aspiring to overthrow the *bakufu*. By the mid-fifteenth-century, however, this system of sanctioned civil war reached a tipping point, and the intervention of various powerful domainal rulers in a shogunal succession dispute resulted in the calamitous Ōnin War (1467-77) that destroyed most of Kyoto and left the Ashikaga clinging to power.

The abundance of warfare also led to the development of new forms of medicine that centered on ailments associated with battle. The term *kinsō*, literally meaning "metal wounds," first appeared in a brief entry in the *Man'anpō* (1327). By the late fourteenth-century, *kinsō* had developed fully into a discrete medicinal specialization. The anonymous *Kinsō ryōjishō* [On metal wounds, 1357 (Shōhei 12)] and Tominikōji Norizane's *Kihō* [Demon methods, 1391 (Meitoku 2)] provided extensive information on the emergency treatment of various wounds from swords, arrows, and spears. Notably, the authors of both these texts emphasized that their information derived not only from Japanese and Chinese texts, but also from experienced physicians themselves, many of

whom were associated with Buddhist temples.[80] This emphasis on practical experience and effectiveness would only grow throughout the rest of the medieval era.



Figure 5 An early modern depiction of the treatment of wounds from arrows on the battlefield. From *Zōbyō monogatari* [Tales of various warriors], seventeenth century, picture scroll on paper and silk. Tokyo National Museum, Tokyo.

B*akufu* officials and rival *daimyō* sought the particular expertise of *kinsō* specialists, and integrated them into their courts across Japan. To do this, they conferred accomplished medical practitioners with the same titles as Buddhist monks, such as *hōin* (sign of dharma), *hōgen* (eye of dharma), and *hokyō* (bridge of dharma). Although some physicians were trained at Buddhist institutions, these titles did not indicate a practitioner was affiliated with a temple per se. Such titles formed a largely ad-hoc court system that was distinct from yet on par with the imperial court. It would have been presumptuous and fiscally irresponsible to adopt the same sprawling bureaucratic organization as the one that still functioned in Kyoto. Buddhist temples were recognized intellectual centers that existed separately from the imperial court, and many monks with the titles of *hōgen* and *hokyō* were already renowned specialists in various fields. Officials of the Ashikaga

[80] Goble, *Confluences of Medicine*, 95, 100-101.

bakufu borrowed the existing Buddhist ranking system in order to commemorate the accomplishments of skilled practitioners in their newer courts. These Buddhist bureaucratic titles were not limited to physicians, but also granted to artists, poets, and musical performers. Titles of physicians affiliated with *bakufu* officials would remain largely ad-hoc until the turn of the seventeenth century, when positions for physician-officials (*kani, hani*) within the Tokugawa *bakufu* were established.[81]

Cultivating a court of medical specialists was not only useful for officials who wished to keep their troops hale for battle, but also for those who hoped to curry favor with influential figures. Notably, in 1442 (Kakitsu 2), the Emperor Go-Hanazono was troubled by a sore that had opened on his back. None of the imperials physicians or trusted monks from temples around Kyoto were able to ease his pain. Ultimately, it was a physician trained in *kinsō* in the service of the influential *bakufu* official Hatakeyama Mochikuni who resolved the emperor's sore. Aside from advancing Mochikuni's career by earning him the gratitude of the emperor, this incident greatly harmed the reputation of the Tenyaku-ryō while simultaneously advancing interest in independent, specialized medical practitioners.[82]

Kinsō was one of many medical specializations that developed fully in the fourteenth century thanks in large part to the patronage of *bakufu* officials like Mochikuni. The concept of medical specialization dates back to seventh century Chinese texts like the *Zhubing yuanhou lun*, which presented ideas about specific practices related to obstetrics, gynecology, and pediatrics. In the Tenyaku-ryō, certain branches of the

[81] Shinmura, *Nihon iryōshi,* 102-106.

[82] Okazaki, *Kusuri no rekishi*, 86.

Wake and Tanba families began to dabble in specialization by the eleventh century, with general medicine supplemented by obstetrics and gynecology, pediatrics, and ear, eye, mouth, and teeth ailments. In the 1160s, the imperial physician Tanba no Kaneyasu earned a reputation for excelling at the treatment of mouth sores, tooth pain, and other oral ailments. Intriguingly, his particular contributions are only remembered because his descendants eventually departed from the Tanba family, adopting the family name of Kaneyasu in memory of their most accomplished ancestor and continuing to specialize in medical treatments for the mouth. This story is illustrative of the general trends of the medieval era, wherein specialization became the provenance of non-imperial medicinal practitioners who were engaging with newer texts from the continent, learning from other experienced physicians, and earning a reputation for their unique accomplishments rather than their lineages.[83]

The development of medical specializations was also supported by the growth of physicians practicing in temples, cities, and castles across Japan. By the mid-fourteenth-century, medical practice began to appear as a discrete profession (*shoku*) outside of the imperial court or temples. Referred to as *kusushi* or *ishi*, these figures became standard in lists of professionals (*shokunin*) that were the subject of poetic and visual activities throughout the medieval and early modern eras. As opposed to the titles and ranks provided to imperial physicians and monks practicing medicine, *ishi* relied on their craft to distinguish themselves and earn their livelihood. In poetry competitions (*uta awase*) and hand scrolls (*emaki*), *ishi* were grouped together with blacksmiths, merchants, painters, musical performers and other professions that were thought of as fixtures of

[83] Sugimoto and Swain, *Science and Culture,* 147.

medieval Japanese communities.[84] These kinds of depictions of *ishi* deviated from those produced before the fourteenth century. Legally the practice of medicine had never been formally circumscribed, but practitioners who were not associated with established lineages such as the Tenyaku-ryō or temples tended to be considered inferior and ineffective. Earlier artistic and literary representations like those found in the *Yamai no sōshi* [Handscroll of Illness, c. 1300] depicted *ishi* as unqualified conmen tricking their rich patients into increasingly odd and counterfeit treatments.[85] While certain aspects of this portrayal persisted in popular representations after the fourteenth century, usually to comedic effect, they were outnumbered by the growing number of stories about accomplished *ishi* who gained acclaim for their medical knowledge.



Figure 6 A physician or "medicine doctor" (*kusushi*) featured in an early modern copy of the Shichijūichi-ban shokunin uta'awase [Poetry competition of seventy-one professions], originally created around 1500. Attrib. Kano Osanobu and Kano Shōsen'in, Microfilm. Tokyo National Museum, Tokyo.

[84] Sōda, *Nihon iryō bunkashi,* 83-85.

[85] Kasuya Makoto, and Satomi Yamamoto, *Yamai No Sōshi* (Tōkyō: Chūō Kōron Bijutsu Shuppan, 2017), 8-12.

This conceptual transition was aided by the support of domainal rulers and *bakufu* officials, who privileged expertise over lineage in their use of physicians. When the wife of the second Ashikaga shogun, Yoshiakira, was about to give birth to his heir in 1358, they called not on the imperial physicians of the Tenyaku-ryō, but on an independent doctor, Aki Morisada. Little is known about Morisada, but his success in delivering multiple children of Yoshiakira earned Morisada's successors the hereditary duty of caring for the obstetric and gynecological needs of the shogun's family. Moreover, his accomplishments resulted in the eventual formation of an Aki-method (*Aki-ryū*) of medicine focused on pregnancy, childbirth, and pediatrics. Even after the decline and destruction of the Ashikaga bakufu, the Aki family were able to continue their practice since they were already so renowned for their particular kind of medicine.[86]

Ryū reflected the proliferation of physicians and growth of medical specializations throughout the fourteenth century. The kind of medicine associated with Aki-method was known in Japanese as *sanzen-sango*, literally meaning "pre-birth after-birth." During more peaceful times, *kinsō* specialists were also able to put their knowledge about hemostasis and wound care to use in *sanzen-sango,* as childbirth was often a bloody process. Chūjō Tatewaki, who famously served Hideyoshi Toyotomi, did just this in the late sixteenth-century, and in the process began a Chūjō-*ryū* of obstetric medicine to rival Aki-*ryū*. Aside from *kinsō* and *sanzen-sango,* specialists in eye and mouth ailments also proved popular. The monk Majima Seigan originated therapies for eye sores and cataracts in the fourteenth century. As with many other methods, information about Majima-*ryū*

[86] Sōda, *Nihon iryō bunkashi,* 95-98.

was largely tacit, circulating orally and via manuscripts.[87] For the newly acknowledged group of medical specialists sought after by *bakufu* officials, keeping information about their practice secret was a matter of maintaining their newly obtained bureaucratic position and income. For *ishi* catering to the civilian population, their particular skill was representative of their *shokunin* status as well as linked to their earnings. For both groups, limiting who knew details about their specialized practices made professional sense.

Even the respected imperial physicians were also relegated to the status of *ryū* over the course of the medieval period. The high-ranking court noble, Ichijō Kaneyoshi, wrote in his encyclopedic *Sekiso ōrai* [Brief correspondences, c. 1480] that "Wake and Tanba - the physicians of both methods (*ryōryū*) still transmit [this knowledge], and it has newly reached me." As an avid collector of texts, Kaneyoshi presumably utilized his political influence as regent to gain access to the otherwise secret knowledge passed down by the Tenyaku-ryō physicians for centuries.[88] His position as an imperial official only deepened the impact of his choice to describe the practices of the Wake and Tanba as just another *ryū* in an increasingly diverse medical cosmos.

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[87] Shinmura, *Nihon iryōshi,* 65-6. Sugimoto and Swain, *Science and Culture,* 147. For a discussion of contemporary practices in China, see Yi-Li Wu, *Reproducing Women: Medicine, Metaphor, and Childbirth in Late Imperial China (*Berkeley: University of California Press, 2010).

[88] Shimizu, *Nihon yakugakushi*, 59.

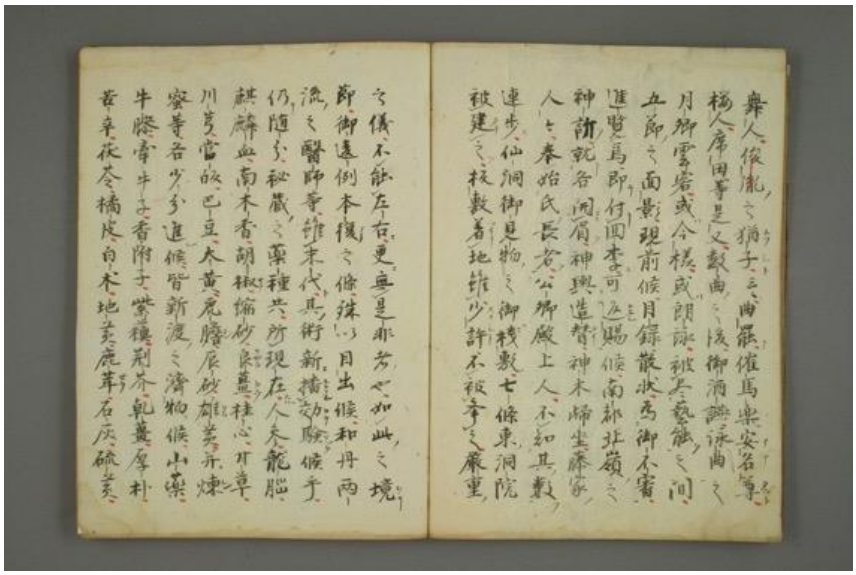

Figure 7 Kaneyoshi's qualification of the Wake and Tanba families as *ryū* and the list of medicinal substances associated with their practices. Copy of Ichijō Kaneyoshi, *Sekisō ōrai*, Manuscript, ヘ 10 00891. Waseda University Library, Tokyo.

In order to demonstrate his understanding of the Wake and Tanba methods of medicine, Kaneyoshi also included a detailed list of medicinal substances commonly used in Wake and Tanba-*ryū* therapies, how these were compounded, and the primary texts relied upon by imperial physicians. The list of medicine Kaneyoshi recorded and listed in Table 2 closely resembled those found in much earlier sources like the eleventh century *Shinsarugakuki* or the eighth century records kept by Hōryū-ji and Tōdai-ji, indicating that the imperial physicians were still relying on much older pharmaceutical concepts.[89] The Wake and Tanba were also slow to adapt newer ideas about medical practice. According to Kaneyoshi, by the mid-fifteenth-century the physicians at the imperial court had finally begun to reference the *Wazai kyokuh*ō (C. *Hejiiju fang*), which was popular centuries before amongst Buddhist medical practitioners. Sun Sumiao's seventh century text *Beiji qianjin yaofan*g was still in use alongside Song and Yuan texts such as *Sheng ji*

[89] Okazaki, *Kusuri no rekishi,* 89. Table adapted from Shimizu Tōtarō, *Nihon yakugakushi*, 59-60.

zong lu [Collected formula for divine relief, 1117] and *Yifang dacheng* [Complete medical methods, 1321].[90] While it was certainly not uncommon to continue using much older etiological and physiological sources as part of one's practice, the lack of any Yuan or Ming books found in Kaneyoshi's list demonstrated that the imperial physicians were centuries behind their counterparts in the temples and cities of Japan.

Name (*Linnean if applicable*)	**Recorded name**	**Place of origin**
Ginseng (*panax ginseng*)	*ninjin* (人参)	Northeast China, Korea
Borneol, Borneo camphor	*ryūnō* (龍脳)	Indonesia, China
"*Qilin* blood" [resin obtained from *Daemonorops* plants]	*kirinketsu* (麒麟竭)	Southeast Asia, Socotra
Bayberry (*Podocarpus nagi*)	*nanki* (南木)	South and Southeast Asia
Black pepper (*Piper nigrum*)	*kosho* (胡椒)	Southern India, Southeast Asia
White ginger lily (*Hedychium coronarium*)	*Shukusha* (縮砂)	Southern China, Thailand
Galangal (*Alpinia officinarum*)	*ryōkyō* (良薑・良姜)	China, Southeast Asia
Cinnamon (*Cinnamomum cassia*)	*keishin* (桂心)	Southern China, Indonesia, Malabar
Licorice (*Glycyrrhiza glabra*)	*kanzō* (甘草)	Arabia
Snowparsely (cnidium officinale)	*Senkyū* (川芎)	China, Vietnam
Danggui (*Angelica sinensis*)	*tōki* (当帰)	China, Indonesia, Korea
Purging croton (*Croton tiglium*)	*hazu* (巴豆)	Arabia, Malaysia
Chinese rhubarb (*Rheum palmatum*)	*dai'ō* (大黄)	Western China, Mongolia
Orpiment, realgar	*oō* (雄黄)	Unknown
Gallstone of a tiger	*koi* (虎膽)	Unknown
Cinnabar	*shinsha* (辰砂)	Unknown

Table 3 The medicines used by the Wake and Tanba families in the late fifteenth century.

As a whole, Buddhist practitioners remained the primary agents involved in adapting newer medicinal ideas for use in late medieval Japan. Tashirō Sanki specifically

[90] Ichijō Kaneyoshi, *Sekiso ōrai,* manuscript copy. Waseda University Library, Tokyo.

became a novice monk in order to study medicine, traveling to Ming China throughout the late fifteenth-century in order learn from Chinese physicians and texts. His efforts resulted in the adaptation of the newer clinical medical practices influenced by Zhu Xi's advocation of the investigation of all things (*gewu zhizhi*). Sanki's student, Manase Dōsan, continued his teacher's work, publishing simplified pharmacopeia and medical texts for use by non-specialists inspired by the works of Li Dongyuan and Zhu Danxi.[91] These guides focused less on complex theoretical issues and more on pragmatic concerns, such as terminology, dietary practices, and the identification of potentially poisonous substances. The efforts of Dōsan and other late fifteenth-century physicians resulted in the rise of self-medication practices in early modern Japan. Provided with primers and easy-to-follow guides, otherwise untrained Japanese people were capable of identifying and compounding basic medicinal substances for use in their daily lives. This widespread dissemination also encouraged the growth of commercial medicines, with customers capable of analyzing symptoms and claims made by purveyors of medicine in order to purchase products according to their own needs.[92]

Dōsan was not only involved in the spread of Li-Zhu medicine but also encountered an entirely novel medicinal practice when he traveled to Kyūshū in 1584 to learn from the Jesuit physicians who had recently opened a hospital there. Dōsan's approach to Jesuit medicine closely resembled the processes that had occurred in Japan with Korean and Chinese physicians and sources for a millennium.[93] Rather than

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[91] Shinmura, *Nihon iryōshi,* 74-79.

[92] Shimizu, *Nihon yakugakushi,* 66-68. For more on the relationship between commercial medicine and home-made therapies, see Suzuki Akira, *Nihon No Denshōyaku: Edo Baiyaku Kara Kateiyaku Made* (Tokyo: Yakuji Nippō, 2005).

[93] Sōda, *Nihon iryō bunkashi,* 104-6.

disrupting the established etiological and diagnostic systems already in place, Dōsan and other students of Jesuit medicine were more intrigued by particular medicinal formulations and applications that complemented existing East Asian practices. They were quick to adapt these individual aspects of Jesuit medical practices, labelling them as yet another *ryū* available for use, while discarding or ignoring other elements that they deemed unnecessary. This process of selective adaptation continued into the early modern era, when various global and local shifts in commerce and education led to a growing interest in Dutch medicine in Japan.

Chapter 2. Trade and medicine in Japan, 1500-1800

Kaneyoshi's medical opinion

The court noble Ichijō Kaneyoshi did not confine his discussion of medicine in *Sekiso ōrai* [Brief correspondences, c. 1480] to just the Wake and Tanba methods of medicine. He also mentioned various *reiyaku* that were well-known in late medieval Japan. This list diverged greatly from those found in earlier sources, indicating that new products and formulations had replaced older *reiyaku* like Shisetsu and Gin'en, which had been popular amongst imperial officials since the late Heian era. Kaneyoshi wrote

> Sogō'en [storax pills], Shihō-tan [Penultimate cinnabar pills], Nōja-en [Borneol musk pills], Jinja-en [Agarwood musk pills], Go'ō-en [Bear gallbladder stone pills], Toshishi-en [Dodder pills], Akada'yaku [Agada medicine]. These and other tried-and-true medicines are carried around by people nowadays in the base of their flint bags or wrapped up in small medicine containers. It's quite embarrassing not to wear such things.[1]

In this list, only one medicine, Shihō-tan, had a pretentious name similar to the panaceas previously favored by the emperors of Heian Japan. While both the *en* and *tan* endings referred to a kind of bolus or pill, *tan* specifically indicated one in which cinnabar was a primary ingredient, which also highlighted the connection of Shihō-tan to earlier medicinal practices.[2] Both *en* and *tan* were created by drying and grinding various ingredients before adding them to some kind of glutinous substance, into which they were kneaded. While still pliable, the medicine would then be placed into pill-shaped wooden molds of varying sizes and left to dry. After firming up, these pills were carried around in

[1] Ichijō Kaneyoshi, *Sekiso ōrai,* Manuscript copy. Waseda University Library, Tokyo.

[2] Sōda Hajime, *Nihon seiyaku gijutsu shi no kenkyū* (Tōkyō : Yakuji Nippōsha, 1965), 12.

the manner described by Kaneyoshi, and consumed either by swallowing them or dissolving them in liquid.

Presumably, the other pills recorded by Kaneyoshi in 1480 were all named according to the main ingredients used in their formulation, most of which demonstrated the reliance of medicine on imported materials like borneol and agarwood. The final medicine, Akada'yaku, illustrated the inherently global nature of many medicines used in premodern Japan. *Akada* was the Japanese pronunciation of *agada,* an Ayurvedic term that referred to a discrete field of practice in India related to toxicology. The term was integrated into Buddhist sutras as well as certain medical texts that were translated by Chinese monks and scholars, and then adapted by Japanese Buddhist and medical practitioners sometime in the medieval era. Because of this, effective remedies against poison were often called *agada-yaku* in premodern Japan.[3]

Kaneyoshi's final comment regarding these medicines commonly being carried about by people is intriguing. Given he was a high-ranking imperial noble, Kaneyoshi's indication of "people nowadays" (*tōsei no hito*) was no doubt limited to those of a certain status living in or around Kyoto. As indicated by Kaneyoshi, medicine was stored in a number of ways by the people of late medieval Japan, be it in special containers or simple cloth pouches tied to the belt of a kimono that essentially functioned as pockets. People of certain means carried medicine in the small lacquered cases known as *inrō*, which typically consisted of three to six small nested containers capable of carrying a few days' worth of pills or powders.[4] These cases and the associated fasteners (*netsuke*) used to

[3] Salguero, *Translating Buddhist Medicine*, 78-9.

[4] For more, see Hattori Akira, *Inrō to kusuri: Edo jidai No kusuri to hōsō* (Tokyo: Hatsubaimoto Seiunsha, 2010), and Miyake Yasuo and Itō Kyōko, *Kusuri hakubutsukan shūzō shiryōshū:*

attach them to one's belt are commonly found in the Asian collections of most museums. Analyzed due their artistic qualifications as lacquer work and sculpture, the original function of *inrō* and *netsuke* as predominantly medicinal accessories is largely overlooked. But as seen in Kaneyoshi's account, by the late fifteenth-century it was not only fashionable but also expected to carry around pre-prepared medicines on one's body. This practice would continue into the early modern era as medicine developed far beyond the limited networks of imperial and Buddhist practitioners, and expanded into the daily lives of Japanese consumers.





Figure 8 and 9 Left: A diagram explaining how inrō functioned as portable carriers of medicine. Courtesy of Naito Kinen Kusuri Hakubutsukan, Gifu. Right The front and back of a five-chambered *inrō* with cranes in the foreground and pines in the background, and a *netsuke* featuring the hat and sage mask used in *noh* or *sarugaku* performances. All of which were symbols of longevity, speaking to the use of inrō as carriers of medicine. Koma Kyuhaku, eighteenth century, H. 7.7 cm; W. 5.5 cm; D. 2.3 cm, New York, Metropolitan Museum of Art.

"Chinese goods" and the spread of commercial medicines, 1400-1550

The first recorded medicinal purveyors appeared in the mid-tenth-century imperial chronicle *Engishiki*, which included a section surveying the various licensed merchants working in the eastern and western markets of Kyoto. Medicine shops

kusuri ire (Gifu: Naito kinen kusuri hakubutsukan, 1998).

(*yakuten*) were catalogued alongside other stalls selling textiles, metalwork, oil, salt, ceramics, and other daily necessities. No detailed information about these shops is extant, and the relationship between such retailers and the Tenyaku-ryō is unclear. It is plausible, however, that these "medicine shops," like all other institutions in the capital, were intended to cater entirely to the court. Walled and gated, only ranking imperials officials and other high-status people, such as Buddhist abbots, were permitted entry to the markets of Kyoto.[5] As such, the presence of shops like these only indicates the commodification of medicine in tenth century Japan. Its commercialization would not occur until much later.

As evidenced by the list of shops found in the *Engishiki*, specialized merchants also began to appear in the capital in the late Heian era. Such specialization required the intervention of influential nobles or temples, whose patronage supplied merchants and artisans with shops, steady sources of income, and favorable taxation rates. By the thirteenth century, established merchants and artisans were more than capable of supplying their noble patrons and also began to sell items on the public marketplace. Outside of established, full-time markets in larger cities like Kyoto and Hakata, markets in smaller town and villages met weekly or monthly, often in or around the precinct of the local Buddhist temple.[6] Over time, the protections provided by rich patrons were formalized into the *za* guild system, which allowed chosen merchants and artisans to maintain near-monopolistic holds on certain products and expand their trade into

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[5] Yoshioka Shin, *Kinsei Nihon yakugyōshi kenkyū* (Tōkyō : Yakuji Nippōsha, 1989), 117. Takenaka Yasukazu, *Nihon shōgyōshi* (Kyoto: Minerva Shobo, 1969), 8, 11.

[6] Conrad Totman, *Japan before Perry: a short history* (Berkeley : University of California Press, 1981), 119.

neighboring regions.[7] By the end of the fifteenth century, most merchants and artisans affiliated with *za* had outgrown the need for their patrons, and oversaw themselves as semi-autonomous guilds functioning with the permission of local or regional authorities.[8]

Merchants buying and selling medicine benefitted from the financial and logistical support provided by such groups, particularly those dealing in costly imported items. Such traders had a variety of names. The earliest merchants affiliated with medicinal substances were known as *yashi*, or specialists in incense, medicine, and other aromatics who began to appear in early medieval Japanese records. *Yashi* were not tied to a particular shop, but traveled through cities and villages, leading to their popular title of "walking healers" (*aruki isha*).[9] Another common name for medicinal merchants in the medieval era was *karamono-za* or *karamono-ya*, with the former indicating a guild and the latter an individual merchant. *Karamono,* also sometimes pronounced *tōmotsu* or *tōbutsu*, literally translates to "Chinese goods." Like the earlier qualifications of Chinese, such products were not limited to those originating in China. Depending on the context, *karamono* might refer specifically to goods brought by Chinese merchants, or the term was intended as a generalization for any imported objects as seen in the *Shinsarugakuki* entry discussed in chapter one.[10] For the most part, *karamono-ya* did not compound medicine themselves but rather traded in them, supplying substances to *ishi* and other medical specialists in charge of making medicine.

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[7] Yamamura Kozo, "The growth of commerce in medieval Japan" in *The Cambridge History of Japan, Vol. 3, Medieval Japa*n, ed. K. Yamamura (Cambridge: Cambridge University Press, 1990), 351-353.

[8] Yoshioka, *Kinsei Nihon yakugyōshi,* 118-9.

[9] Okazaki, *Kusuri no rekishi,* 122.

[10] Fujiwara, *Shin sarugakuki,* 290-5.

The formation of *karamono* as a commercial field resulted from an increased supply of imported products available in late medieval Japan. Around the turn of the fifteenth century, relations were normalized between the Ashikaga *bakufu* and Ming China, Joseon Korea, and the Ryūkyū kingdom. The resumption of official embassies and state-led exchange was matched by the growth of private trade across East and Southeast Asia, with more Japanese merchants than ever before involved in global commerce. In Kyoto, the court-affiliated Shifuno Kayochō-*za* boasted dozens of smiths, weavers, carpenters, and other craftsmen amongst its participants. By the mid-fifteenth-century, *karamono* traders also joined their ranks, who catered to the tastes of court nobles and other rich inhabitants of the capital for novel imported goods.[11] After the end of the Ōnin War in 1477 (Bunmei 9), the Ashikaga *bakufu* was largely eclipsed by powerful regional rulers known as *daimyō*. During the century that followed, *daimyō* built up their regional authority through territorial expansion as well as infrastructural developments like roads and castles. As in the fourteenth century, *kinsō* specialists were in high demand on and off the battlefield, where they began to be known more commonly as practitioners of *geka*, or "external medicine." *Ishi, karamono* merchants, and guilds including medicinal purveyors flocked to the cities that formed around these new regional centers, known as "town below the castle" (*jōkamachi*). The diminished Ashikaga *bakufu* along with *daimyō* continued their patronage of specialized merchants and medical practitioners, further expanding commercial medical activity across Japan.[12]

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[11] Wang Yi'tung, *Official relations between China and Japan, 1368-1549* (Cambridge, Harvard University Press, 1953). Farris, 151. Okazaki, 88.

[12] Nakai Nobuhiko, "Commercial change and urban growth in early modern Japan" in *The Cambridge History of Japan, Vol. 4, Early Modern Japan,* eds. John Whitney Hall and James L. McClain (Cambridge: Cambridge University Press, 1991), 519-595.

Karamono have mostly been analyzed in terms of their relation to tea ceremony, with imported ceramic vessels and bronze objects notably used in sixteenth century *chanoyu* events. As in earlier eras, however, medicine featured heavily in the diverse group of products categorized as *karamono*. The domain of Ecchū (Toyama), located on eastern coast of Japan facing the continent, boasted a "guild of Chinese persons" (*tōjin no za*), which was famous for supplying medicines to that region. The aforementioned *shokunin* literature and artwork often featured "Chinese persons selling medicine" (*kusuri uru tōjin*) as one of the common types of professions seen alongside *isha*.[13] In the collection of essays known as *Tsurezuregusa* [Essays in idleness, 1330], the monk Yoshida Kenkō wrote that "beyond medicine, if one did not have Chinese goods (*kara no mono*), would it be that much of a loss?" He went on to call many of the things imported from the continent unnecessary (*muyō*), indicating that even as he disparaged the needless excess associated with some imported goods, medicine was nonetheless necessary in Kenkō's opinion.[14] The connection between *karamono* and medicine was also strengthened by the continued migration of various Chinese medical specialists to Japan in the fourteenth and fifteenth centuries. Previously, such figures were largely connected to the imperial court or Buddhist temples, where they were sent not only to advance the institution but also act as teachers on various subjects. Beginning in the fourteenth century, more specialists began to arrive and settle in the established Chinese residences of areas like Hakata and Kōbe. A major driver of this migration was regime change, as was the case with the most famous late medieval medicinal merchant, Chen Yanyou.

[13] Okazaki, *Kusuri no rekishi,* 88-9. Sōda, *Nihon iryō bunkashi,* 101.

[14] Kamo Chōmei, Kenkō Yoshida et al, *Hōjōki, Tsurezuregusa* (Tōkyō: Shōgakkan, 1995), 174.

While serving the Yuan court, Chen Yanyou was employed as a councilor (C. *wailang,* J. *uirō*) in the Ministry of Rites. After the Ming founder, Zhu Yuanzhang, overthrow the last of the Yuan emperors in 1368, Chen lost his position and moved to Hakata, where he set up shop as an *ishi.* He worked under the name Chen Uirō, gesturing to his former position of power in Yuan China, and became so famous for his Uirō'yaku (Uirō medicine) that the third Ashikaga shogun, Yoshimitsu, invited him to serve at his court in the same manner as the Aki family of obstetricians.[15] While Chen declined this summons, his son, Sōki, eventually agreed to go to the court of the *bakufu* in 1404, whereupon he was dispatched on a mission to Ming China to further his study of medicine. Sōki returned to Japan with a new *reiyaku* composed primarily of catechu, an astringent extract of acacia trees native to South and Southeast Asia, which was purported to clear congestion and dizziness. Eventually named Tōchin-kō [Translucency granting scent], the Chen family continued to sell this medicine for centuries, maintaining shops in Hakata and Kyoto. Furthermore, the *bakufu* granted the Chen family permission to conduct trade with Ming China, bringing in quantities of catechu and sulfur to use in the production of Tōchin-kō as well as sell to other merchants.[16]

[15] Okazaki, *Kusuri no rekishi,* 125.

[16] Ikeda Matsugorō, *Nihon yakugyōshi* (Kyoto: Yakugyō Jinronsha, 1929), 57. For a discussion of Chinese physicians across premodern Asia, see Sherman Cochran, *Chinese Medicine Men: Consumer Culture in China and Southeast Asia* (Cambridge, Mass: Harvard University Press, 2006).



Figure 10 – The kabuki actor Ichikawa Ebizō, packet of medicine in hand, playing an itinerant seller of *uirō* in the eighteenth century play *Wakamidori ikioi Soga*. Attrib. Tori'i Kiyonobu II, c. 1741. 31 x 15 cm. Boston Museum of Fine Arts, Boston.

Tōchin-kō or simply Uirō became one of the first commercial medicines that enjoyed widespread popularity across Western and Central Japan from the fifteenth century onwards. The use of catechu was not particularly revolutionary, and the formulation of Uirō was quite similar to medicines found in much older texts like the *Wazai kyokuhō, Beiji qianjin yaofan*g, and *Shanghan zabing lun*.[17] However, the success of Uirō was not based in its novelty, but in the political, intellectual, and economic activities undertaken by the Chen family to secure their own medicinal lineage. They had clear ties to both Yuan and Ming China, and when the *bakufu* lost most of it authority after the Ōnin war, the Kyoto-based Uirō merchants quickly sought the patronage of

[17] Shinmura, *Nihon iryōshi*, 71.

imperial nobles as well as the *gozan* temples located around the capital.[18] These influential Buddhist institutions provided similar support for the Chen family's commercial activities within Japan and on the continent. As will be discussed in chapter five, Uirō merchants also became renowned in the early modern era for their particular marketing practices that combined performance and dissemination of information.

Medicinal merchants like those discussed above made *reiyaku* and other substances previously only accessible to the socio-political elite available to other Japanese groups over the course of the fifteenth century. The patronage of some kind of authority, be it political or through the guild-like *za*, provided the economic and logistical support needed to conduct business across regions and deal in more costly imported products. Over time, as more purveyors entered the marketplace, the term *reiyaku* was joined by *baiyaku*, literally meaning "medicine for sale."[19] Often used as synonyms, the appearance of *baiyaku* in the fourteenth century indicated a clear shift in the world of medicine. Such products were no longer primarily identified with their purported miraculous nature, but instead their main function as commodities available for purchase. Similarly, Chen Yanyou had formal medical training and was known for his practice of medicine in Hakata in the late fourteenth century. However, over time his identity as a physician was eclipsed by the success of Uirō'yaku and Tōchin-kō. Chen's successors were not commemorated as physicians or *ishi*, nor were they thought of as practicing a Chen "method" or Chen-*ryū* of medicine. They existed in the record as purveyors of *baiyaku*, passing down a family formulation (*kaden*) that was favored by influential

[18] Sōda, *Nihon iryō bunkashi,* 103.

[19] Yoshioka, *Kinsei Nihon yakugyōshi,* 118.

medieval figures. Their practice thus became secondary to their product.

Karamono, *Nanban, Kōmō:* 1550-1650

This burgeoning public marketplace and growth of *baiyaku* was further strengthened by the arrival of new maritime actors to Japan in the mid-sixteenth-century. Particular intellectual and material contributions of Portuguese, Spanish, and Dutch trade to medicinal practices in Japan will be discussed at length in Chapters three and four. For the purposes of this general introduction, European traders increased the supply of various Asian products and provided Japanese medical practitioners with certain novel practices and formulations. Despite the emphasis of modern historians on the new and groundbreaking ideas and technologies brought by the Europeans to sixteenth century Japan, these merchants dealt overwhelmingly in the same intra-Asian products and networks that had been used for over a millennium. Textiles from India, silks from China, silver and copper from Japan, and nutmeg, pepper, mace, and cloves from Indonesia were all mainstays of the intra-Asian trade conducted by Europeans from the mid-fifteenth-century onward. Certain particular socio-political aspects of this trade would change once full-scale colonization and monopolization attempts began, but as a whole, the Europeans did little to change the system of global trade in Asia during their first centuries of activity in the region.

The Japanese conception of these early Europeans arrivals was epitomized by their choice to call them *nanban*. Commonly translated as "Southern Barbarians," the term *nanban* (C. *nanman*) derived from the Chinese cosmological system that categorized people as either civilized or uncivilized depending on their relationship with the cultural

center. For centuries, the Japanese themselves had been designated as "Eastern Barbarians" (C. *dongyi,* J. *tōi*) by the imperial courts of China. In the case of sixteenth century Japan, *nanban* in turn was applied to the goods, peoples, and practices brought by the Portuguese and Spanish merchants and missionaries because of their perceived origins in the islands to the south of the Japanese archipelago. Capable of carrying far more cargo in their galleons than the Chinese junks, *nanban* merchants were welcomed by *daimyō* seeking to enrich their domains through the import and export of valuable goods. Without any functioning central authority to set legal or economic limits, marketplaces across Japan benefitted from an influx of previously rare quantities of valuable imported products. This laissez-fair system continued until the 1580s, when Toyotomi Hideyoshi placed various restrictions on foreign and domestic commercial activities as part of his broader efforts to re-instate centralized rule in Japan.[20]



Figure 11 Nanban merchants unloading cargo from their galleon. Early seventeenth century, folding screen, 105 x 260 cm. Metropolitan Museum of Art, New York.

[20] For more on Oda Nobunaga and Hideyoshi's particular changes to commerce and trade, see Wakita Samu, "*The social and economic consequences of unification"* in *The Cambridge History of Japan, Vol. 4, Early Modern Japan,* ed. John Whitney Hall (The Cambridge History of Japan, 1991), 96-127.



Detail of Figure 11 The large ceramic jars seen in the upper right became popular vessels for storing tea, but originally would have been used as containers for a variety of medicinal substances brought by Spanish and Portuguese traders from South and Southeast Asia.

Medicine was an important part of *nanban* trade from the first exchanges of the 1540s to the cessation of contact in 1639. Aloeswood, sandalwood, black pepper, and cinnamon were common bulk items on galleons, with more valuable deer musk, rhinoceros' horn, and clove brought in smaller quantities. Novel medicinal substances associated with *nanban* trade were turpentine, palm oil, and olive oil, all of which were heavily used by surgeons on Iberian galleons and in the hospitals set up by Jesuits across Asia.[21] Since Japanese physicians were already familiar with other oleoresins like borneol and asafetida that had similar applications, they were capable to adding that substance the Japanese pharmacopeia without much issue. In contrast, palm oil and olive oil both came

[21] *Porutogaru to nanban bunka-ten: mezase, tōhō no kuniguni* (Tokyo: NHK Puromōshon, 1993), 178-179.

to be referred to as "Portugal oil" because of their associations with that particular foreign group. That said, the use of palm oil and turpentine only became widespread once they were folded into "Dutch-method" medicine in the late seventeenth-century.[22]

The United East India Company (*Vereenigde Oostindische Compagnie*; VOC) similarly made use of the existing demand for medicinal substances when its merchants came to Japan in 1609. With newly established footholds in Northern Java and plans to monopolize the trade of cloves, nutmeg, and mace, the Company was well equipped to supply such products to Japan along with the standard array of commodities from South and Southeast Asia. As will be discussed in chapter three, the ability of Dutch merchants to supply Japan with "silks and medicines" was key to its enterprise, both during the Company's height in the seventeenth century and after its downfall at the turn of the nineteenth century. VOC personnel also arrived at an opportune time of political and economic flux that allowed them to carve out a portion of trade from their rival European merchants. After decades of political consolidation by various *daimyō,* Tokugawa Ieyasu rose to power after a decisive military victory in 1600. Making use of the institutional reforms and socio-economic regulations put into place by his predecessor Hideyoshi Toyotomi, Ieyasu founded the third and final *bakufu* in 1603 and set about ensuring that it would not succumb to the issues that plagued previous shogunal governance.

Between 1616 and 1639, various decrees and limitations were placed on foreign exchange in Japan. The *bakufu* was well aware of the potential political and military challenges that might arise from unsupervised free trade, having witnessed the economic benefits and political alliances that formed in the century before between foreign groups

[22] Sōda, *Nihon iryō bunkashi,* 116-7.

and *daimyō*. In order to cut off potential political rivals from sources of profit and powerful foreign allies, the Tokugawa *bakufu* imposed various restrictions that ensured their total control over all commercial and diplomatic relations. Limiting ports of entry facilitated government oversight of foreign goods and merchants, and ensured that the *bakufu* would maintain control over all profits from that trade. Fewer resources needed to be dedicated to fighting smuggling and piracy, and the assessment and taxation of imported goods all occurred in one centralized location with *bakufu*-approved specialists. The *bakufu* ultimately selected the deep bay of Nagasaki, in a convenient position to receive boats going to and from Southeast Asia, to receive all approved foreign traders.

Based on its ports of origin and Asiatic products, Japanese observers initially categorized the VOC alongside the Spanish and Portuguese merchants as *nanban.* However, the willingness of the VOC to comply with the trade regulations and anti-Christian edicts set by the *bakufu*, as well as the vociferous claims made by Company servants against the "popeish" Portuguese and Spanish, quickly distinguished it from the other European trading groups in Japan. This delineation moreover suited the needs of the officials of Tokugawa *bakufu*, who were growing increasingly displeased with the refusal of Spanish and Portuguese merchants and missionaries to comply with various government regulations restricting the commercial and religious activities of all foreign groups in Japan.[23]

By 1640, foreign merchants permitted to trade in Japan were limited to those from China and those representing the United East India Company. The English had

[23] See Adam Clulow, *The Company and the Shogun: The Dutch Encounter With Tokugawa Japan* (New York: Columbia University Press, 2013), and Robert I. Hellyer, *Defining Engagement: Japan and Global Contexts, 1640-1868* (Cambridge, Mass.: Harvard University Press, 2009).

abandoned their factory in Hirado over a decade earlier, unable to turn a profit with the woolens and poor-quality Asian goods in which they trafficked. In 1624, the Spanish were the first group to be banned from Japan entirely after repeated attempts to trade beyond approved ports and to bring Catholic missionaries to Japan. Portuguese trade, meanwhile, remained important enough that the *bakufu* permitted the presence of Portuguese merchants in Japan until 1639, when it was clear that the Chinese and VOC were capable of supplying all foreign products deemed necessary by the government. In order to ensure that no trade deficits or overwhelming loss of certain commodities through export would occur, the *bakufu* also imposed limits on imported cargo and the number of boats that could come to Japan annually, the specifics of which would change throughout the early modern era depending on the state of the economy. Finally, foreign merchants were required to live in designated areas in order to prevent illicit activity such as smuggling or sedition. In sum, the series of laws that are commonly described as "closing" Japan to the rest of the world were in fact intended to maintain stable diplomatic and commercial ties with certain entities while ceasing relations with those who refused to accept the sovereignty of the Tokugawa *bakufu*. As demonstrated thus far, foreign trade and interaction had been quintessential to Japan since the first century CE. The Tokugawa ensured that this trade would continue while safeguarding not only their own rule, but also the country from the early incursion of European powers.

Going into the mid-seventeenth-century, Japanese officials, merchants, and consumers associated foreign trade with the categories of *karamono*, *nanban*, and *kōmō*. Certain aspects of *nanban* culture persisted in early modern Japan after the expulsion of the Portuguese and Spanish, but by the late seventeenth-century the primary remnant of

this period of exchange was the term *nanban* itself. As a whole, Japanese political and intellectual interest had shifted to the material and intellectual practices associated with the VOC, referred to as *kōmō* [red hairs] or *oranda*, a Japanese approximation of "Holland." That said, the trade conducted by the Company and its successors in Japan was often referred to as *nanban* in more popular sources, no doubt based in the association of the VOC with Malabar, Coromandel, Sri Lanka, Malaysia, Batavia, and other South and Southeast Asian regions from which they brought important Asian commodities.



Figure 12 Depictions of the ships that frequented Nagasaki after the mid-seventeenth-century, namely junks from Fuzhou and Nanjing, and an Indiaman spanning two pages in order to show its larger size. From Nishikawa Joken, Zohō kai tsūkōsho (Kyoto: Kansetsudō, 1708). Waseda University Library, Tokyo.

From Nagasaki to the markets of early modern Japan

While *bakufu* officials sought to curtail criminal activity and maintain control over the entities and profits associated with foreign trade, they did not seek to monopolize the commodities brought by foreign traders. Regional officials and merchant groups worked to build economic mechanisms that ensured imported goods would remain accessible to purveyors and consumers across Japan despite the changes to the system of foreign trade. Until the mid-sixteenth-century, imported textiles were handled

separately from other goods by the insular silk exchange market (*itowappu*). This system was dissolved as supplies dwindled and prices skyrocketed amidst the Ming-Qing conflict and expulsion of the Portuguese from Japan. The purchase of imported products shifted to an authorized auction system closely overseen by *bakufu* officials working Nagasaki, who were often likened to merchants themselves by contemporary observers.[24]

Over the course of the seventeenth century, merchants organized informal mechanisms to facilitate the flow of imported commodities from Nagasaki to Osaka, Edo, and beyond. Initially, the Tokugawa *bakufu* sought to curtail the oligopolistic power of merchants in various regions by disbanding *za* in the first decades of the seventeenth century. These efforts were quickly deemed untenable given the commercial and urban developments of the fifteenth and sixteenth centuries. By the 1690s informal merchant groups had formed in cities across Japan. Such organizations that revived the older appellation of *za* tended to center on specific products, such as cinnabar and ginseng. Another type of informal group that began to appear in the seventeenth century as *tokumi doi'ya* [10-type wholesalers], which consisted of merchants associated with ten categories of daily necessities: brocade and silk clothing, cottons, lacquer, household utensils, medicine, paper, alcohol, iron implements, tatami, and oil. The first major *tokumi doi'ya* was formed by Edo-based merchants in 1694 (Genroku 7), where members pooled their money together to cover the necessary costs involved in buying and transporting goods from Osaka to Edo.[25]

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[24] Conrad Totman, *Early Modern Japan* (Berkeley : University of California Press, 1995, c1993.), 142-144. Wakita, 103-6.

[25] Nakai, "Commercial change and urban growth," 567. Yoshioka, *Kinsei Nihon yakugyōshi,* 176. For more on the development of trans-regional shipping and trade, see Hayashi Reiko, *Edo to Kamigata: Hito Mono Kane Jōhō* (Tokyo: Yoshikawa Kōbunkan, 2001).



Figure 13 Members of an Edo-based *tokumi doi'ya* specializing in imported and domestic medicines. From *Edo kaimono hitori annai* (A self-guided tour to Edo shopping, 1824). Waseda University Library, Tokyo**.**

Unlike *za* centered on controlling trade in a specific city, craft, or product, the merchant groups of the early modern era focused more on cooperative activities that ensured profits in relatively risky long-distance trade. These collaborative commercial activities were not only beneficial to the growing population of urban consumers, but also to *bakufu* officials and *daimyō* who needed to ensure that the cities and towns under their control were supplied with necessary products. Ultimately, in 1715 (Shōtoku 5), seventh shogun Tokugawa Ietsugu promulgated laws that formally permitted the formation of trade organizations (*kumiawase*) as long as they submitted to the authority of the *bakufu* and paid certain fees. After this, merchant groups further developed into trade associations known as *nakama* or *kabu-nakama*, which were organized around certain specialized commercial categories within a town or region. *Nakama* were permitted to manage their own operations with little government oversight as long as they complied with local and national laws and paid special taxes known as *myōgakukin*. Like *tokumi doi'ya*, members of *nakama* collectively purchased products and transport, with each shop receiving a share (*kabu*) of the return profit comparable to the size of their initial investment. Rather than leading to monopolization, *nakama* set prices at an agreed-upon

amount and ensured that their members complied with regulations set forth by the government and trade association, thus facilitating the growth of a competitive but collaborative marketplace in eighteenth and nineteenth century Japan.[26]

As always, medicine featured heavily in commercial activities. The same year merchant groups were officially allowed by the government, a *nakama* for medicinal wholesalers (*yakushu donya*) was formed by 24 merchants based in the Honchō district of Edo. Honchō, meaning "main street," was the first area that opened for residential and commercial use after Edo became the new headquarters for Tokugawa Ieyasu in 1590. Located to the east of the castle that housed Ieyasu's family and retainers, officials anticipated that Honchō would serve the needs of the regional ruler and his forces in the same manner that *jōkamachi* did, providing food, clothing, and other day-to-day necessities. Unsurprising, one of the first merchants that opened shop in Honchō was Masuda Tomoyoshi, an apothecary who specialized in eye medicine. By the turn of the seventeenth century, dozens of merchants selling medicine populated the streets of Honchō, cementing its position as the medicinal center of Edo.[27]

Honchō paled in comparison to the medicinal marketplace found in Osaka. The former castle-town had flourished under Toyotomi Hideyoshi in the last decades of the sixteenth century, with the ruler gathering various commercial and intellectual specialists in his seat of power. In 1583 (Tenshō 11), Hideyoshi granted the Saitō family land in the Fushimi district of Osaka, with orders to grow medicinal substances, including tea, on

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[26] Matao Miyamoto, "Quantitative Aspects of the Tokugawa Economy" in *The Emergence of Economic Society in Japan, 1600-1859,* eds. Akira Hayami, Osamu Saitō, and Ronald P. Toby (New York: Oxford University Press), 73-4. Miyamoto Miyaji, *Nihon kinsei tonyasei no kenkyū* (Tokyo: Tōe Shoin, 1971), 287-372.

[27] Sōda, *Nihon iryō bunkashi,* 145.

their property for his use. After a few decades, the Saitō were not only cultivating medicinal substances but also involved in sourcing imported ones, both of which they sold at a storefront in Fushimi.[28] After the Tokugawa rose to power, the *bakufu* used Osaka's central location and advanced commercial infrastructure to manage the flow of commodities from eastern to western Japan and vice versa. Medicinal merchants flocked to join to Saitō family in Fushimi and the neighboring districts of Awajimachi and Doshōmachi, where they had direct access to many imported goods moving through the commercial hub. By 1666 (Kanbun 6), there were over one hundred medicinal retailers located in and around the district of Doshōmachi. These merchants organized into a *kabu-nakama* in 1722 (Kyōhō 7), which was involved with buying and selling the vast majority of imported medicines from Nagasaki for the rest of the eighteenth century.[29]

The system of imported medicine and *nakama* worked as follows. Chinese and Company ships arriving in Nagasaki dropped anchor and awaited inspection by the Magistrate (*bugyō*). Magistrate officials and translators examined the cargo of these ships, ascertaining the types of goods and their quantities before permitting the products to be unloaded into the warehouses of the Chinese quarters and Dejima, the residence of the VOC. Special items requested by *daimyō* and *bakufu* officials were separated out from the rest of the goods, which were auctioned off wholesale to Japanese merchants who had received government approval to purchase imported products (*nyūsatsu, satsuraku*). The right to come to the auctions was one of the means by which the *bakufu* exerted indirect control over merchant groups. Representatives of *nakama* who were lax

[28] *Takeda hyaku-hachijūnenshi* (Osaka: Takeda Yakuhin Kōgyō, 1962), 13.

[29] Watanabe Sachiko, *Kinsei Ōsaka yakushu no torihiki kōzō to shakai shūdan* (Osaka: Seibundō, 2006), 30-34.

in their oversight of affiliated purveyors or failed to pay their dues would not be granted entry to the auction.

For products brought by the smaller Chinese junks, which were not as constrained by seasonal winds and often exceeded 80 vessels annually, auctions occurred throughout the year. A small gated market was also present outside of the Chinese residence with cheaper bulk goods or those that failed to sell at auction. In contrast, the sale of goods brought by the VOC was a much more limited affair. Auctions only happened once annually, often in the late summer after the Indiamen used by the Company arrived from Batavia. Over the course of a week, approved merchants inspected the cargo held in the warehouses of Dejima and then placed bids. In order to curtail exorbitant spending, prices were capped based on the deliberations of the Magistrate and perceived demand, always to the consternation of Company servants. Imported goods that were deemed unnecessary or not bought at auction were returned to the Company warehouses or ships, while the rest were loaded into carts and boats to be taken to the shops of the purchasing merchants.



Figure 14 Cargo from Company ships being unloaded and inspected by Japanese officials on Dejima. Hirowatari Koshū, *Zainichi ranbōeki emaki* [Picture scroll on Dutch trade occurring in Japan]. Late eighteenth-century, picture scroll on paper and silk. Matsūra Historical Museum, Hirado.

As a whole, merchants based in Nagasaki, Edo, Osaka, and Kyoto were the primary participants in the auctions on Dejima. The sale of imported medicines was dominated by traders affiliated with the Doshōmachi and Honchō *nakama* until 1800, when commercial representatives from Kyoto, Sunpu, and Sakai began to travel to Nagasaki directly instead of purchasing their imported products from wholesalers in Osaka and Edo.[30] Nagasaki traders largely acted as middlemen, purchasing products that they then sold to wholesalers in other regions at a markup. Products that needed to be shipped outside of Kyūshū were first send overland via the Nagasaki *kaidō*, which connected the port city in the southwest corner of the island to Kokura in the north. Goods were then loaded onto barges and floated on the relatively safe and shallow waters of coastal Honshū to the bay of Osaka. Once there, Osaka purveyors sold these products at storefronts to customers or shipped onwards to merchants in other towns. Kyoto-bound merchandise was sent up the Yodo and Katsura rivers, while the rest was shipped overland via one of the five official roadways (*gokaidō*) maintained by the *bakufu.*[31] Edo functioned as the central market for eastern Japan, with merchants from the northeastern regions of Akita, Mutsu, and Sendai traveling to the capital to purchase needed foreign goods.

Selling medicine in early modern Japan

In this way, self-regulated trade associations leveraged the economic and infrastructural developments of the early seventeenth-century and facilitated the

[30] *Takeda hyaku-hachijūnenshi,* 20.

[31] Constantine Vaporis, *Tour of Duty: samurai, military service in Edo, and the culture of early modern Japan* (Honolulu: University of Hawai‘i Press, c2008), 36-62.

circulation of imported products such as medicine from the southwestern port of Nagasaki into the major cities of early modern Japan. Similar to early modern trade mechanisms, government oversight of the actual production and sale of medicine was largely relegated to *nakama* and other merchant organizations. Until the mid-nineteenth-century there was only one major law promulgated by the government related to apothecaries and medicinal merchants. In 1671 (Kanbun 11), the *bakufu* banned the creation and sale of counterfeit medicines (*giyaku*), as well as the sale of poisonous substances (*dokuyaku*). Those found guilty of engaging in these activities would be sentenced either to death or banishment depending on the severity of their crime.[32] As demand for costly imported products like ginseng and theriac grew over the course of the eighteenth century, so did cases of merchants falsely making and advertising such goods. As a result, the *bakufu* determined in 1742 (Keihō 2) that the punishment for selling counterfeit medicine was execution no matter the circumstances. In contrast, selling poisonous medicine resulted only in imprisonment as long as the person who consumed the medicine was not killed.[33]

Nakama were not only responsible for facilitating the purchase and transport of goods, but also ensuring that members of their groups abided by the laws against counterfeit and poisonous medicine. While members of trade organizations had informally inspected the products in which they trafficked prior to 1722, these efforts were formalized when the *bakufu* issued a decree the same year ordering the designation of an Office for the Inspection of Medicines (*wayakushu aratame kaisho*) in Edo, Osaka,

[32] Yoshioka, *Kinsei Nihon yakugyōshi,* 174.

[33] Ikeda, *Nihon yakugyōshi* (Kyoto: Yakugyō Jinronsha, 1929), 81-82.

Kyoto, Sunpu, and Sakai. These cities not only had robust medicinal marketplaces but were also all directly overseen by the *bakufu* rather than *daimyō*. Guaranteeing the safety and legality of medicine sold in these cities was important. It demonstrated that the system put into place by the *bakufu* was feasible, and that merchant groups were capable of policing themselves without more heavy-handed government oversight.[34]

In line with other commercial developments, the inspection of medicines was not carried out by *bakufu* officials, but by trusted apothecaries and medicinal merchants. In Osaka, where over 120 shops were registered as selling medicine by 1725, a rotating group of three to four apothecaries staffed the Office for the Inspection of Medicines for Dōshōmachi. Their evaluations were not limited to the identification of counterfeit or poisonous medicines. Inspectors also sought to identify the mixing or dilution of valuable substances with other products (*mazegusuri*), as well as determine whether merchants were charging too much for their medicine by documenting how much their constituent materials cost and how much they charged for the finished product. Inspectors documented any infractions or suspicions before passing them on to *bakufu* officials, who would decide on a course of action based on precedent and the input of the members of the Office for the Inspection of Medicines. In this way, the *bakufu* leveraged the expertise cultivated by commercial medical practitioners, elevating them to a semi-bureaucratic status in exchange for their enforcement of government regulations.[35]

Apart from the aforementioned laws and self-regulation, there were startlingly few barriers to entry for hopeful participants into the medical marketplace. Association

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[34] Yoshioka Shin, *Kinsei Nihon yakugyōshi kenkyū* (Tokyo: Yakuji nippōsha, 1989), 176-177.

[35] *Takeda hyaku-hachijūnenshi,* 53-5.

with a trade organization was not required, although few chose not to join a *za* or *nakama* based on the logistical and economic benefits they granted. As opposed to earlier eras, when affiliation with a powerful socio-political entity was required to get access to imported goods and to provide legitimacy for one's enterprise, the apothecaries and medicinal merchants of early modern Japanese cities required no such patrons. Aside from the inspections mandated in cities like Edo, Osaka, and Kyoto, there was no training or licensing required to make and sell medicine in these cities. Furthermore, over the course of the seventeenth century, many apothecaries and merchants became recognized as effective practitioners of specialized medicine, thus becoming their own sources of legitimacy. Along with more traditional qualifiers gesturing to Buddhist practitioners or a certain *ryū*, apothecaries began to promote themselves as the originators of a specific *baiyaku* in a variety of formal and informal documents, using terms like "head family" (*honke*) or "head shop" (*honten*). Not only was medicine itself fully commercialized, but the practice of making and selling it had also transitioned to the public marketplace by the turn of the eighteenth century.[36]

Given this commercial and legal context, apothecaries and medicinal merchants flourished in early modern urban centers. In this dissertation, I generally refer to those who made and sold medicine as apothecaries while "medicinal merchant" is intended to encompass the variety of shops that traded in medicine but did not particularly compound it. This distinction is based in contemporary documentary sources, which separated *baiyaku* shops*, yakushu* (medicinal substances) shops, and *karamono* shops selling medicine into distinct categories. Although it was relatively common for *yakushu*

[36] Yoshioka, *Kinsei Nihon yakugyōshi,* 118-119.

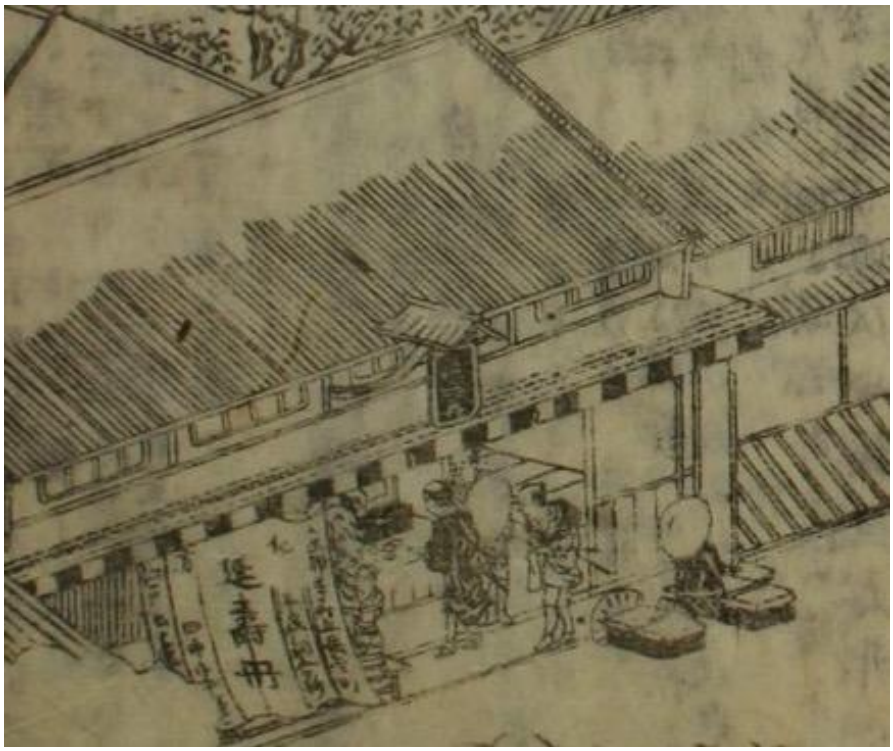
merchants to formulate certain products and for apothecaries to deal in raw substances, since they functioned as separate but related entities in early sources I have chosen to provide discrete names for them.

Using documentation compiled by trade associations and early urban guides, the growth of the medicinal marketplace can be charted for major cities and regions throughout the early modern era. Although Doshōmachi was an early center for medicinal activities, shops selling medicine in Osaka only numbered around 200 by the turn of the nineteenth century. This was not due to infrastructural failure or lack of demand, but rather because the neighboring cities of Kyoto and Sakai had formed competitive medicinal marketplaces that drew customers away from Osaka. A relative latecomer to commercial medicine, Kyoto boasted around 150 apothecaries and medicinal merchants by the mid-nineteenth-century. By far, the most remarkable growth occurred in Edo, which exploded from one apothecary in 1590 to over 250 shops by 1820.[37]



Figure 15 The main street of the post-town of Okazaki, with a shop selling Enjū'tan visible in the lower left. From the third volume of *Tōkaidō meisho zue* (Edo [Tokyo]: Kobayashi Shinbé, 1797). Waseda University Library, Tokyo.

[37] For more details, see *Takeda hyaku-hachijūnenshi,* 13.



Detail of Figure 15 The medicine is advertised with a wooden signboard hanging above the door, as well as a hanging curtain (*noren*).

Beyond major urban centers, domainal capitals like Kanazawa, Nagoya, and Sendai also drew specialized merchants. In regions not directly over seen by the *bakufu*, some form of license (*go-men*) was often granted by regional authorities to merchants dealing in more valuable substances. This system was largely ad hoc and intended more to support businesses directly overseen or related to domainal officials rather than to sharply circumscribe commercial practitioners.[38] By the late eighteenth-century, branch shops (*bunten*) or franchise shops (*hiroiten*) associated with popular apothecaries in Edo and Osaka also appeared in many of these cities. Branch shops typically mimicked the business model and specialization of the head shop (*honten*) and were run by a member of the head family. In contrast, franchise shops revolved around particular products,

[38] Miyamoto, *Nihon kinsei tonyasei,* 341-344.

which the original creator permitted to be made and sold at these other locations.

Smaller towns and villages also had some access to medicine. Buddhist temples, particularly those in regions with no other established medicinal practitioners, made use of their medieval legacy by selling certain medicines to pilgrims and other travelers. That said, unless the temple was affiliated with a specific lineage or *ryū,* these medicines tended to be limited to one or two medicines for "myriad illnesses" (*manbyō*).[39] The post-towns located at specific intervals along the Tōkaidō, Nakasendō, and other government administered roadways also had either a discrete apothecary, or a general goods store where medicine might be bought. For instance, in *Tōkaidō meisho zue* [Illustrated famed places of the Tōkaidō, 1797], the post-town of Okazaki in Mikawa domain (Aichi) was described as having a number of branch shops with connections to Edo. The accompanying illustration showed the main street of Okazaki, lined with an apothecary, a restaurant, and a stable where travelers could refresh their mounts. Signboards mounted on the exterior of the apothecary advertise Enju-tan [Life extending pills], qualified as a sagely formulation (*senpō*) and good medicine (*ryōyaku*).[40] Weary travelers on the Tōkaidō doubtless appreciated the presence of shops selling panaceas like Enju-tan in post-towns.

Travel guides often described the common ailments suffered by pilgrims and sightseers, like foot sores, food poisoning, and fatigue. In preparation, texts like *Ryokō*

[39] For a specific case of someone in a small town buying medicine, see the story of Hatsu in Amy Stanley *Selling women: prostitution, markets, and the household in early modern Japan* (Berkeley: University of California Press, c2012), 142.

[40] Akisato Ritō, *Tōkaidō meisho zue* [Illustrated famed places of the Tōkaidō], Vol. 3 (Edo [Tokyo]: Kobayashi Shinbé, 1797).

yōjinshū [Collection of precautions for travelers, 1810 (Bunka 7)] provided a tidy list of medicines to procure before traveling. Various *baiyaku* were included such as medicinal oils for scrapes and bruises, and Ki'ō-gan, a popular commercial medicine compounded with ginseng and agarwood that is still produced today. Uncompounded medicines included bear gallbladder for general digestive health and black pepper to encourage the consumption of water. Illustrations in *Ryokō yōjinshū* also showed the clothing and accessories travelers should prepare, including small pouches in which to carry the aforementioned medicines. Extant examples of such pouches from the nineteenth century display a similar array of medicines with their discrete cases, with saffron and the gallbladders of bear and monkey neatly packed away for use on the road.



Figure 16 A travel case for medicine, including bear gallbladder and saffron. Nineteenth century. Naito Kinen Kusuri Hakubutsukan, Gifu.

Alongside storefronts and temples, itinerant medicinal merchants also became more common after the mid-eighteenth-century, who supplied smaller towns and villages with particular products. There were four primary organizations that administered itinerant sellers of *baiyaku* located in Yamato (Nara), Ōmi (Shiga), Tōyama, and Tashiro. The most prolific group was affiliated with the city of Tōyama, the castle town-turned-

domainal capital of Kaga on the eastern coast of central Japan. The Maeda family of *daimyō* began to authorize various commercial endeavors based in Tōyama in the late seventeenth-century. Their medicinal enterprise was undoubtedly their most prolific, with various types of Tōyama *baiyaku* sold across all of central Japan by thousands of itinerant merchants.[41] The only main competition for the Tōyama group of medicinal purveyors were the merchants affiliated with Tashiro in central Kyūshū. Unlike Tōyama, the sale of medicine in Tashiro began as an illicit practice. Officially part of the domain ruled over the Sō family along with the island of Tsūshima, the residents of Tashiro were initially restricted to agricultural pursuits in order to maximize the economic output of that domain. After petitioning the Sō and demonstrating the profitability of their business, the merchants of Tashiro were permitted to continue their medicinal activities. Actively modeling themselves after the Tōyama enterprise, they expanded their commercial reach beyond Kyūshū and into Honshū, where they ultimately butted heads with Tōyama merchants in their travels.[42]

The merchants of Tōyama, Tashiro, Yamato, and Ōmi constructed a system known as "left-medicine" (o*kigusuri*) or "inserted medicine" (*iregusuri*). Itinerant merchants were put in charge of a certain area, which they visited on a pre-determined schedule. Larger towns were frequented by these purveyors multiple times through a year, where with products sold both to shops in larger numbers and to individual families. Smaller villages were only visited once or twice annually, and all sales would occur

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[41] Sakai Seiichi, *Kinsei Etchū no shakai keizai kōzō* (Tōkyō: Meicho Shuppan, 1975), 201-203. Tamagawa Nobuaki. *Hankontan No Bunkashi: Etchū Toyama No Kusuriuri*. (Tokyo: Shobunsha, 1979), 8-16.

[42] *Nakatomi Kinen Kusuri Hakubutsukan tenji annai* (Saga: Nakatomi Kinen Kusuri Hakubutsukan, 2018), 34-36.

directly with individuals. Tōyama and Tashiro merchants provided families with a box of medicines that purportedly addressed all manner of common ailments, such as sickness, fever, arthritis, and pregnancy-related issues. On their annual visits, thse merchants would replenish medicines as they were used, "leaving" or "inserting" it in designated container. These medicines consisted entirely of named *baiyaku*, which aided the merchants of Tashiro and Tōyama in building a particular "brand" that distinguished them from other itinerant merchants dealing in medicine. Specific apothecaries in the regions serviced by these organizations were selected to obtain the privileged information about the formulation of these *baiyaku*. In exchange for supplying itinerant merchants with their products, these apothecaries were also permitted to sell *baiyaku* affiliated with Tōyama, Tashiro, and other groups at their store.[43]



Figure 17 Modern reproductions of the garb and methods of transporting medicine used by the itinerant merchants of early modern Japan. Those affiliated with Tōyama (left) often traveled long distances and kept their cargo to a minimum, while those moving throughout urban areas carried a heavier dual-case that became an impromptu shop when set down. Courtesy of Naito Kinen Kusuri Hakubutsukan, Gifu.

[43] Chō Tadao, *Tashiro no iregusuri: hansei jidai no Tashiro baiyaku* (Saga: Nakatomi Kinen Kusuri Hakubutsukan, 2001), 71-110.

Apothecaries and Physicians

Aside from making medicine available locally, apothecaries also acted as alternative sites of medicine from physicians, a role that was visible in the taxonomies found in urban guides, directories, and other documentary sources. In 1687, *Edo kanoko* [Dappled Edo, Jōkyō 4] was published as a primer to the quickly growing capital, introducing various notable locations, figures, and annual events. By far, the most important parts of this guide were the directories for various professional and commercial services in the capital, which provided names, titles, and addresses of shops and residences for easy reference. As in earlier medieval documents, physicians or *ishi* found in *Edo kanoko* were grouped along with comparable skilled *shokunin* professions, such as painters, swordsmiths, calligraphers, and scholars specializing in Confucian studies or calendrical astronomy. The professional and intellectual development of *ishi* throughout the early and medieval eras was clearly illustrated by *Edo kanoko*. The first sixteen physicians found in *Edo kanoko* all bore some title of *hōin* (sign of dharma), *hōgen* (eye of dharma), or *hokyō* (bridge of dharma), indicating that they had achieved distinction serving a noble or *bakufu* official. Notably, a head physician affiliated with the Tenyaku-ryō by the name of Hirai was also listed, who presumably quit his post with the imperial institute in Kyoto and moved to the Sarugakuchō area of Edo to practice medicine.[44]

Alongside these more distinguished figures, a few dozen civilian *ishi*, who would also come to be known as *machi ishi* or town physicians, were also found in *Edo kanoko*. Beyond general practitioners, there were specialists treating children (*koji ishi*), pre- and postpartum women (*sanzen-sango ishi*), eye ailments (*me ishi*), and oral ailments

[44] Fujita Rihē. *Edo kanoko,* ed. Asakura Haruhiko (Tōkyō : Sumiya Shobō,1970). 1-6, 250.

including tooth-pulling (*kōchū ishi*). By far, the specializations with the most practitioners listed were those for acupuncture (*hari-sashi ishi*) and *geka* (external medicine), the latter of which will be discussed at length in Chapter 4. In total, over seventy *ishi* were recorded in *Edo kanoko,* all of whom made their services available to the public. Although no prices were listed, it can be assumed that the more renowned physicians with their bureaucratic titles charged more than the un-titled *machi ishi*, who offered more affordable alternatives for most urban residents.[45]

While *baiyaku* and those selling it were found in the same volume of *Edo kanoko*, they were categorized distinctly from *ishi* and the other *shokunin* professions, and placed instead alongside the merchants (*akindō, shōnin*). While this distinction reflected the socio-political division of skilled craftsman from merchant, it also emphasized that apothecaries and medicinal merchants functioned independently from physicians. The production of *baiyaku* occurred without any direct intervention from physicians, either through circumscribing the activities of apothecaries or in the form of prescriptions. In early modern Europe, physicians and other medical authorities used various means to limit the intellectual and commercial reach of apothecaries, grocers, and other medicinal merchants. Early modern purveyors of *baiyaku* had no such restrictions. Japanese apothecaries engaged with pharmacopeia or certain formulations associated with various trusted sources of medicine entirely by choice, and typically as a means to bolster their commercial claims.[46] Similarly, there was no formal system of prescriptions, unlike the

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[45] *Edo kanoko,* 251-252.

[46] Harold J. Cook, *The Decline of the Old medical Regime in Stuart London* (Itacha: Cornell University Press, 1986), 46-47. Katharine Park, *Doctors and Medicine in Early Renaissance Florence* (Princeton, NJ: Princeton University Press, 1985).

pharmacies of early modern China and Europe. Certain physicians might advise patients on what medicine to buy or formulate their own novel therapies from substances bought at medicine shops, but this was not expected. Apothecaries chose what *baiyaku* they produced and how they produced it. As long as these products were deemed fairly priced, safe, and legitimate by the standards of trade associations, there was no intervention in these activities by government officials, much less physicians.[47]

Intriguingly, the entries on apothecaries in *Edo kanoko* were not structured around individual shops but rather the medicine that was being sold. Many of the categories of medicine in the guide paralleled the specializations found in the list of physicians, indicating that these professional divisions also functioned to delineate between commercial medicines. These categories consisted of stomach medicine, eye medicine, medicinal salves, tooth medicine and tooth-pulling, medicinal foods, and colic medicine. Alongside these groups, twelve discrete *baiyaku* were also featured. Uirō Tochinkō was present, as was Masuda Gorei-kō, the eye salve sold by the first apothecary that opened shop in Edo in 1590. Both of these products were so popular that multiple shops around the city sold them. Rounding out this diverse group were four wholesalers of "medicinal substances" (*yakushu tonya*), all of which were based in Honchō.[48]

The popularity of *Edo kanoko* prompted multiple reprints of the book, as well as inspired the production of other urban guides in the decades that followed. In the early eighteenth century, the poet and writer Kikuoka Senryō produced *Edo sunago* [Gold-

[47] Bian, *Know Your Remedies,* 126-7.

[48] *Edo kanoko,* 286-7, 293.

dusted Edo], which provided an extensive guide to the growing western and southern districts of the capital. In 1735 (Kyōhō 20), Senryō then completed *Zoku Edo sunago* [Expanded Gold-dusted Edo], which surveyed the commercial districts to the east of the city, including Honchō and its neighboring districts of Nihonbashi. Medicine was not only featured in *Zoku Edo sunago*, but received a discrete section entitled "Various medicinal formulations: *reiyaku* of physician families and *baiyaku* of various families." Senryō's choice to qualify *reiyaku* with physician families indicated that by the mid-eighteenth-century the term was associated with more established medical practitioners. As opposed to this, Senryō positioned *baiyaku* as something that might originate from any number of sources.[49]

Zoku Edo sunago also displayed an intriguing shift in the relationship between physicians, apothecaries, and commercial medicine. In comparison to the twelve *baiyaku* listed in 1687, *Zoku Edo sunago* featured over seventy different commercial medicines for sale in the capital, each associated with a specific apothecary. Only six of these were categorized as *reiyaku*, such as Ryūnō'gan [Borneol pills]. The entry on this *reiyaku* clarified that it was "a miraculous formula of the physician-official Hirai, originally named Wake." This was the same former Tenyaku-ryō physician Hirai listed amongst the *ishi* in *Edo kanoko*, now properly identified as coming from one of the prestigious imperial lineages of physicians in Kyoto. Hirai's presence in these urban guides emphasizes the major shift in medicinal practice from the late medieval to early modern era. Medicinal formulations and ideas that had previously only been accessible to the

[49] Kikuoka Senyrō, *Zoku Edo sunago onko meisekishi* (Edo [Tokyo]: Suhara-ya Ihachi, 1735), Vol. 5, 8r-13v.

imperial court in Kyoto were now available for purchase in Edo. Intriguingly, with only one exception, all of the six *reiyaku* found in *Zoku Edo sunago* were associated with physicians listed in *Edo kanoko*, though not all of them boasted lineages as distinguished as Hirai. Their expertise was now codified and consumable by anyone capable of paying for it.



Figure 18 The first entry in the list of commercial medicines in *Zoku Edo sunago*, featuring the Ryūnō-gan [Borneol pills] originated by the Hirai family, formerly of the Wake. From the fifth volume of Kikuoka Senyrō, *Zoku Edo sunago onko meisekishi* (Edo [Tokyo]:Suhara-ya Ihachi, 1735). Waseda University Library, Tokyo.

As opposed to *Edo kanoko*, however, there was no discrete category or list of *ishi* in *Zoku Edo sunago*, even though other professional groups and their services were included. Physicians were removed from the urban marketplace, with the exception of medicines like Ryunō-gan that were credited to them. Continuing with the trend that began with the Chen family and Uirō centuries earlier, product replaced practitioner. Even amongst the *baiyaku* listed in the 1735 text, there were no attempts at general

categories as seen in *Edo kanoko*. Instead, each seller was defined only by their particular novel product. There was no general "eye medicine," only "Masuda Gorei-kō." This product-centered structure continued in Edo for the rest of the early modern period, with shopkeepers defining themselves by the novel medicines they sold. When *Saihan zōho Edo kanoko* [Newly printed and expanded complete Dappled Edo], a revised and expanded version of *Edo kanoko* was published in 1751 (Kanen 4), it included information about 124 *baiyaku* under the chapter heading "Famed formulations of various families in the Eastern capital, along with types of medicinal oils available in the city." Addresses and shops were listed below the name of each discrete *baiyaku.* As in *Zoku Edo sunago*, physicians only featured in the text in relation to these commercial medicines. Instead of being treated as competing medical practitioners in the public marketplace, physicians instead became sources of information for those making and selling medicine alongside other trusted actors like temples and notable families.[50]

Re-locating apothecaries and medicinal merchants

In 1681 (Tenna 1), the Kyoto-based apothecary Endō Genri wrote and published *Honzō bengi* [Distinguishing materia media], intended as a primer to quintessential medicinal substances and basic formulations. The physician Kurokawa Dōyū was tasked with writing a brief preface to his text, in which he stated that Genri was a respected owner of a medicine shop in Kyoto (*Kyō no yakuten*) who was not only knowledgeable about medicines but "selected high-quality ingredients and compounded them,

[50] Okumura Gyokkashi. *Saihan zōho Edo sōganoko meisho taizen,* ed. Hanasaki Kazuo (Tōkyō : Watanabe Shoten, 1973), 445.

responding to the demands of the people. His is generally thought to be the first compounded medicine shop (*seiten no hajimari*)." Although Dōyū's claim that Genri was the first so-called "compounded medicine shop" was dubious, his choice of phrase gestured to a new term for commercial medicine that became popular around the turn of the eighteenth century: *seiyaku*, meaning compounded medicine. This term reflected the fact that many apothecaries not only sold medicine, but also made it themselves. Like Genri, they were respected sources of specialized information who existed at the intersection of various commercial and intellectual spheres.[51]

The expertise of apothecaries was relied upon by a variety of historical actors. Notably, in 1721 (Kyōhō 6), the shogun Yoshimune dispatched orders to various experts to provide information and advice regarding recent efforts to cultivate valuable imported substances in Japan like sugar and ginseng. Information was famously gathered from the merchants of the Chinese and Dutch residences in Nagasaki. Notably, Japanese apothecaries were also consulted. Fushimi-ya Ichiemon and Hirano-ya Kyūbē from Osaka and Onishi Yazaemon from Sakai were summoned to Edo to discuss the feasibility of growing ginseng in southwestern Japan in the hopes of reducing the cost of trade. In 1722, these same men were appointed in the Office of the Inspection of Medicine (*wayakushu aratame kaisho*) in their respective cities. They had obviously earned the shogun's trust, and advanced the cause of apothecaries as reliable sources of knowledge. Similarly, when medicinal gardens began to be cultivated around Japan at Yoshimune's order, apothecaries were often consulted about what should be grown in them. Niwa Shōhaku, the town-doctor turned shogunal physician, worked closely with the apothecary

[51] Endō Genri, *Honzō Bengi* (Kyoto: Takishō Tarō, 1681).

Kiriyama Taemon when he began to oversee the medicinal gardens of Yakuendai in northeast Edo.[52]

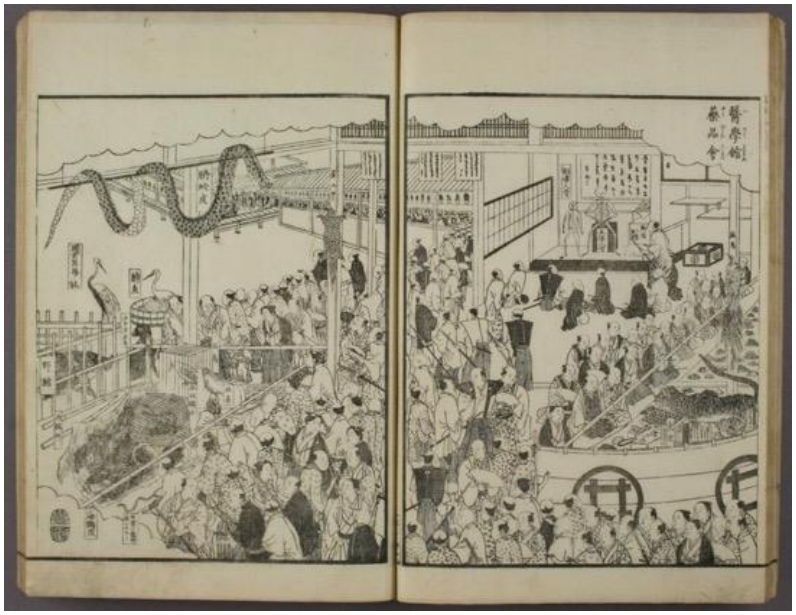

Figure 19 A *yakuhinkai* full of novel flora, fauna, and other medical information. From Okada Kei, Noguchi Michinao, and Odagiri Shunkō, *Owari meisho zue* (Nagoya: Hishi-ya Kyūbē and Hishi-ya Kyūhachirō, 1844). Aichi Prefectural Library, Nagoya.

The state-led activities related to materia medica and medicinal studies spearheaded by Yoshimune led to a flourishing of intellectual activity about these subjects in the mid- to late eighteenth-century. A novel result of this was a series of showcases of medicinal substances (*yakuhinkai*) that occurred in Edo and Osaka between 1757 and 1762 (Hōreki 7-12). Organized primarily by Hiraga Gennai, who used them to expound on the importance of the study and cultivation of materia medica, these events displayed rare and novel substances from around the world. Specimens were donated from across Japan, and unsurprisingly, apothecaries and medicinal merchants were deeply involved in the collection and exhibition of substances. In Gennai's 1761 (Hōreki

[52] Yoshioka, *Kinsei Nihon yakugyōshi,* 202. Marcon, *The Knowledge of Nature,* 120-124, 142. Hellyer, *Defining Engagement,* 68-70.

11) manifesto that he circulated to promote the final *yakuhinkai*, apothecaries were clearly involved in helping to organize the showcase. The Edo merchant affiliates Naoki-ya Giemon and Naoki-ya Tōbe were listed as new sponsors (*sewanin*), while Sagami-ya Tōshirō and Nakamura-ya Hikobē of Honchō were recognized as established sponsors (*chakuza sewanin*). In addition, the shops of Nakamura-ya Ihei in Edo, Yakusō-ya Kanbē in Kyoto, and Tennōji-ya Kanbē and Bungo-ya Kiemon in Osaka were featured as "collection sites for substances from distant domains."[53] Undoubtedly, Gennai and his fellow organizers intended to use the existing commercial structures that these apothecaries were a part of in order to simplify the transport of items from around Japan. Furthermore, the particular knowledge held by these specialists would aid in organizing submissions in preparation for the exhibition.

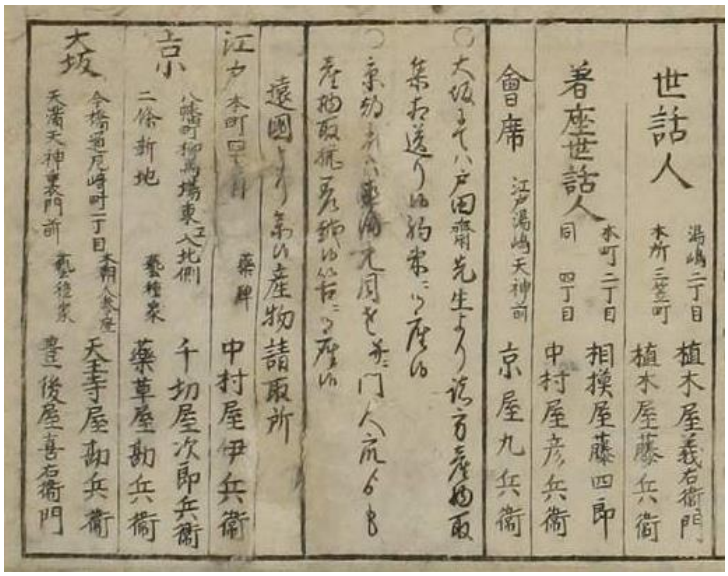

Figure 20 Medicinal merchants from Edo, Osaka, and Kyoto featured as advisors and assistants in Hiraga Gennai's 1761 promotional flyer for the final *yakuhinkai* he organized. Detail of Hiraga Gennai, *Tōto yakuhinkai* (Tokyo: Pub. unknown, 1761). Waseda University Library, Tokyo.

[53] Hiraga Gennai, *Tōto yakuhinkai* (Tokyo: Pub. unknown, 1761). Waseda University Library, Tokyo.

Gennai's recruitment of apothecaries also suited his broader intellectual restructuring that privileged the practical study of medicinal substances and their applications over the more formalized, textual curricula favored by Ono Razan.[54] The influence of these commercial practitioners was moreover evident in *Butsurui hinshitsu* [Qualities of various substances, 1763 (Hōreki 13)], the catalogue produced by Gennai and his collaborators documenting all of the substances featured at the *yakuhinkai* of 1762 (Hōreki 12). Entries included information about which region or country provided the "best quality" (*jōhin*) of certain substances, be it China (*kan*), Southeast Asia (*nanban*), or individual Japanese domains. Since assurances of quality functioned primarily to persuade customers to purchase certain products, Gennai and his co-authors envisioned that students of materia medica needed some understanding of the commercial value of the substances in question. There was thus some expectation that readers of the text would need to physically engage with the substances as commodities in the marketplace.[55]

Gennai also demonstrated the particular terminology constructed by Japanese commentators to designate between the older networks and agents of medicinal trade, and newer, early modern ones. Along with designations of "best quality," he also qualified certain medicines as "brought in the past" (*kowatari*) and "brought recently" (*shinwatari*). *Kowatari* broadly indicated goods brought by Song, Yuan, and Ming traders, while *shinwatari* referred to the various merchant groups that began to come to

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[54] Marcon, *The Knowledge of Nature,* 213-227.

[55] Hiraga Gennai, Tamura Bansui, Tamura Seiko, Nakagawa Jun'an, and Aoyama Shigemichi. *Butsurui hinshitsu* (Shinsaibashi, Osaka: Kashiwara-ya Seiemon, 1763).Waseda University Libray, Tokyo.

Japan from the sixteenth century onwards. Apothecaries and medicinal merchants frequently discussed imported medicine in the same manner in pharmacopeia and medicinal primers.

These terms were also borrowed from apothecaries and medicinal merchants, as illustrated by their use in pharmacopeia and other medicinal primers. For instance, Shibata Masahiro's *Nichiyō yakuhinkō* [Thoughts on medicines for daily use, 1811 (Bunka 8)], divided entries on products like cinnamon, Chinese rhubarb, and nutmeg into information about that "brought in the past" and that "brought recently." His entry on borneol reads:

> Most is imported. That which is produced in China and clear is called *honbaika* (C. *benmeihua*) and of the highest quality, but this was brought in the past and is not available nowadays. Regarding that which is brought recently some has a cloudy color but is considered good; some is clear but a subpar product. This is called *shirode* or *shiroryū*. That which is brought by the Dutch is cloudy and potent, and thought of as the best quality available now.[56]

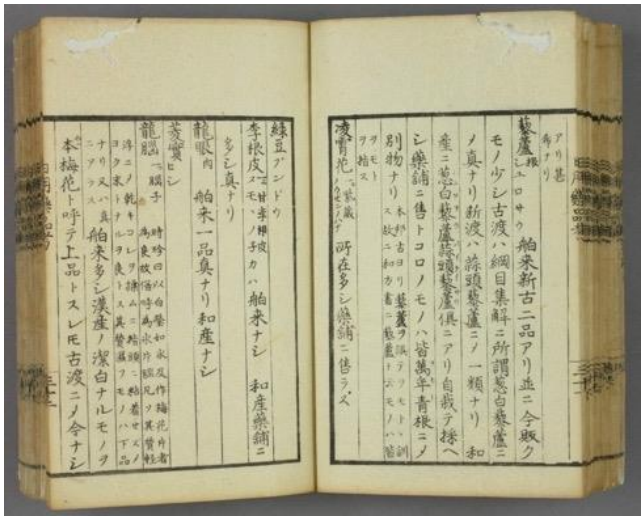

Figure 21 The entry on benzoin, alongside other medicines classed as both "newly brought" and "brought in the past." From Shibata Masahiro, *Nichiyō yakuhinkō* (Owari [Nagoya]: Katano Tōshirō, 1811). Waseda University Library, Tokyo.

[56] Shibata Masahiro, *Nichiyō yakuhinkō* (Owari [Nagoya]: Katano Tōshirō, 1811), 25r, 27v, 45r.

Intellectual and financial cooperation between established scholars and apothecaries was even more apparent in the life of Takano Chōei. Originally the third son of a middle-ranking samurai in the domain of Mutsu in Northeastern Japan, Chōei aspired to learn more about *ranpō* but struggled because of his meager finances ever since his arrival in Edo in 1820. Chōei's lack of funding strained many of his relationships in the capital, most notably with his first teacher Sugita Hakugen, heir to the famous Genpaku, who refused to take Chōei on as a formal apprentice or provide him with lodgings. Because of this, Chōei instead stayed with an apothecary known as Kanzaki-ya Genzō. Hailing from the same domain of Mutsu and acquainted with Chōei's adoptive father, Genzō permitted the aspiring physician to lodge with him and earn some income treating patients on a case-by-case basis. When Chōei ultimately left Sugita Hakugen's tutelage, it was Kanzaki-ya who recommended him to Yoshida Chōshuku, a teacher of *ranpō* more willing to provide financially for Chōei. After Chōshoku's death in 1824 (Bunsei 7), Chōei was once again forced to look for a new source of tutelage and funding. He ultimately set his sights on Dejima and the foreign physician in residence, Franz von Siebold, who was offering medical training in exchange for information about Japanese flora and fauna. While his daily expenses would be paid once he enrolled in the school in Nagasaki, Chōei still required money to make the trip south, and so he once again appealed to the apothecary Kanzaki-ya Genzō for a few *ryō*. Thus funded by Genzō, Chōei went on to study with von Siebold, joining the now famous Narutaki-juku and the well-known narrative of *rangaku* as a national modernizing force.[57]

[57] Sōda, *Toraiyaku no bunkashi: Oranda-sen ga hakonda yoyaku* (Tokyo: Yasaka Shobo, 1993), 192-193.

Genzō's interest in funding Chōei was more pragmatic than philanthropical and he was infamous amongst *ranpō* scholars for his interest in financing aspiring students.[58] The reasons for this were primarily commercial, as Genzō advertised himself as a wholesaler of Dutch medicine (*oranda yakuhin*) in urban guides to Edo.[59] The apothecary no doubt planned for Chōei to return with information about other Dutch medicines that might be sold at the shop in Horidome. These particular hopes were dashed when Chōei faced censure for his critiques of the Tokugawa *bakufu*'s policies on foreign exchange. Luckily, Genzō had diversified his assets, and also invested in other aspiring *ranpō* scholars like Ōtuski Shunsai, who was later appointed as the head physician for the domain of Mutsu and became known for his work in disseminating the smallpox vaccine within Japan.

Despite a recent number of analysis on Chōei's contributions or *yakuhinkai*, apothecaries like Genzō or Gennai's collaborators are rarely discussed in term of their roles as intellectual and material intermediaries. Their specialized knowledge and familiarity with imported substances made them ideal sources of information not only for scholars and officials, but also for customers. By the turn of the nineteenth century, an increased flow of imported commodities and public interest in diverse cultural traditions prompted the rise of new *baiyaku* that purportedly involved an eclectic variety of foreign substances and ideas. Merchants had to explain the uses of these products, their unique characteristics, and their cultural connections to customers as part of the commercial process. A millennium after the first major influx of global medicinal substances and

[58] Takano Chōun, *Takano Chōei-den* (Tokyo: Iwanami Shoten, 1943), 107. See also Janetta, 112.

[59] Nakagawa Hōzandō and Katsushika Hokusai, *Edo kaimono hitori annai* (Kyoto: Namari-ya Subē, 1824), 289r.

practices, Japan's marketplaces were filled with a new world of medicines, sold by a number of apothecaries and medicinal merchants and all available to the Japanese public for a price.

Chapter 3. The Dutch global medicine trade in early modern Japan, 1630-1854

Silks and medicines for Japan

On May 2 1639 (Kan'ei 16), Francois Caron arrived in Edo as part of the annual court journey (*hofreis*) undertaken by the representatives of United East India Company in early modern Japan. Having risen through the ranks of the Company while serving in Hirado for the previous twenty years, Caron had been appointed chief merchant (*opperhoofd*) only a few months before he left for the capital in order to reaffirm the Company's trading relationship with the Tokugawa *bakufu.* Caron set off from Hirado the first week of April, traveling from the southwestern island of Kyūshū to Osaka in central Japan before arriving in Edo a month later for his meeting with the shogun Tokugawa Iemitsu. Following protocol, Caron conducted preliminary meetings with Inoue Masashige, the governor of Chikugo domain and overseer (*ōmetsuke*) for the VOC. The chief merchant was delighted to discover at these meetings that Iemitsu and his councilors were considering banning Portuguese traders from Japan.[1]

Throughout the 1630s, *bakufu* officials had undertaken various measures to assert authority over the Portuguese as part of their broader political efforts to shape foreign policy. Initially, the Tokugawa government continued the red seal (*shūin*) licensing system for foreign trade originated by Toyotomi Hideyoshi, in which merchants chosen by the ruling government were granted permits that allowed them to trade regularly at Japanese ports. Ships run by Chinese, Japanese, and European entities were given red seal permits, with Japanese merchants quickly adopting the practice of settling

[1] *Oranda shōkanchō nikki, genbun-hen*, Vol. 4 (Tokyo: Tōkyō Daigaku Shiryō Hensanjo, 1974), 32-3, 64.

in important port cities just as the Chinese and European did. Macao, Manilla, Tonkin, Cochin, and Patani were all frequented by red seal ships, which returned to Japan carrying massive quantities of textiles, sandalwood, agarwood, cinnabar, mercury, and betel nut.[2] As discussed in chapters one and two, these goods were not new to Japan and had circulated around Asia since at least the eighth century. However, the efforts of red seal traders did result in an unprecedented supply of foreign commodities in the early seventeenth-century, increasing their availability for Japanese consumers.

As the *bakufu* further consolidated power through the first decades of its rule, officials placed more stringent regulations on the red seal system until phasing it out entirely in 1633 (Kan'ei 10). Any ships coming to or leaving Japan were directly overseen by *bakufu* officials, ensuring their total control over the circulation of goods and people. The number of ports permitted for foreign trade was also reduced in 1635 in order to facilitate government administration of trade, with Nagasaki receiving all ships aside from those going to the VOC factory in Hirado and the Chinese-dominated port of Hakata. Amidst this construction of foreign policy, the Portuguese remained a thorn in the side of the *bakufu*. Merchants and missionaries affiliated with the foreign group repeatedly violated various edicts concerning Christian proselytization, permitted ports of entry, and smuggling. However, the Tokugawa officials were hesitant to ban the Portuguese in the same manner as they had the Spanish in 1624 (Kan'ei 1). With the cessation of the red seal permit system, the South and Southeast Asian products brought on Portuguese galleons were needed more than ever after 1633. Historically, Chinese merchants would have been able to bridge any shortage in the supply of such goods, but

[2] Ikeda, *Nihon yakugyōshi,* 58-9.

the increasing efforts of the Spanish, Portuguese, and Dutch to monopolize specific networks and products reduced the access of Chinese traders to certain ports across the Indian Ocean.[3] Rather than risking a disruption in supply, the *bakufu* chose to first deport any Portuguese not directly involved in commerce to Macao in 1636 (Kan'ei 13), confining the remaining merchants to the newly constructed island of Dejima in the bay of Nagasaki in order to closely police their activities in Japan.



Figure 22 A modern reconstruction of the VOC's factory in Hirado, a deep-water port on the western coast of Kyūshū. The original was torn down by Francois Caron in 1640 as a show of fealty to Inoue Masashige and the bakufu, who ordered its destruction and for the Company to move its base of operations to the man-made island of Dejima in the bay of Nagasaki.

When Caron learned from Inoue Masashige in 1639 about the potential expulsion of the Portuguese, he understood that it represented a major turning point for Japanese policy and the future of the Company. Since its creation in 1602, the VOC had engaged in a fierce battle for Asian territories and trade routes with the Portuguese. In Japan, this broader conflict had led to various attempts by Company employees to undercut the

[3] For more on the reorganizations caused European traders and territorial conquests, see *Iberians in the Singapore-Melaka area and adjacent regions,* ed. Peter Borschberg (Wiesbaden, Harrassowitz Verlag, 2004).

Portuguese politically and commercially, generally positioning themselves as loyal servants of the *bakufu* in opposition to the disruptive missionary efforts of the Portuguese. These efforts had intensified after 1628 (Kan'ei 5), when a Japanese red-seal ship and its crew were detained illicitly in Taiwan by the Dutch governor Pieter Nuyts. As a response to these actions, the *bakufu* censured the Company by suspending all trade activities at the factory in Hirado until 1632. In order to avoid the anger of the *bakufu* once again after this long cessation of trade, head merchants of the VOC designated themselves as "vassals" of the shogun, willingly submitting themselves to his authority and informing him any potential threats to the realm.[4] Company personnel happily provided information to *bakufu* officials that further sowed mistrust of the Portuguese, warning of their colonization of the Philippines, their heavily armed navies, and their willingness to do anything for the Catholic mission. Most recently, Caron himself had been involved in the fabrication of a "pope-ish [sic] plot" intended to further sour Japanese officials on the Portuguese by convincing them of an imminent invasion aided by local Christian converts.[5]

For Caron and other Company personnel, the news about the *bakufu* potentially expelling the Portuguese thus represented a commercial victory as well as an ideological one. It cemented the Company's usefulness to the shogun as trading partners and pseudo-subjects as well as eliminated a major source of competition for the VOC within Japan and beyond. Before finalizing this decision, however, there was one major issue that the

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[4] Clulow, *The Company and the Shogun,* 205-255. F. S. Gaastra, *The Dutch East India Company: Expansion and Decline* (Zutphen: Walburg Pers, 2003), 37-52.

[5] François Caron and Joost Schouten, *A True Description of the Mighty Kingdoms of Japan & Siam,* trans. Roger Manley, ed. C.R. Boxer (London: The Argonaut Press, 1935), xxxi-xxxiii.

bakufu wanted Caron to address. During his meeting with Inoue Masashige, the overseer of the VOC asked Caron "if the remaining Portuguese were banned from this land, could we find a way to provide the medicines and silks (*medecijnen ende sijdestoffen*) to Japan that until then had been brought by the Portuguese." In his records, Caron recorded his delighted affirmative, and began to make plans in preparation for the imminent expulsion of the Portuguese from Dejima.

Caron was asked this same question multiple times throughout his stay in Edo in 1639, including at the official audience with the elder councilor (*tairō*) Sakai Tadakatsu, who stood in for an ailing Tokugawa Iemitsu.[6] The *bakufu*'s insistence on Caron addressing this question demonstrated how essential these goods were to early modern trade, with textiles and medicine constituting the two largest categories of imported commodities both in terms of quantity and value.[7] However, before expelling the Portuguese from their shores the shogun and his councilors wanted to ensure that their supply of these products would not be interrupted. In response to these worries, Caron provided ample reasons why the Company would be capable of making up for any deficit caused by the expulsion of the Portuguese traders. In his reasoning, with the Japanese market and its precious metals off-limits to the Portuguese, the Chinese would be far more amenable to trading greater quantities of their silks to the Dutch. As for their other request, Caron reported that "they gave us a record of the medicines and drugs that were brought by the Portuguese, and we shall see to supplying them with the same ones."[8]

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[6] *Oranda shōkanchō nikki,* Vol. 4, ix, 49, 53, 55, 62.

[7] *Takeda hyaku-hachijūnenshi,* 20.

[8] *Oranda shōkanchō nikki,*Vol. 4, 49. De droge ende medicijnen, die de Portugese brengen, men geve ons een memorie daarvan, wij sullen seen deselve mede te voldoen.

While this list is not extant, the VOC had been paying attention to the trade conducted by the Portuguese merchants for the previous few years. In November of 1636, head merchant Nicolaes Couckebacker transcribed a report he had received from the governor (*daikan*) of Nagasaki detailing the contents of a Portuguese galleon that had come to that port the previous year. Alongside a large quantity of silks and damasks, the galleon had also brought agarwood, mercury, China root (*smilax glabra*), red coral, putchuk (*saussurea costus*), cinnamon, borax, and saffron to trade in Nagasaki.[9] Caron described similar products in a report he wrote for the VOC director in Batavia in 1636, which was later published as *Rechte beschryvinghe van het machtigh koninghrijk van Iappan* [Accurate description of the mighty kingdom of Japan, 1662]. In the section on trade, Caron listed nutmeg, pepper, musk, borax, and agarwood as some of the "many types of medicine" (*alderley dragen tot medicijn*e) commonly brought to Japan by foreign merchants.[10] Late sixteenth and early seventeenth-century Portuguese records corroborate this information, including large quantities of Chinese rhubarb, musk, agarwood, sandalwood, pepper, cinnamon, and cloves amongst the cargoes of ships sent to Japan.[11]

Medicine "brought by the Portuguese" was thus not equivalent to Portuguese medicine, but rather indicated medicinal substances produced in Asia that were shipped by the Portuguese to Japan. Caron was asked about supplying these medicines not because he represented a European entity, but because the VOC traded in the same Indian

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[9] *Oranda shōkanchō nikki,* Vol. 2 (Tokyo: Tōkyō Daigaku Shiryō Hensanjo, 1974), 134-8.

[10] Caron et al, xxxiv, 44.

[11] Toyama, Usaburō, *Nanbansen bōekishi* (Tōkyō: Tōkō Shuppan, 1943), 427-8. For a general overview, see *Porutogaru to nanban bunka-ten* (Tokyo: Nihon Hōsō Kyōkai, 1993), 178-9.

Ocean ports as the Portuguese. Caron reiterated this fact each time he was asked by the *bakufu* about the capability of the Company to supply silks and medicines, claiming that "there was no land in the world in which the Portuguese and Spanish trafficked that the Dutch did not also conduct business."[12]

European Companies and intra-Asian trade

The *bakufu*'s request to Caron in 1639 to ensure the continued supply of silks and medicine previously brought by the Portuguese spoke to the perennial importance of an intra-Asian system of trade that was over a millennium old. Medicine was a quintessential part of this trade for all of the premodern era. The medical system adapted in Japan from the continent beginning in the seventh century relied heavily on global substances as part of its therapeutic practices, all catalogued neatly in pharmacopeia and other medical texts produced in China, Japan, and Korea. Although Japanese physicians and officials worked to find indigenous medicines that were also effective or capable of substituting more costly imported products, there was a widespread reliance on global products as part of premodern Japanese medical practice. For much of this time, reliable access to foreign commodities was limited to the socio-political elite, such as the imperial court, *bakufu* officials, and monks affiliated with influential Buddhist temples. By the late fifteenth-century, a growing supply of medicinal substances from South and Southeast Asia brought by Chinese, European, and red-seal ships led to increased circulation of these products in public marketplaces of Japan.

[12] *Oranda shōkanchō nikki,* Vol. 4, 49. Der Portuguesen noch Spanjaerden in gene landen ter werelt trafficqueerden daer de Hollanders niet mede haren handel dreven.

As a whole, the substances and practices brought by European merchants to their Asian trading partners were far from revolutionary. The Portuguese and Dutch adapted to the existing trading system rather than disrupting it when they arrived in the Indian Ocean arena in the last decade of the fifteenth century, inserting themselves as middlemen for the existing intra-Asian trade in textiles, medicinal substances, and precious metals. The marketplaces of India, Persia, and Arabia alone were extensive enough to support the entry of these new maritime actors, with the merchants and consumers in these regions able to produce a consistent demand for hundreds of thousands of tons of medicinal substances, textiles, and porcelains from East and Southeast Asia.[13] While Japan was not capable of trading on this scale, it demanded similar products from foreign merchants and offered sought-after exports in return, such as gold, silver, copper, lacquer-ware and camphor. By the time the Portuguese arrived in Japan in 1542, they were already competing with Chinese, Muslim, Spanish, and Dutch traders for control over major ports and routes in South and Southeast Asia. Their ability to transport goods from Portuguese bases of power in Goa, Macao, and the Persian Gulf was appealing to the Japanese *daimyō* of sixteenth century, who, like the emperors of the Nara and Heian periods, knew that control of desirable imported objects provided both political and economic power.[14] Nearly a century later, the VOC had successfully maneuvered itself into a similar position after a series of domestic and global political shifts.

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[13] R. A. Donkin, *Between East and West: The Moluccas and the Traffic In Spices Up to the Arrival of Europeans* (Philadelphia, PA: American Philosophical Society, 2003), 170.

[14] Arun Das Gupta, "The Maritime Trade of Indonesia: 1500-1800" in *India and the Indian Ocean*, ed. Arun Das Gupta and M. N. Pearson (Calcutta: Oxford University Press, 1987), 251-4. Roderick Ptak "Reconsidering Melaka and Central Guangdong: Portugal's and Fujian's Impact on Southeast Asian Trade (Early Sixteenth Century)" in *Iberians in the Singapore-Melaka area and Adjacent Regions,* ed. Peter Borschberg (Wiesbaden, Harrassowitz Verlag, 2004), 1-22.

Caron's assurances to Inoue Masashige during their meetings in 1639 were not empty promises. Having spent the first decades of the seventeenth century wresting away key sites from the Portuguese like Banda, costal Ceylon (Sri Lanka), and Ambon, the VOC was well equipped to supply the fruits of these regions – namely nutmeg, mace, cinnamon, and cloves – to Japan and its other Asian trading partners.[15] In a way, Caron's assurances to the Tokugawa *bakufu* were an extension of this series of territorial conquests, with the Company taking yet another trade route and source of revenue from the Portuguese. These conquests moreover formed the final links in the Company's network of intra-Asian trade.

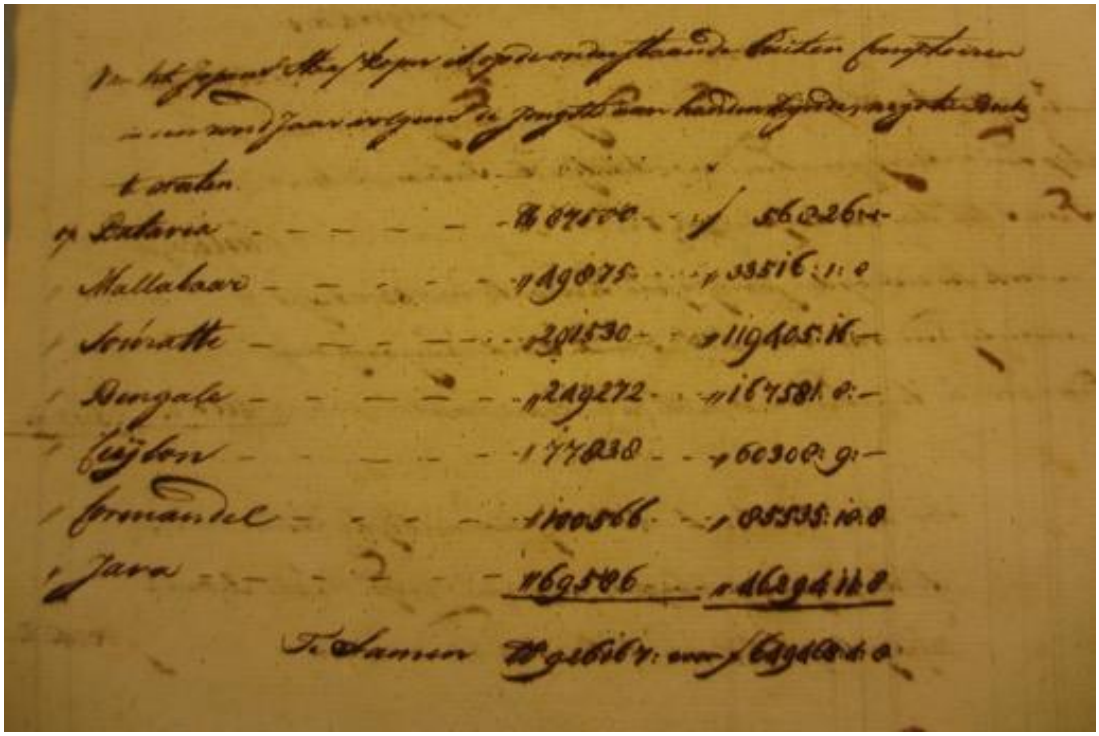

Figure 23 An excerpt from a summary of Company trade with Japan produced in 1791 for the Governor General of Batavia Willem Arnold Alting, detailing the impressive net profit for bulk trade that year, which consisted entirely of goods originating from Batavia, Malabar, Surat, Bengal, Ceylon, Coromandel, and Java. 1.04.21 NFJ 662. Nederlandse Factorij Japan, Nationaal archief, Den Haag, Netherlands.

[15] Gaastra, *The Dutch East India Company*, 37-52.

Aptly described as the "soul of the Company" by its directors, intra-Asian trade directly or indirectly subsidized the acquisition of return goods for the European market until the Company's demise in 1799.[16] This system broadly functioned as follows: Company merchants traded silver for silk in China, silk for copper in Japan, copper for textiles in Coromandel and Bengal, and textiles for pepper, cloves, nutmeg, and mace in the Indonesian archipelago.[17] Out of all these goods, the natural products from the Indonesian archipelago generally yielded the greatest profits throughout the seventeenth century particularly when sold in the ports of Europe.[18] However, the Company's pursuit of these products and the profits they garnered on the European market have often been conflated in histories of the VOC and global trade. Scholars tend to treat European consumers as the ultimate endpoint of the Company's trade, and have duly analyzed the various socio-cultural and economic effects caused by increased European access to commodities like pepper and cloves.[19]

As evidenced by Caron's conversation with Inoue Masashige, the VOC's intra-

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[16] Om Prakash, *The Dutch East India Company and the Economy of Bengal, 1630-1720* (Princeton, N.J.: Princeton University Press, 1985.), 118. Jan De Vries and A. M. van der Woude, *The First Modern Economy: Success, Failure, and Perseverance of the Dutch Economy, 1500-1815* (Cambridge: Cambridge University Press, 1997), 431.

[17] *The Dutch East India Company Boo*k, eds. Ron Guleij and Gerrit Knaap (Zwolle : WBooks, 2017), 138-140. 121-2, 134.

[18] Kristof Glamann, *Dutch-Asiatic Trade, 1620-1740* (Copenhagen: Danish Science Press, 1958), 15-20. See also Gaastra, *The Dutch East India Company*, 119-137. For histories of the VOC in other Asian regions, see Bhawan Ruangsilp, *Dutch East India Company Merchants At the Court of Ayutthaya Dutch Perceptions of the Thai Kingdom, Ca. 1604-1765*. (Leiden: Brill, 2007). Sanjay Subrahmanyam, *The Political Economy of Commerce: Southern India, 1500-1650* (New York: Cambridge University Press, 1990).

[19] Paul Freedman, *Out of the East: spices and the medieval imagination* (New Haven: Yale University Press, 2008). *Southeast Asian exports since the 14th century: cloves, pepper, coffee, and sugar,* ed. David Bulbeck (Singapore: Institute of Southeast Asian Studies, 1998), and *Ships, sailors and spices: East India companies and their shipping in the 16th, 17th and 18th centuries*, ed. Jaap R. Bruijn and F.S. Gastra (Amsterdam: NEHA, 1993).

Asian trade was circular rather than unidirectional. The Company shipped cinnamon and pepper not only to Europe but also to its array of Asian trading partners. Om Prakash has compellingly argued that the Indian subcontinent rather than the Europe was the single largest consumer of cloves, nutmeg, and mace throughout the seventeenth century.[20] Arun Das Gupta writes that, alongside Japanese copper, the VOC imported various medicinal substances from Southeast and Northeast Asia into Surat and Coromandel to exchange for textiles, such as sandalwood from Sumatra, camphor from Japan, and benzoin from Thailand.[21] In addition, although the profits garnered on the Asian market from products like cloves and cinnamon were less than those from European sales, they were certainly not negligible. S. Arasaratnam and Els M. Jacobs both estimate that around 100,000 pounds of cinnamon were shipped to Asia annually throughout the eighteenth century.[22] Since the VOC essentially obtained its cinnamon for free and set the price per pound at 2.4 guilders, this would net 240,000 guilders total. This profit margin would grow after the mid-eighteenth-century, when cinnamon supplies dwindled and the VOC leveraged its monopsony position to raise prices globally.[23]

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[20] Om Prakash, *Bullion for goods: European and Indian merchants in the Indian Ocean trade, 1500-1800* (New Delhi : Manohar Publishers & Distributors, 2004), 109-115.

[21] H.K's Jacob, "De VOC in de Malabarkust in the 18de eeuw" and A. Das Gupta, "De VOC en Suratte in de 17de en 18de," in *De VOC in Azië*, ed. M.A.P. Meilink-Roelofsz (Bussum: Fibula-Van Dishoeck, 1976), 71, 108.

[22] Jacobs estimates that between 1660 and 1750, the VOC acquired 600,000 pounds of cinnamon from Ceylon, 100,000 pounds of which was shipped to Asia. Arasaratnam in turn claims that over the course of the eighteenth century 800,000 pounds of cinnamon were shipped from Ceylon, also noting that 100,000 pounds went to Asia. Els M. Jacobs, *Merchant in Asia: the trade of the Dutch East India Company during the eighteenth century,* trans. Paul Hulsman (Leiden: Research School CNWS, Universiteit Leiden, 2006), 19, 51. A. Das Gupta, *Malabar in Asian trade: 1740-1800* (Cambridge: Cambridge University Press, 1967), 137. S. Arasaratnam, "De VOC in Ceylon en Coromandel in de 17de en 18de eeuw" in *De VOC in Azië,* ed. M.A.P. Meilink-Roelofsz (Bussum: Fibula-Van Dishoeck, 1976), 32.

[23] Jacobs, *Merchant in Asia,* 52-53.

That said, profits were not the primary objective of the Company's intra-Asian trade, but access to the marketplaces of South and Southeast Asia. In fact, the VOC harmed the potential earning from cloves, nutmeg, and cinnamon by setting prices artificially high on these products, which was meant to prevent competitors from buying these goods in Asia and shipping them back to Europe at a profit.[24] As demonstrated by Caron's meeting with the *bakufu* in 1639, rather than exerting some kind of free-market policy, Company merchants prioritized the needs of their Asian trading partners in order to maintain their trading relationships. Om Prakash and Jan de Vries both note how Company directives clearly stated that the Asian market for spices took precedence over that of Holland, because it was only by trading in this market that the VOC obtain other valuable return goods intended for Europe like porcelain, tea, and lacquerware.[25]

Getting spicy

After Caron's conversations in Edo, he quickly conveyed the orders of the *bakufu* to his colleagues in Batavia, Siam, Tonkin, and Surat. Company ships arriving in the summer trading season of 1640 brought tens of thousands of catties of sappanwood, aloeswood, catechu, putchuk, rhinoceros horn, elephant tusk, cloves, mercury, musk, and sandalwood, most of which was sold by December of that same year.[26] In July of 1641, the ship *den Orangienboom* made port in Nagasaki carrying modest quantities of mercury, galangal, and China root. A week later, *de Coninghinne* arrived with bulk

[24] Glamann, *Dutch-Asiatic Trade,* 15, 92. Arasaratnam, "De VOC in Ceylon en Coromandel," 32. Gupta, "De VOC en Suratte," 72-3.

[25] Prakash, *Bullion for goods*, 109-115. de Vries and Woude, *The First Modern Economy*, 430.

[26] *Oranda shōkanchō nikki,* Vol. 4, 263, 323. A catty is generally converted a little over a pound.

cargoes of pepper, cloves, betel nut, and sappanwood from the Company's warehouses in Batavia and Siam.[27] In September of that same year, *den Meerman* came from Tonkin with over one thousand catties of cinnamon.[28] All of these goods were sold either to *bakufu* officials or at auction before the end of the month.

Company servants were pleased enough with the outcome of these successive trading seasons that they continued to send similar medicinal cargoes to Japan for the rest of the VOC's tenure on Dejima.[29] In general, the cargo brought to Japan by Company ships was divided into two parts, the formal *motokata* trade and the informal *wakini* trade. *Motokata,* meaning main goods, primarily referred to bulk items that were deemed useful or necessary by the *bakufu*. These consisted of textiles, medicinal substances, and sugar. In addition, *motokata* also encompassed the items specially requested items for the shogun, his councilors, and the officials working for the magistrate (D. *eischen, geschenken*; J. *atsuraemono*). *Wakini,* or side goods, were products brought by individual members of the VOC to trade personally. Before the mid-eighteenth-century, *wakini* trade was extremely limited due to regulations that limited individuals to a single chest of goods. Amongst *bakufu* officials, there was also a strong affiliation of *wakini* trade with smuggling, and VOC administrators were happy to uphold this regulation in order to prioritize Company profit over individual gain. As the VOC's circumstances changed from the mid-eighteenth century, restrictions on private trade were relaxed as long as *wakini* goods were submitted for approval to the Magistrate in order to prevent

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[27] *Oranda shōkanchō nikki,* Vol.5, (Tokyo: Tōkyō Daigaku Shiryō Hensanjo, 1974), 105-6, 117-8.

[28] *Oranda shōkanchō nikki,* Vol.5, 163-4.

[29] *Oranda shōkanchō nikki,* vol.5, 171-3.

smuggling and the import of harmful substances. For most Company personnel on Dejima after the mid-eighteenth-century, they relied on the profits of *wakini* trade rather than their stagnant wages to ensure their livelihood.[30]

Eighteenth century VOC records illustrate that medicine was part of both *motokata* trade and *wakini* trade. Sappanwood, black pepper, cloves, putchuk, and elephant tusk were all imported as *motokata* goods along with catechu and mummy. More valuable medicines were in turn brought as *eischen* or as *wakini*. The exact products changed annualy, but saffron, oculi cancri (shellfish gastrolith), gum arabic, and theriac appeared perennially in cargo lists. After the VOC's demise in 1799, *wakini* trade expanded as a formal part of the exchange conducted by the Dutch Trade Society. Because of this, greater quantities of familiar medicines were brought to Japan alongside more novel substances like balsam copaiba, sal ammoniac, calomel, and quinine, which will be discussed further later in this chapter.

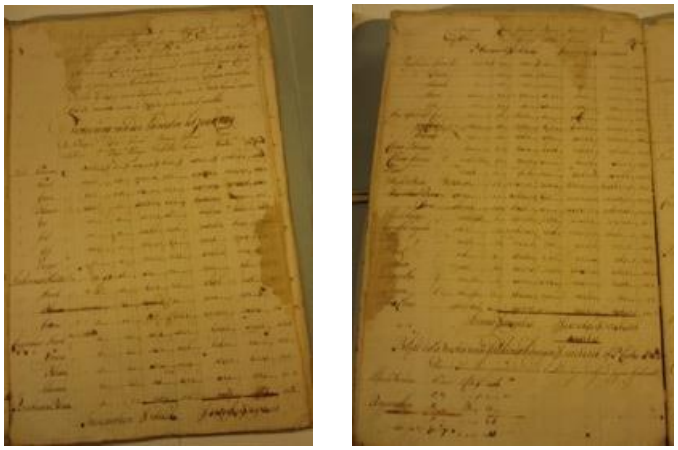
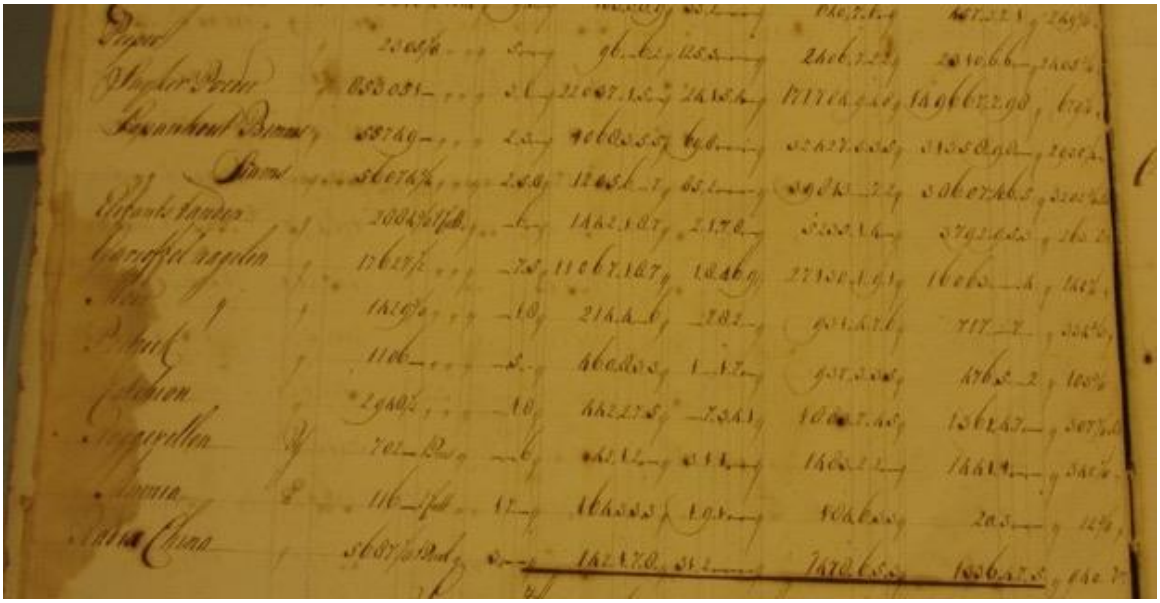


Figure 24 A comparison of Company trade and Chinese trade to Japan between 1779 and 1783 prepared by head merchant Isaac Titsingh. From Secreete memorie wegens den handel der Compagnie en Chineesen en hetgeen verder betrekking heeft op het bestuur der stad Nangasakki, 1783. 1.04.21 NFJ 661. Nederlandse Factorij Japan, Nationaal archief, Den Haag, Netherlands.

[30] For more, see *Nichi-Ran Kankeishi o Yomitoku,* eds. Matsukata, Fuyuko, and Frederik Cryns. (Kyōto: Rinsen Shoten, 2015). Gaastra, *The Dutch East India Company*, 164-170.



Detail of Figure 24– Aside from cotton and silken textiles, medicines composed the other profitable bulk goods for the trading seasons of 1779-1783. These included pepper, sugar, sappanwood, elephant tusk, cloves, putchuk, catechu, and China root.

Historians rarely treat the kinds of substances discussed above as anything but "folk medicine" or "traditional medicine." Indeed, the trade and use of some of most valuable and effective medicinal substances like cloves, saffron, and nutmeg are rarely discussed in terms of medicine at all. The exchange of such commodities by European merchants is more commonly known as "the spice trade," a paradigm that is problematic for a variety of reasons. In national histories, "the spice trade" analyzed by scholars was built by and for Europeans, beginning with the Portuguese "discovery" of the Spice Islands in the Indonesian archipelago and culminating in grandiose imperial endeavors.[31]

[31] See Owen Lattimore and Eleanor Holgate Lattimore. *Silks, Spices, and Empire: Asia Seen Through the Eyes of Its Discoverers* (New York: Delacorte Press, 1968), A. R. Disney, *Twilight of the Pepper Empire: Portuguese Trade In Southwest India In the Early Seventeenth Century* (Cambridge, Mass.: Harvard University Press, 1978), Michael Murrin, *Trade and romance* (Chicago: The University of Chicago Press, 2014), *Global goods and the Spanish Empire, 1492-1824: circulation, resistance and diversity*, ed. Bethany Aram, Ramón y Cajal et al (Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2014), and Piet C. Emmer and F. S Gaastra *The Organization of Interoceanic Trade In European Expansion, 1450-1800* (Aldershot, Hampshire: Variorum, 1996).

Asian actors are often elided from these narratives entirely despite their prolific involvement in the cultivation and exchange of natural substances across Asia for over a millennium. Described as a foundational moment in globalization, historians pay little attention to the causes of the global demand that motivated merchants to traffic in spices.[32] The few monographs that tackle this question do so through the lens of European consumption and questions of taste and exoticism, describing what spices represented culturally more so than how they were generally consumed.[33] Furthermore, the "spice trade" is rarely considered beyond the seventeenth century. Paul Freedman asserts that by the turn of the eighteenth century, "the spice trade became unimportant," although he neglects to detail to whom it ceased to matter. In other words, the natural resources of Asia, once fully exploited through monopolization and colonization by European entities, ceased to hold their same allure.[34]

Aside from historiographical issues, linguistically the term "spice" is also problematic. As John Keay points out, the English word derives from the Latin *species*, meaning "type" or "kind." Medieval traders and officials understood "spices" to be a category of import goods subject to duties (*species pertinentes ad vectigal*) at the Byzantine port of Alexandria. By the medieval era, Italian merchants used the term to

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[32] *Globalization in prehistory: contact, exchange, and the "People without History,"* ed. Nicole Boivin and Michael D. Frachetti (Cambridge, United Kingdom : Cambridge University Press, 2018). Jane Hooper, *Feeding Globalization: Madagascar and the provisioning trade, 1600-1800* (Athens, Ohio: Ohio University Press, 2017), and Steven E. Sidebotham *Berenike and the ancient maritime spice route* (Berkeley: University of California Press, 2011).

[33] Andrew Dalby, *Dangerous Tastes: The Story of Spices* (Berkeley: University of California Press, 2000), Jack Turner, *Spice: The History of a Temptation* (New York: Alfred A. Knopf, 2004), and Timothy Morton, *The Poetics of Spice: Romantic Consumerism and the Exotic* (Cambridge, UK: Cambridge University Press, 2000).

[34] Freedman, *Out of the East,* 2.

refer to goods with a high value-to-weight ratio, which included a wide range of fruits, nuts, gums, and roots.[35] Over time, this meaning narrowed even further, reduced to mean aromatic vegetal substance commonly used to season or flavor foods. The term "spice" thus reduces these substances to one-dimensional commodities defined by their exchange value and exploitation by European actors. For these various reasons, this dissertation will not call cloves, nutmeg, and saffron "spices," but instead adopt the language of Caron and the Tokugawa bakufu by simply referring to them as medicines.

Across the world, cinnamon, mace, and borneol fetched such high prices because of their use as medicine. They were not sought after because they tasted good or preserved meat well, but because they had noticeable therapeutic effects exploited by medical practitioners. Open any premodern pharmacopeia, formulary, or alchemical text from Western Europe, China, Persia, or Greece, and natural substances are listed as the primary components of most medicines found on those pages.[36] Cloves and nutmeg did not only feature in "folk" or "traditional" medicine, but in that practiced by the foremost surgeons and medical professionals across the world. The erasure of these practices from modern histories is the result the same intersecting Eurocentric and teleological frameworks that have artificially delimited the study of Dutch medicine in early modern Japan.

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[35] John Keay, *The Spice Route: A History* (London: John Murray, 2005), 21, 23-6.

[36] Paul U. Unschuld, *What Is Medicine? Western and Eastern Approaches to Healing* (Berkeley: University of California Press, 2009), Nancy G. Siraisi, *Medieval & Early Renaissance Medicine: An Introduction to Knowledge and Practice* (Chicago: University of Chicago Press, 1990). R. K French, *Medicine Before Science: The Rational and Learned Doctor From the Middle Ages to the Enlightenment* (Cambridge, UK ; New York: Cambridge University Press, 2003), and Bruce T. Moran, *Distilling Knowledge: Alchemy, Chemistry, and the Scientific Revolution* (Cambridge, Mass.: Harvard University Press, 2005).

Japanese conceptions of the world of Dutch trade

Early modern Japanese commentators were well aware of the intra-Asian nature of Dutch trade, and of the importance of medicine within that trade. In 1695 (Genroku 8), the merchant Nishikawa Joken published *Kai tsūkōsho* [Thoughts on foreign trade]. Joken lived and worked in Nagasaki, coming into close contact with the diversity of foreign traders and products flowing through the port city. A collector of cartographic and astronomical maps and texts from China and Europe, in all of his works Joken incorporated this more specialized knowledge with the practical information gained from his day-to-day activities as a merchant. The first volume of *Kai tsūkōsho* consisted entirely of goods brought from ports like Nanjing, Shandong, and Shanxi. As a whole, the Chinese products discussed by Joken did not differ much from trade conducted in earlier eras. Silks and textiles were second only to medicinal substances in terms of import quantities, all of which were sourced from across Asia. Most of these products had been imported to Japan by Chinese merchants since the eighth century. Restorative panacea such as ginseng, deer musk, and bear gallbladder remained important, as well as digestive aids like licorice, purgatives such as Chinese rhubarb, and diuretics like figwort. Diverse compounded *reiyaku* were also featured as key exports from various Chinese ports.[37]

[37] Nishikawa Joken, *Kai tsūkōshō*, *Vol. 1,* (Kyoto: Kansetsudō, 1695), 8-22. Waseda University Library, Tokyo.



Figure 25 Before his discussion of Chinese goods, Joken included images of both Ming people (left) and Qing people (right) in recognition of the recent political shifts in China. From the first volume of Nishikawa Joken, *Zohō Kai tsūkōsho* (Kyoto: Kansetsudō, 1708). Waseda University Library, Tokyo.

The second volume of *Kai tsūkōsho* surveyed things brought to Japan from regions other than China, which were divided into two general groups. First were foreign regions "beyond China" (*chūka no soto gaikoku*) that "abided by Chinese cultural norms, used Chinese letters, and followed the Three Teachings [of Buddha, Confucius, and Daoism]."[38] These foreign regions and their products consisted of Japan's formal diplomatic partners of Joseon Korea and the Ryūkyū kingdom, as well as Taiwan, Cochin (Eastern Vietnam) and Tonkin (Northern Vietnam). In contrast, the second general grouping in the second volume of *Kai tsūkōsho* consisted of "uncivilized places" (*gai'i*) that were "different from China and all used horizontal letters." Aside from reinforcing the primacy of Chinese trade and culture, Joken's taxonomy indicated a clear East Asian

[38] The later version of Joken's text replaced China (*chūka*) with "Chinese territory" (唐土 *tōto*).

world order oriented around a certain conception of diplomatic and mercantile activities quite different from those found in European sources. There was China, the regions that adapted their socio-political practices from China, and the regions that did not. These "uncivilized foreign places" included Chanpa (Coastal Vietnam), Cambodia, Patani (Northern Malaysia), Ligor (Northern Malaysia), Siam (Thailand), Malacca (Indonesia), the port of Jakarta, Java, Banten (West Java), the Mughal empire, and Holland.[39]

Joken's encyclopedic primer of foreign trade proved popular, but the mixture of Japanese, Chinese, Korean, Portuguese, and Dutch terms used throughout the text confounded readers. When an expanded and updated version of the work, *Zohō kai tsūkōsho,* was printed in 1708 (Hōei 5), Joken not only added to many of the entries but also supplied brief descriptions of most of the terms discussed, particularly those adopted from different languages. The category of "Dutch products" (*oranda dosan*) in *Zohō kai tsūkōsho* featured some items that undoubtedly came from Europe, such as glassware, maps, and mechanical objects such as clocks, thermometers, and compasses.[40] Aside from these items, however, all the other "Dutch products" in Joken's text were in fact sourced from Asia. The list began with a variety of cotton, woolen, and velvet textiles from India, followed by mineral products like crystal, coral, agate, amber, mercury, and cinnabar. These were already in use by Asian consumers as medicine long before the seventeenth century, as were the bezoars from various animals, the resin known as "Dragon's Blood," and the aromatic woods like aloeswood and sandalwood also found in

[39] Nishikawa, *Kai tsūkōshō*, Vol. 1*,* 1r-1v.

[40] For a more in-depth analysis of these particular products, see Chaiklin, *Cultural Commerce and Dutch Commercial Culture.*

Joken's commercial taxonomy.[41]

Other goods, like narwhal horn from the waters around Greenland and saffron from Persia, were undoubtedly far more novel commodities for seventeenth century Japanese observers. Both products were moreover positioned to compete with more established commodities demanded by East Asian consumers. Supplies of rhinoceros horn and elephant tusk, commonly ground up and consumed as analgesics, were decreasing as the animals were hunted across Asia and Africa to meet the demand of European and Asian consumers.[42] *Bakufu* officials and Company merchants believed that narwhal horn might serve as an appropriate replacement for these products, with the applications and appearance of narwhal horn described as similar to rhinoceros and elephants products. Joken was certainly convinced of the utility of narwhal horn or unicorn (*unikōru*) in *Zohō kai tsūkōsho,* praising it as a "miraculous medicine (*myōyaku*)." Similarly, Company servants and Japanese officials hoped that the integration of saffron into the Japanese marketplace might offset the massive costs related to the importation of ginseng. In Joken's words, "Dutch saffron appears similar to safflower, and is used as a substitute medicine (*daiyaku*) for ginseng." While saffron was praised in Chinese, Japanese, and Arabic pharmacopeia for its general restorative benefits similar to those of ginseng, ultimately the popularity of ginseng and Yoshimune's efforts

[41] Nishikawa Joken, *Zohō kai tsūkōsho*, *Vol. 4*, (Kyoto: Kansetsudō, 1708), 4r-5v. Waseda University Library, Tokyo.

[42] Recent findings about the 1555 Portuguese shipwreck *Bom Jesus* have led scientists to postulate that the early globalization activities of European traders directly led to later extinctions and endangered species. Alida de Flamingh et al, "Sourcing Elephant Ivory from a Sixteenth-Century Portuguese Shipwreck," *Current Biology* 31, Issue 3 (2021): 621-628. Rachel Nuwer, "Ivory From Shipwreck Reveals Elephant Slaughter During Spice Trade," *New York Times,* December 17, 2020, www.nytimes.com/2020/12/17/science/ivory-elephants-shipwreck.html.

at import substitution in the 1720s foiled any hopes for it to fully replace ginseng. That said, by the turn of the nineteenth century, apothecaries and Japanese consumers were familiar enough with saffron for it to enjoy popularity in the public marketplace, as will be discussed in chapter five.[43]

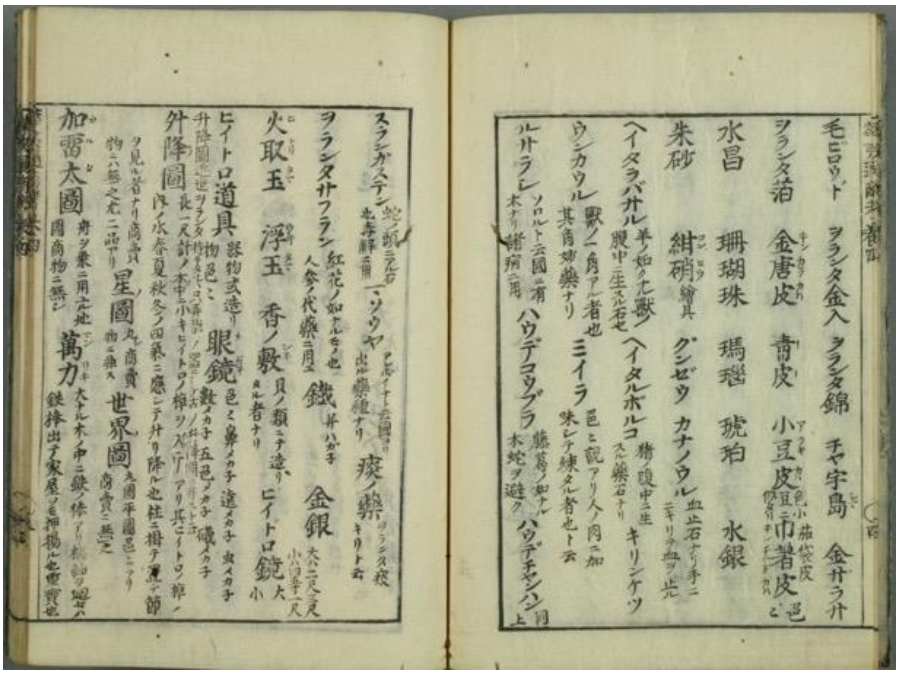

Figure 26 Joken's list of Dutch goods, featuring textiles, maps, glassware, and many medicinal substances such as narwhal horn, mummy, bezoar, sappanwood, snakestone, "cough medicine," and more. From the fourth volume of Nishikawa Joken, *Zohō Kai tsūkōsho* (Kyoto: Kansetsudō, 1708). Waseda University Library, Tokyo.

In addition to narwhal horn and saffron, other new substances in Joken's list of Dutch goods included bloodstone and snakestone, both of which gestured to European alchemical practices. Bloodstone was used across Africa, the Middle East and Europe to staunch bleeding, based in the belief that the red speckles visible on the surface of the stone resulted from the coagulation of blood within it. Similarly, snakestone was thought to draw the venom from wounds caused by snakes. Joken explained that "it is said to be a

[43] Teijirō Yamawaki, *Kinsei nihon no iyaku bunka*: *miira, ahen, kōhī* (Tokyo: Heibonsha, 1995), 115-119.

stone found in the heads of snakes and is used to purify poisons." Mummified remains (*miira*) were also regularly supplied to Japan by Portuguese and Company merchants. According to Joken, *miira* referred to something that "was seasoned with flesh of people" (*hito no niku ni kami shite netaru*). The wide-spread trade in mummies by European merchants remains largely unstudied, so it is difficult to ascertain whether the remains regularly traded to Japan were human or animal. That said, the actual quantity of bloodstone, snakestone, and mummy traded to Japan was quite small compared to the other medicinal substances brought by the VOC, and their use was largely limited to privileged *bakufu* officials and rich collectors.[44]

Other medicines included under the rubric of "Dutch products" were qualified as phlegm medicine (*tan no kusuri*), "*mōya*, a kind of medicine that comes from a region called Ambon," and "*biriri,* from the region of Surat," which referred to *bilis* or another bile-based medicine. Curiously, there was also a medicinal salve called "*toronbeita*, made with *kawatarō*." *Kawatarō* was another term for *kappa*, the cup-wearing monsters that supposedly dwelled in lakes and rivers in Japan. According to Joken, these creatures were also formulated into a medicine by the Dutch. Curious products like this were listed alongside theriac "a compounded medicine for myriad illnesses," and a variety of medicinal oils distilled with balsam, clove, turpentine, and amber. These substances in particular featured heavily in the Japanese adaptation of Dutch medicinal practices, and will be discussed further in chapters four and five.

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[44] J. Webster, *Metallographia or A history of metals wherein is declared the signs of ores and minerals both before and after digging: As also, the handling and shewing of their vegetability* (London: Walter Kettilby, 1671). Elaine Leong and Alisha Rankin, "Testing Drugs and Trying Cures: Experiment and Medicine in Medieval and Early Modern Europe," *Bulletin of the History of Medicine*, 91 no. 2 (2017): 157-182.



Figure 27 Joken's illustration of "Dutch people" and his final statement clarifying that all of the products discussed "were not all products of the country of Holland, but come from the various regions trafficked by the Dutch." From the fourth volume of Nishikawa Joken, *Zohō Kai tsūkōsho* (Kyoto: Kansetsudō, 1708). Waseda University Library, Tokyo.

Joken wrote at the end of the entry on Dutch products that "aside from the aforementioned goods, there are so many kinds of medicinal substances, plants and trees, birds and beasts, and detailed craft-works and curios that it is difficult to describe everything."[45] He then clarified that "Dutch traders ship goods from 35 disparate regions," which included Tonkin, Siam, Pegu [Bago], and Arakan [Rakhine] in mainland Southeast Asia; Malacca, Borneo, Sumatra, Banda, Jakarta, Makassar, Ambon, Timor, and Ternate in the southeast Asian archipelago; Persia, Ceylon, Coromandel, Bengal, Surat, Mocha, and Malabar in South Asia; and Madagascar and Guinea in Africa.[46] In closing, Joken summarized that "many of the goods discussed above are not products of the country of Holland (*oranda-koku no dosan ni arazu*), but come from the various

[45] Nishikawa Joken, *Zohō Kai tsūkōsho*, Vol. 4, 6r.

[46] Nishikawa, *Kai tsūkōshō*, Vol. 2, 24v-34v.

regions visited by the Dutch, where they are gathered and brought to Japan." This conception of Dutch trade would soon find a larger audience. The physician and scholar Terashima Ryōan clearly referenced *Zohō Kai tsūkōsho* when compiling the encyclopedic *Wakan sanzai zue* [Illustrated guide to the realms of heaven, earth and man, 1713]. The entry on *Oranda* in Ryōan's text listed textiles, medicinal substances, and glassware in the same manner as Joken. After this, Ryōan wrote "since the Dutch merchant ships conduct trade in 35 or 36 separate countries and bring a variety of goods, the number of these strange and rare things is incalculable. They visit places like Tonkin, the Moluccas, Siam, and Jagatara [Jakarta] in the same manner as the Chinese, and are permitted to trade in various countries like Sumatra, Pegu, Bengal, Persia, and Borneo."[47]

The ideas expressed by Joken and Ryōan provide a clear understanding of how qualifiers like *oranda* or *kōmō* functioned in early modern Japan. To borrow Joken's explanation, "Dutch products" did not mean "products of the country of Holland." Rather, Dutch products encapsulated anything traded in by the VOC in the same manner as *kara* gestured to the role of Chinese merchants as shippers of global commodities. In regards to the early modern conception of *ran* or Dutch, I concur with Timon Screech that it was a "cluster of concepts" shaped primarily by Japanese engagement with objects imported by the VOC rather than a discrete cultural or national entity. However, I would also argue that it is just as important to consider how this understanding was based on Asian products as much - if not more - than the European "fringe products" discussed by Screech.[48]

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[47] Terajima Ryōan, *Wakan sanzai zue,* Vol. 14 (Osaka: Ōnogiichibē, 1713), 59r. National Diet Library, Tokyo.

[48] Screech, *The lens within the heart*, 7-8.

The conceptual flexibility of these terms was also evident in the use of *nanban* by contemporary Japanese observers. In *Butsurui hinshitsu* [Qualities of various substances, 1763], Hiraga Gennai and his co-writers surveyed the hundreds of medicinal products that had been displayed at the *yakuhinkai* of 1762. Entries in the book commonly included assertions about which domestic or foreign regions supplied the "best quality" (*jōhin*) of the substances in question, which were split into three general categories. There were products from Japan (*wasan*) and China (*kansan*), both of which were written using the word "produce" or "cultivate" (*san*). In contrast, the final category of goods was simply referred to as *nanban*, with no other descriptor. Moreover, Gennai claimed that *nanban* goods were the best quality, the relevant entry also included the names of those products in Dutch, indicating that this information might be necessary for those attempting to locate the product in other texts or for sale. Thus, while originating in the malleable, "uncivilized" region of the world known as *nanban*, Dutch was still the relevant language needed to better understand these commodities. This taxonomy not only emphasized the non-national, non-European conception of "Dutch" seen in Joken's work but also gestured to the increasing engagement of Japanese scholars with Dutch-language pharmacopeia that were also the result of global material and intellectual exchange.

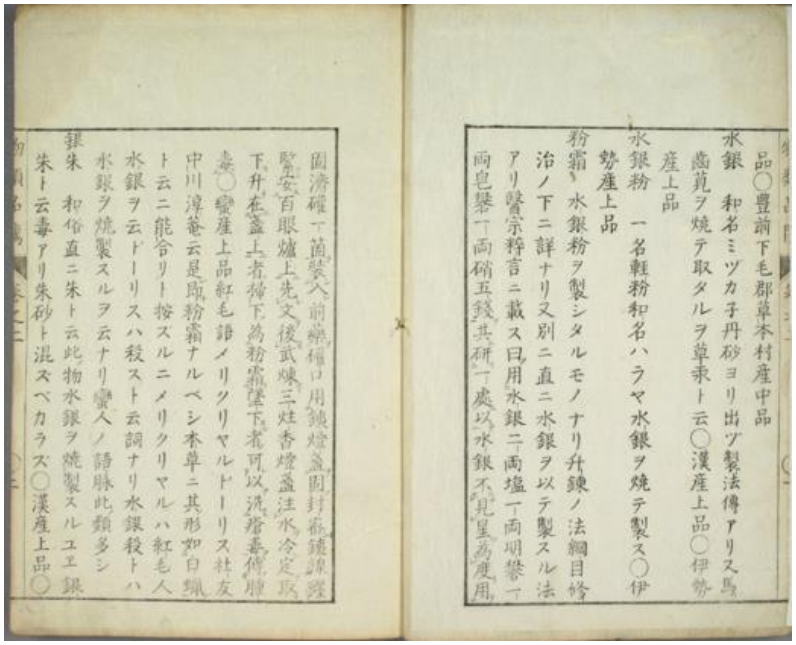

Figure 28 Entries on medicinal substances in *Butsurui hinshitsu*, featuring assertions that the "best quality" of mercury is from China and the domain of Ise, while the best calomel (J. *funsō,* mercury chloride) is from *nanban*. From the second volume of Hiraga Gennai et al, *Butsurui hinshitsu* (Shinsaibashi, Osaka: Kashiwara-ya Seiemon, 1763). Waseda University Library, Tokyo.

Texts like *Wakan sanzai zue* and *Butsurui hinshitsu* enjoyed widespread popularity and use in early modern Japan.[49] For Japanese readers, most of whom never traveled to Nagasaki or interacted with foreign merchants, entries such as the ones above shaped their understanding of these foreign groups and their trade. These conceptions were in turn bolstered by the commodities Japanese consumers encountered in the public marketplace that were qualified as Dutch or Chinese. Beginning from the mid-eighteenth-century onward, commodities brought by the VOC became increasingly accessible in the Japanese marketplace due to local and global shifts in trade. This influx of intra-Asian commodities reinforced these earlier conceptions of foreign trade in early modern Japan and fed a growing demand for "Dutch goods."

[49] Marcon, *The Knowledge of Nature,* 80-82.

Diverging Narratives

Historians of the VOC and Company trade to Japan to describe the eighteenth century as one of decline. The primary cause of this is teleological. Modern researchers know that the Company fell into bankruptcy and dissolved in 1799, and thus attempt to track the causes of this institutional failure back into the eighteenth century. Making use of the rigorous records kept by the VOC, this narrative is also quantitatively easy to argue, with Company profits leveling off at the turn of the eighteenth century after a period of astonishing growth. With few official extant Japanese sources dating to the same period, many scholars have bought into the Company-crafted narrative of oppression and restriction. Japan's trade policies are commonly emphasized in national and institutional histories of the VOC as one of the reasons for the Company's ultimate decline. The glorious, trailblazing seventeenth century activities of the Company in East Asia were undone by the anti-mercantilist, self-limiting policies of the *bakufu*.[50] The diaries kept by head merchants (*dagregisters*) were filled with protests about how Japanese officials repeatedly limited the trading quota and set prices on imported products mercilessly low despite the Company's record of service and compliance. Each year, head merchants appealed to the Nagasaki magistrate to address these issues, then threatened to withdraw from Dejima when their demands were not met.[51]

A salient example of this is found in the diary kept by the head merchant Isaac

[50] See Gaastra, *The Dutch East India Company* and Ingrid G. Dillio, *De nadagen van de Verenigde Oostindische Compagnie, 1783-1795: schepen en zeevarenden* (Amsterdam : De Bataafsche Leeuw, 1992).

[51] Léonard Blussé, *The Deshima Diaries: Marginalia, 1740-1800* (Tokyo: Japan-Netherlands Institute, 2004). In particular, the diary of van Suchtelen is another good example of this particular narrative..

Titsingh. When no Company ships arrived in Nagasaki in the summer of 1782, officials and translators working for the Nagasaki magistrate repeatedly asked Titsingh to explain this absence. While admitting that the cause might partially be the war between the Netherlands and England, Titsingh emphasized that the greater reason for the lack of ships was "the disadvantages that the Company has to suffer in its trade without the prospect of improvement." Furthermore, he stressed that the government in Batavia might have attempted to send a ship regardless of the perils of war "if it enjoyed a fair profit on its cargo and commensurate with the heavy duties it has to bear here." [52] Titsingh's argument about the specific indignities suffered by the VOC in Japan was undermined in December of that same year. As demanded by the Nagasaki magistrate, incoming Chinese and Company merchants submitted reports on the state of the world, apprising the *bakufu* of any important events occurring in the regions frequented by these groups. In the winter of 1782, Titsingh was informed by one of the Japanese translators working on Dejima that according to the Chinese merchants, no Company ships had traded in Canton that year either. Nonetheless, Titsingh continued to blame the disruptions in shipping not on the Fourth Anglo-Dutch war, but rather on the restrictions the Japanese had placed on Dutch trade.[53]

Although few records kept by the Nagasaki magistrate and *bakufu* in the eighteenth century survive, there are plenty of other Japanese documentary sources that contradict the narrative of slow decline described in Dutch-language records. If anything, public interest in goods, practices, and ideas associated with the Company grew in Japan

[52] *The Deshima Diaries: Marginalia, 1740-1800,* 465.

[53] *The Deshima Diaries: Marginalia, 1740-1800,* 765.

throughout the eighteenth century, with the consumption of Dutch imports reaching an all-time high in the nineteenth century. Yoshimune's encouragement to study imported materia medica and pharmacopeia in 1720 deeply affected a generation of Japanese officials, physicians, and scholars who engaged with texts and goods imported by the Dutch. After a few decades, these students of Dutch culture began to disseminate their knowledge publicly. Primers on particular aspects of Dutch trade, language, and culture were produced in large numbers in the late eighteenth-century, beginning with Gotō Rishun's *Oranda banashi* [Dutch story, 1765 (Meiwa 2)]. Rishun's text largely reiterated the work of earlier writers like Nishikawa Joken and Terashima Ryōan, with his discussion of Dutch goods included many familiar medicinal products, like mummy, *biriri* [bilis], snakestone, and bezoar.[54]

In the last decades of the eighteenth century, scholars also produced more corrective works that updated this established canon on Dutch culture, such as Morishima Chūryō's *Kōmō zatsuwa* [Dutch miscellany, 1787 (Tenmei 7)] and Ōtsuki Gentaku's *Ransetsu benwaku* [Distinguishing between bewildering explanations of the Dutch, 1799 (Kansei 11)]. These easy-to-read texts including phonetic lettering and glosses integrated knowledge directly adapted from Chinese and Dutch-language sources as well as direct observations resulting from visits to Nagasaki. This resulted in the addition of newer medicines to the growing category of Dutch goods alongside clarifications about older ones. For instance, both *Kōmō zatsuwa* and *Ransetsu benwaku* discussed mummy and narwhal horn in depth, dismissing claims that they were derived from mermaids or other

[54] Gotō Rishun, *Oranda banashi*, Vol 2 (Location unknown: Goin'an, 1765).

fantastical creatures, locating them geographically as products of Africa and the Arctic.[55] A later text produced by Chūryō, *Bankoku shin'wa* [New tales of myriad countries, 1800 (Kansei 12)] similarly synthesized texts like Li Shizhen's *Bencao gangmu* and Dodoneus' *Cruijdeboek* in order to clarify the geographic and cultural contexts for medicines like bloodstone, theriac, and oils produced by distilling cloves and betel nut.[56]

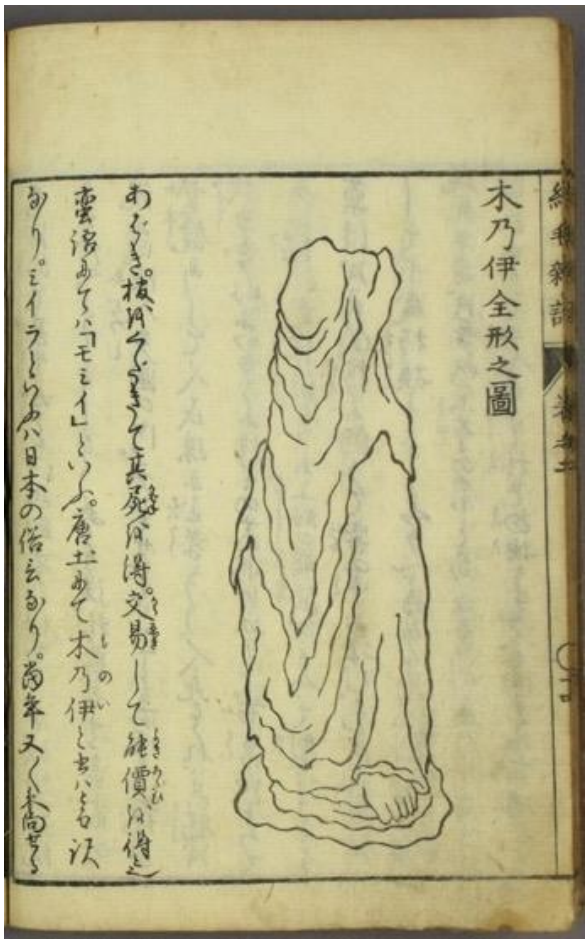

Figure 29 Chūryō's illustration, showing a form shrouded in cloth except for an exposed human foot, accompanying his entry on mummy (*miira*). From the second volume of Morishima Chūryō, *Kōmō zatsuwa* (Edo [Tokyo]: Suhara-ya Ichibā, 1787). Waseda University Library, Tokyo.

[55] Morishima Chūryō, *Kōmō zatsuwa*, Vol. 2 (Edo [Tokyo]: Suhara-ya Ichibā, 1787), 13r-15r. Ōtsuki Gentaku and Arima Genchō. *Ransetsu ben'waku*, Vol. 1 (Ise: Yamagata-ya Yatōsuke, 1799), 20v-21r.

[56] Morishima Chūryō, *Bankoku shin'wa* (Osaka: Fuji-ya Asano Yahē, 1800).

Fujimoto Yoshi, a physician specializing in acupuncture and moxibustion, unsurprisingly integrated many medicinal products into *Oranda sanbutsu zukō* [Illustrated thoughts on Dutch products, 1798 (Kansei 10)]. From his title page to his illustrations clearly adapted from European texts, Yoshi demonstrated his familiarity with various aspects of the Dutch culture available to early modern Japanese consumers. Like Chūryō and Gentaku, Yoshi's discussion of the goods and regions trafficked by the Dutch broadened the intra-Asian network first laid out by Nishikawa Joken a century earlier, transforming it into truly a global enterprise. Notably, his entry on "tree oil" (*jukō*) described the Dutch product as "an oil pressed from extremely fragrant trees grown in a region called Berū [Peru], called *barusamo*."[57] This particular phrasing and transliteration of balsam originated from Giulo Aleni's geographical treatise *Zhifang waiji* [Account of regions beyond imperial administration, 1623], aspects of which were reproduced in many other Chinese-language encyclopedic and pharmaceutical texts.[58] These texts were in turn referenced by Japanese scholars like Arai Hakuseki, whose geographic work *Sairan igen* [Gathered observations and foreign tongues, 1725 (Kyōhō 10)] was credited by Yoshi in his discussion of "tree oil." While medicinal oils made using balsam were mentioned by Joken in the late seventeenth-century, Yoshi's inclusion of "tree oil" from Peru nonetheless gestured to the growing popularity of certain resins imported by the VOC amongst Japanese physicians and apothecaries, most commonly balsam copaiba produced from the Copaifera trees of South America.

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[57] Fujimoto Yoshi, *Oranda sanbutsu zukō*, Vol. 2 (Kyoto: Hayashi Gonbē, 1798), 9r-9v. Waseda University Library, Tokyo.

[58] Angela Schottenhammer, "Peruvian balsam: an example of transoceanic transfer of medical knowledge," *Ethnobiology Ethnomedicine* 16:69 (2020): https://doi.org/10.1186/s13002-020-00407-y.



Figure 30 Yoshi's title page, with an approximation of the Japanese title written out in roman letters, *Sanbets Dsokoo*, and his entry on "tree oil." From the second volume of Fujimoto Yoshi, *Oranda sanbutsu zukō* (Kyoto: Hayashi Gonbē, 1798). Waseda University Library, Tokyo.

Alongside primers like *Kōmō zatsuwa* and *Oranda sanbutsu zukō*, there were also more specialized texts on materia medica. Kimura Kenkadō's treatise on narwhal horn, *Ikkaku sankō* [Collected thoughts on unicorn] and Gentaku's *Rokumotsu shinshi* [New account of six substances] were both published in 1795 (Kansei 7) and highlighted medicinal substances brought by the VOC to Japan that were considered important. Like Yoshi before them, Kenkadō and Gentaku both heavily referenced Chinese-language encyclopedia alongside Dutch-language pharmacopeia and botanical texts. While brought by the Dutch, these goods were nonetheless global products, and knowledge about them was still sourced primarily from established intellectual centers like China.



Figure 31 An image of Hitta Kōmori-ya, a *karamono* shop in Osaka, full of novel wares imported by the Chinese and Dutch, including wine glasses and an elekiter or static energy generator. The roman letters translate roughly to mean "In Japan as well, there is a store full of foreign nonsense where customers can see distant lands right before their eyes." From the third volume of *Settsu meisho zue* [Illustrated famed sites of Settsu] (Osaka: Sekigyokuho, 1798). Waseda University Library, Tokyo.

This widespread dissemination of information fed into an increased demand for Dutch products that grew in Japan from the late eighteenth-century. Glassware, oil paintings, and other novelties imported by the VOC began to appear frequently in visual and textual descriptions of *karamono* shops. Public spectacles (*misemono*) and *yakuhinkai* displaying flora, fauna, and other things imported by the Company further exposed Japanese consumers to the wonders of Dutch trade. Shops in Edo, Kyoto, and Osaka advertised themselves as selling Dutch craftworks, textiles, and medicines.[59] This popular interest in Dutch medicines was also facilitated by an increased supply of substances imported by the Company to Japan. The Takeda family, based near Osaka, began their apothecary sometime in the Meiwa era (1764-1772), dealing primarily in

[59] Yamawaki, *Kinsei nihon no iyaku bunka,* 115, 149-50.

medicinal substances imported into Nagasaki. Their earliest records show a brisk trade in more traditional substances brought by both the VOC and Chinese merchants, such as betel nut, cinnamon, pepper, benzoin, sappanwood, mercury, and rhinoceros horn. Medicines unique to Company trade, such as cloves, nutmeg, opium, and saffron were present in earlier records, but began to increase in quantity beginning in the Tenmei era (1781-1789). By the turn of the nineteenth century, the Takeda family was also dealing in far more novel medicines brought by the Dutch to Japan, like sal ammoniac, a cough medicine made of salted licorice, and balsam copaiba. From the end of the Bunka period in 1818, the quantity of these aforementioned substances bought by the Takeda in Nagasaki and sold at their shop near Osaka tripled.[60]



Figure 32 A *karamono* shop featuring stemmed glassware and paintings of Dutch figures seen on the final page of a comedic tale. From Morshima Chūryō, *Karadehon tōjingura* (Edo: Pub. Unknown, 1796). Waseda University Library, Tokyo.

[60] *Takeda hyaku-hachijūnenshi,* 7-8, 20.

Paging through the commercial records kept by the Takeda family, there is a clear disconnect between the circumstances described by Company personnel and the Japanese market for Dutch goods. There was a growing quantity and diversity of medicinal substances brought by the Dutch and bought by the Takeda from the mid-eighteenth to the mid-nineteenth-century. Japanese merchants and consumers remained interested in the commodities brought by the Dutch. This much is illustrated by a historical fact omitted from the diaries of the head merchants. Despite their unceasing complaints and threats, the Company never withdrew from Japan. If anything, from 1780, the government in Batavia exerted itself to ensure the continuation of Dutch trade to Japan through various means despite military and infrastructural setbacks. Because of this, Dutch trade to Japan did not end in 1799 with the dispersal of the VOC. Instead, Dutch ships - or ships hired by the Dutch government in Batavia - continued to trade in Nagasaki until the promulgation of the Treaty of Kanagawa in 1854.

The Company is dead, long live the Company

By the time the Company permitted its charter to expire in 1799, its merchants in Dejima and Batavia were well acquainted with navigating the challenges posed by disruptions in shipping. Aside the episode in 1782, Dutch ships failed to appear in Nagasaki in 1791 and 1796. Petrus Theodorus Chassé, who acted as head merchant from 1790 to 1792, mimicked Titsingh's approach. He blamed the absence of a Company ship in 1791 on the regulations put in place by the Nagasaki magistrate the previous year, which limited the Company to one ship annually and accordingly halved the export quota of copper, camphor, and Japanese craftworks. He wrote to the Nagasaki magistrate that

"the High Government [in Batavia] has deemed it less profitable to bear these costs than to let trade be carried on the footing it is now." Like Titsingh before him, Chassé's justification was a feint. In reality, the ship dispatched to Japan in 1791 had sunk off of the coast of China.[61]

Gilbert Hemmij adopted a similar tactic in 1796 when no ship came for the trading season. While allowing that the ship might have foundered on the way to Japan, head merchant Hemmij nonetheless placed the majority of the blame on the Japanese government, writing that "the non-arrival of a ship proves that Batavia has been forced not to send a ship hither, because the poor exports from here could not satisfy the markets in Europe and the outer factories."[62] The actual reason for this was far more complicated. The administrative structure of the VOC was undermined after the fall of the Dutch Republic in 1795, with the Batavian Republic allying itself with its French counterpart and seeking to take direct control of the Company in order to nationalize it. Supply chains were further compromised when many of the Indian territories formerly maintained by the Company were taken by the British either as capitulations or in battle after war was declared once again between the English and Franco-Dutch alliance. This lack of goods was matched by a lack of ships, many of which either confiscated or destroyed in the first years of the war.[63]

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[61] *The Deshima Diaries: Marginalia, 1740-1800*, 655. Shimada Ryūto, *The Intra-Asian Trade In Japanese Copper by the Dutch East India Company During the Eighteenth Century* (Leiden: Brill, 2006), 164.

[62] *The Deshima Diaries: Marginalia, 1740-1800*, 703.

[63] Gaastra, *The Dutch East India Company*, 170. Anthony Farrington, *Trading Places: The East India Company and Asia 1600-1834* (London: British Library, 2002, 105. J. R. Bruijn, F. S Gaastra, and Ivo Schöffer, *Dutch-Asiatic Shipping In the 17th and 18th Centuries* (The Hague: Nijhoff, 1979), 175-184.

The government in Batavia found a solution to some of these issues the following year, hiring an American ship, the *Eliza*, to trade in Japan in 1797. While initially suspicious, the translators and Magistrate officials conceded to allow the *Eliza* to unload its cargo when Hemmij assured them that America was a neutral country, emphasizing that the ship had been sent by the High Government [in Batavia] "to safeguard its own ships against the perils of war."[64] The *Eliza* returned to Nagasaki in 1798. In 1799, the High Government sent the *Franklin*, another North American ship, followed by the *Emperor of Japan* from Massachusetts in 1800. In this way, the years leading up to the official dissolution of the VOC established a precedent for the use of hired ships and an expectation for a certain amount of interruptions in trade by the Dutch and the Japanese alike. This was fortuitous, since the Dutch trading network experienced great upheaval in the first decades of the nineteenth century, with official administration of former VOC territories and trade passing through many hands. The Batavian Republic took over the Company's assets in 1799 but was unable to enact much change to the administrative or trading structures in Batavia before the outbreak of the Napoleonic Wars.[65] In 1806, Napoleon established the Kingdom of Holland, and administration of former VOC holdings was given to the newly formed Ministry of Trade and the Colonies (Ministerie van Koophandel en Koloniën). This too would be a short-lived arrangement, with the Netherlands officially being incorporated into the French Empire only a few years later in 1810.[66]

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[64] *The Deshima Diaries: Marginalia, 1740-1800*, 709.

[65] Jonathan I. Israel, *Dutch Primacy In World Trade, 1585-1740* (Oxford: Clarendon Press, 1989), 403-4.

[66] De Vries and Woude, *The First Modern Economy*, 456.

For the most part, the Japanese and Dutch merchants on Dejima remained mostly unaware of these events. From 1798 to 1809, Dutch ships continued to arrive carrying Dutch goods sourced from various locations across Asia. Like the *Eliza* and the *Franklin,* many of these ships were in fact American.[67] There were also vessels from other European countries, such as the *Mathilda Maria* from Denmark in 1802, the German ship *Visurgus* in 1806, and another Danish ship, the *Susanna*, in 1807. Even a few Dutch ships managed to make their way to Japan, namely the *Maria Susanna* and *Gesina Antoinetta* in 1804, the *Resolutie* in 1805 and the *Goede Trouw* in 1809. In 1808, this ad-hoc arrangement was disturbed by the arrival of the *Phaeton,* a British frigate dispatched to capture whatever ship the government in Batavia sent to Japan that year as spoils of war. Fortunately for the Dutch, no ship had in fact been prepared in 1805, but the inability of the Magistrate to drive away the *Phaeton* forced a serious re-evaluation of the *bakufu*'s harbor defenses.[68]

Henrik Doeff, who lived through his era while stationed as the head merchant on Dejima, presented the first decade of the nineteenth century as a moment of continuity rather than rupture in his memoir. First appointed as a Company buyer for Batavia in June of 1798, Doeff was then dispatched to Nagasaki in the summer of 1799. He described his first few years in Japan as someone who oversaw "the trade of the High

[67] The *Margaret* in 1801, the *Samuel Smith* in 1802, the *Rebecca* in 1803, the *America* in 1806, and the *Mount Vernon* in 1807.

[68] These ships and the Phaeton incident are recorded in Doeff's memoir, *Herinneringen uit Japan,* and can be found in various documents held by the Nationaal Archief, primarily NFJ 1.04.21 683-690 and 1426-1434. See also Germain Felix Meijlan, *Geschiedkundig overzigt van den handel der Europezen op Japan* (Batavia Bataviaasch Genootschap van Kunsten en Wetenschappen, 1833), 44-45.

Government, which in older times was called Company trade."[69] Intriguingly, the landing paperwork for the *Rebecca*, which Doeff would have presented officials of the Nagasaki magistrate when the ship first arrived in Nagasaki bay in August of 1803, bore a stamp of the VOC despite the Company ceasing to exist four years prior.[70] Stamps and seals bearing the initials of the Company are scattered throughout secretarial papers dating between 1804 and 1810, appearing primarily on documents prepared for higher-ranking members of the Nagasaki magistrate or outside officials working for the *bakufu*.[71] Doeff's narrative of easy transition was thus part of a broader concerted effort to conceal the demise of the VOC from the Japanese authorities, who might have considered the Batavian Republic or the Kingdom of Holland a distinct entity from the one that had enjoyed trading privileges with the *bakufu* for the previous two centuries.



Figure 33 The landing paperwork of the Rebecca, which bears the mark of the VOC despite it going defunct four years earlier. From Secretariële en notariële akten en processen-verbaal, minuten en afschriften, 1803. NFJ 1.04.21 1568, Nederlandse Factorij Japan, Nationaal archief, Den Haag, Netherlands.

[69] Henrick Doeff, *Herinneringen uit Japan* (Tokyo The Tenri Central Library, 1973), vii-viii, 70-1. Den handel der Hooge regering, die nog naar oude tijden Compagnie's handel heet.

[70] NFJ 1.04.21 1568.

[71] NFJ 1.04.21 1568, 1569.

Thanks to these improvisations and tactical shifts, Doeff and the Batavian government smoothed over any potential ruptures with the Dutch enterprise in Japan between 1799 and 1810, when the first true interruption to Dutch trade came with the British occupation of the Maluku Islands and the invasion of Java a year later. No ships flying a Dutch flag arrived in Japan until 1813, when the *Charlotta* and the *Mary* anchored in the bay of Nagasaki. Ironically, these vessels were not in fact Dutch, but sent by Stamford Raffles, the interim British governor of Java, in the hopes of opening up trade relations between the English and the Japanese.[72]

A market for Asian goods

At the height of the Fourth Anglo-Dutch war, Titsingh not only had to deal with the non-appearance of a ship in 1782, but also justifying the increased quantities of products from South and Southeast Asia brought the following year by the *Trompenburg*. In particular, the commissioner of finance (D. *geldkamer*, J. *kanjō bugyō*), who determined the prices of imported goods and paid the Company for what it brought on behalf of the shogun and his councilors, was displeased with the amount of cloves shipped to Japan in 1783. In reply to these concerns, Titsingh wrote in his private records at the time that

> I ordered them to bear in mind that the Company was engaged in an arduous war and needed its ships both to fight the enemy and to send them with its commodities to those factories where it made a profit on them, and, only because of its special affection and the consideration that for about two centuries it had been given the exclusive permission to trade with this empire, had it decided to send a ship other this year laden

[72] Both Doeff and Raffles give accounts of this interaction. Doeff, 70. Thomas Stamford Raffles, *Report On Japan to the Secret Committee of the English East India Company* (Kobe, Japan: J.L. Thompson & Co.,1929), 115.

> with *such commodities as it had been able to gather* in order not to deprive this country of many articles needed.[73]

Aside from cloves, "such commodities as the Company was able to gather" included putchuk, catechu, tin, lead, and elephant tusk, all of which were sourced from places like India, Siam, and Indonesia, and brought in quantities far beyond what the Japanese had demanded.[74] Els Jacobs has shown that during the Anglo-Dutch war it was difficult for the Company to send Asian goods back to Europe due to the blockades and privateering of the British, and so instead it shipped these products to Batavia for storage. Faced with a lack of access to certain territories and an overabundance of goods originally intended for the European marketplace, the VOC relied upon the pre-existing Japanese demand for Asian products, particularly medicines, in an attempt to recoup some of their losses. This continued after the war ended in 1785, when both the VOC and the Netherlands were struggling with the losses of ships and territories like Negapatnam to the British.[75]

In 1789, head merchant Frederick van Rheede tot de Parkeler rejected the stated Japanese demand for 5,000 catties of cloves, declaring that instead "we intend to import 15,000 catties of cloves…and the *geldkamer* will be obliged to accept them."[76] Despite the repeated protests of the commissioner of finance about these surpluses, the Company proceeded to import these Southeast Asian goods well above the quantity demanded by the *bakufu* by using van Reede's assertions as precedent.[77] The hired ships that arrived in Japan at the turn of the nineteenth century bought similarly large cargoes of sappanwood,

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[73] *The Deshima Diaries: Marginalia, 1740-1800,* 769. Emphasis mine.

[74] *The Deshima Diaries: Marginalia, 1740-1800,* 770.

[75] Jacobs, *Merchant in Asia,* 58.

[76] *The Deshima Diaries: Marginalia, 1740-1800,* 616.

[77] For other examples, see *The Deshima Diaries: Marginalia, 1740-1800*, 617, 660.

pepper, cloves, putchuk, and catechu.[78] Doeff recalled the trade conducted in 1806, writing "due to the incessant war, I once more had quite a lot of undesired cargo, for which I (with no small amount of difficulty) managed to receive a decent return cargo." As in the previous century, the majority of this return cargo consisted of copper and camphor. Despite the limitations on copper exports enforced by the bakufu in 1715 and 1790, Doeff was pleased to find that the Nagasaki magistrate was willing to bend the rules a bit, allowing him to export between 1500 and 2500 extra piculs of copper on top of the allotted 6000 piculs for most of the years he oversaw trade on Dejima.[79]

In return for copper and camphor, Dutch ships or ships hired by the Dutch continued to bring sugar, sappanwood, pepper, cloves, putchuk, catechu, lead, mercury, tin, and a variety of twilled, woolen, and printed textiles to sell in Japan.[80] Popular private trade items during this time were saffron, licorice, theriac, sandalwood, betel nut, oculi cancri, sal-ammoniac, and balsam copaiba.[81] As early as 1797, Gilbert Hemmij remarked how the merchants in the auction (*cambang*) always paid more than the commissioner of finance, and so it was advantageous to bring surpluses of certain goods to sell at the auction for greater profits.[82] The Japanese market for imported goods thus was fare more flexible than most contemporary European commentators would lead us to believe. Aside from an unwillingness by the commissioner of finance to raise the set prices on the items

[78] NFJ 1.04.21 683-690, NFJ 1.04.21 1399-1440.

[79] Doeff, *Herinneringen,* 153, 161. Door den aanhoudenden oorlog had ik weder eene zeer ongewilde lading, waarvoor ik echter (hoewel met veel moeite) nog al eene goede retourlading inkreeg.

[80] For examples of official trade, see NFJ 683-690.

[81] For examples of cambang auctions, see NFJ 1.04.21 691, 1441D.

[82] *The Deshima Diaries: Marginalia, 1740-1800*, 710

bought on behalf of the *bakufu*, there tended to be enough buyers amongst the *daimyō* and officials of the Nagasaki magistrate or amongst the private merchants at the *cambang* to support the shipping of greater quantities of Asian goods to Japan by the Dutch in the first decades of the nineteenth century.

It was this persistent market for Asian products and medicinal substances in Japan that made trade so appealing to European partners. Raffles emphasized this when first attempting to persuade the English India Company to permit his dispatching of ships to Japan in 1812. He saw Japan as "a mart for the profitable disposal of a considerable portion of the produce of British India for which there is no sufficient vend in Europe." In exchange for "bulky produce, otherwise of inconsiderable value and unsaleable," trading partners with Japan received "value[able] metal, for which there is constant demand, thus leaving the balance of trade wholly in favor of the European possessions."[83] When his plan was accepted, Raffles hurried to procure "bulky produce" like sappanwood, pepper, and nutmeg, which he described as "essentially necessary for the Commercial Expedition to Japan." Having used the cargo lists and diaries of former Company head merchants like van Reede as his guide, Raffles also prepared 15,000 pounds of cloves. Aside from exploiting these textual resources available to him while he occupied the former VOC offices in Batavia, Raffles also hired Willem Wardenaar, who had served on Dejima previously as a head merchant to act as his representative for the voyage.[84]

[83] Raffles, *Report On Japan*, 11, 18. Raffles had also attempted to send a ship in 1812, but administrative issues and disruptions in the British trading network prevented this.

[84] Raffles, *Report On Japan,* 35, 137.

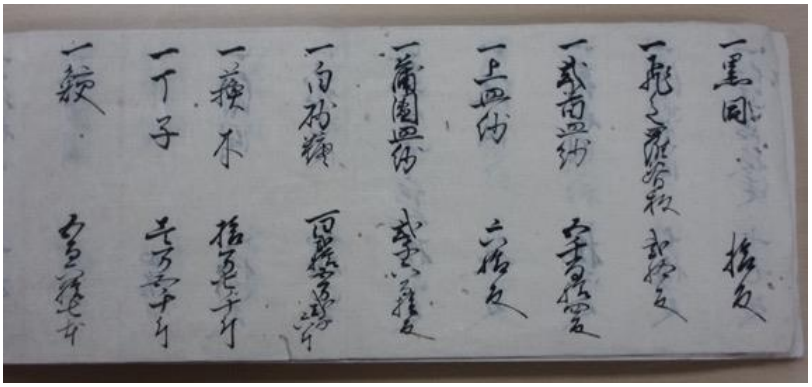

Figure 34 Textiles, sugar, sappanwood, cloves, and sharkskin listed under *motokata* trade brought by the *Charlotta* and *Mary* in 1813. From "Memorandum on karamono, birds, and beasts brought on two Dutch ships in the port of Nagasaki," 1813. H-DS-2, へ 17 152, Nagasaki Museum of History and Culture, Nagasaki.

Japanese records of this specific trading season are extant and confirm much of the information produced by Raffles and his agents. The "Memorandum on *karamono*, birds, and beasts brought on two Dutch ships in the port of Nagasaki" is dated to the 6th month, 28th day of Bunka 10 [1813].[85] The text opens with the *motokata* goods, consisting of textiles, sugar, sappanwood, pepper, elephant tusk, cloves, cinnamon, and cinnabar. After the official trade goods, the products intended for the shogun were listed. These ranged from specially designated quantities of the bulk items like cinnabar, cinnamon, and saffron, to novelty items in small quantities like glassware, telescopes, and perhaps most notably, a single live elephant.[86] Then the goods intended for the various *daimyō,* officials, and translators working with the Nagasaki magistrate were catalogued, which included a similar array of curios, books, and small quantities of medicinal

[85] Nagasaki-kō kōmō sen ni-sō nyūtsu sekirai karamono torirui kerui no oboe [Memorandum on karamono, birds, and beasts brought on two Dutch ships that entered the port of Nagasaki], 1813, へ 17-152, Nagasaki Museum of History and Culture, Nagasaki, Japan, In the solar calendar, this date coincides with July 24, which corroborates the records kept by Raffles.

[86] The elephant would not be accepted by the shogun, and instead sent back to Batavia on the same ship.

substances.

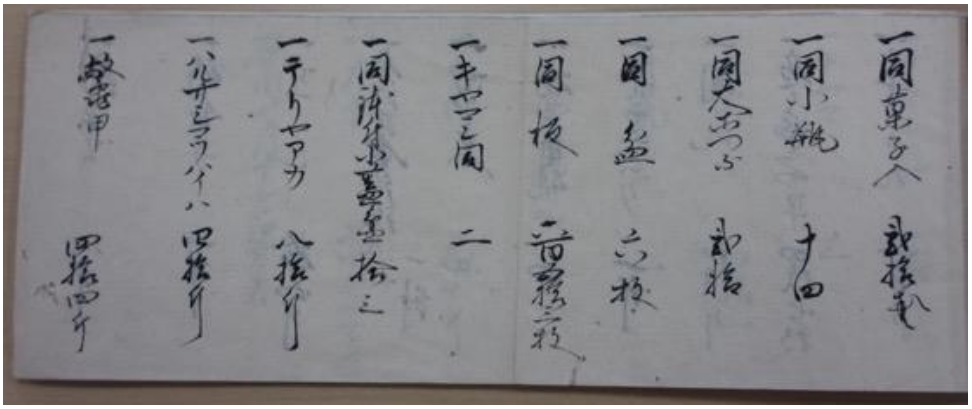

Figure 35 Glassware, theriac, balsam copaiba and tortoise shell in the private trade section of the leger detailing the 1813 cargo of the *Charlotta* and *Mary*.

The second half of the memorandum recorded the private trade goods, or *wakini,* brought by the *Charlotta* and the *Mary*. This category was predominated by glassware and medicine, such as 80 catties of theriac, 15 catties of saffron, 40 catties of balsam copaiba, and 99 bottles of Haarlem oil, a kind of turpentine oil marketed to sooth irritated skin and congestion. Smaller quantities of calomel, a purgative, and sal ammoniac, an expectorant, were also listed. These products as a whole performed far above the expectations of the British. When organizing the second expedition to Japan in February 1814, Raffles wrote to his suppliers in British India that he had great need of "medicines, or an assortment of the principal articles in the Materia Medica, particularly *Thariac* [sic] in considerable quantities; the latter is in great demand."[87]

A new world of medicines in nineteenth century Japan

Raffles' successive trading missions to Japan were successful not only because of the cargo he had prepared, but also because of the concerted efforts of Doeff and the

[87] Raffles, *Report On Japan,* 167.

senior Japanese interpreters on Dejima to pass the British ships off as Dutch. All parties involved were willing to deceive the higher authorities of the *bakufu* in order for trade to occur. For Raffles, he hoped that these ships would prove to the Japanese authorities that the British could be a useful trading partner. In turn, Doeff desperately needed things to offer to the shogun and his councilors to continue an amicable trading relationship, as well as to pay the accumulated annual fees leveraged on the Dutch for residing and trading in Dejima. He also negotiated with Wardenaar so that the other former Company servants stuck on Dejima could obtain a portion of the proceeds from the cargo.[88] Profits were also the motivation for the Japanese translators and Magistrate officials who collaborated with Doeff, whose livelihoods as trained linguists and commercial specialists hinged on the continued presence of Dutch merchants in Japan.

Raffles was the only one amongst this group whose hopes were dashed, not by the Japanese but rather by the governing bodies of the EIC. Raffles sent the *Charlotta* to Japan again in 1814, but his efforts were not enough to convince the EIC to continue to attempt to established trade relations with Japan. After the promulgation of the Anglo-Dutch Treaty of 1814, Raffles was also forced to depart his post as governor of Java and permit the Dutch to re-take control of their Indonesian territories.[89] By 1815, the Dutch once again had control of their Southeast Asian network, as well as regained independence from the French. However, it would be another two years before the government in Batavia was able to regularly send ships to Japan.[90]

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[88] Doeff, *Herinneringen,* 123-129.

[89] Raffles, 160-180. Raffles had also attempted to send a ship in 1812, but administrative issues and disruptions in the British trading network prevented this.

[90] Doeff, *Herinneringen,* 24.

As in the previous centuries, the Dutch based their operations around intra-Asian trade. Although the British Empire was aggressively expanding its territorial holdings in the early nineteenth-century, the EIC was not particularly interested in the so-called spice trade, having learned first-hand from the experiences of the Dutch that products like pepper, cinnamon, and saffron failed to return sufficient profits unless a monopoly could be maintained. In formerly Dutch territories like Ceylon, greater attention was paid by the EIC to the establishment of plantations for cash crops like tea and coffee than to the expansion of the cinnamon trade.[91] It was thus both commercially viable and logistically possible for the Dutch to continue their previous trading strategy. Once Raffles and the British left Indonesia, Dutch access to cheap cloves, nutmeg, and other archipelagic products was restored, as well as the use of Batavia as a central hub for the collection and production of various medicines like theriac and sal ammoniac. Although Ceylon had been ceded to the British, cinnamon could be obtained in other Indian ports and cassia from Vietnam. Similarly, Siam had an ample supply of sappanwood and elephant tusk. This trading network was further bolstered as the United Kingdom of the Netherlands sought to nationalize these routes and products in order to produce revenue for the state.

In 1824, King Willem Frederick I established the Dutch Trade Society (Nederlandsche Handel-Maatschappij; NHM), which sought to expand existing trade networks and further exploit the goods from their newly consolidated colonial holdings in Indonesia, Surinam, and Curaçao.[92] The implementation of the cultivation system

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[91] Jacobs, *Merchant in Asia,* 40. While trade in these products might have been lucrative for individual private traders, their profits were not enough to tempt the EIC into attempting to force a monopoly. Alicia Schrikker, *Dutch and British Colonial Intervention In Sri Lanka, 1780-1815: Expansion and Reform* (Leiden: Brill, 2007), 179, 195.

[92] H.M. Tydeman, *De Nederlandsche Handel-Maatschappij: Bijdrage tot hare geschiedenis en waardering, in verband met het koloniaal beheer* (Leiden, 1867). See also, D.J. Wijmer and A.M.

(*culuurstetsel*) in colonial Indonesia in 1830 is the most salient example of these efforts. This oppressive system forced Javanese cultivators to produce cash crops like sugar, coffee, and indigo in lieu of rice and other agricultural staples. While these products had been grown in Indonesia since the eighteenth century, under the cultivation system villages were ordered to produce certain amounts of each crop annually, which would be sold to the colonial government for low fixed prices. In addition to these three primary products, Javanese farmers also grew smaller quantities of pepper, cinchona trees, and cinnamon.[93] By the mid-nineteenth-century, there was a greater supply of these products ready to meet the demands of the Japanese marketplace, and a colonial government that was motivated to reap the profits from this exchange.

In addition to these imperial developments, in 1826 G. F. Meijlan, the acting head merchant on Dejima, founded the Society for Private Trade in Japan (De Sociëteit van Particuliere Handel op Japan). The Society sought to maximize the profits of private trade by purchasing products intended for the *cambang* on a joint account.[94] Although this strategy was not particularly successful, it nonetheless facilitated the influx of greater quantities of private trade goods into Japan. After Meijlan's death in 1831, the Society was formally disbanded and the license to practice private trade was leased to merchants

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Tempelaars, *Inventaris van het archief van de Nederlandsche Handel-Maatschappij* (Nationaal Archief: Den Hague, 1998).

[93] For more on the cultivation system, see C. Fasseur *The Politics of Colonial Exploitation: Java, the Dutch, and the Cultivation System,* trans. R. E. Elson (Ithaca, N.Y.: Southeast Asia Program, Cornell University, 1992), 26-8. As Fasseur explains, typically one village was designated to produce a specific crop. Fasseur, 27, 31. For the macroeconomic effects of the cultivation system, see N. G. Pierson, *Het Kultuurstelsel* (Amsterdam: Van Kampen, 1868).

[94] Nagazumi Yōko, "Oranda shōkan no wakini bōeki ni tsuite: Shōkanchō Meiran no seiristsu shita kojin bōeki kyōkai," *Nihon rekishi* 379 (1979): 55-90.

on Batavia for 30,000 florins per year.[95]

Japanese records produced after 1825 not only attest to the growth and diversity of Dutch trade but demonstrate how this exchange connected Japanese consumers to global medicinal trends. As part of the typical inspection of cargoes, the Nagasaki magistrate compiled the "Record of Goods for official and private trade seen on the Dutch ship, year of the Sheep," dating to either 1835 or 1847.[96] As expected, cloves, pepper, and sappanwood were catalogued under the category of *motokata* goods. Some w*akini* products were familiar, like oculi cancri, saffron, and gum arabic, while others were representative of newer medicinal developments. There was sassafras from Mexico, salep, a ground flour made with the roots of orchids that originated in Turkey, and balsam copaiba, a resin derived from South African trees. All of these spoke to the expanded range of Dutch trade, no longer just intra-Asian but truly global.

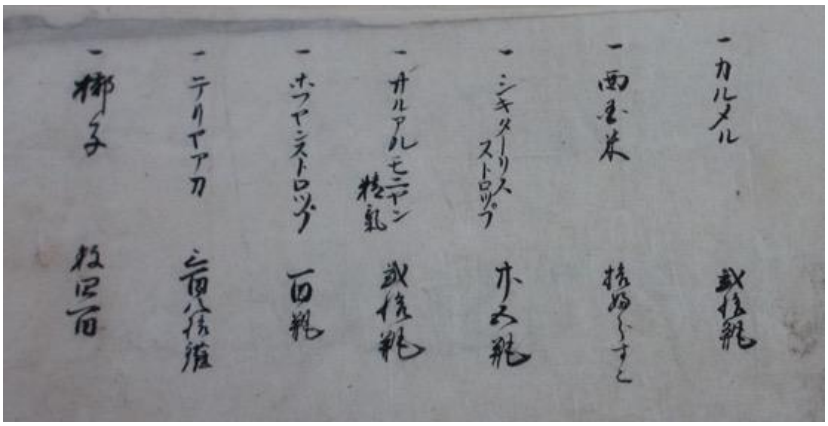

Figure 36 - Calomel, citrus lozenges, sal ammoniac, theriac, and betel nut listed in "Record of Goods for official and private trade seen on the Dutch ship," 1835/1847, H-DS-1, 17 13-2, Nagasaki Museum of History and Culture, Nagasaki.

[95] NFJ 1.04.21 1593-4.

[96] Hitsuji kōmō-sen honkata wakinimotsu narabi ni hingawari tanmono kenchō [Year of the sheep, record of goods for official and private trade seen on the Dutch ship as well as their exchange value], 1835 or 1847, 17 13-2, Nagasaki Museum of History and Culture, Nagasaki, Japan. Many of these sources do not provide a discrete date, but rather designate the year using the Chinese astrological calendar, from which I have extrapolated the possible Gregorian years.

Another source made by the Nagasaki magistrate from 1828 or 1850 listed older favorites like theriac, cloves, and oculi cancri alongside salep, gum arabic, and magnesia. Turpentine, turpentine oil, and turpentine gum were all documented, indicating a clear demand for the medicine. Notably, quinine, known in Japanese as *kinakina*, was also imported this year. The anti-malarial product was derived from the bark of cinchona trees native to Peru and had been introduced to Spain by Jesuit missionaries as early as the seventeenth century. However, it was not until 1820 that the active compound of quinine was isolated by French chemists, after which the Dutch government quickly converted it into a colonial product. Cinchona trees were planted and farmed on Java in the same way as nutmeg, sugar, and coffee, with the production of quinine folded into the newly established *cultuurstelsel* overseen by the Dutch colonial government.[97] Between 1820 and 1840, Japan imported over 7000 catties of quinine, with demand only growing in the late nineteenth-century. By the turn of the twentieth century, the newly formed Meiji government continued to import both cinchona bark and chemically synthesized quinine in large quantities.[98]

[97] T.S. Kaufman and E.A Rúveda, "The Quest for Quinine: Those Who Won the Battles and Those Who Won the War." *Angewandte Chemie*, 44 (2005): 854-885. Andrew Goss, "Building the world's supply of quinine: Dutch colonialism and the origins of a global pharmaceutical industry," *Endeavor* 38 no. 1 (March 2014): 8-18.

[98] Miyashita Saburō, *Nagasaki bōeki to Ōsaka: yunyū kara sōyaku e* (Ōsaka-shi : Seibundō, 1997), 141.

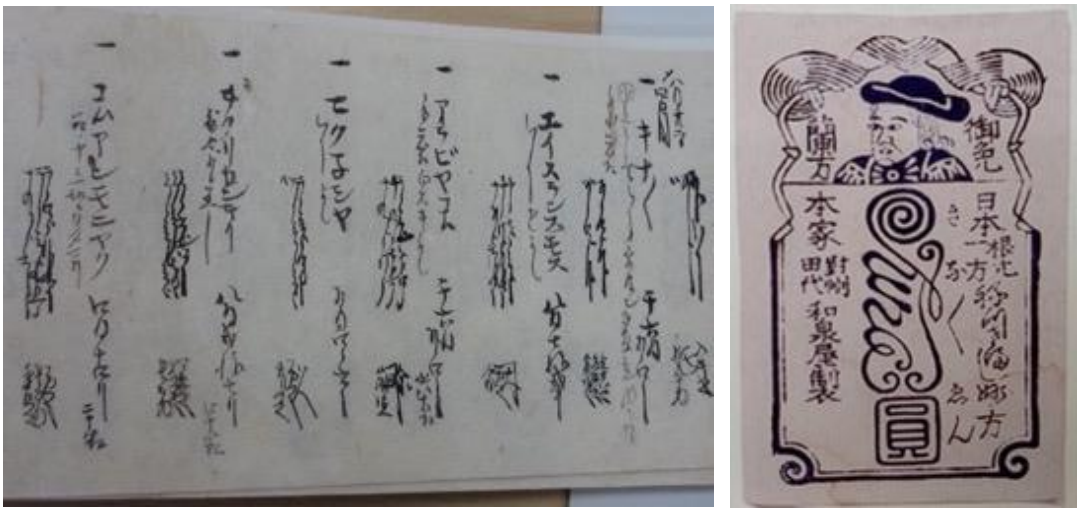

Figure 37 Quinine (*kinakina*) alongside gum arabic, magnesia, and other medicines in an inventory of Dutch cargo from 1828/1850, and a package of commercial medicine Kinakina-en [Quinine pills] sold by the itinerant merchants of Tashirō. Left: Year of the dragon, notes on official and private trade goods on the Dutch ship, H-DS-1 17 14-3. Nagasaki Museum of History and Culture, Nagasaki. Right: Nakatomi Memorial Museum, Saga.

As a whole, official documents produced by the magistrate in this period illustrated the eclectic supply of global medicine brought by the Dutch to Japan. Other sources included the mineral calomel, a popular panacea in Europe and America, and the purgative ipecac from the South America.[99] Narwhal horn continued to be imported in varying quantities, with prices and quantities peaking in the 1850s and 1860s. After trade stabilized with the NHM in the 1820s, the quantities of borneol brought to Japan by the Dutch were typically double or triple that brought the Chinese merchants. Opium also began to feature in lists of *wakini* around the same time, though quantities of the drug rarely exceeded a few dozen catties. In contrast, theriac, which was typically made with

[99] Saru kōmō honkata narabi ni wakinimotsu hingawari tanmono rakusatsu chō [Year of the monkey, Record of Dutch goods for official and private trade and their exchange values, as well as successful bids for textiles] Tori kōmō-sen wakinimotsu chō [Year of the rooster, record of private trade goods on the Dutch ship]. Both date to the mid-nineteenth century. Nagasaki Museum of History and Culture, Nagasaki.

opium, remained a perennial favorite, with cases of the medicine regularly snapped up at auction.[100]



Figure 38 Jō Girin, *Oranda senchū zu* [Interior of a Dutch ship], early to mid-nineteenth century, 60 x 77 cm, Kobe Municipal Museum, Kobe.

An intriguing visual record created in the mid-nineteenth-century parallels these textual sources. The artist Jō Girin was a painter known as a *machieshi* who catered to townsfolk and commoners rather than elite patrons. Although little is known about his life, the majority of his artwork centered on Nagasaki and the foreigners who lived there. The painting *Oranda senchū zu* [Interior of a Dutch ship] dates to the mid-nineteenth-century, and shows a cross-section of a Dutch ship. On the upper deck cows, pigs, and other livestock are visible. The middle or orlop deck shows the room of the ship's captain, as well as piles of elephant tusk. The hold is shown crammed with goods,

[100] Miyashita, *Nagasaki bōeki to Ōsaka,* 8, 31, 141-2, 186.

labelled as sappanwood, narwhal and rhinoceros horn, tortoise shell, pepper, cloves, theriac, glassware, and felted, printed, and cotton textiles. In addition, three separate bundles are marked as sugar, and another three as medicine, or *yakushu*, which demonstrates the sheer quantity of these categories of goods.

In all likelihood, Jō Girin never set foot on a Dutch ship, evidenced by his portrayal of the lower floors and their haphazard organization that was anything but seaworthy. Girin instead structured the painting around his observation of the exteriors of Indiamen anchored in Nagasaki Bay, using popular conceptions of Dutch trade to fill in what he could not see. For early modern Japanese consumers, medicines and textiles were the products associated with Dutch trade. These nineteenth century concepts regarding foreign trade and medicine were only bolstered by contemporary discourse about the growing medical field of *ranpō*, or Dutch medicine.

Chapter 4. The development of Dutch medicine in early modern Japan, 1650-1800

Dutch plasters and oils

In 1770 (Meiwa 7), the physician-official (*han'i*) Takebe Seian sent one of his students to the capital of Edo to complete his medical studies. Before his student departed, Seian entrusted him with a set of questions about Dutch medicine. During his youth, Seian had become acquainted with some practitioners of the latter while he was training in Edo, but now the practice was growing ever more popular in the cities and towns of Japan. Based on his experiences in the 1720s, Seian remained unconvinced of the usefulness and viability of Dutch medicine, and so asked his student to circulate the questions he had about the practice amongst the physicians working in Edo, hoping that one of them might be able to convince him of the merits of Dutch medicine.[1] It took three years, but eventually Seian received responses to his questions from none other than Sugita Genpaku. Considered the doyen of *rangaku* or Dutch studies in early modern Japan, Genpaku is most famous for collaborating in a partial translation of the anatomical text *Ontleedkundige Tafelen* [Anatomical charts, 1734]. More importantly, he was canonized for his efforts at popularizing Dutch studies when Fukuzawa Yukichi published Genpaku's 1815 text *Rangaku kotohajime* [The beginning of Dutch studies] in 1869, which many historians have uncritically used to chart the rise of *rangaku* from the mid-eighteenth-century onward.

Genpaku's responses to Seian's question proved so persuasive that the physician began to send his most promising students to train with Genpaku, and permit his own son

[1] For more on the context, see Terrence Jackson, *Network of Knowledge: Western Science and the Tokugawa Information* (Honolulu: University of Hawai'i Press, 2015), 24-5.

to be adopted as Genpaku's heir. This son ultimately published the set of questions and answers between Seian and Genpaku as *Oranda iji mondō* [Questions and answers on Dutch medical matters] in 1795 (Kansei 7). The text was intended to convince people in the same manner as Seian about the theoretical foundations and practical applications of Dutch medicine.[2]

The first question posed by Seian in this dialectic revolved around his perception of Dutch medicine as a limited system.

> Year after year Dutch people come to Japan, and while we see external medicine (*geka*) we do not see internal medicine (*naika*). Are there no physicians for internal medicine in Holland? It is unthinkable that in Holland they do not suffer the sicknesses caused by wind, chill, wet, and heat, or that trouble children, or women during and after pregnancy. There must be an answer as to why the Dutch only offer treatments that use plasters and oils. Because there is no internal medicine (*naika),* in Japan treatments known as "Dutch style" (*oranda-ryū*) consist entirely of plasters and salves that generally treat swellings. How strange.

In response to these concerns, Genpaku replied that this particular misconception resulted from there being only about a dozen "directly transmitted Dutch external medicine texts." Furthermore, people who practiced Dutch medicine treated it as "a family secret" (*kahi*), and did not disseminate knowledge about either the external or internal treatments associated with the method. If students instead learned from Dutch medical texts directly, claimed Sugita, they would find that plasters and salves constitute only one type of treatment. Moreover, if they were to read Dutch texts themselves, they would be able encounter the "true Dutch-method" of medicine (*shōshin no oranda-ryū*).

This dialogue encapsulates two important points about the nature of Dutch medicine

[2] Takabe Seian and Sugita Genpaku, *Oranda iji mondō* (Edo: Shisekisai, 1795). Waseda University Library, Tokyo.

in early modern Japan. First, as much as Sugita Genpaku would like to convince readers of *Rangaku kotohajime* that the study of Dutch medicine began with him, Takebe's question entirely undoes this assertion.[3] There was a type of Dutch medicine in Japan before the mid-eighteenth-century, albeit it one that Seian described as being limited to "external medicine" (*geka*), and epitomized by the treatment of swellings with plasters and salves. This "external medicine" had been translated and adapted based upon specific historical circumstances, without which it is impossible to understand Seian's consternation with the seemingly one-sided nature of Dutch medicine. Second, Sugita's assertion that the "true Dutch-method" of medicine required direct engagement with Dutch texts illustrates how scholars, physicians, and apothecaries dynamically expanded upon a seemingly finite medical practice of "external medicine" (*geka*) to a broader therapeutic system that flourished at the turn of the nineteenth century.

The origins of "Dutch external medicine"

The court journey undertaken by the VOC in the winter of 1649 was an unusual one. As opposed to the usual trio of VOC personnel that typically went to Edo, twenty-four representatives of the Company traveled from Nagasaki to Edo that year, most of whom were part of a special embassy headed by Andries Frisius. The *bakufu* had requested a few years previously that an official ambassador from Holland be dispatched in order to formally resolve the *Breskens* incident. In summer of 1643, ten crew members working on the *Breskens* as part of a Dutch expedition in northeast Asia abandoned the

[3] George Sansom, *The Western World and Japan: a study in the interaction of European and Asiatic cultures* (New York: Knopf, 1950), 203. Grant Kohn Goodman, *Japan and the Dutch, 1600-1853* (Richmond, Surrey: Curzon, 2000), 8.

yacht and came ashore onto the coast of northeast Japan. As explained in chapter 2, these actions broke numerous laws promulgated by the *bakufu.* According to standard procedure for any foreigner who came to Japan illegally or accidentally, these men were taken into custody by the *bakufu* in order to preclude any unauthorized economic or political activities, interrogate them for subversive intent, and organize transport for them out of Japan.[4] After releasing the crewmen into the custody of head merchant Jan van Elserack without taking any punitive action for their breaking of Japanese law, the *bakufu* asked Company representatives to send a formal ambassador from Holland to express gratitude for the shogun's magnanimity.[5]

The VOC, which already viewed this detainment of the *Breskens* crew itself as illicit and hostile, was reluctant to send someone all the way from Holland. Instead, they designated a sickly schoolteacher from Batavia as a "special envoy," who died en route and was replaced by Frisius, his young secretary.[6] Lacking an ambassador and any official diplomatic correspondence from Holland, the Company hoped to smooth over any potential insult through a choreographed performance of compliance. Their large "embassy" complete with dozens of costumed Dutchmen parading along the highways between Osaka and Edo was patterned after the ceremonies preferred by other South and Southeast Asian rulers. Aside from this display, the Company also ensured that specialists in foreign affairs, artillery, and medicine were included in the court journey,

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[4] Although Dutch sources treat this incident as outrageous, it was in fact a standard practice across Japan, China, and Korea. See the second and third parts of *Umi kara mita rekishi*, ed. Haneda Masashi (Tokyo: Tokyo Daigaku Shuppankai, 2013).

[5] The most detailed account of this is R.H. Hesselink, *Prisoners from Nambu: reality and make-believe in seventeenth century Japanese diplomacy* (Honolulu: University of Hawai'i Press, 2002). See also, Clulow, *The Company and the shogun*, 150-1.

[6] Goodman, *Japan and the Dutch,* 25-6.

whose presence had been requested by the *bakufu* for some time.[7]

The shogun and his councilors were not pleased with this turn of events. While the members of court journeys typically spent around a month in Edo, the patchwork embassy was forced to wait for nearly four months before receiving permission to meet with the shogun. The delay was blamed on Iemitsu's ill health, but the more experienced VOC personnel, like the head merchant Antonio van Brouckhorst, were well aware that this was little more than excuse. In the past, trusted elder councilors stood in if the shogun was unwell in order to ensure the head merchant would be able to return to Nagasaki in time to prepare for the summer trading season. The purposeful delay of the meeting in the spring of 1650 was thus intended as a form of mild censure. For the specialists brought as part of the journey, the long wait provided them with ample time to demonstrate their prowess in various fields to varying degrees of success. This transferal of information was deemed important enough that when van Broeckhorst departed for Nagasaki in mid-April of 1650 with the chastised embassy, the specialists were ordered to remain in Edo for the time being. The Swedish artillerist Juriaen Schedler demonstrated basic aspects of aiming and fitting mortars, including the measurement of distance using an astrolabe. Jan Schmidt, a Swiss corporal, and the Company merchant Wilhelm Bijlevelt were primarily asked to provide details about the state of trade and the world, and had to take care not to let anything incriminating slip about the embassy or maneuverings of the VOC in Batavia.[8]

By far, the most important specialist in this group was the German surgeon

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[7] Wolfgang Michel-Zaitsu, *Von Leipzig Nach Japan: Der Chirurg Und Handelsmann Caspar Schamberger* (München: Iudicium, 1999), 126-130. Hesselink, *Prisoners from Nambu,* 160-1.

[8] Hesselink, *Prisoners from Nambu,* 147.

Caspar Schamberger. Between January and April of 1650, Schamberger was dispatched to Inoue Masashige's residence multiple times to treat various members of his household for joint pain, swellings, and abscesses. Word of the surgeon spread amongst bakufu officials in Edo, and over the summer Schamberger treated the arthritic knees of the daimyō of Odawara, Inaba Masanori, and a sore on the leg of a page employed by Tokugawa Mitsukuni, the daimyō of Mitō. Schamberger's methods were well-received, and championed by Inoue Masashige, who considered the kind of medicine practiced by the German surgeon novel and effective. Translators and physicians were regularly dispatched to the inn where Schamberger resided with his fellow specialists to create detailed information about his treatments, particularly those he used on Masashige, Masanori, and other *bakufu*-affiliated patients.[9]

Based on these and other documents, Schamberger's methods primarily consisted of administering distilled medicinal oils and plasters, the supplies for which he depleted by mid-summer. Upon returning to Nagasaki with the rest of the VOC contingent in late May, the head merchant Van Broekhorst immediately shipped all available medicinal products that he could gather on Dejima to Edo. By October, however, these too ran out, and Schamberger was permitted to return to Nagasaki in order to directly oversee the replenishment of his own supplies and procure similar substances for Masashige from the cargoes brought in the summer of 1650. In addition, Masashige put in orders for the ships arriving the next year to bring greater quantities of the goods used by Schamberger.[10]

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[9] Sōda, *Nihon iryō bunkashi*, 125.

[10] *Oranda shōkanchō nikki, genbun-hen*, Vol. 12 (Tokyo: Tōkyō Daigaku Shiryō Hensanjo, 2013), 66-67, 113-117.

Table 3 Medicinal substances associated with the formulations involved in "Caspar's 17 methods," 1650-1651[11]

Japanese approximation	**Latin**	**Substance(s) involved**
miira	mumia	mummy
peishimureru	peixe mulher	manatee bone
biriri	biriri	bile
kohaku sukushīne	succinum	amber
barusamo	basalmum	balsam
ōrio terementeina	oleum terebinthinae	turpentine oil
konpekisho arukarumosu	confetio alkermes	cochineal, cloves, nutmeg, and more
konpekisho hayashintho	confetio hyacinthi	hyacinth, myrrh, camphor, and more
teriyagun	theraicum	Wine, opium, viper, saffron, and more
meteridāte	mithridatum	opium, viper myrrh, ginger, and more
kirishitarun tarutari	cristallum tartari	Cream of tartar
agua bīte materiori	aqua vitae Matthioli	Distilled alcohol, cardamum, and more
barusamo perabiyanun	balsamum peruvianum	Peruvian balsam (*myroxylon balsamum*)
dehenshībun bigyōnasu	defensivum vigonis	Rose oil, sandalwood, Dragon's blood and more

After only a week in the VOC outpost, Schamberger rejoined the court journey again, arriving back in Edo in January of 1651.[12] A few days after this, Inoue Masashige arrived at the residence housing the Company's personnel in order to peruse the medicines brought by the surgeon personally. As the head merchant Pieter Sterthemius wrote

[11] Adapted from Wolfgang Michel-Zaitsu, "Kasuparu Schamberugeru to Kasuparu-ryū geka II," *Nihon ishigaku zasshi,* Vol. 42, No. 4 (1996): 27-29. Information about particular ingredients was sourced from François Foppens, *Medicina pharmaceutica, oft drogh-bereydende ghenees-konste; met besondere aenmerckinghen of verscheyde misbruycken* (Brussels: François Foppens, 1681).

[12] Dagregisters van de Factorij Firando en te Deshima, 1650-1652, 1.04.21 NFJ 64 and 65, Nederlandse Factorij Japan, Nationaal archief, Den Haag, Netherlands.

> Chikugo no kami [Masashige] sent for the surgeon [Schamberger] to inspect the medicines he had brought and to write down the names in Japanese. When he returned, he said that the commissioner [Masashige] had told him he would be especially pleased if we would present them to the shogun on our behalf and see to it that the ones he had requested last year be delivered with the next ships. He has now seen and experienced some fine samples of Dutch medicine. This has led to the Japanese appreciating and esteeming it more than before.[13]

It became common after 1650 for the surgeon assigned to Dejima to treat various ailments of bakufu officials both in Nagasaki and during the court journey, with the medicines and their applications carefully noted by the Japanese physicians and interpreters present. The VOC clearly viewed this as an opportunity to further ingratiate themselves to the bakufu, and willingly lent out their physician when requested.[14] Gabriel Happart, the head merchant for 1653/4, was dismissive of Japanese efforts to learn and apply Dutch methods. In February of 1654, when the Company surgeon was summoned to the home of the shogun's senior doctor during their stay in Edo, Happart wrote that "many questions were put to him about various illnesses and their cures, and the composition of medicines…It seems that these heathens, forever trying to learn from us, think that by some short discussion between them and a surgeon, happening extempore and unplanned, European surgery can be thoroughly understood.[15]

Happart failed to grasp some quintessential aspects of the seventeenth century Japanese adaptation of Dutch medicine. First, the primary method of learning was not impromptu "short discussions." Second, Japanese physicians were not interested in

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[13] *The Deshima dagregisters,* Volume 12, eds. Cynthia Viallé and Leonard Blussé (Leiden: Institute for the History of European Expansion, 2005), 6.

[14] For a complete list, see Koga Jūjirō, *Seiyō ijutsu denraishi* (Tokyo: Nisshin shoin, 1942).

[15] Dagregisters van de Factorij Firando en te Deshima 1654, 1.04.21 NFJ 67, Nederlandse Factorij Japan, Nationaal archief, Den Haag, Netherlands.

"European surgery" as a whole, but rather a discrete set of treatments that had been deemed efficacious through direct observation. Happart's predecessor, Frederick Coyett, had a more accurate understanding of the situation. During the court journey of 1652/3, the surgeon Jan Stipel was asked to treat the tumor of the Noh actor, Kita Shichidayū Nagayoshi. Stipel recorded the incident saying "Chikugo no kami asked that our surgeon attend to the aforesaid Shichidayū every day, because our stay would not be for very long and he would like to see him recover his health before our departure, or at least improve to the extent that a certain Tosack, who fancies that he has learnt enough from us about the art of medicine and healing *through writing it down*, could cure him with the medicine which Chikugo-no-kami would give him."[16]

Japanese observers like "Tosack" wrote down Schamberger's methods - the names of specific remedies, the measurements of ingredients, and their various applications - and disseminated these amongst their students and colleagues. This process began before Schamberger left the country in November of 1651. Inomata Denbē, the translator who had been assigned to the German physician during most of his time in Japan, created a report on Schamberger's methods before they left Edo after their 10-month residency there in 1650. Denbē completed another report upon their return to Nagasaki in November of 1650, and another a year later after Schamberger departed for Batavia.[17] During the hofreis in January of 1652, Masashige sent his own personal

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[16] *The Deshima dagregisters,* Volume 12, 96. Italics are my own. The exact identify of this physician is uncertain. "Tosack" is only mentioned again in the dagregisters on the occasion of his death a few years later. What is certain is that he was employed by the commissioner as a physician, but his contributions to the spread of Dutch medicine were lost in the Meireki fire of 1657, along with many of the Edo-based *Kasuparu-ryū* manuscripts.

[17] Michel-Zaitsu has traced these three manuscripts through extant copies held by various physicians and translators associated with the Nagasaki magistrate. Wolfgang Michel-Zaitsu, "Kasuparu Schamberugeru to Kasuparu-ryū geka I," *Nihon ishigaku zasshi,* Vol. 42, No. 3

translator, Shin'emon, to document more details about the medicines brought by the Company surgeon that year, comparing them to the reports Denbē had previously compiled.[18]

Manuscripts on this subject were disseminated rapidly in the months and years following Schamberger's departure by the translators and physicians working for the Nagasaki magistrate and Inoue Masashige.[19] Schamberger's methods were assimilated into the treatments of physicians who had previously studied medicine under Iberian and Jesuit doctors, such as Kurisaki Dōki (1582-1665), Yoshida Jikyū (?-1694), and Nishi Genpō (? - 1664).[20] A younger generation of translators and physicians like Kawaguchi Ryōan (1629-1687), Narabayashi Chinzan (1649-1711), and Irako Dōkyū (1672-1734) continued to use Schamberger's methods through the turn of the eighteenth century, teaching them to their students and colleagues.[21] Texts with titles like "Caspar's 17 Methods" (*Kasuparu jūnana-hō*) or "Kōmō-method external medicine" (*kōmō-ryū geka*) continued to be copied throughout the following centuries, which featured not only formulations but also the necessary substances used to compound them.

(1996): 53.

[18] Dagregisters van de Factorij Firando en te Deshima 1651-1652, 1.04.21 NFJ 65, Nederlandse Factorij Japan, Nationaal archief, Den Haag, Netherlands..

[19] Sōda, *Nihon iryō bunkashi*, 125-7.

[20] Okazaki, *Kusuri no rekishi,* 105.

[21] Michel-Zaitsu, "Kasuparu Schamberugeru I," 49-53.

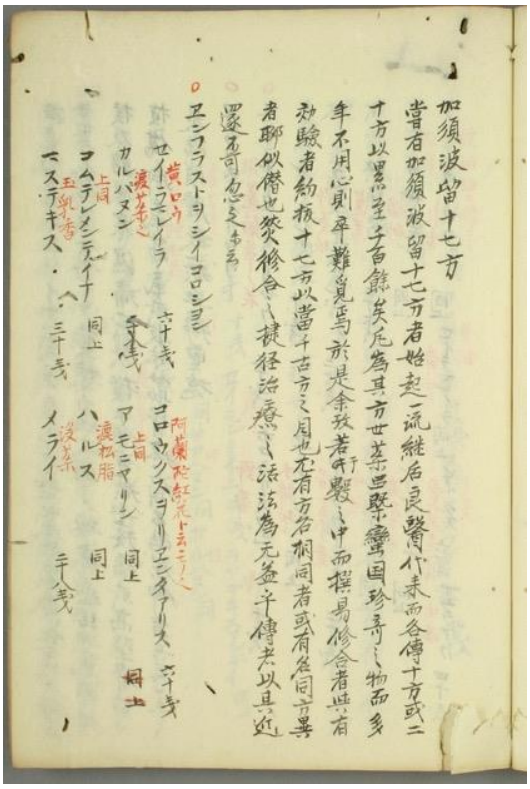

Figure 39 – An 1815 (Bunka 12) copy of *Kasuparu jūnana-hō* [Caspar's 17 methods] originally produced by Kawaguchi Ryōan in the late seventeenth-century. The first formulation is for Emplastrum oxycroceum, a saffron-based plaster. Manuscript, 28 x 20 cm. Waseda University Library, Tokyo.

Qualifying *Geka* / Surgery

The manuscripts and later printed versions of Schamberger's methods referred to his treatments as *geka*, typically described as *oranda geka* or *kōmō geka. Geka* literally translated to "external medicine" or "external treatment." In modern Japan, *geka* came to refer to surgery, meaning the use of surgical tools like lancets and scalpels to treat medical issues through incision, removal, or manipulation. However, both the Japanese term *geka* and the surgery practiced by Schamberger had different meanings and associated treatments than the surgery with which most people are familiar today. The term *geka* first appeared in the late fourteenth-century martial epic *Taiheiki* [Chronicle of the Great Peace], where it referred to a new type of therapy for *kinsō,* or wounds from

bladed objects.[22] Andrew Goble has described the fourteenth century as a watershed moment in the the development of wound care as a discrete field, with texts like *Kinsō ryōjishō* [On healing wounds caused by metal objects, 1356] collating both Song medical texts and oral transmissions from contemporary Japanese physicians in order to disseminate effective methods of diagnosis and treatments for various injuries sustained in battle.[23]

The therapies found in texts like *Kinsō ryōjishō* and the later *Kihō* [Demon formulas, 1391] arose from the particular circumstances of fourteenth century Japan. Warfare was frequent in the Kamakura era and grew even more so under the Ashikaga, with more effective military technologies and infrastructure leading to more wounded soldiers.[24] As a whole, *kinsō* specialists were not invested in a broad pathological systems, but in specific and visible issues: punctures from arrows, cuts from swords and spears, broken bones, and so on. Texts like *Kinsō ryōjishō* did not linger on theoretical foundations but moved immediately into the steps that a physician should take to treat his patient. First, he must determine whether an issue is fatal, and then concentrate on stopping the bleeding; suppurative wounds should be opened and drained, and broken or fractured bones should be reset and splinted. Medicines featured heavily in all aspects of these regimens, such as analgesics to soothe pain, unguents to speed the skin's healing, and purgatives to combat the constipation that often occurred after treatment.[25] During

[22] Sōda, *Nihon iryō bunkashi*, 93.

[23] Goble, *Confluences of medicine,* 89-100.

[24] Tom Conlan, "Instruments of Change: Organizational Technology and the Consolidation of Regional power in Japan, 1333-1600," in John Ferejohn and Frances Rosenbluth eds., *War and State Building in Medieval Japan* (Stanford: Stanford University Press, 2010), 124-58.

[25] Goble, *Confluences of Medicine,* 97-100.

times of peace, *kinsō* practitioners further developed their craft to include the treatment of pregnancy and childbirth, as well as common external ailments, like sores, tumors, and abscesses. The importation and dissemination of newer Chinese texts like *Waike jingyao* [J. *Geka seiyō,* Essentials of external medicine, 1263] led to the adoption of the term *geka* to describe the activities of this category of specialists outside of battlefield medicine.[26] By the fifteenth century, *kinsō* and *geka* practitioners gained credence as medical specializations proliferated, and their services were retained by powerful socio-political entities like the imperial court and the *bakufu.*

Yet, when the Jesuit physician Luis de Almeida arrived in Japan in 1552, he reported that Japan had no surgery before he opened his hospital and began training students.[27] As a result, Almeida is commonly credited for "introducing" surgery to Japan. This is odd given the resemblance of the surgery practiced by the Jesuits to *geka*. Sixteenth century European surgery was quite different from the modern field. Due to the high likelihood of infection or sepsis, incision or removal of affected areas rarely occurred and only when all other options had been explored. Surgeons were most commonly called upon to address issues like broken bones, wounds, and other common ailments like syphilis, hernias, and bladder stones.[28] Indeed, Japanese observers were quick to categorize the medicine they saw at Almeida's hospital as *nanban-ryū geka*, or

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[26] Sōda, *Nihon iryō bunkashi*, 93. Fujikwa Yū, *Nihon igakushi* (Tokyo, Nisshin Shoin, 1941),111-116, 177, 289-329. Edo kanoko, ed. Asakura Haruhiko (Tokyo: Sumiya Shobo, 1970), 250.

[27] Okazaki, *Kusuri no rekishi,* 103. As a result, Almeida is commonly credited for "introducing" surgery to Japan. See CR Boxer, *Jan Compagnie in Japan, 1600-1817: an essay on the cultural, artistic, and scientific influence exercised by the Hollanders in Japan from the seventeenth to the nineteenth centuries* (New York: Oxford University Press, 1968), 44.

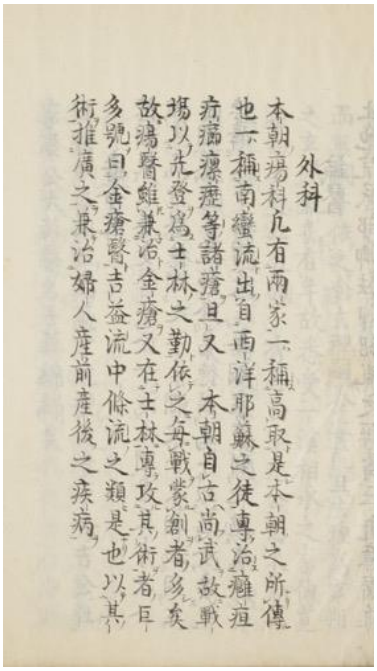
[28] Sōda, *Nihon iryō bunkashi,* 116-7. Harold Ellis and Sala Abdalla*, A History of Surgery: Third Edition* (Boca Raton: CRC Press, 2018), 35.

"*nanban*-method external medicine." As explained in chapter two, The word *nanban*, was derived from the Chinese cosmological system that categorized people as either civilized or uncivilized depending on their relationship with the cultural center. Japanese observers applied the term *nanban* to the goods, peoples, and practices brought by Portuguese and Spanish merchants and missionaries to Japan because of their ports of origin in the islands to the south of the Japanese archipelago.

Nanban-ryū geka was so named because it was legible to Japanese physicians familiar with existing forms of *geka* in sixteenth century Japan. They had no issues with classifying the practices they saw in the Jesuits hospitals within the broader category of wound care and external medicine. This was illustrated by medical historians like Kurokawa Doyū, who wrote in 1663 that there were two schools of *geka* in Japan: Takatori-*ryū* and *nanban-ryū.*[29] The former referred to the practice of Takatori Hidetsugu, a physician in Harima (Hyōgo) who became famous for his integration of older *kinsō* practices with newer techniques, including a few adapted from *nanban-ryū geka*. In turn, *nanban-ryū geka* was largely defined by its more novel treatments: sanitation with alcohol, cauterization, the use of olive oil or "Portugal oil" to soothe the ensuing burn, and the application of a liniment made with palm oil and egg white to the affected area.[30]

[29] Kurokawa Doyū, *Honchō ikō* [Thoughts on medicine of this country] (Kyoto: Tahara Nizaemon, 1663), Kyoto University Library, Kyoto.

[30] Okazaki, *Kusuri no rekishi,* 104-6.



外科

本朝疡科凡有兩家一稱高取是本朝之所傳也一稱南蠻流出自西洋耶蘇之徒專治癰疽疔瘡瘰癧等諸瘡且又　本朝自古尚武故戰場以先登爲士林之勤依之每戰裂創者多矣故瘍醫雖兼治金瘡又在士林專攻其術者巨多兒曰金瘡醫吉益流中條流之類是也以其術推廣之兼治婦人産前産後之疾病

Figure 40 Doyū's discussion of the Takatori and *nanban*-methods of external medicine. From the third volume of Kurokawa Doyū, *Honchō ikō* (Kyoto: Tahara Nizaemon, 1663). Kyoto University Library, Kyoto.

Far from being the revolutionary moment that Almeida described, Japanese practitioners viewed the surgery disseminated at Jesuit hospitals as a different method of *geka* that nonetheless fit overall within the existing medical schema of sixteenth century Japan. The same thing can be said for the surgery practiced by Schamberger, which Japanese translators and scholars similarly categorized as yet another method of *geka*.

Oranda-ryū geka in practice

Schamberger, like many other contemporary physicians, trained with a surgeon's guild before joining the VOC. The curriculum for his guild in Leipzig included instruction in anatomy, wound care, and relevant medicines and salves - those to stop bleeding, those to prevent festering, those to speed healing, and so on.[31] The Company in

[31] Michel-Zaitsu, "Kasuparu Schamberugeru I," 43-4.

turn required that applicants to work as surgeons were examined using the standards established in Cornelisz Herls' *Examen der Chyrurgie*, which was originally published in 1625 and revised multiple times throughout the seventeenth century.[32] Herls' text covered a similar range of topics to the ones that Schamberger had studied in Leipzig, beginning with the fundamentals of anatomy and humoral pathology before providing detailed instructions on how to diagnosis and treat swellings and tumors, various wounds, ulcers, and fractures and dislocations.[33]

Trained to contemporary standards of practices and fluent in Dutch, German, and Latin, Schamberger was thus well-prepared to act as a material and intellectual intermediary for European surgical practices in Japan. The earliest Japanese manuscripts describing *oranda geka* consisted of six sections, beginning with "general remarks on *geka*" and "distinguishing between hot, cold, dry, and wet [ailments]." These introduced the basics of humoral pathology and the diagnosis of certain issues based upon this system. The third section centered on the causes and treatments of various ailments associated with swelling (*hare*), such as carbuncles, abscesses, hernias, and aneurysms. The fourth section centered on *kinsō*, which assimilated various practices found in *nanban-ryū geka* with Schamberger's methods. The final two sections of earlier manuscripts detailed the formulation and application for "Caspar's seventeen methods," and introduced important substances used in Dutch medicine (*oranda-yaku*).

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[32] Mishima Saiichi, *The History of Ophthalmology in Japan* (Oostende: J.P. Wayenborgh, 2004), 157.

[33] Cornelis Herls, *Examen der Chyrurgie* (Middleburgh: Symon Moulert, 1625).



Figure 41 An illustrated guide to patients suffering from ailments that were associated with "Dutch external treatments," such as tumors, abscesses, and carbuncles. From Nakamura Soyo, *Geka ryōjishū,* (Kyoto: Yamamoto Chōbē, 1684). Kyoto University Library, Kyoto

These various sections would be re-ordered, condensed, elided, or expanded upon as the manuscripts were circulated, copied, and ultimately printed into books. Many of the later manuscripts and printed versions of *oranda geka* removed the first two sections and their explanation of the humors entirely, focusing instead on the diagnostic and therapeutic aspects of the practice. A notable exception to this was *Oranda geka shinan* [Compass of Dutch *geka*], which was completed in 1696 (Genroku 9) by an author using the pseudonym Naniwa Insha. Like the earlier manuscripts, *Oranda geka shinan* began with "general remarks on *geka*" and a brief description of the humors and their function.

> In a human body, there are four names for the blood known as "humors" (*umoru*): sanguine (*sangi*), cholera (*korera*), phlegma (*perema*), and melancholia (*marenkonya*). Sanguine refers to good circulation, and is characterized by heat and wetness. Cholera is when the blood is not circulating, and is too thin; it is characterized

> by heat and dryness. Phlegma refers to the liquid in the blood, and is characterized by cold and wetness. Fluid-filled swellings are caused by this. Melancholia is the dregs of the blood, and is characterized by cold and dryness. If the aforementioned types of blood are reasonably proportional within the body, then one will be in good health.[34]

This explanation highlights an important aspect of the seventeenth century Japanese adaptation of European medicine. There is a tendency to describe European medical systems as entirely foreign to Japanese observers, a trend that undoubtedly began with Sugita Genpaku's dramatic re-telling of his encounter with European anatomy in *Rangaku kotohajime*.[35] Sugita described opening the pages of *Ontleedkundige Tafelen* to find both the words and images entirely illegible to him, prompting his dogged pursuit of scholars and translators capable of helping him to understand the contents of the book. Part of the appeal of Sugita's narrative undoubtedly lies in its evocation of crisis that historians and philosophers of science seek when they are attempting to describe scientific revolutions. But *oranda geka* was far from a paradigm shift. While the names of the humors were foreign to Japanese practitioners, the concepts behind them were not. Heat, cold, wetness, and dryness were key categories used to diagnose and treat diseases in the etiological system adapted from China a millennium earlier, which sought a similar equilibrium to humoral pathology between various elements circulating in the body.[36] Ailments caused by melancholia or cholera were diagnosed in a certain way and treated with a specific set of oils, unguents, and plasters, just as ailments associated with cold or

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[34] *Oranda geka shinan* [Compass of Dutch surgery] (Kyoto: Izumi-en, 1696), Volume 1 1r-1v. Kyoto University Library, Kyoto.

[35] Sansom, *The Western World and Japan,* 203. Goodman, *Japan and the Dutch,* 8.

[36] Usnchuld, *Ideas,* 179-180.

wet were diagnosed and treated in a particular way within the existing East Asian medical system.

Japanese scholars and physicians moreover conceived of Dutch external medicine as fitting into this existing intellectual system rather than challenging or undermining it. This eclecticism was seen across most *oranda geka* texts. In 1670 (Kanbun 10), Yamawaki Dōen published *Oranda-ryū gekasho* [Text of Dutch-style *geka*].[37] Dōen focused entirely on the subject of swellings and *kinsō,* expanding upon these sections from the manuscripts and removing any discussion of humoral pathology. After a brief introduction to a specific ailment, Yamawaki then related what "the Dutch said" (*oranda iwaku*) about the potential causes and treatments of that ailment. This commentarial style was familiar to Japanese readers. The practice dated back to the earliest Confucian texts that structured their topics according to what the "The Master said" (*shi iwaku*) about them. By adopting this turn of phrase, Yamawaki thus conceived of the Dutch as another source of information on par with contemporary medical texts and intellectual traditions.

The writers of these early *oranda geka* texts positioned the practice as an alternative or compliment to more well-known East Asian diagnostic and therapeutic methods. In their minds, *oranda geka* was not a unified or universal medical system. It provided an alternative taxonomy for the causes and treatments of certain external ailments that nonetheless fit within in the existing intellectual and medical systems of Japan. This much was evident in the preface to *Oranda geka shinan*, wherein the author adapted the opening lines of the Classic of Filial Piety (*Xiaojing*) to suit his promotion of

[37] Yamawaki Dōen, *Oranda-ryū gekasho* [Text of Dutch-style surgery] (Kyoto: Nakamura Jichōemon, 1670). National Institute of Japanese Literature, Tokyo.

Dutch medicine. Originally, this text began "our body, skin, and hair are all received from our parents – we dare not injure them. This is the first priority in our filial duty." *Oranda geka shinan* added to this saying, beginning the book with "our body, skin, and hair are all given to us by our mother and father. We dare not injure them, and so seek to heal our ailments and swellings with these medicines and salves."[38]

The importance of Schamberger to Japanese histories of medicine and knowledge thus cannot be reduced to a binary conception of Eastern and Western medicine, or to a teleological narrative about the spread of modern, European medicine across the world. Schamberger's particular contributions were grounded in their particular historical context and can be grouped into two categories. First was the immediate technological transfer regarding information about the production and use of medicinal oils in late seventeenth century Japan. Second, Schamberger's interactions with Inoue Masashige and other *bakufu* officials in 1650 prompted curiosity about the substances and methods used in Europe, leading these influential figures to specifically request European pharmacopeia from the VOC. Although such texts arrived in Japan in the last decades of the seventeenth century, Japanese scholars were not able to productively engage with these medical and botanical texts until the mid-eighteenth century, leading to a broader conception of Dutch medicine based on the substances and formulations found in imported pharmacopeia.

In regards to this first point, like both Japanese *geka* and *nanban-ryū geka* before it, Schamberger's therapy took the form of external medicines, specifically plasters (*enpurasuto*) and unguents (*inguento*). Plasters were generally made by combining

[38] *Oranda geka shinan,* unpaginated preface. The original section in the Xiaojing read

various ingredients with a large quantity of wax that would form a cast once the mixture hardened. Unguents were formulated with a higher ratio of oil to wax in order to create a more emollient medicine that could be easily spread over wounds and skin irritations or applied to cloth wrappings. Both the ideas and substances involved in Schamberger's formulations resulted from global exchange. For instance the recipe for "Melilot Plaster" recorded in *Oranda geka shinan* reads:

> *Empurasuto merirauto* [Emplastrum de Meliloto][39]
>
> 60 *monme* [225 g] of *hōko-gusa* [*Pseudognaphalium affine*] extract
> 3 *monme* [11g] of absinthe flowers
> 3 *monme* of chamomile flowers
> 3 *monme* of chamomile oil
> 3 *monme* of dwarf sedge flower
> 3 *monme* of dwarf sedge oil
> 3 *monme* of mandarin orange flowers
> 3 *monme* of mandarin orange oil
> 3 *monme* of clover
> 3 *monme* of mallow root
> 25 *monme* [94 g] of hemp
> 25 *monme* of cinnamon
> 25 *monme* of cloves
> 5 *monme* [19g] of nutmeg
> 5 *monme* of myrrh
> 25 *monme* of cardamum
> 10 *monme* [37g] of turpentine
> 40 *monme* [150g] of ox oil
> 80 *monme* [300g] of wax
>
> Grind and combine the aforementioned ingredients. Once heated, it is good for beriberi, muscle cramps, and palsy, as well as broken bones and sprains. Also good for swellings around the neck and tumors in the breast. Heat and spread on the affected area.

[39] *Oranda geka shinan,* Volume 2, 8r-9r. 1 monme was around 3.75 grams.



Figure 42 The formulation for Melilot Plaster from the second volume of *Oranda geka shinan* (Kyoto: Izumi-en, 1696). Kyoto University Library, Kyoto

Melilot refers to a kind of sweet clover that was commonly used to ameliorate external bruising and swelling. This particular formulation for Melilot plaster can be traced to the ninth century physician Yuahnna Ibn Masawayh (Mesuë), who lived and worked in Baghdad. By the sixteenth century Masawaiyh's medicines were widely disseminated in many of the early European pharmacopeia produced in order to standardize the compounding of medicines amongst universities and surgical guilds.[40]

Along with plasters and unguents, *oranda geka* texts also commonly included information about medicinal oils, which could be used alone but were also important ingredients for the plasters and unguents associated with Schamberger. These medicinal oils prompted immediate interest within Japan and were imported in large numbers. Some examples of these oils are even extant in the former collection of the Nabeshima family who ruled the domain of Saga and were deeply interested in Dutch trade and

[40] Wolfgang Michel-Zaitsu, "Kasuparu shamuberugeru to kasuparu-ryū geka II," Nihon ishigaku zasshi, Vol. 42, No. 4 (1996): 24-5.

medicine. Unlike the expressed palm and hemp oils discussed in *nanban-ryū geka* texts, Dutch medicinal were produced by distilling various substances. Those commonly used by Schamberger were made with floral and vegetal ingredients like like fennel, hemp, chamomile, clove, and cinnamon; minerals or resins like amber, borneol, camphor, and turpentine; and the organs or tallow obtained from animals like foxes or deer.



Figure 43 Extant important medicinal oils and salts bought by the Nabeshima family in Saga, who had increased accessed to such items because of their location and status as domainal rulers. Labels read "Fennel oil" and "Lime salts." Late eighteenth to mid-nineteenth-century, Takeo Municipal Library, Saga.

As discussed in chapters one and two, these types of products sourced from across South and Southeast were a huge part of Dutch trade to early modern Japan, and had been brought to and used in the archipelago since the eighth century. However, Schamberger demonstrated how these familiar substances could be compounded in novel and seemingly more effective ways.

Adapting the technologies related to *oranda-ryū geka*

The perceived effectiveness of distilled oils caused an increase in demand for them within Japan. Orders for clove, cinnamon, nutmeg, and rose oil began to be placed annually with the Company by Inoue Masashige, Inaba Masayori, and various other daimyō and officials who had observed Schamberger while he was in Edo. Requests for distillation apparatuses and seedlings for the plants used to produce these oils were also made, although few of these survived the trip to Japan. In 1667, the Nagasaki magistrate requested that the VOC send someone who as "well versed and experienced in the extraction of oils and waters from fresh medicinal plants, together with the necessary instruments and a variety of young seedlings."[41] Two years leader, the Company dispatched a series of pharmacists (*apotheker*) to Dejima, whereupon the construction of a dedicated "distillation house" (J. *abura tori ie,* D. *distilleerhuisje*) on the island was financed by the magistrate in 1671.[42]

The Nagasaki magistrate clearly hoped to produce the types of oils used by Schamberger within Japan. This was no doubt motivated by the bakufu's renewed interest in consolidating its control over the growing medicinal marketplace, which also resulted in the laws against counterfeit and poisonous medicines detailed in chapter two. The magistrate requesting distillation specialists and building facilities on Dejima also represents an early attempt to replace imported commodities with domestically produced ones. While Yoshimune's later efforts in the eighteenth century to cultivate costly

[41] Wolfgang Michel-Zaitsu and Elke Werger-Klein, "Drop by drop: The introduction of Western distillation techniques into seventeenth-century Japan," *Journal of the Japan Society of Medical History*, Vol. 50, No. 4 (2004): 468.

[42] Sōda, *Nihon iryō bunkashi,* 131.

imports like ginseng and sugar within Japan were successful, the distillation house failed to reap immediate results.[43] The single apothecary dispatched by the Company to Japan was expected to produce a substantial amount of oils as well as train physicians in the process. The distillation house on Dejima lacked many of the tools needed to distill larger quantities of oil, with the delicate glass pipettes and flasks often not surviving the sea voyage. As humble vassals, Company servants had to accede to the *bakufu*'s requests for certain plants involved in the production of medicinal oil, but they circumvented any diplomatic tensions or disruptions to their monopsony on various products by ensuring that the seedlings for trees producing nutmeg, cloves, and cinnamon all arrived to Japan withered and useless. Seeds brought by the VOC also failed to flourish once planted in the gardens of Nagasaki despite careful tending. While ambitious, the program lacked the manpower, tools, and ingredients necessary to produce more than a fraction of the medicinal oils annually requested by the shogun and other *bakufu* officials.[44]

Although the immediate material adaptation of medicinal oils failed, the technological transfer resulting from the distillation house on Dejima proved successful. A generation of medical practitioners and translators working for the magistrate familiarized themselves with the processes, instruments, and substances involved in the production of distilled oils. Japanese physicians who went to Dejima to learn about *oranda geka* were able to directly observe and even participate in making oils at the distillation house. A report on the subject was prepared in 1672 by a group of six Japanese interpreters employed by the magistrate, which detailed the preparation of nine

[43] Yoshioka, *Kinsei Nihon yakugyōshi,* 174. For more, see Marcon, *The Knowledge of Nature,* 115-139, and Hellyer, *Defining Engagement,* 87-89.

[44] Michel-Zaitsu and Werger-Klein, "Drop by drop," 481-485.

medicinal oils, provided illustrations of the apparatuses used to make them, and listed their applications and properties. Like the earlier *oranda geka* manuscripts, this report was copied and circulated amongst the professional and personal networks of these translators for decades long after it was written.[45]

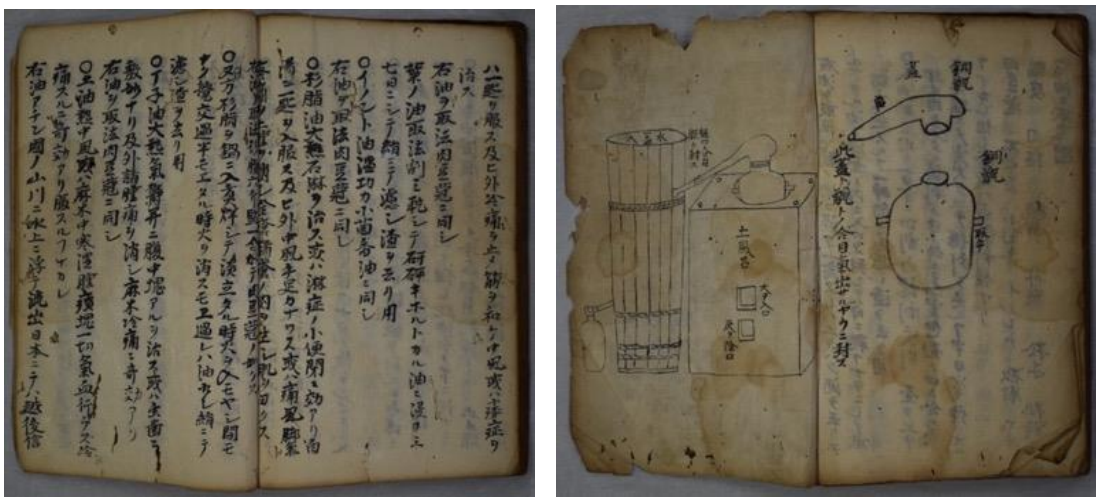


Figure 44 A manuscript on Dutch external treatments, including instructions and illustrations of the tools used to distil oils. The Nabeshima family, who ruled Saga, obtained this information directly from translators involved in the events of 1671-2. *Geryō kōmōden yōyaku kenbun* [A survey on external therapies transmitted by the Dutch], eighteenth century. Manuscript, 20 x 28 cm. Takeo Municipal Museum, Saga.

The distillation observed by these Japanese translators and physicians largely involved the use of glass and copper retorts. Substances like fennel, clove, and rosemary were placed within the retort along with water and salt, and the vessel was heated from below. As the liquid evaporated, oils and other bioactive components present in the fennel, clove, or rosemary were vaporized and circulated around the vessel. The long neck of the glass retort would cause this vapor to cool and condense, dripping down into another vessel affixed to the neck of the retort. If one was unable to afford glass instruments, which were relatively difficult to obtain before the nineteenth century in

[45] Sōda, *Nihon iryō bunkashi*, 128-131.

Japan, a ceramic or copper distillation apparatus known as a *ranbiki* could be used instead. In *Butsurui Hinshitsu* [Qualities of various substances, 1762], Hiraga Gennai mistakenly attributed the introduction of the *ranbiki* in Japan to the Dutch, which was an understandable mistake given the contemporary use of "*ran*" to describe ideas, goods, and practices associated with that particular foreign group.[46] In actuality, *ranbiki* referred to the Portuguese word *alambique*, itself an approximation of the Arabic *al-anbiq*. The vessel's introduction can thus be credited to the *nanban* traders of the late sixteenth and early seventeenth-century.[47]



Figure 45 Two types of *ranbiki* – one quite humble and one relatively luxurious - formerly owned by the Nabeshima family of Takeo Domain. Late eighteenth to mid-nineteenth-century, Takeo Municipal Library, Saga.

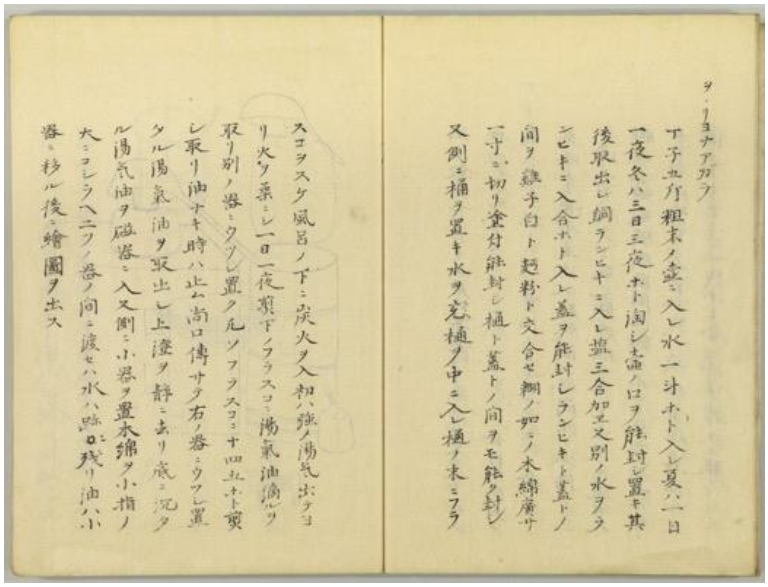
Ranbiki relied upon same chemical processes as retorts to distill natural substances. Most were made out of two or three chambers, with long necks affixed to the upper sections. Water and other liquids were be placed in the lower chamber and heated, while the

[46] Gennai, *Butsurui hinshitsu,* Vol. 1, 1r-1v.

[47] Michel-Zaitsu and Werger-Klein, "Drop by drop," 491-2.

substances one hoped to distill were inserted into the middle section. As steam rose from the lowest chamber and circulated, oils and other liquids collected and condensed in the upper section, dripping out of the necks and into a waiting vessel.[48]

Later copies of the report on medicinal oils produced in 1672 emphasized the use of vessels other than glass in their instructions on the distillation of oils. *Oranda yakuyu no shūge* [Collected explanation of Dutch medicinal oils] which was copied sometime in the eighteenth century, described the production of clove oil in the following way.



Ōlio nāgara [Oleum nagelen, Clove oil][49]

> Take 5 *kin* [3 kilograms] of cloves and place them in a simple pot, then add one *to* [2 liters] of water. In the summer, this should sit for one day and one night with the mouth of the jar shut tightly; in winter, for three days and three nights. After this, pour the contents into a copper *ranbiki* and add three *gō* [540 ml] of salt, and the same amount of water. Cover the mouth of the *ranbiki,* making sure to pack any space between the rim and lid of the vessel with wadded cotton cloth. Flush out the pipe on the side with water, and then place a flask at the end of it. Make a

[48] *Kyūshū no rangaku Takeo no rangaku* (Saga: Takeo shiritsu toshokan, 2014), 74.

[49] *Oranda yakuyu no shūge* [Collected explanation of Dutch medicinal oils], eighteenth century, unpaginated manuscript, Kyoto University Library, Kyoto.

fire with charcoal beneath the oven. After strong steam starts to emerge from the *ranbiki*, bank the fire and let the mixture simmer. After one day and one night, the steam will become droplets of oil that are gathered in the flask. Swap out the flask with another vessel when it is filled. You should expect fourteen or fifteen flasks. Once the production of oil ceases, the process is completed. Clear out any oil droplets from the pipe, and slowly skim the top of the liquid remaining in the *ranbiki*. Transfer this distilled oil to ceramic jar or small flask. Prepare two small strips of cotton cloth and pass them through the water to catch any remaining oil, then store in a small vessel. An illustration of relevant implements follows.

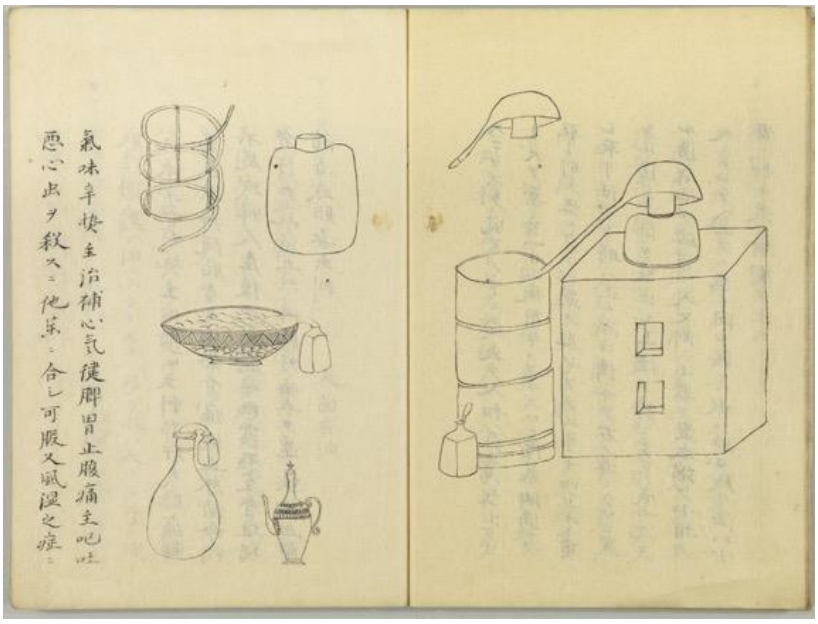


Figure 46 Instructions and the illustration of tools used in the distillation of clove oil. From *Oranda yakuyu no shūge*, eighteenth century, Manuscript, RB00001416. Kyoto University Library, Kyoto.

Given the cost and scarcity of glass instruments prior to the nineteenth century, the replacement of glass instruments with copper and ceramic ones was undoubtedly intended to make the tools involved in distillation more accessible. While misattributed, Hiraga Gennai's inclusion of *ranbiki* and distillation in *Butsurui Hinshitsu* also demonstrated the relative popularity of distillation in mid-eighteenth-century Japan. The sheer amount of *ranbiki* extant in public and private collections today also speaks to the

widespread use of the instrument by physicians and apothecaries before the turn of the twentieth century.

Engaging the pharmacopeia

Like the earlier *oranda geka* texts, information about distillation and medical oils would ultimately be published and made available to a wider audience. Senno Yoshitaka printed *Oranda seizai* [Dutch medicinal substances] in 1809 (Bunka 6), which detailed and expanded upon the report first produced over a century earlier. In the preface to his text, Yoshitaka described the practice of Dutch medicine in an intriguing way, writing "what is it to specialize in Dutch medicine? One hears that it is in Dutch medicinal substances, and that it is a precise craft.[50]" In other words, in order to practice Dutch medicine one should understand Dutch medicinal substances and the intricacies of their application and formulation. *Oranda seizai* offered its reader the ability to do just that, illustrating the materials and processes involved in producing oils and how they might be formulated into various plasters.

Yoshitaka was not the only one to espouse this belief in the inextricably connected nature of the practices and materials involved in Dutch medicine. *Oranda honzō zukyō* [Illustrated treatise on Dutch materia medica] circulated as a manuscript throughout the eighteenth century. In the preface, the author, using the pen-name of Yōgetsu Sōshi, described the connection between the external medicines and oils introduced to Japan by Schamberger and broader early modern Japanese engagement

[50] Senno Yoshitaka, *Oranda seizai* [Dutch medicinal substances] (Pub. Unknown, 1806), Kyoto University Library, Kyoto.

with European pharmacopeia.

> In my youth, I lived in Hizen in Nagasaki, and was dispatched by domainal officials to study under a renowned physician from the land of Holland. I learned about external medicine for many years. The Dutch method [of medicine] treats illnesses and pain using oils made from plants, trees, flowers, and leaves, as well as formulates these into medicinal plasters. The effectiveness of these treatments cannot be matched by any other styles of medicine. It is unacceptable for those who hope to practice this style of medicine to not know the names, applications, and effects of these aforementioned substances.[51]

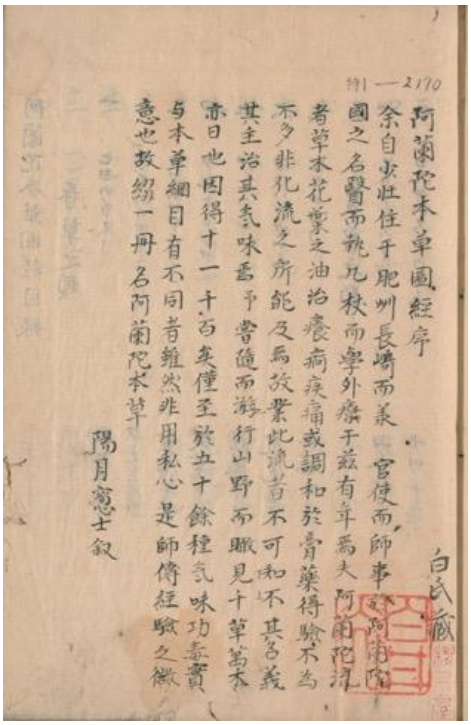


Figure 47 The preface from Yōgetsu Sōshi [Pseudonym], *Oranda honzō zukyō*, Manuscript copy, eighteenth century. 特 1-2170, National Diet Library, Tokyo.

This quote epitomizes Schamberger's second major contribution to early modern Japanese medicine. *Oranda geka* was grounded in specific substances and processes, all of which reflected global material and intellectual exchange. Some of these substances

[51] Yōgetsu Sōshi, *Oranda honzō zukyō* [Illustrated treatise on Dutch materia medica] eighteenth century, manuscript, National Diet Library, Tokyo.

were familiar, like cloves, cinnamon, and nutmeg, but the ways in which Schamberger compounded and applied them was entirely new. Similarly, the German physician brought and used a diverse range of medicinal products that were new to East Asia. After 1650, Japanese translators and physicians found it necessary to reconsider familiar substances in order to reflect the new ways in which they could be compounded, and to identify and classify unfamiliar substances.

This unsurprisingly led Japanese practitioners of *oranda geka* to engage with European pharmacopeia in search of the "names, applications, and effects" of both familiar and unfamiliar medicines. Like the adaptation of medicinal oils, efforts to undertake this taxonomical project began relatively quickly after Schamberger's departure from Japan. Inoue Masashige, Inaba Masanori, and other officials working with the Nagasaki magistrate made requests for books on pharmacopeia and materia medica with the Company throughout the 1650s and 1660s. As a result, various books were brought to Japan, most notably Dodoneus' *Cruijdeboek* [Plant book, 1644], Pliny's *Historia Naturalis* (1635), and Jan Jonston's *Naeukeurige beschrijving van de natuur de vier-voetige dieren* [Accurate description of the nature of four-footed animals, 1660].[52]

The impact of these texts has been analyzed by various historians, who often overlook the specific reasons for this sudden engagement with European knowledge. The requests for such books and subsequent efforts to translate their contents by Japanese officials and physicians tend to be positioned as obvious and inevitable, and the value of

[52] Harmen Beukers, "Dodonaeus in Japanese: Deshima surgeons as mediators in the early introduction of Western natural history" in *Dodonaeus in Japan : translation and the scientific mind in the Tokugawa period*, eds. W.F. Vande Walle and Kazuhiko Kasaya (Kyoto: International Research Center for Japanese Studies, 2001), 286-7.

engaging with European knowledge as self-evident. These presumptions stem from a variety of problematic Eurocentric and teleological paradigms, which remove the need for particular contexts by assuming that all non-Western peoples and cultures would at some point or another adopt Western ways of thinking. But early modern Japanese engagement with European pharmacopeia was not driven by some objective sense of scholarly interest or intellectual progress, but by the medicinal applications of the plants, minerals, and animals that were used by Schamberger and detailed in the aforementioned requested texts. Inoue and Inaba ordered medical and botanical books because of their experiences with Schamberger and his medicine. They had witnessed the utility of *oranda geka*, with the substances and processes involved in it prompting the need to reconsider and reclassify certain medicines and medicinal practices.

The process of engaging with European pharmacopeia was a much larger undertaking than the initial adaptation of *oranda geka*, and manuscripts or printed texts on Dutch medicine other than "external treatments" did not appear in Japan until the late eighteenth-century. The reasons for this time lag were both linguistic and institutional. In regards to the former issue, one of the many books brought to Japan at the request of Inaba Masanori was the *Hortus Eystettensis*, also known as *The Garden of Eichstätt.* The lavishly illustrated book was compiled in 1613 by the Nuremberg apothecary Basilius Besler, and shipped to Japan in 1668. Four years later, the Japanese interpreters working for the Nagasaki magistrate brought *Hortus Eystettensis* back to Dejima to seek help with reading the book. The Latin and German text of *Hortus Eystettensis* had confounded the physicians and translators employed by Inaba and the *bakufu* who had been consulted since the book's initial arrival in Japan. Equipped with the knowledge that each Company

ships was equipped with at least one surgeon on board, the frustrated interpreters inquired on Dejima to see if anyone present amongst the VOC crew was capable of translating these languages into Dutch. Given the precedent set by Schamberger, the translators were dismayed to find that none of the Company surgeons were confident enough in Latin or German to attempt to even read the book, much less translate it. Lacking the requisite skills to attempt their own translations, the Japanese translators returned the book to Inaba's library, where it sat untouched for decades.[53]

This was far from an isolated incident. Company documents from the late seventeenth-century onward record various other instances like that of September of 1672, with texts previously imported by the VOC brought back to head merchants and Company surgeons years or decades later in the hopes that they would help translate them. In addition to these issues of language, *bakufu*-led interest in sponsoring major translations and other projects related to Dutch medicine waned at the turn of the eighteenth century. It was the involvement of high-ranking officials like Inoue and Inaba that had led to the relatively quick adaptation and dissemination of *oranda geka*. They ordered translators to produce reports on the subject, dispatched physicians to train with the VOC surgeons on Dejima or staying in Edo and approved and financed the construction of the distillation house on Dejima. Inoue's death in 1660 and Inaba's retirement in 1682 removed the two most influential supporters of *oranda geka*. Compounding this, Tokugawa Tsunayoshi, who ruled from 1680 to 1709 as the fifth shogun, was not particularly interested in Dutch medicine, favoring more orthodox forms of knowledge.

[53] Michel-Zaitsu and Werger-Klein, "Drop by drop," 481-2.

It was not until Yoshimune became shogun in 1716 that concerted efforts began once again to import and translate foreign medical and pharmacological texts. Promising young retainers were sent to Nagasaki to study with the translators and Company surgeons, copying every manuscript they could find and training in the ways of Dutch medicine. Non-samurai academies (*shijuku*) were sponsored by Yoshimune and his successors, and the libraries of officials and physicians were scoured for information related to medicine, botany, and materia medica.[54] After a couple of decades of training and translation, Japanese physicians and scholars began once again to produce texts about Dutch medicine. These works built on the established practices of *oranda geka* by adapting knowledge from the European books languishing unread in various collections and newer texts supplied by the VOC in the eighteenth century.

Internal and external medicine

In 1786 (Tenmei 6), Otsuki Gentaku published *Rokumotsu shinshi* [New account of six substances] with the financial help of wealthy merchant and Dutch studies enthusiast Kimura Kenkadō. The second son of a physician employed by the domain (*han-i*) of Ichinoseki, Gentaku first trained under Takebe Seian, who then sent him to study with Sugita Genpaku in Edo.[55] At first glance, Gentaku's selection of topics for *Rokumotsu shinshi* seems random. The six substances in question were narwhal horn [*unikōru*], saffron [*safuran*], nutmeg [*nikuzuku*], mummy [*miira*], agarikon [*eburiko*], and

[54] Marcon, *The Knowledge of Nature,* 117-129.

[55] Jackson, *Network of Knowledge,* 130.

mermaid [*ningyo*].[56] Looking through the text, it is clear that Gentaku chose these substances because of their use as medicine and their association with foreign trade. Moreover, with the exception of agarikon, which was primarily imported from Ezo (Hokkaido) through the Matsumae family, all of the other substances were Dutch imports.[57]

In fact, these same substances featured heavily in the seventeenth century texts on *oranda geka*. Both manuscripts and printed materials on the subject typically included a section on Dutch medicine (*oranda-yaku*), which was informed by the products that Schamberger was observed using and subsequently ordered by Inoue Masashige and other bakufu officials in the late seventeenth-century. This eclectic group of medicines consisted of substances of dubious origin like mummy and mermaid, complicated panaceas like theriac and mithridatium, and more familiar products from across the Indian Ocean like cloves, nutmeg, opium, and saffron. In addition, there were medicines that were new to East Asia, like balsam copaiba and sarsaparilla from South America, and narwhal horn from the Arctic waters around Greenland.

Originally, the Japanese translators who recorded information about these substances in the seventeenth century could only rely on oral transmissions from Company surgeons and the apothecaries dispatched to Dejima. When matched with a trained surgeon like Schamberger, they were able to construct substantial pharmacological entries about the contents and uses of certain medicines. But surgeons

[56] Agarikon is also known as "quinine cork."

[57] This selection also likely resulted from the interests of Gentaku's patron, Kenkadō, who had already written extensively on these six goods in his diaries and in unpublished manuscripts. Miyashita, *Nagasaki bōeki to Ōsaka,* 5.

were rarely as schooled as Schamberger, and the apothecaries who came to Dejima between 1668 and 1674 failed to live up to the expectations of the Nagasaki magistrate in terms of intellectual ability.[58] The translators who compiled the 1672 report on medicinal oils even placed a qualifier on the information they had collated from viewing the activities of the apothecary Frans Braun in the distillation house on Dejima. In explaining what exactly an "apotheker" was, they wrote that it meant "the keeper of a medicine shop" (*kusuriya no shujin*) rather than describing him as a physician or surgeon.[59] This was not an indictment of Braun's distillation abilities, but a perceived explanation for why many of the names and processes for various substances did not match earlier records compiled during Schamberger's residence. Braun, not extensively trained beyond basic pharmacological activities, was not versed in Latin, and instead supplied the Dutch and German names for many medicines. While this discrepancy initially dismayed Japanese officials and physicians, the contributions of Braun and his predecessor, Godefried Haeck, can be seen in the increasing use of Dutch rather than Latin terms in *oranda geka* manuscripts from the late seventeenth century onwards.

Given these circumstances, knowledge about many of the mediciness used in *oranda geka* was extremely limited until scholars like Gentaku collated information and names from a variety of domestic and imported pharmacopeia and encyclopedia. His extensive network of fellow scholars circulated Dutch texts on anatomy and materia medica, such as Ambroise Paré's *De Chirurgie* (1573) and Blankaart's *Anatomia*

[58] Michel-Zaitsu and Werger Klein, "Drop by drop," 479-487.

[59] Sōda, *Nihon iryō bunkashi,* 131.

practica (1658).[60] For *Rokumotsu shinshi,* Gentaku pulled heavily from Li Shizhen's magnum opus *Bencao gangmu* [Compendium of materia medica, 1596] and Rembert Dodoens' *Cruydtboeck* (1554) in equal measure, listing the names of his selected six substances in various languages, reproducing relevant images of them, and describing their applications as medicine. For the substances affiliated with newer Dutch trade like narwhal horn and saffron the sources consisted of primarily European texts. For example, in his discussion of saffron Gentaku referenced Dodoneus' assertion that it should be mixed with red wine (*budōshu*) and drunk in order to ameliorate chest congestion and clear the ear, nose and mouth of mucus. Gentaku referenced Paré heavily in the entry on mummy, and Li Shizhen for the discussion of nutmeg. That said, Gentaku did not privilege one source of information over another - all contained valuable knowledge regardless of where they were produced.



Figure 48 Gentaku's entry on saffron, including Dodoneus' assertations that it should be added to wine and drunk as a digestive aid. From the first volume of Ōtsuki Gentaku, *Rokumotsu Shinshi* (Edo [Tokyo]: Tsuta-ya Jūzaburō, 1795). Waseda University Library, Tokyo.

[60] Jackson, *Network of Knowledge,* 83-7, 123-129.

As a whole, Gentaku strove not to mention medicinal oils in *Rokumotsu shinshi*. Although many of the substances discussed were commonly distilled or used in salves, Gentaku limited his analyses of relevant formulations to those that were not applied externally but rather consumed in some form. This was intentional. In the preface, Otsuki repeatedly emphasized that the contents of his text were meant to show how information collated from Dutch pharmacopeia and encyclopedia could supplement Dutch methods and make it a holistic practice of both "internal and external medicine" (*naigai no ih*ō). He thus sought to address the skepticism of his first teacher, Seian, as well as reiterate his second teacher Genpaku's claim that the seemingly limited nature of Dutch medicine as "external medicine" only resulted from a lack of direct engagement with Dutch texts by Japanese practitioners.

This goal was shared by most of the students who studied with Sugita Genpaku and Ōtsuki Gentaku. Udagawa Genzui, who joined Gentaku's private academy, spent years attempting to translate Johannes de Gorter's *Gezuiverde Geneeskonst of kort onderwys der meeste inwendige ziekten* [Clarified medicine, or a brief education on most internal sicknesses, 1744]. In 1796 (Kansei 8), Genzui finally published this manuscript a year before his death as *Naika senyō* [Western internal medicine]. In the introduction to his text, Genzui described Dutch medicine by writing that "in our country, what has been passed down was one type of medicine for wounds and swellings." His purpose in translating and publishing this text was therefore to demonstrate the uses of Dutch methods in "both internal and external medicine" (*naigai nika*).[61]

[61] Udagawa Genzui and Johannes de Gorter, *Naika sen'yō* [Compilation of Western internal medicine] (Edo [Tokyo]: Suhaya-ya Ichibē, 1796), Waseda University Library, Tokyo.

Genzui's sons carried on this mission. Between 1820 and 1830, Udagawa Yōan and his brother Genshin published an expansive series of texts on Dutch medicine that in many ways was the culmination of over a century of translation, adaptation, and collation of Dutch pharmacopeia and encyclopedia by Japanese scholars, officials, and physicians. In the prefaces for his texts, Yōan regularly referenced Noel Chomel's *Algemeen huishoudelijk-, natuur-, zedekundig-, en kunstwoordenboek* (1768), Lorenz Heister's *Chirurgi*e (1752), Rembert Dodoens*' Cruijdeboek* (1644)*,* Nils Rosen von Rosenstein's *The Diseases of Children and their Remedies* (1768)*,* and the pharmacopeia produced by the cities of Amsterdam (1706) and Leiden (1732).

In 1822 (Bunsei 5), Yōan published *Ensei meibutsu-kō* [Thoughts on famous medicine from the Far West]. He positioned the text as a necessary part of the academic legacy of his father, writing in the opening lines that

> In our country, the medicine of the Far West that is promoted rarely extends beyond the practice of surgery (*geka*). My departed father Professor Kaien [Genzui] emphasized this when he wrote *Naika senyō* [Western internal medicine], and in doing so many people came to truly know the practice of Western internal medicine… But the ingredients, formulations, and ways of compounding famous medicines of the Far West have not yet been explained in detail.

To that end, *Ensei meibutsu-kō* included information about the products Yōan considered quintessential to Dutch internal medicine, such as purgative ipecac tonics, cooling spearmint salves, and cough drops (*doroppu*) made with gum arabic, licorice, and sugar. Entries were divided by individual substances, listing their primary applications and the most effective methods in which they could be used. Many substances were already familiar to practitioners of *oranda geka*, such as nutmeg, cloves, turpentine, and theriac. In addition, there was also an array of newer products discussed by Yōan like calomel,

magnesia alba, sal ammoniac, and quinine. The 36-volume text also included things that were not medicinal per se but important to the process of making medicines like shōchū, sugar, wax, and milk.

Purveyors of global goods and ideas

As a companion to *Ensei meibutsu-kō,* Yōan also compiled *Oranda yakkyō* [Mirror of Dutch medicines], which was first published in three volumes in 1820 (Bunsei 3) and would later be expanded into eighteen volumes and republished between 1828 and 1830.[62] Whereas *Ensei meibutsu-kō* was primarily concerned with the practical use and formulation of Dutch medicines, Yōan intended for *Oranda yakkyō* to be a showcase of the linguistic and taxonomical abilities cultivated in his family after two generations of specialized study. While similarly organized according to individual substances, *Oranda yakkyō* sought to locate the sources and applications of these substances within specific cultures and intellectual traditions. For instance, the entire first section of *Oranda yakkyō* was dedicated to cinnamon, which Yōan glossed as *cortex cinnamomi* in Latin and as *kaneel* in Dutch. Yōan wrote that while most cinnamon came from the "South Sea" islands and the Indian region, the quality of this product tended to be poor.[63] The highest quality cinnamon was produced on the island of Ceylon [Sri Lanka], which Yōan described as a large island of renown in the Indian Ocean. He also explained that the Dutch owned seaports in the southwestern part of the island, which referred to Galle and

[62] Udagawa Yōan, *Oranda yakkyō* (Asakusaka [Edo]: Seireikaku, 1828), Waseda University Library, Tokyo.

[63] Udagawa, *Oranda yakkyō*, Vol. 1, 15r, 17v. This indicates that what Yōan described as cinnamon was also inclusive of cassia.

Colombo. Both of these ports had been central to Dutch rule since the formation of Dutch Ceylon in the mid-seventeenth-century, primarily due to their proximity to cinnamon producers.

Given this description and the period in which Yōan was writing, Yōan's evocation of Dutch medicine might seem overtly colonial. In using Dutch texts as their main references, Japanese scholars might have unconsciously been reiterating the rhetoric of mercantilism, progress, and empire, wherein European nations laid claim to the products and labor in the regions over which they governed. Certainly, the early nineteenth-century represented a moment when major imperial projects were beginning across the globe. It makes sense that these efforts would be reflected in Japanese translations and adaptations of European source materials.

That said, there are a number of issues with this conception on both the historical and historiographical levels. While the cinnamon trade had been one of the main reasons the VOC maintained its territorial possessions in Ceylon, by the time the Udagawa brothers compiled and printed this text, Dutch Ceylon no longer existed, having been taken by the British over twenty years before in 1796.[64] This anachronism regarding Ceylon in *Oranda yakkyō* stemmed from Yōan's use of seventeenth century geographic and encyclopedic texts like Johann Hübner and J.F. Martinet. Furthermore, as it pertains to Ceylon and a number of other regions Yōan glosses as producers of "Dutch goods," such as Egypt, Persia, Malabar, Bengal, Coromandel, Siam, and Malacca, it is difficult to assert any claims about Dutch imperial authority in either the political or economic sense. In these regions, as in Japan, the VOC was forced to constantly work with local and

[64] Schrikker, *Dutch and British Colonial Intervention,* 33-5,131-2.

neighboring sovereigns to maintain access to ports and supply chains.[65] Certainly after the collapse of the VOC and the British interregnum in Java, the Dutch government acted with renewed interest in exerting power in the same manner as the ever-expanding British empire. However, these efforts were quickly limited to the Indonesian archipelago as other imperial powers, primarily the British, claimed former VOC port cities and shipping networks through military and diplomatic means.[66] Thus, with the exception of Java, both before and after the turn of the nineteenth century the conceptions of Dutch that appear in Japanese discourse cannot be simply explained by some notion of territorial or imperial influence.

Benjamin Schmidt has convincingly argued that Dutch texts excelled at catering to a diverse audience, alternately flattening out or conflating information in order to make the goods, ideas, and peoples of the world accessible to a wide range of readers.[67] While other European nations sought to aggressively colonize the markets and peoples of the world, "the Netherlands assumed the role of chief purveyor of words, images, and ideas concerning the globe." While Schmidt limits his discussion to European consumers, there is no doubt that this concept can be applied to Japanese readers of Dutch texts as well. Yōan positioned the products seen in *Ensei meibutsu-kō* and *Oranda yakkyō* as Dutch

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[65] See *Asian Port Cities,* and Sanjay Subrahmanyam, *The Political Economy of Commerce: Southern India, 1500-1650* (New York: Cambridge University Press, 1990).

[66] H.R.C Wright, "The Anglo-Dutch Dispute in the East, 1814-1824," *Economic History Society* 3, No. 2 (1950), 233. In particular, the Anglo-Dutch Treaty of 1824, allowed the Dutch full sovereignty over the Indonesian archipelago in exchange for ceding its holdings in the Malay and Indian peninsulas to the British. Philip J. Stern, *The Company-State: Corporate Sovereignty and the Early Modern Foundation of the British Empire in India* (New York: Oxford University Press, 2011).

[67] Benjamin Schmidt, "Inventing Exoticism: The project of Dutch geography and the marketing of the world, circa 1700" in *Merchants & Marvels: commerce, science, and art in early modern Europe,* eds. Pamela H. Smith and Paula Findlen (New York: Routledge, 2002), 347-369.

medicine because they were global materials and processes that were collected and redistributed by the Dutch. Dutch pharmacopeia and encyclopedia cemented the hybrid and intra-Asian nature of Dutch goods, ideas, and peoples as they were understood in early modern Japan. As opposed to solidifying a "European" or "Western" type of medicine, Japanese translations and adaptations of Dutch pharmacopeia only further proved the inherently hybrid and eclectic nature of early modern medicine trafficked across the early modern world by the Dutch.

Yōan's qualification of "Dutch" was thus similar to Nishikawa Joken's description of Dutch products in 1696. Joken laid the foundations to understand that "Dutch goods" represented a vast commercial network. That said, Joken's information, based in his first-hand observations as a merchant in Nagasaki and geographical texts, was concerned only with the material objects of trade. In contrast, Yōan's discussion of medicine necessarily combined both the material and intellectual aspects of this exchange. Nearly two centuries of medical adaptation and engagement with European texts were synthesized with earlier conceptions about products imported by the Dutch. Shaped by particular encounters and circumstances. Dutch medicine in Japan was the product of Japanese officials, physicians, and scholars adopting European practices and texts as they saw fit to suit their own contemporary demands. Because of this, the Dutch medicine practiced and sold across nineteenth century Japan was neither European nor modern, but representative of global processes that were in turn selectively adapted by Japanese medical practitioners.

Chapter 5. Selling medicine in nineteenth century Japan

The fast-speaking medicine seller

In January of 1718, the kabuki actor Ishikawa Danjurō II debuted a new character as part of the special New Years' play *Wakamidori ikioi Soga* [Verdant sprouts and the vivacious Soga]. He acted as the titular Soga Gorō Tokimune, a disgraced noble son seeking to avenge his father's wrongful death at the hands of another Kamakura lord. Tokimune disguises himself as an itinerant merchant selling medicine in order to infiltrate the hunting party of his father's killer. Reaching into the lacquered box he carries on his back, Tokimune pulls out a package of medicine and begins his speedy and amusing spiel about the history and benefits of Uirō, full of strange turns of phrase that pick up momentum and quicken over the course of the monologue.[1]



Figure 49 The Uirō seller's spiel. From the ninth volume of *Hana no Edo kabuki nendaiki*, edited by Utei Enba and Katsukawa Shuntei (Edo [Tokyo]: Chōji-ya Chūshichi, 1841). National Diet Library, Tokyo.

[1] For more on the context and full translation of the play, see James R. Brandon and Samuel L. Leiter, *Kabuki Plays on Stage: Brilliance and Bravado, 1697-1766* (Honolului: University of Hawai'I Press, 2002), 96-110.

The speech begins as follows

> My master, who might be known amongst you all gathered here, is Tora-ya Tōemon of Rankan Bridge - though nowadays he has shaved his head and goes by Enzai.[2] He lives just outside of Aomono-chō, which lies past Isshiki-chō in Sōshu Odawara, all together 20 *ri* from Edo. Now, this medicine that could be yours comes all the way from the Court of Yuan China. Long ago, a Chinese man called Uirō from the region of Chen came to our land. He carried this medicine to our own imperial court, pulling one pill at a time out of an opening in his courtier's hat as he prostrated himself. Because of this, the Emperor gave this medicine the name of Tōchinkō. That is, the written characters for "crown of the head" (*chin*) - "opening" (*tō*) - and "scent" (*kō*), making Tōchinkō.
>
> Nowadays word of this medicine has spread across the land, with fake signboards (*nise kanban*) put out everywhere. Oh, they call it Odawara Tōchinkō, Haidawara Tōchinkō, Sandawara Tōchinkō, Sumidawara Tōchinkō and so on. But the ones that say "Uirō" in *hiragana* - only these refer to the medicine made by my master Enzai.
>
> Perhaps there a some amongst you who have gone to the hot springs of Atami or Hakone, or the Great Shrine of Ise - would it be possible to mistake your experiences there for anything else? You travel there on the right side of the path, and return on the left side. You know that the roofs of the building are split into eight sections, and the gates three. You know that the noble palaces there have terracotta gable in the shape of chrysanthemums. Just like these things, this medicine too has a proper lineage.
>
> Until just now I've been doing nothing but sing this product's praises. Those of you unfamiliar with it might think it's just like swallowing a black pepper corn whole, but take one pill and see how you feel! First you place one piece of this medicine on your tongue. Once it's in your belly, your stomach, heart, lungs and liver become healthy, and an invigorating feeling comes over you. It's like a refreshing breeze in your mouth. Like godly intervention, it's immediately effective whether you're eating fish, fowl, mushrooms, or grains, as well with other myriad sicknesses.[3]

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[2] Meaning that he has taken the tonsure of a Buddhist novice, and selected an appropriately Buddhist name.

[3] Different actors and lineages have changed certain aspects of this speech over the years, including the name of the protagonist. I have translated the version that first appeared in early nineteenth century texts and has been reproduced most often. Utei Enba, *Hana no Edo kabuki nendaiki,* ed. Yoshida Teruji (Tokyo: Kabuki Shuppaku, 1926), 48-53.

After this opening, the Uirō seller commences the *hayakuchi* section, crafted as a linguistic tour-de-force for Danjruō full of nonsense similes, puns, and tongue-twisting phrases. Part sales pitch and part performance, within the play Tokimune's deft words astonishes and amuses the lord and his retainers with "quick speaking" ability (*hayakuchi*). Delighted, they attempt to mimic his phrasings, stuttering and tripping over their consonants. Taking advantage of this distraction, Tokimune throws off his disguise and demands his father's murderer meet justice The speech of the Uirō seller (*Uirō uri*) has become a rite of passage for many aspiring kabuki performers because of its length and difficulty, with most focusing on the second "quick-speaking" half of the piece and omitting the opening lines. However, this opening section presents a fascinating picture of how medicine was sold by itinerant merchants such as this around the turn of the eighteenth century.

The Uirō seller locates his product geographically, historically, and commercially before making any claims about the medicine's efficacy. He introduces listeners to the apothecary who makes Uirō, as well as the original formulator. While providing information orally, he still gestures to the importance of written materials for consumers, telling them how the product's name is written and what signs they should look for standing or hanging outside of shops that sell medicine. The Uirō seller thus provides listeners with a clear guide on how and why to buy the medicine, without falling for any counterfeits with their fake names and lineages. Using bodily, lived experiences as his metaphor, he likens the consumption of Enzai's Uirō to visiting famed places like Hakone or the shrines of Ise. The implication is clear for counterfeit medicines like Haidawara Tōchinkō or Sandawara Tōchinkō - these are nothing more than second-rate

attractions, unable to capture the magic of the real thing. Finally, the seller then clearly describes how the medicine should be consumed and what it does as a digestive aid and breath freshener. After the shockingly fast *hayakuchi* section, the merchant finishes his spiel with "now esteemed listeners, how about coming for some Uirō?"



Figure 50 The *uirō* seller originated by Ichikawa Danjurō II in 1718. Although his clothing and gold-embossed cases were far beyond the means of most itinerant merchants, his overall presentation matches that of contemporary medicinal merchants affiliated with Tashirō and Tōyama groups. Utagawa Toyokuni, *Uirō-uri Tora-ya Tōkichi* [Uirō seller Tora-ya Tōkichi], woodblock print, 1852, National Diet Library, Tokyo.

Undoubtedly Danjurō and the writer of *Wakamidori ikioi Soga* based the structure and topics covered in the speech of the Uirō seller on the merchants they saw in the streets of Edo. As discussed in chapter two, Uirō was one of the earliest commercial medicines that enjoyed widespread popularity in Japan from the fifteenth century onwards. It was primarily used as a breath freshener, with the astringent catechu and the aromatics of clove, licorice, borneol, and sandalwood providing the feeling of "a breeze

in one's mouth." Because these analgesic components, Uirō was also marketed as aiding with tooth pain, headaches, and dizziness.[4] As mentioned in the speech, the medicine's creation was attributed to a Chinese emigre and former official of the Yuan court, although the rest of the story presented a different narrative to the historical record. Chen Yanyou came to Japan in the late fourteenth century, not during the Kamakura era (1185-1333) in which the play is set. Aside from conflating Chen's last name with his region of origin, the play also replaces the shogun with the emperor, and contrives the purported origin of the medicine's name. In reality, Chen Yanyou never went to Kyoto, even when summoned by the shogun Ashikaga Yoshimitsu. Similarly, the name Tōchinkō was based on titles of various *reiyaku* found in sources like the *Taiping huimin hejiiju fang* [Pharmaceutical formulations for the peace and benefit of the people, 1110], not a name granted by the Japanese emperor.[5] That said, this spurious tale of the foreign physician pulling pills from his official's cap served a clear purpose, providing both an image and an easy spelling by which listeners might remember the name of this medicine.

As evidenced by the fictional Uirō seller, it was the job of apothecaries and medicinal merchants in early modern Japan to transmit a variety of information to potential buyers. The pronunciation of a product's name and what the signs for that medicine looked like were pieces of knowledge that were just as important as the purported uses of the medicine and its claims of efficacy over competing products. Apothecaries and medicinal merchants provided various tools a consumer might need in order to navigate the crowded medicinal marketplace physically and intellectually.

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[4] Okazaki, *Kusuri no rekishi*, 124.

[5] Sōda, *Nihon iryō bunkashi*, 103-104.

Marketing Medicine

By the nineteenth century, medicine was one of the largest categories of goods available for public consumption, with apothecaries and medicinal merchants positioned as important parts of most cities and towns. Shops selling *baiyaku* were immediately identifiable in visual records by the use of signboards (*kanban*) advertising the names of specific medicines for sale. Boards ranged in size, with the larger, free-standing signs placed just inside or outside of a door, while smaller signs were hung above the door or on the wall of the shop. Certain generic signs, such as *yakushu* in the shape of a medicine bag, were also common, but as a whole *kanban* with particular commercial medicines the most numerous, all ending in standard suffixes like pill (*en, gan, tan*), powder (*san*), or salve (*kō*). Such signs might also have included the name of the medicine's maker, or the name and address of the shop selling it in smaller lettering, but never in place of the name of the actual medicine itself. The maker and seller remained secondary to their product.

Urban guides and maps further highlighted the sociability of these medicinal sites. In *Ōmi meisho zue* [Illustrated famed sites of Ōmi, 1797 (Kansei 9)], a shop selling a medicine called Shinkyū'gan [Divine teaching pills] is depicted in the post-town of Tori'i. Located between Kyoto and Nagoya on the Nakasendō, one of the five official roadways, Tori'i was described in the guidebook primary in terms of its proximity to the tourist spot of Lake Biwa. However, the featured image for the town was of an apothecary.[6] Only part of the signboard for Shinkyū'gan is visible aside from the name of the medicine. In front of the sign, trays filled with the round medicine are set out to dry

[6] Akisato Ritō and Nishimura Chūwa, *Ōmi meisho zue* (Kyoto: Hishiya Magobē, 1797), 56. Reprints of this text were produced in 1814 (Bunka 11), 1817 (Bunka 14), and 1836 (Tenpō 7), but the contents were unchanged.

on a raised platform open to the street. Beside these, a shopkeeper kneels and holds up a package of medicine, with two more identical packages visible on the floor. The vertical lines drawn onto these packages indicate writing of some sort, which would have included the name of the product, dosage instructions, and the address and name of the shop where it was purchased. Two travelers sit on the raised platform speaking with the shopkeeper, both of whom carry swords, indicating their status as *samurai*. Outside on the street, a man of some means in a litter (*kago*) directs his attendant to the shop, who mirrors his gesture as he looks back for confirmation while heading towards the doorway to purchase medicine as directed for his master. As discussed in chapter two, travelers along the Nakasendō and other major roads needed such products if they fell ill, so the presence of an apothecary near a popular destination like Lake Biwa is unsurprising.



Figure 51 Illustration and detail for the apothecary in post-town of Tori'i. The convenience and sociability of this shop is clearly displayed, as is the ease of purchasing medicine in pre-prepared quantities. From the fourth volume of Akisato Ritō and Nishimura Chūwa, *Ōmi meisho zue* (Edo [Tokyo]: Kobayashi Shinbē) 1797. National Institute of Japanese Literature, Tokyo.

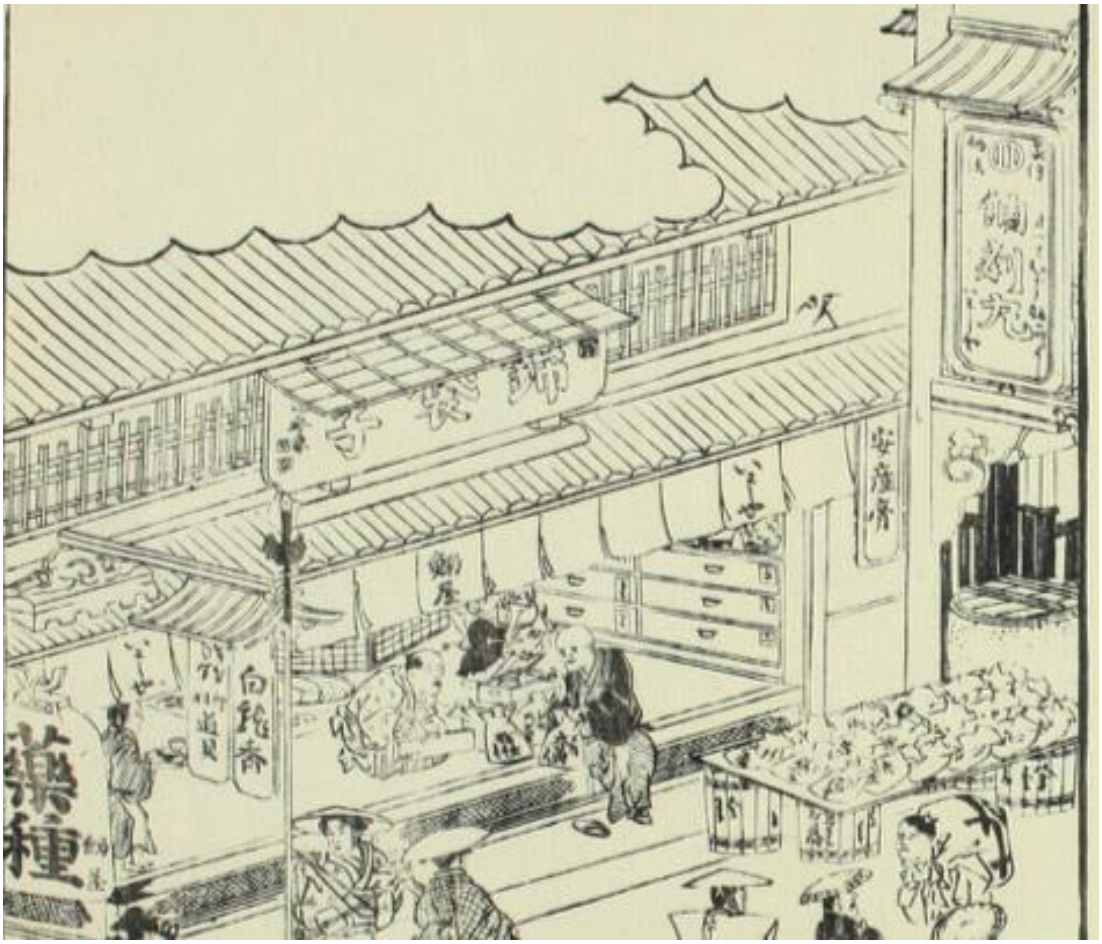
A similar scene was presented in *Edo meisho zue* [Illustrated famed sites of Edo, 1834]. A two-page image titled "Honchō medicine shops" shows the lively street housing the apothecary Iwashi-ya.[7] This name is written in both Chinese characters and simpler *hiragana* on the curtains below the awning, catering to customers with various levels of literacy. Within the shop, a man sits on the raised platform, having brought over a few bags of medicine from the display table nearby with pre-made products. As a young attendant brings over a cup of tea, one of the shopkeepers turns from the tray of pills he was sifting to see to the customer. The third shopkeeper continues to grind medicine in a stone mortar, with the labeled cabinets full of raw substances visible behind him. Signboards of differing size are attached to the shop, all advertising different *baiyaku*.



Figure 52 – A page showing the "Medicine shops of Honchō," with the apothecary Iwashi-ya dominating most of the left-hand page. From the first volume of Saitō Yukio et al, *Edo meisho zue* [Illustrated famed sites of Edo], woodblock printed book, 1834. Waseda University Library, Tokyo.

[7] Saitō Yukio et al, *Edo meisho zue,* Vol. 3 (Edo: Nihonbashi-tōri, 1834), 17.

From the street, the most immediately visible sign is the roofed one mounted perpendicular to the front of the shop promoting Chōri-gan [Bowel ordering pills]. A simple crest is visible above the name of the medicine, surrounded by the words “secret family formulation” (*kaden hihō*). Another large sign above the awning, oriented horizontally, advertises Kintaishi [Brocade bag pills], while hanging by the door is another sign shaped like a medicine bag reads “Medicine, Iwashi-ya.” Smaller vertically oriented signs promote products like Anzen’kō [Safe delivery salve], and the nearby table full of pre-prepared medicines are titled with the names of substances like Chinese rhubarb and deer musk.



Detail of Figure 52

Iwashi-ya and its wares were not only documented in *Edo meisho zue,* but in one of the largest urban guides produced in the early nineteenth century. *Edo kaimono hitori annai* [Self-guided Edo shopping, 1824 (Bunsei 7)] was the second in a series documenting the shops found in the three main cities of Osaka, Edo, and Kyoto. Medicine was the largest section in each of these guides, with *yakushu* and *baiyaku* constituting over one fifth of all entries. Iwashi-ya boasted a single-page advertisement in *Edo kaimono hitori annai*, the focus of which was the commercial medicine Chōri-gan. The presentation of Chōri-gan on the page took the form of a signboard itself, with the same crest and similar layout of information as seen in the image in *Edo meisho zue*. Along with the claim of "secret family formulation" (*kaden hihō*), the pseudo-signboard also included a brief explanation of the Chōri-gan's purpose, namely to treat contagious disease and diarrhea (*ribyō geri*). This manner of presenting products as they appeared in real life on the streets of Japan was common in nineteenth century sources, particularly with medicine. A reader of books like *Edo kaimono hitori annai* was not only provided with the name of the medicine and address of it purveyor, but also a visual guide that allowed them to better navigate the crowded streets of Honchō. Book in hand, a potential customer knew exactly what the sign for Iwashi-ya looked like and could pick it out from the rest of the shops on that street with ease.



Figure 53 Iwashi-ya advertised in Edo, with a comparison of the signboard in Fig. 5. From the second volume of *Edo kaimono hitori annai* (Kyoto: Namariya Yasubē, 1824). Waseda University Library, Tokyo.

Aside from Chōri-gan, Iwashi-ya also sold Hōsō'anzen-yu [Safety from smallpox bath] and Jinba'heian-san [Tranquil unity powder] that aided with sinus congestion. A pill made with bear gallbladder was also present alongside aromatic medicines and incenses from China, and medicinal substances and oils "brought by the Dutch (*oranda mochiwatari*)." The specific qualification of medicinal oil brought by the Dutch gestured back to the early adaptation of *oranda geka*, with these products and practices now popular in the nineteenth century marketplace nearly two centuries after their initial adaptation by Japanese physicians. Furthermore, the pages following the advertisement for Iwashi-ya boasted a pseudo-signboard for "the famed formulation of Joseon (*Choson meihō*) Gyūniku-gan" sold by a shop in Ryōgoku. Within two pages, *Edo kaimono hitori annai* presented medicines and medicinal practices credited to early modern Japan's major foreign trading partners, all of which were available to public consumers. That said, apothecaries and medicinal merchants did not limit themselves only to products qualified as Chinese, Dutch, and Korean, but instead took advantage of the eclectic nature of medicine in nineteenth century Japan to sell a novel array of products.

A world of medicine for sale in Japan

The world of medicine found in nineteenth century urban guides was vast, stretching across temporal and geographical boundaries. Along with *Edo kaimono hitori annai,* similar guides to Osaka and Kyoto constitute the primary sources for this discussion. The earliest text, *Akindo kaimono hitori annai* [Self-guided shopping to the merchant capital] was first published in 1819 (Bunka 2) and provided information about shops and wares available in the commercial center of Osaka.[8] The same editors and publishers worked on the 1824 guide to Edo, while a competing group of authors compiled *Kyoto kaimono annai* [Self-guided Kyoto shopping] in 1833 (Tenpō 4).[9] Unfortunately, there is no concrete evidence as to how exactly retailers came to be featured in these texts. By far the most likely method involved merchants paying for their shops and goods to be advertised.[10] This assumption is supported by the fact that the size of advertisements seen in these guides vary widely, from expansive multi-page promotions to advertisements so small only one or two lines of text could fit within the borders.

As in the earlier urban guides discussed in chapter two, medicinal purveyors were generally split into the categories of *yakushu*, primarily selling "raw" medicinal goods that were not compounded or prepared for consumption, and *baiyaku* or *seiyaku*, both

[8] The text was republished throughout the early to mid-nineteenth century. I primarily use a copy dating to 1820 (Bunka 3).

[9] Kiyomizu Kyūbundō, *Kyoto kaimono hitori annai* (Tokyo: Kinsei fuzoku kenkyukai, 1962). Berry mentions this book in *Japan in Print,* dating it to 1831, while the facsimile copy I used dates to 1833 (Tenpō 4). Mary Elizabeth Berry, *Japan in Print: Information and Nation in the Early Modern Period* (Berkeley: University of California Press, 2007), 167.

[10] Advertisements in other printed books at this time largely promoted similar works by the same publisher, and are thus generally thought to not have been transactional in the same way as one finds in these guidebooks.

indicating compounded products. While the contents of each individual entry in these guides differed, the name or category of medicine as well as the name and address of its seller were always featured. Basic descriptions of what the medicine treated, where it came from, and other claims of legitimacy were also common. The prices of medicines were sometimes included, ranging from a few *mon* to far more costly products that constituted the value of a month's income for a basic laborer. Entries also commonly included *hiragana* glosses for more complicated Chinese characters or for the names of the medicine, similar to the manner in which the Uirō seller provided both the pronunciation and writing of Tōchinkō. Above all, products had to be legible to consumers.

Mary Elizabeth Berry has discussed shopping guides within the context of the "self-guided tour" that allowed early modern Japanese readers to exert a kind of freedom during their travels to different cities.[11] In the case of most of the products found within the pages of *kaimono hitori annai*, this was not only spatial freedom but also freedom of choice. Consumers had many options for particular needs, from established medicinal specializations like eye medicine or pre-birth-post-birth medicines, as well as an array of newer formulations that purported to treat syphilis, diarrhea, and skin blemishes.[12] The purveyors in these guides had one page or less to convince customers to buy their products. In order to do this, apothecaries and medicinal merchants leveraged an eclectic variety of intellectual and cultural lineages in order to distinguish their product and appeal to consumers' interests. The sheer diversity and number of medicines found in

[11] Berry, *Japan in Print,* 173.

[12] *Akindo kaimono hitori annai,* 105r, 127r. *Edo kaimono Hitori annai,* 274v-275r.

these sources make it difficult to summarize them satisfactorily, so aside the most general trends visible from Dutch medicines were as follows.

By far, the most common qualifiers for commercial medicine emphasized familial lineages, like that seen in the marketing of Chōri-gan. Such formulations were nearly all positioned as tacit knowledge available only to certain members of a family, with phrasing like "an extraordinary medicine of Japan taught to only one heir" (*nihon isshi sōden*) or “a secret family recipe" (*honke hihō*) attached to specific products.[13] The use of such legitimating claims was possible because of the events of the late medieval era onwards, when skilled medical practitioners like Aki Morisada and Chūjō Tatewaki had earned their reputation from individual accomplishments rather than their association with an established medical center like a Buddhist temple. These developments were strengthened by the growth of the commercial medical sphere and its self-administration over the course of the seventeenth century.[14] The early modern Japanese consumer thus supposedly trusted that these family lineages were indications of a certain quality and were willing to buy into those linages conceptually and monetarily. Evocations of novelty or rarity were also frequent, sometimes in the form of spiritual healing, with medicines described as a miracle formulation (*reihō*) or taught by the sages (*senden*). Unsurprisingly, these kinds of descriptions were most common in the guidebook for Kyoto, with merchants actively leveraging the city’s association with various spiritual traditions. In addition other products were credited to individual monks, with a few temples listed as selling medicine alongside affiliated apothecaries. Continuing the trend

[13] *Edo kaimono hitori annai,* 274r. *Kyoto kaimono hitori annai,* 131r.

[14] Yoshioka, *Kinsei Nihon yakugyōshi,* 118-9.

seen in seventeenth century documentary sources, physicians were entirely absent unless cited as an original compounder or source for a particular medicine.

Beyond these descriptions, medicine was most frequently affiliated with a recognized cultural source of medicinal knowledge. Terms like Japan-China (*wakan*) and China-Japan (*tōwa*) were commonly used to broadly indicate both indigenous and foreign medicinal substances and practices. As with other generic qualifiers discussed thus far, these terms were porous and superseded modern national conceptions. For instance, "China-Japan medicines" (*tōwa yakushu*) functioned as the set designation for the shops affiliated with the Honchō medicinal guild that collaboratively bought imported goods from Nagasaki and transported them from the central marketplace of Osaka.[15] Some apothecaries also wrote *wakan kōmō* to clarify the inclusion of Dutch goods in this generic description. Others, like Masu-ya Hachibeē in the Kyoto guidebook, chose to class themselves as "wholesalers of Chinese and Dutch medicinal goods" (*tō'oranda yakushu tonya*) in order to emphasize that they specialized entirely in imported goods.[16]

As indicated by these monikers, China was referred to in a variety of ways in these shopping guides. *Tō* [Tang] and *kan* [Han] were largely applied to imported commodities, while evocations of *min* [Ming] and *shin* [Qing] indicated individual medicinal formulations. For instance, the commercial medicine Toku'ō-gan was "transmitted from the Great Ming" (*daimin denrai*) but made in Kyoto by the apothecary Nakamura Gihachirō.[17] It should be noted, however, that the term that is associated with

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[15] *Edo kaimono hitori annai,* 185-193.

[16] *Akindo kaimono hitori annai,* 40r. *Kyoto kaimono hitori annai,* 106r.

[17] *Kyoto kaimono hitori annai, 132r.* For more on medicine qualified as Chinese and apothecaries, see Habu Kazuko, *Edo Jidai Kanpōyaku No Rekishi* (Osaka: Seibundō, 2010).

"Chinese medicine" in modern Japan, *kanpō*, was not present in any of these guides, and did not enjoy widespread use until the late nineteenth century. As opposed to the various eras of Chinese history seen through the guides, Korea was only discussed in terms of the kingdom of Joseon. Aside from formulations qualified as "secret formulation of Joseon" (*Chōson hihō*) or "transmitted from Joseon" (*Chōson denrai*), Joseon ginseng (*Chōson ninjin*) was the single most popular product of that culture.

Japanese formulations (*wahō*) and Japanese medicine (*wayaku*) were also available for purchase. As explained by Daniel Trambaiolo, the construction of "Japanese medicine" began in the late eighteenth century, branching off from *kokugaku* studies. Positioned as the "rediscovery" of ancient knowledge using Nara and Heian texts, Japanese medicine, like *kokugaku*, was intrinsically concerned with early modern issues of cultural uniqueness and proto-nationalism.[18] Other qualifiers found in documentary sources such as "ancient formulations" (*kohō*) and medicine "from the gods" (*shintsū, shinden*) also gestured back to this intellectual movement.

Types of Dutch medicine for sale

There are three general categories of Dutch medicine visible in nineteenth century urban guides. The first consisted of substances specifically brought by Dutch merchants to Japan. The Edo-based merchant Tonomura Hikohachi described himself a wholesaler of foreign and native medicines, incenses, and sugars.[19] Furthermore, in the two-page advertisement for his shop in Ōhakubachō near Nihonbashi, he listed some of the

[18] Trambaiolo, "Native and Foreign in Tokugawa Medicine," 313-314.

[19] *Edo kaimono hitori annai,* 217v-218r.

imported and domestic products available for sale such as Korean ginseng, agarwood, and bear gallbladder. Most notable however was the inclusion of narwhal horn (*unikōru*), saffron (*safuran*), and theriac (*teriyāka*) in his catalog of products. Readers of the Edo guidebook would likely infer some intended meaning from the use of katakana for the names of these products. There might even have been those with some awareness of Otsuki Gentaku's *Rokumotsu shinshi*, which featured narwhal horn and saffron as two of the six medicinal products that Gentaku analyzed at length and associated with Dutch medicinal practices.[20]



Figure 54 - Advertisement for Tonomura's shop in Ōhakubachō with the imported goods highlighted, from *Edo kaimono hitori annai* (Kyoto: Namariya Yasubē, 1824). Waseda University Library, Tokyo.

Saffron was also sold by the competing Edo merchant Ōmi-ya Kashichi in Honchō, alongside other imported items like ginseng and bear gallbladder. In Osaka, saffron pills were sold by Kokura-ya Heizaemon, which he glossed as "just like ginseng." Thus earlier hopes expressed by Nishikawa Joken in the late seventeenth century came to some fruition, with saffron being used by apothecaries as a substitute for ginseng. However, the product was still novel enough for Japanese consumers that it required

[20] Ōtsuki Gentaku, *Rokumotsu Shinshi* (Tōriaburachō [Edo]: Tsutaya Jūzaburō, 1795), Waseda University Library.

some clarification such as "just like ginsing" in guides like these.[21] Agarwood, bornoel, and putchuk also appeared as discrete substances and as part of various commercial medicine, such as Kikō-gan (Putchuk pills) sold by Miyake Haruji in Osaka.[22] A particularly intriguing product was Genmyō-yu [Gen's special oil], also sold in Osaka by Karasugane-ya Sakubē in the third ward of Doshōmachi. Described as "a secret method of *hōgen* Masuda Genryū," Sakubē claimed the medicine's source to be a medical practitioner so accomplished that he earned the title of *hōgen* in service to some official. Unfortunately, aside from Sakubē's advertisement, no other record of this individual is extant. Moreover, Genmyō-yu was described as being compounded with "Dutch balsam copaiba" (*kōmō barusamu coppaiba*).[23] Like the Ryūnō-gan [Borneol pills] popularized by the Wake-turned-Hirai family in Edo earlier in the seventeenth century, Genmyō-yū combined particular Japanese conceptions of medical expertise with a shared knowledge of imported substances.

Genmyō-yu also connected to the second category of Dutch medicines in these shopping guides, namely medicinal oils gesturing to the initial adaptation of *oranda geka* from the mid-seventeenth century onwards. The inclusion of the resin balsam copaiba in a medicinal oil like Genmyō-yu would have necessitated distillation of some kind. The "various peppermint oils and Dutch oils" (*hakka-yū kōmō-yū rui*) promoted by Yamato-ya Yashichirō in Doshōmachi would similarly have involved distillation. Other oils qualified as Dutch did not indicate particular substances but rather Dutch methods, using

[21] *Akindo kaimono hitori annai,* unpaginated insert.

[22] *Akindo kaimono hitori annai,* 133r.

[23] *Akindo kaimono hitori annai,* 140r.

terms like “Dutch formulation” (*ranpō*) or “Dutch teaching” (*randen*). Muro-ya Momosuke, whose shop was located in the Sakaisuji district of Osaka, advertised *ranpō* Seibi-kō [True beauty oil]. Below the name of this medicine was written a brief summary of the product: "for cuts and painful areas, said to be entirely peculiar." Similarly, Ichi-ya Shinsaburō advertised his Yodoyabashi shop as selling a "*ranpō* medicine for bruises" (*uchimi-yaku*), claiming that is treated erysipelas and other skin infections effectively. Nearby, Kimura Kotoku sold “oil medicine Dutch teaching Shiratsuryu-kō” [White dew scent].[24] In Kyoto, Seiryū-kō [Lively dragon oil] was described by Echigo-ya Kinjurō as a “Dutch oil medicinal salve” (*oranda-yu kōyaku*).[25] Although none of these shops mentioned “Caspar-method” or “Dutch external treatments,” these particular medicines reflected the earliest forms of Dutch medicine that were developed by Japanese practitioners over a century earlier.

Finally, other *ranpō* products found for sale in Edo, Osaka, and Kyoto indicated that the efforts of Ōtsuki Gentaku and Udagawa Genshin to develop “Dutch internal medicine” as discussed in chapter four were also fruitful. Many of the apothecaries and merchants already mentioned also described themselves as selling a variety of “*ranpō* medicinal goods.” Along with peppermint oils, Yamato-ya Yashichirō in Osaka marketed Seiryō-in [Energy chilling tonic], which based on its name certainly included peppermint as the primary cooling ingredient. Yashichirō described Seiryō-in, sold in a tin incense container and intended to be mixed into liquid to drink, as a “secret Dutch teaching” (*kōmō hiden*). Similarly, Shinano-ya Iemon in Kyoto promoted a *ranpō* medicine called

[24] *Akindo kaimono hitori annai,* 113v, 138r, 138v, 140r.

[25] *Kyoto kaimono hitori annai*, 96r.

Seiō-tan [Energy affirming pills], but provided no details about what this *seiyaku* treated.[26] Beyond the examples mentioned above, other apothecaries and medicinal merchants marketing their products as Dutch provided little to no information beyond their claims of *ranpō* or *kōmō-den*. For some customers, these terms alone were convincing enough for them to buy into the medicine intellectually and materially. Luckily, two particularly *ranpō* medicines provide ample evidence to permit the reconstruction of the intersecting commercial and intellectual trends that sustained their production and consumption in nineteenth century Japan.

Reconstructing Dutch medicine: Theriac

Alongside Tonomura Hikohachi, there was another supplier in the 1824 shopping guide to Edo who promoted theriac. Matsumoto-ya Hikoshirō, a wholesaler of medicinal goods and sugars, sold "*ranpō* theriac" along with other *baiyaku* like Kion-gan [Aster pills] and Go'ōshinsei-gan [Ox bezoar life purifying pills]. Unlike Hikohachi, who listed theriac as one of a number of imported medicinal substances along ginseng and saffron, Hikoshirō instead positioned his theriac with other commercial medicines produced in Japan.[27] Theriac was thus simultaneously an imported medicinal good as well as a *baiyaku* made by Japanese medical practitioners.

Also known as treacle, theriac was a popular panacea in Europe and the Middle East that most pharmacists dated to the second century physician Galen. The renowned antidote for various poisons was not new to early modern East Asia. Su Jing had featured

[26] *Akindo kaimono hitori annai,* 113v. *Kyoto Kaimono Hitori Annai,* 115r.

[27] *Edo kaimono hitori annai,* 220v-221r.

theriac as *diyejia* in the seventh century *Xingxiu bencao* discussed in chapter one.[28] That said, larger quantities of the panacea were not regularly brought to East Asia until the sixteenth century, when it become a popular commodity traded across the Mediterranean and Indian Oceans by Muslim, Chinese, and European merchants.[29] As discussed in chapters two and four, theriac was similarly popular in Japan and imported as part of official and private trade. Rather than traveling all the way from Europe, most of the theriac brought to Japan was in fact produced in Batavia (Jakarta). The VOC had established a dispensary or "medicine shop" (*medicinale winkel*) there in the mid-seventeenth century to store, compound, and supply medicinal goods and materials for the use of Company surgeons on ships and in places like Dejima. Apothecaries thus compounded theriac in Batavia along with other medicines, which were then shipped to various Dutch outposts in East and Southeast Asia.

After the political and economic upheavals at the turn of the nineteenth century, the Dutch East Indian government ultimately took control of this dispensary alongside other former VOC facilities on Batavia.[30] Throughout the nineteenth century, cargo inventories for ships arriving in Japan listed medicines, roots, and resins originating from the dispensary in Batavia (*uit de medicinale winkel*).

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[28] Wittop Koning and Dirk Arnold, *Facsimile of the First Amsterdam Pharmacopoeia, 1636* (Nieuwkoop: B. de Graaf, 1961), 73. Carla Nappi, "Bolatu's Pharmacy: Theriac in Early Modern China," *Early Science and Medicine* 14, No. 6 (2009): 741.

[29] James Shaw and Evelyn Welch, *Making and Marketing Medicine in Renaissance Florence* (New York: Rodopi, 2011) 299-301. Nappi, 750-1.

[30] Iris Diane Rosemary Bruijn, *Ship's Surgeons of the Dutch East India Company: Commerce and the Progress of Medicine in the Eighteenth Century* (Leiden: Leiden University Press, 2009), 98-105, 307.

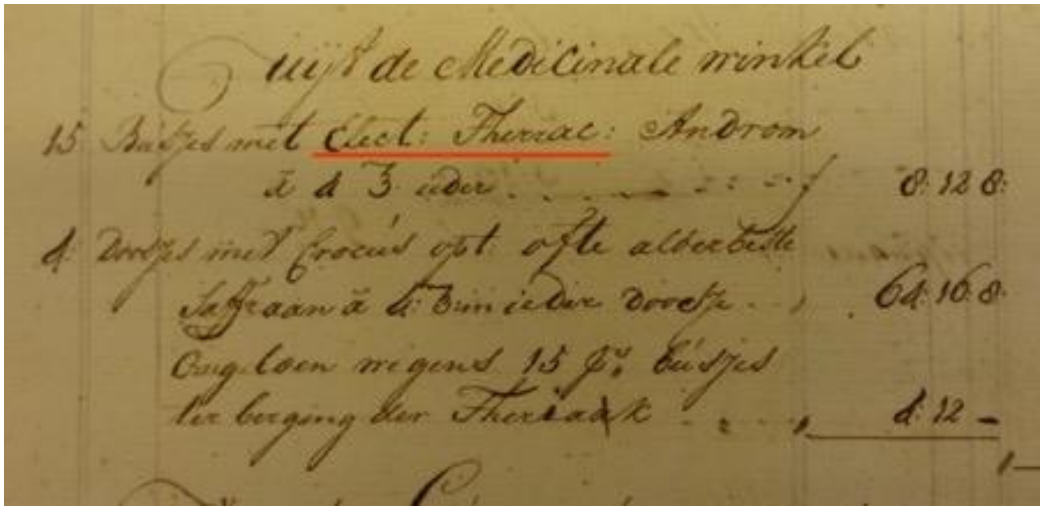

Figure 55 Bottles of theriac from the Batavian dispensary (*medicinale winkel*), packaged alongside saffron in an 1802 inventory of goods shipped to Dejima. Diverse Handel, 1804, 1.04.21 NFJ 968, Nederlandse Factorij Japan, Nationaal Archief, Den Haag.

From the mid-seventeenth to mid-eighteenth century, medicines were prepared or compounded for the VOC on Batavia according to the Amsterdam Pharmacopoeia.[31] First published in 1636, the pharmacopoeia was meant to create a standard for the preparations of medicines for Dutch medical professionals.[32] In 1746, a pharmacopoeia for Batavia was compiled. Like the Amsterdam Pharmacopoeia, the *Bataviasche apotheek* divided its medicinal ingredients into roots, barks, woods, herbs, flowers, seeds, fruits, grains, juices, resins and gums, animal products, minerals, marine goods, and fauna.[33] Theriac appeared in both of these texts. The Amsterdam pharmacopoeia provided formulations for Galenic theriac and Venetian theriac, both of which featured the use of cinnamon, myrrh, and

[31] Yamawaki, *Kinsei Nihon No Iyaku Bunka,* 197. Bruijn, *Ship's Surgeons,* 105. This text is also commonly referred to by its Latin name, Pharmacopoeia Amstelredamensis.

[32] *Facsimile of the First Amsterdam Pharmacopoeia,* 13-4.

[33] Kriel, Muller, and Smellentin, *Bataviasche apotheek (*Batavia: C.J. Weichberger, 1746). De Digitale Bibliotheek voor de Nederlandse Letteren, Den Haag.

saffron.[34] The *Bataviasche apotheek* also presented a number of methods for producing theriac, although the one most commonly seen in the list of goods imported to Japan from Batavia is electuary theriac (*Theriaca diasseron)*.

Like many aspects of Dutch medicine, simplified formulations for theriac were included in the mid-seventeenth century adaptation of *oranda geka*. As a whole, however, the medicinal oils and distillation processed associated with Caspar Schamberger received far more attention by Japanese physicians than convoluted panacea like theriac and mithridatum.[35] As such, attempts to translate and disseminate formulations for theriac did not being to appear commonly until the turn of the nineteenth century. One of the most easy-to-follow formulations for the panacea that Matsumoto-ya Hikoshirō might have used was found in the works of Hirokawa Kai. The physician and scholar is most famous for writing *Nagasaki bunkenroku* [Record of things seen and heard in Nagasaki, 1800 (Kansei 12)], which proved popular amongst the growing number of readers interested in the foreign products and peoples of Nagasaki. Kai, a physician by trade, unsurprisingly lingered on novel imported medicinal substances in *Nagasaki bunkenroku*, providing detailed illustrations of mermaids, distillation pipettes, and other things associated with Dutch medicine. He then expanded upon this knowledge by producing two works on medicine entitled *Ranryōhō* [Dutch methods of treatment, 1804 (Kyōwa 4)] and *Ranryō yakkai* [Explanation of Dutch medicines, 1806 (Bunka 3)].[36]

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[34] *Facsimile of the First Amsterdam Pharmacopoeia,* 73-6.

[35] Michel, "Kasuparu Schamberugeru II," 21-30.

[36] Hirokawa Kai, *Ranryōhō* (City Unknown: Pub. Unknown, 1804) and Hirokawa Kai, *Ranryō yakkai (*Teramachidōri [Kyoto]: Hayashi Gonbē, 1806). Waseda University Library, Tokyo.

Ranryōhō presented an array of medicinal formulations, including their names in Dutch with a katakana gloss, as well as a translation of the medicine based on its therapeutic aspects and an approximation of Dutch name using Chinese characters. Kai thus ensured that readers were capable of understanding his discussion regardless of their own individual levels of medical or philological literacy. Similar to the processes discussed in chapter four, the primary methods of formulating Dutch medicine in *Ranryōhō* were decoction, distillation, and fermentation, all of which had been used in the production of medicines in East Asia for over a millennia. The visual and textual descriptions of tools used in "Dutch methods of treatment" seen at the end of *Ranryōhō* are flasks, funnels, and retorts. The only aspect of these practices that could be considered new was the increasing use of glass implements as the Dutch increased their supply of such products to Japan after the turn of the nineteenth century.[37]

Theriac appears in Hirokawa's text as *teriyakka* (的里亞迦). Kai noted that aside from acting as an antidote to poisons, theriac also helped with congestion, diarrhea, and a number of other complaints.[38] The recipe for theriac in *Ranryōhō* began with the preparation of a pit viper for compounding by removing its innards and stuffing it with saffron, before soaking it in the distilled alcohol *shochū* for three days. Kai instructed that one should add myrrh, catechu, coltsfoot, sweet pepper, long pepper, myrtle, putchuk, cinnamon, musk, and borneol. More *shochū* was added and the mixture was heated until reduced, after which it was buried in the ground for around one hundred days in an earthenware vessel. While the use of spices like cinnamon, myrrh, and cardamum

[37] For more see, Dorothy Blair, *A History of Glass in Japan* (New York: Kodansha International, 1973).

[38] Hirokawa, *Ranryōhō,* 16r.

were common in recipes for theriac found in contemporary European pharmacopeia, as a whole Kai's formulation does not match those found in the *Bataviasche apotheek* nor the *Amsterdam pharmacopoeia.* These used products like gentian, valerian, gum mastic, and gum arabic.[39] This might seem perplexing unless one reads the opening pages of *Ranryōhō*. After praising the qualities of Dutch medicines, Kai then explained that many of "the medicinal materials are found in their land, and not in ours," and therefore recommended the use of "substitute medicines" (*daiyaku*).[40] This process of substitution resulted in the distilled alcohol *shōchū* being substituted for red wine. Ina addition, gentian and gum arabic were replaced with putchuk and borneol, which boasted similar therapeutic affects. [41] None of these substances were native to Japan, but putchuk and borneol were regularly supplied in sufficient quantities by Chinese and Dutch merchant to Japan. As such, Kai trusted any Japanese practitioner of medicine was capable of obtaining the products without issue. Finally, while it was common to let the theriac mixture ferment for varying amounts of time, Kai's formulation is the only one that suggests burying it. Certainly the instruction to place the mixture in a earthenware pot and bury it underground reflected Japanese practices for the fermentation of other products like miso and pickles.

[39] Shaw and Welch, *Making and Marketing Medicine,* 301. *Facsimile of the First Amsterdam Pharmacopoeia*, 73-5. Kriel et al, *Bataviasche apotheek*, 175-6.

[40] Hirokawa, *Ranryōhō*, 7v.

[41] Yamawaki, *Kinsei Nihon No Iyaku Bunka,* 197-8.



Figure 56 Hirokawa Kai's theriac, from *Ranryōhō* (City Unknown: Pub. Unknown, 1804). Waseda University Library, Tokyo.

Aside from theriac, most of the medicines and formulation in *Ranryōhō* were modified in a similar way to suit the medicinal substances and tools readily available to nineteenth century Japanese physicians and apothecaries. Yet, despite the use of these "substitutes," Kai still presented these formulations as "Dutch methods of treatment." He was not as concerned with transmitting a "pure" version of the medicine as he was with providing one that could be put into use by Japanese physicians and apothecaries. Kai even noted in his entry on theriac that "much of it was formulated by the Dutch in Jagatara [Jakarta]."[42] He saw no issue with the fact that this Dutch medicine was produced in Indonesia. His comments moreover demonstrated Kai's awareness of the contemporary system of trade, since most theriac was indeed compounded at the *medicinale winkel* rather than brought from Europe. In the entry for theriac in *Ranryō yakkai*, published two years after *Ranryōhō*, Hirokawa wrote that "Many formulations

[42] Hirokawa, *Ranryōhō,* 7v.

[for theriac] use foreign materials. Nowadays it is brought on the ships of foreigners as well as manufactured in our country. All of it that is sold is an effective medicine."[43] Although Kai did not credit his easy-to-read primer on Dutch medicine as a possible reason that theriac was now being produced in Japan, without a doubt *Ranryōhō* and other texts like it hastened the acculturation process for Dutch medicine. Information about theriac had circulated amongst the tacit networks of privileged physicians and magistrate officials since the mid-seventeenth century, and required a relatively advanced understanding of Dutch language and medical applications in order to understand the formulation process. With texts like *Ranryōhō*, theriac was suddenly available for any Japanese reader who picked up Kai's book.

Reconstructing Dutch medicine: Uruyusu

While theriac and saffron enjoyed relatively widespread awareness amongst urban consumers, the most popular *baiyaku* qualified as Dutch was the medicine known as Uruyusu. Originally produced in Osaka in the first decades of the nineteenth century, Uruyusu first appeared in the 1824 guidebook for Edo. Like many other products, the *baiyaku* had a full-page spread, including a pseudo-signboard, information about usage and effectiveness, and the names and addresses of retailers. That said there are a few particular aspects of this advertisement. The pseudo-signboard breaks the artificial boundaries of the text, appearing as though mounted to the right-most border of the page. Mimicking the way it would be seen in real life, the sign is drawn slightly elevated as though the reader is looking up at it from the street.

[43] Hirokawa, *Ranryō yakkai,* 29r.

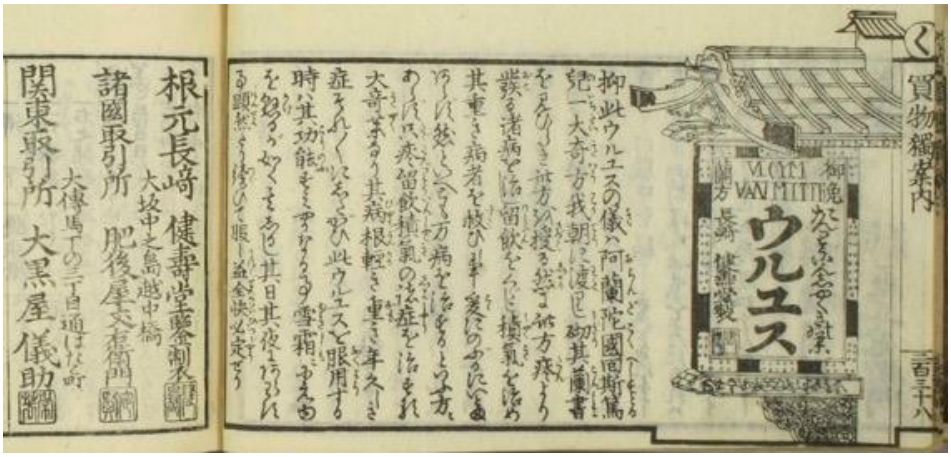

Figure 57 - Uluus advertised in Edo, from the second volume of *Edo kaimono hitori annai*. Waseda University Library, Tokyo.

Because of this, the viewer is capable of reading all of the characters beneath the roofed awning (*hotan*) that shelters the signboard from rain. The central register of the sign is dominated by the large *katakana* lettering reading Uruyusu. The *katakana* phonetic alphabet was not new to nineteenth century Japan, but until that time it had been primarily used for reading specialized texts. By writing the name of this commercial medicine this way, Higo-ya Jōemon and his Edo-based affiliate were leveraging a newer use of *katakana*: the transliteration of foreign words. Another novel aspect of the sign is the use of roman lettering visible above the name of the medicine. The words VLOYM VAN MITTR are centered between the terms "officially licensed" (*go-men*) on the right, and "Dutch medicine" (*ranpō*) on the left. No gloss is provided for the roman lettering, despite the fact that few nineteenth century readers of the Edo shopping guide would have been able to read these foreign-looking words.

Aside from the unique use of *katakana* and roman lettering, the sign for Uruyusu still uses the same format and general structure seen in other documentary sources. The name of the medicine is written the largest, and occupies the central register.

Qualifications about the medicine like *ranpō, hihō,* or *kaden* are placed above this name as descriptors, and the name and address of compounders and retailers are listed at the end. In fact, VLOYM VAN MITTR is placed in the same location one sees a family crest on other signs pictured in the guide, indicating that the odd alphabet was intended as a sort of early trademark symbol rather than strictly logographic lettering. As a whole, the novel aspects of this signboard were still placed within a familiar informational framework. Despite the odd name and lettering a Japanese reader would still have been capable of navigating the text for the most important information, namely what this medicine was called and where to buy it.



Figure 58 A comparison of the 1824 advertisement with extant signboards for Uruyusu with another popular commercial medicine, Ninjinsanzō-en [Ginseng three organ pills]. All of the signs display identical informational structures. Nineteenth century, Naito Kinen Kusuri Hakubutsukan, Gifu.

This emphasis on legibility is apparent in the rest of the sign and advertisement. To the right of the medicine's name, "a medicine for phlegm, constipation, and cramps" is written in *hiragana*, the most common phonetic alphabet. To the left of the name,

"Nagasaki, compounded by Kenju-dō" appears in Chinese characters. The final section of the advertisement explains this statement by detailing that while the medicine "originated in Nagasaki" (*nemoto Nagasaki*) and was made by Kenju-dō, it was also sold in various domains like Osaka and Edo. These retailers were listed as Higo-ya Jōemon near Etchu Bridge in Osaka, and Daikoku-ya Gisuke in Edo. Because the guidebook was intended for those visiting Edo, the advertisement was primarily for Daikoku-ya's shop in Ōhakuba. That said, since the guidebook was compiled in Osaka, Higo-ya Jōemon was surely directly involved in composing this promotional material.

Beyond the image of the signboard and names of Uruyusu's purveyors, the body-text provides more claims to the commercial medicine's unique nature.

> Firstly, as for this Uruyusu, it is a great and exceptional medicine of Heshisutoru of Holland. I learned of this medicine upon opening a certain Dutch book when it came to this country. It heals those who suffer from phlegm, dispels constipation, and resolves cramps. Not only extremely effective at saving those suffering from these severe ailments, it is truly remarkable medicine that can be used for myriad illnesses (*manbyō*), controlling associated symptoms like phlegm, constipation, and cramps. Whether the root of the sickness is light or severe, long or short, it addresses all symptoms. When you consume this Uruyusu, it takes effect quickly, with your symptoms melting away like snow or frost. Take it in the morning and by evening you will feel clear. Continue to take it and as a result you will surely recover fully.[44]

As in the sign, this promotional material combines novelty with established systems of dissemination. Beyond the initial discussion of Dutch books and medicines, the rest of the text consists of detailed about efficacy and therapeutic effects. All of the Chinese characters used in the text are glossed with *hiragana*, including the odd-sounding name of the Dutchman Heshisutoru. The phrasing "a certain Dutch book" (*sono ransho*)

[44] *Edo kaimono hitori annai,* 238v-239r.

gestures to a kind of specialized knowledge, something with which only the compounder Kenju-dō and the reader are familiar. This story of Kenju-dō encountering Uruyusu in a Dutch book also resolved the seeming contradiction of the medicine coming" originally from Nagasaki" although both its compounder and primary retailer were based in Osaka. The reader of this guide would have pieced together these ideas based on their own conceptions of early modern trade. Kenju-dō either went to Nagasaki and found this book, or this book was brought from Nagasaki to Osaka where Kenju-dō encountered it. Both were plausible options, and either way this "Dutch book" would have necessarily passed through Nagasaki.

The reference to "Heshisutoru of Holland" also lent credence to Kenju-dō's claims about sourcing Uruyusu from a Dutch book. Pharmacopeia and texts on Dutch medicine produced around the turn of the nineteenth century commonly cited their information about particular substances in this way. Sugita Genpaku and other *rangaku* specialists mentioned authors Yonsuton [Jonston], Marshichinetto [Martinet], and Dodoneusu [Dodoneus]. Anyone who had paged through such texts would have seen names like Heshisutoru. For customers with more than a passing knowledge of medicinal trends and *rangaku*, this name would have evoked even more concrete connections. A few years before the guidebook for Edo was compiled and this advertisement published, a series of translations were published in Japan about the German physician Lorenz Heister (1683-1758). Sugita Genpaku and Ōtsuki Gentaku worked on various translations of Heister's works from the last decade of the eighteenth century onwards, particularly *Heelkundige ondwerwijzingen* (1741), the Dutch translation of *Institutiones*

chirurgicae.[45] While manuscript copies of their translations circulated for a few decades, Gentaku sought to publish this project after Genpaku's death in 1817. He compiled a preliminary introduction to Heister's work entitled *Hasshi seiyō* [Eight point primer], which was printed in 1822 (Bunsei 5). Three years later, *Yōi shinsho* [New book on wound care, 1825], was also published, which served as a partial translation of *Heelkundige ondwerwijzingen* (1741)*,* the Dutch translation of Heister's *Institutiones chirurgicae*.[46]

These efforts popularized Heister's name, now linked to the inimitable network of *rangaku* scholars centered upon Sugita Genpaku and Ōtsuki Gentaku. A reader of the Edo shopping guide who was interested in Dutch medicine thus might have connected the "Heshisutoru of Holland" in the advertisement for Uruyusu with Heister, assuming that "a certain Dutch book" indicated one of Heister's surgical texts now translated for use in Japan. This was certainly a connection that Higo-ya Jōemon actively suggested to potential customers as they evaluated what medicines to buy in the crowded marketplace of Edo. That said, if "Heshisutoru of Holland" was intended to refer to Lorenz Heister, the veracity of the claims found in marketing materials for Uruyusu only become more dubious.

Mid-nineteenth century promotional material for Uruyusu dated its creation to 1812 (Bunka 9). If, as claimed in the Edo shopping guide, the compounder Kenju-dō adapted Uruyusu directly from one of Heister's texts, this timeline is feasible. Yet, as

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[45] Achiwa Gorō, "Wagakuni geka ni oyobashita Yōroppa igaku ni eikyō," *Nihon ishigaku zasshi* 12 (2) 1966, 2-66.

[46] Ōtsuki Gentaku and Sasaki Tomoyoshi, *Hasshi seiyō* (Edo: Suhara-ya Mohei, 1822). Kyoto University Library. Otsuki Gentaku and Sugita Genpaku,*Yōi shinso* (Manuscript, 1790), Kyoto University Library.

Nojiri Kayoko explains, Kenju-dō was a nothing more than a pseudonym for the apothecary Higo-ya Jōemon, itself the shop name (*yagō*) for Matsuo Jōemon.[47] Later promotional materials for the *baiyaku* even referred to its originator as Matsuo Kenju-dō. While Higo-ya Jōemon was no doubt a skilled apothecary, chances were extremely slim that he would have been able to read a Dutch text on his own without any advanced training. Chances of Jōemon studying with scholars who had access to either Heister's texts or Genpaku and Gentaku's manuscripts were slim. These *rangaku* groups were well-documented, and while open to commercial actors like Jōemon, no apothecary or merchant appeared in such records. Based on this lack of evidence that Jōemon studied Dutch or worked with *rangaku* practitioners, he undoubtedly used an easy-to-understand text like Hirokawa Kai's *Ranryōhō* as his source for Uruyusu rather than a "Dutch book." Alternately, 1812 might also be a revisionist date, and Uruyusu was not actually created until after the initial publication of *Hasshi seiyō* and other texts featuring Heister's name in the 1820s.

These conclusions are supported by chemical analysis of Uruyusu. Both the Naito Museum of Pharmaceutical Science and Industry and the Japanese Society for the History of Medicine possess preserved examples of the product dating to the late nineteenth century.[48] Uruyusu was sold a rectangular bar that could be segmented into fifteen pieces. Three layers of packaging were wrapped around this bar of medicine. The outer wrapper was essentially a flyer that included promotional information about Uruyusu similar to

[47] Nojiri Kayoko, "Katakana De Nazukerareta Saisho No Baiyaku 'Uruyusu' Ni Tsuite," *Nihon ishigaku zasshi* 61, no. 1 (2015): 90.

[48] Yoneda Kaisuke, Maehira Yuki, A.H.M. Mawjood, Iwai Kojiro, and Nojiri Kayoko, "Dentō Baiyaku 'Uruyusu' Ni Tsuite (1)," *Yakushigaku zasshi* 31, no. 1 (1996): 96. Inagaki Hiromi, "Edo Jidai No Okusuri Jijō," *Hito, Kenkō, Mirai* 2 (2014): 7.

that seen in the guidebooks. On the middle wrapper were written the dosage instructions: three pieces in the morning, three at midday, and three at night.[49] This bar of medicine was thus enough for five treatments. This middle wrapper also included recommended dosages for children, and counseled that people use the medicine within 14 days of purchasing it. Finally, the innermost wrapper explained that this medicine could be consumed by chewing and swallowing it, or by dissolving it in hot water and drinking it.



Figure 59 An extant late nineteenth century sample of Uruyusu, including the various wrappers featuring dosage, expiration, and other relevant information. Naito Kinen Kusuri Hakubutsukan, Gifu.

Chemical analysis of these samples has determined that the primary ingredient of Uruyusu was Chinese rhubarb (*Rheum palamantum*), also referred to as Russian rhubarb.[50] Known as *da huang*, Chinese rhubarb was featured in some of the earliest Chinese *materia medica* texts as a primary component for purgative and diuretic formulations. The plant itself is native to Western China and Central Asia, before being

[49] "Kusuri-Uri No Hikisatsu," *Kusuri hakubutsukan dayori* 34 (1995): 3.

[50] Yoneda et al, "Dentō Baiyaku 'Uruyusu' Ni Tsuite," 96-7, 100.

traded across first the Silk Road and then the Mediterranean throughout the early and medieval eras.[51] In Europe, Chinese rhubarb was adopted for uses similar to those seen in the Chinese texts. Udagawa Yōan's entry on Chinese Rhubarb in *Oranda yakkyō* glossed the substance as *Rhabarbarum* and *Rheum* in Latin, and *rhabarbar* in Dutch.[52] Yōan commented that it was produced in China and the parts of Mongolia affiliated with China, but noted that a certain type of rhubarb with a pitted stem was known by shopkeepers as Russian rhubarb (*oroshia daiō*). As might be expected, the first formulation using rhubarb in Yōan's text was a purgative or "bowel cleansing drink."

Despite its frequent appearance in East Asian and European pharmacopeia, rhubarb was never featured in any of Heister's surgical texts. In fact, the only book by Heister featuring instructions on medicines and medicinal prescriptions was *Medizinische, chirurgische, und anatomische Wahrnehmungen* [Medical, surgical, and anatomical cases and observations, 1753]. However, there is no record of this text being translated into Dutch or shipped to Japan and adapted for use there.[53] In contrast, Hirokawa Kai included rhubarb as a primary ingredient in many purgatives found in *Ranryōhō,* glossing it in both Dutch as *purgeel* and in Japanese as *gezai.*[54] By all accounts, Higo-ya Jōemon's claims of using a "Dutch book" and "Heshisutoru of

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[51] Bian, *Know your remedies,* 109-110. Clifford M Foust, *Rhubarb : The Wondrous Drug* (Princeton, N.J.: Princeton University Press, 1992), 4-5. Shaw and Welch, *Making and Marketing Medicine,* 237-240.

[52] Udagawa, *Oranda yakkyō*, Vol. 5, 1r.

[53] Lorenz Heister, *A General System of Surgery in Three Parts* (London: W. Innys et al, 1748). Lorenz Heister, *Medical, Chirurgical, and Anatomical Cases and Observations* (London: J. Reeves, 1755).

[54] Hirokawa, *Ranryōhō,* 3v.

Holland" were little more than marketing tactics. Even as false advertising, however, Uruyusu and its promotional materials provide a fascinating glimpse of the medical marketplace of nineteenth century Japan. Jōemon's conceptual presentation of Uruyusu indicated that Japanese customers were curious yet savvy about the products they purchased. Trends like *rangaku* and *kokugaku*, which historians have treated as purely intellectual pursuits, clearly resonated in the commercial sphere as well, influencing both the demand and supply of certain products. Furthermore, the manipulation of information by Jōemon through specific words, phrases, and lettering revealed a relatively advanced understanding of certain aspects of Dutch medicine and *rangaku* for someone who presumably never formally trained in Nagasaki or at the private academies of Genpaku and Gentaku.

In all likelihood, Higo-ya Jōemon sourced Uruyusu and its related promotional material from Japanese rather than Dutch-language texts. This conclusion is supported by the roman lettering seen on signs and in books. MITTR grasped at the Dutch term for medicine or drug, *middel*. The term was used throughout primers on Dutch language and medicine, often transcribed as *mitteru*. As was common in early modern script, Japanese writers, including Hirokawa Kai, often elided the *dakuten* in their works, which indicated whether certain consonant sounds should be read and voiced or unvoiced. Thus the voiced D-sound in middel shifted to unvoiced T-sound to make *mitteru.* Kai partially resolved this issue of language by including roman lettering for all of the words discussed in *Ranryōhō* and *Ranryō yakkai*, demonstrating how the original term appeared. But Higo-ya Jōemon obviously did not reference Kai's work in this regard, as otherwise he would have simply copied the roman letters found in the pages of *Ranryōhō*. Instead,

Jōemon reverse-transliterated this word from *mitteru*, retaining the unvoiced-T as he was unaware of the original pronunciation. His choice to remove some of the vowels also demonstrated only a passing familiarity with foreign words, which tended to have far fewer vowels than their Japanese transliterations. Like "Heshisutoru of Holland," Jōemon was aware of what certain Dutch things looked like in Japan, but his knowledge did not extend beyond this initial outward appearances.

The rest of the roman lettering used in advertisements for Uruyusu displayed a similar level of basic familiarity about Dutch-language and medicine but a lack of detailed knowledge. As Nojiri Kayoko points out, VLOYM was most likely intended to replicate the Dutch word for phlegm, *fluim*.[55] Jōemon's rendering of this word might be result of hearing *fluim* spoken aloud, as the diphthong *ui* would sound similar to an *o* to those not acquainted with Dutch pronunciation. The construction of the term VLOYM VAN MITTR also indicates that Jōemen knew little about the basics of Dutch language. "Medicine for phlegm" appeared in Dutch-language texts as *middel tegen vloym* or *fluim middel*. The insertion VAN indicated a passing understand of a quintessentially Dutch preposition, albeit a grammatically incorrect one.

The name Uruyusu epitomized this specific manipulation of popular conceptions about Dutch medicine. Although it was positioned to both look and sound foreign, the word "Uruyusu" does not resemble any of the medicines found in the pharmacopoeia of Amsterdam or Batavia, nor does it seem to have originated from any of the terms used in *Ranryōhō.* Indeed, the historians at the Japanese Society for the History of Medicine have concluded that "Uruyusu" was derived from a pun based entirely in the Japanese

[55] Nojiri, "Katakana De Nazukerareta," 90.

language.[56] As discussed thus far, the main effect of the medicine was to combat constipation and other stoppages, acting to "empty out" anyone who took it. The comparable phrase for this idea in Japanese was *sukusu* (空す). Higo-ya Jōemon broke down the character 空 into its constituent logographic parts, which resemble the katakana letters for *u* (ウ), *ru* (ル), and *yu* (ユ). Adding the verbal ending *su* to these, Jōemon thus created the word *uruyusu*, which sounded like an unfamiliar foreign word to any early modern customer. A passer-by on the street no doubt saw these various elements as sure proof of Uruyusu's claim to "Dutch-ness." Even students of *rangaku* might have been drawn in by the mention of "Heshisutoru," demonstrating the various levels at which Jōemon's manipulation operated.

As Daniel Trambaiolo points out, in early modern Japan "the styles of written language used to convey medical ideas both carried traces of those ideas' origins and determined the range of readers to whom those ideas would be accessible."[57] With the case of Uruyusu, readers were presented with various linguistic and visual markers of the medicine's purported origin. These words and styles were not simply a transmission of knowledge, however, but a conscious manipulation by Higo-ya Jōemon, who sought to make his product both more accessible and appealing to potential consumers. By all reasoning, Uruyusu was derived entirely from *Ranryōhō* and other similar primers on Dutch medicine produced by Japanese physicians and apothecaries around the turn of the

[56] Inagaki, "Edo Jidai No Okusuri Jijō," 7. See also Yoneda et al, "Dentō Baiyaku 'Uruyusu' Ni Tsuite," 103. Nojiri, "Katakana De Nazukerareta," 90.

[57] 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: Brill, 2014), 147.

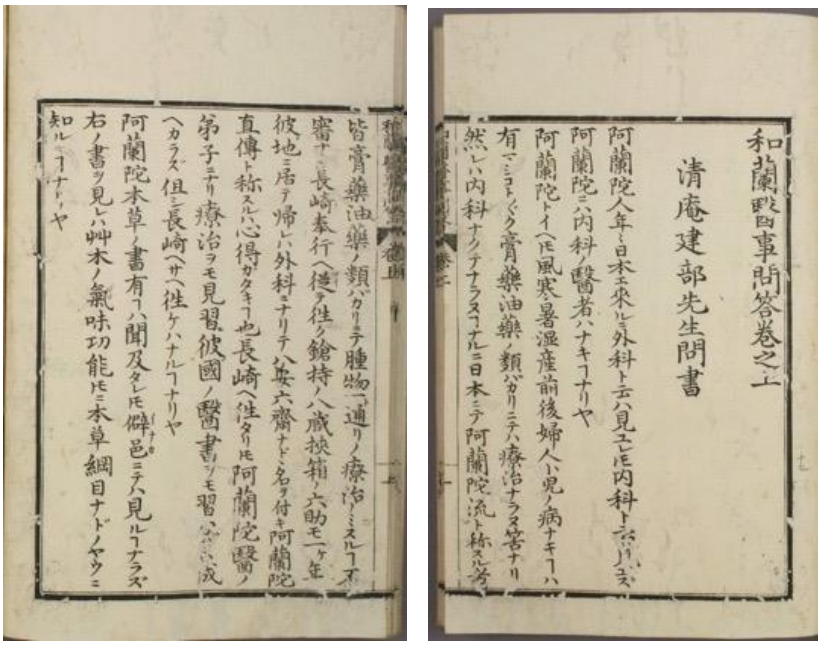
nineteenth century. "Heshisutoru of Holland" and "a certain Dutch book" functioned not as discrete sources of information but as a marketing tools that were just convincing enough to get customers with varying levels of familiarity with *rangaku* to purchase the product. While these potential consumers were probably not aware of recent government initiatives to translate foreign texts, the publication and reprinting of books like *Rokumotsu shinshi* (1795)*, Kōmō zatsuwa* (1795), and *Ranryō yakkai* (1806) had raised public awareness about Dutch medicine.[58]

The actions of commercial actors like Higo-ya Jōemon were foreseen by none other Takebe Seian, whose skepticism about Dutch medicine was discussed in chapter four. As seen in *Oranda iji mondō* (1795), Seian followed his question about external medicine and salves with a distinct criticism of physicians who purported to specialize in Dutch medicine after traveling to Nagasaki.

> It seems like any Spear Carrier Hachizō or Porter Rokusuke who is dispatched to Nagasaki for a year or so returns as a so-called practitioner of external medicine (*geka*).[59] They adopt professional names like Hachi'an or Rokusai, and qualify themselves as having "learned directly from the Dutch" (*oranda chokuden*). I find that difficult to believe. It seems like anyone who goes to Nagasaki becomes a disciple of Dutch medicine (*oranda'i no deshi*). They supposedly learn therapies through observation but are not able to understand the medical texts from Holland. So all you need to do [to practice Dutch medicine] is go to Nagasaki?

[58] Jannetta, *The Vaccinators,* 65-6.

[59] These are not references to any discrete physician, but intended to evoke the plebian, unqualified nature of such individuals.



和蘭對面事問答卷之上

清庵建部先生問書

阿蘭陀人年〻日本エ來リ外科ト云ハ見エ內科ト云ハ

阿蘭陀ニハ內科ノ醫者ハナキコトナリヤ

阿蘭陀トイヘル風寒暑濕産前後婦人ハ兒ノ病ナキコトハ有マジキコトニシテ膏藥油藥類バカリニテハ療治ナラヌ筈ナリ然レハ內科ナクテナラヌコトルニ日本ニテ阿蘭陀流ト稱スル者

皆膏藥油藥類バカリニテ腫物一通リノ療治ノミスルコトヌ

密ニ長崎奉行ヘ侘ヲ往ノ鎗持ノ八藏挾箱ノ六助モ一ケ年

彼地ニ居テ帰レハ外科ニナリテハ安六齋ナドト名ヲ付キ阿蘭陀

直傳ト稱スル心得カタキコトヤ長崎ヘ往タリヤ阿蘭陀醫ノ

弟子ニテリ療治ヲモ見習彼國ノ醫書ヲモ習ハシヤ成

ヘカラズ但シ長崎ヘ往ケハナルコトナリヤ

阿蘭陀本草ノ書有コトハ聞及タレヒ僻邑ニテハ見ルコトナラズ

右ノ書ヲ見レハ艸木ノ氣味功能ヒ本草綱目ナドノヤウニ

知ルコトナリヤ

Figure 60 Seian's first question posed about external medicine and physicians who purport to practice Dutch medicine that was eventually answered by Genpaku. From the first volume of Takabe Seian and Sugita Genpaku, *Oranda iji mondō* (Edo: Shisekisai, 1795). Waseda University Library, Tokyo.

Seian's observations in 1770 reflected the growing popularity of Dutch medicine, and predicted how this interest would be exploited by enterprising physicians and apothecaries in the nineteenth century. Higo-ya Jōemon created the name Kenjū-dō to create a veneer of medical expertise in the same manner as Seian's imagined Hachizo styled himself as Hachi'an. Though Jōemon referenced "a certain Dutch book" it was unlikely that he ever read or encountered any such text. Moreover, Jōemon did not even need to claim that he studied in Nagasaki, but merely referenced the port city, knowing that his clientele would come to their own conclusions based on the associations he so carefully evoked. While this was certainly a manipulation, it nonetheless spoke to presiding popular conceptions about trade and medicine held by the nineteenth century Japanese public.

Copycats and counterfeits

Uruyusu was the first of many *baiyaku* to leverage growing interest in *rangaku* and Dutch medicine. Although *ranpō* and Dutch medicinal oils were already popular enough to support many rival retailers by the 1820s, in many ways, Uruyusu changed the way in which Dutch medicine was marketed. Products that mimicked Uruyusu's linguistic and intellectual claims multiplied to the point that Higo-ya Jōemon and his successors had to include instructions for franchise sellers of Uruyusu in other regions dealing with counterfeits and emulations of their product. *Uruyusu hiromekata kokoroegaki* [Guidelines for promoting Uruyusu, mid-nineteenth century] was provided to approved retailers who sold the product in Edo, Kyoto, Nagoya, Akita, and Sendai.[60] The text described methods for selling Uruyusu, including how flyers and wrappers for the product should be printed, how the product was packaged, and what talking points should be used in selling it to customers. Instructions for ordering more product from the compounder in Osaka and reporting cases of counterfeit Uruyusu to local authorities were also included.

These concerns about counterfeits were not unwarranted. Purgatives and diuretics were commonly listed amongst the medicines advertised in the shopping guides, a number of which also strongly resembled Uruyusu in their qualification as Dutch medicine. The Edo-based Katayama family advertised a product called Medesein, purportedly compounded by Takada Kahē in Hyogo.[61] Although no roman letters or *katakana* were used, the name of this product was a transliteration of the Dutch word

[60] Higo-ya Takēmon, *Uruyusu hiromekata kokoroegaki* (Osaka: Higo-ya Takēmon, date unknown). Waseda University Library, Tokyo.

[61] *Edo kaimono hitori annai,* 267v-268r.

medicijn that was written using Chinese characters. Like the references to Heshisutoru of Holland seen in Uruyusu's promotions, this naming convention was intended to pique the interest of those somewhat familiar with or interested in *rangaku*. The first line of the description following this name claimed that "this Medesein is an exceptional medicine treating phlegm and constipation." Medesein thus echoed two of Uruyusu's primary therapeutic properties, as well as sought to evoke the same connections to Dutch medicine.

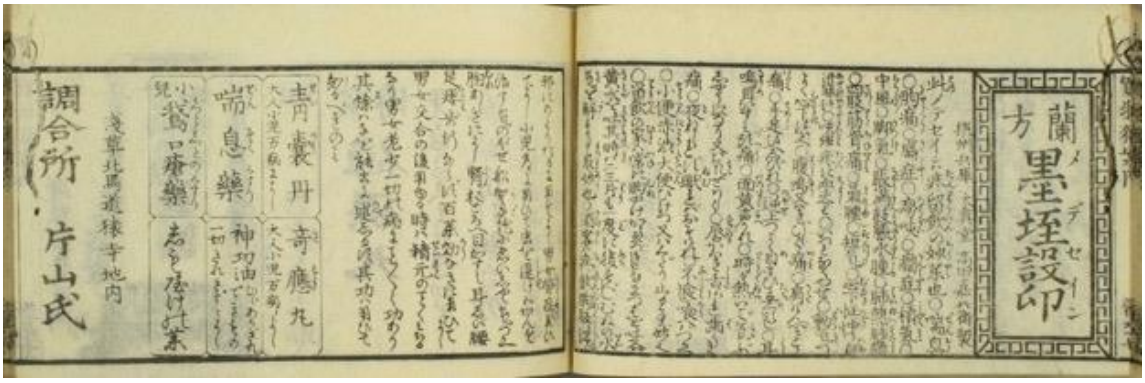


Figure 61 Advertisement for *ranpō* Medesein, from *Edo kaimono hitori annai* (A self-guided tour to Edo shopping, 1824). Waseda University Library, Tokyo

The most egregious imitation of Uruyusu was a product called Horutosu. Signboards for Horutosu copied Uruyusu in all aspects. The name of the product was written in *katakana*, it was said to treat "phlegm, cramps, and constipation," and compounded in "Nagasaki, by Kansho-dō." Roman lettering reading WEREID SPECIFICA was placed above the name of this medicine, with "officially licensed" and *ranpō* written to either side. Whereas VLOYM VAN MITTR sought to evoke the growing field of Dutch medicine, WEREID SPECIFICA, an approximation of *wereld specificatie* or "world specimens," in turn illustrated the global nature of Dutch goods. The maker of Horutosu, the Osaka apothecary Ōhashi Kihē, even adopted the same

method of franchising the sale of his medicine out using manuals like Higo-ya Jōemon. *Horutosu kōhōnohisho* [Secret book on spreading Horutosu, mid-nineteenth century] included detailed information about producing signboards, wrappers, and other marketing materials, although no warnings about the dangers of counterfeit or imitation medicines were present in the text.[62] As evidenced by the list of apothecaries selling Horutosu, the product enjoyed the same widespread popularity as Uruyusu. Beyond Edo and Osaka, there were purveyors in the northeastern cities of Ōshu (Iwate prefecture) and Akita, as well as on Sado, an island off the coast of Niigata. Central and southern Japan were served by shops in Geishu (Hiroshima prefecture), Higo (Kumamoto prefecture), and Tosa (Shikoku). In most of these cities, purveyors of Horutosu were competing directly with those selling Uruyusu. As discussed in the conclusion, only one of these products would continue to be sold until the turn of the twentieth century. These developments were not the result of political shifts, but particular cultural circumstances.

[62] Ōhashi Kihē, *Horutosu kōhōnohisho* (Osaka, Ōhashi Kihē, date unknown). Waseda University Library, Tokyo.



Figure 62 – Comparison of signboards for Uruyusu and the rival Horutosu, both using "Dutch letters." Early to mid-nineteenth century, pigment on wood, Naito Kinen Kusuri Hakubutsukan, Gifu.

The proliferation of signs and other materials using roman letters was not only noticed by merchants, but also by the Tokugawa *bakufu*. In the summer of 1840 (Tenpō), *bakufu* officials posted notices around the government-run cities of Edo, Osaka, Kyoto, Sunpu, and Sakai. This new proclamation (*machibure*) read "recently, signboards for commercial medicine (*baiyaku*) using Dutch letters (*ranji*) have been seen. From this time forward Dutch letters should not be used."[63] Although no specific reasons for the

[63] Ikeda, *Nihon yakugyōshi,* 173.

banning of "Dutch letters" were provided, certainly products like Uruyusu and Horutosu precipitated this prohibition of certain scripts. Like the laws governing the sale of medicine, the regulation of signboards and marketing materials was relatively lax. Until 1840, the regulation of signage had been limited to the banning of gold and silver leaf, which was part of a broader effort to enforce sumptuary laws in 1682 (Tenna 2).[64] This sudden rejection of "Dutch letters" on signboards reflected more recent anxieties troubling officials, namely how to deal with the incursion of European and American ships and peoples in Japan in the first decades of the nineteenth century. This "out of sight, out of mind" tactic seen in the banning of "Dutch letters" certainly encapsulated the attitudes of more conservative factions within the *bakufu.*

Based on the sheer number of apothecaries operating in cities and towns as well as the tolerant manner of regulation, the banning of "Dutch letters" in 1840 was difficult to enforce. In 1853 (Ka'ei 6), a curt reminder of the law was posted again in the cities of Edo, Osaka, Kyoto, Sunpu, and Sakai. After restating the earlier edict, the notice continued with "inconceivably, nowadays signboards and other materials are posted around cities that use horizontal letters (*yokomoji*). Since this is unlawful, these should be promptly removed throughout all cities.[65]" Like the earlier pronouncement, this one also failed to bring about the desired result, albeit for entirely different reasons. The same year this reminder was posted, Commodore Matthew C. Perry arrived in Uraga bay with a fleet of heavily-armed ships to demand that the shogun enter into a formal diplomatic and commercial relationship with the United States. Japanese officials signed the first of

[64] Aoki, *Kusuri kanban*, 6.

[65] Yoshioka, *Kinsei Nihon yakugyōshi*, 183.

many unequal trading treaties with Perry in 1854 (Ka'ei 7), and opened various ports to meet the new stipulations laid out by their new American trading partners. After their long confinement on Dejima, the Dutch Trading Society moved into Nagasaki proper and other treaty ports like Kobe and Yokohama. Treaties with the United Kingdom, the Russian Empire, and France soon followed, ushering in a flood of imported goods.

Sellers of patent medicines from Europe and America were surprised to find an already robust market in Japan. The widespread commercialization and integration of diverse medicines from various intellectual and cultural traditions had already occurred at the turn of the nineteenth century. This system was more than capable of supporting new entries into the commercial landscape, which were presented using the same visual language and informational organization already familiar to Japanese consumers. The number of signs and packages featuring *katakana* and roman lettering only multiplied in number, with the edict of 1840 forgotten entirely. As new products entered Japan, novel names and references to foreign physicians, both real and imagined, continued to be leveraged by apothecaries trying to distinguish their product in an ever more crowded marketplace. Customers evaluated potential purchases by using the variety of textual and visual information provided to them in signs, flyers, and wrappers. Sellers of older medicines like Hōtan began to integrate roman lettering into their signage to offset any anxieties about the product being outdated. Medicines with portraits of foreign physicians like Bazanshi-gan [Dr. Bazan's pill] and transliterated foreign words like Kindoru-san [*Kinder* powder] appeared. Both of these, like Uruyusu before them, were in fact the product of Japanese apothecaries rather than foreign physicians. [66]

[66] *Kusuri no kōkoku bunka: kanban, nishikie, posutā no sekai* (Gifu: Naito kinen hakubutsukan, 2003), 37. See also James Harvey Young, *The Toadstool Millionaires: a Social History of Patent*



Figure 63 Late nineteenth century signboards that demonstrate the growing popularity of roman letters, and the continuation of older methods to pique the interest of customers. Naito Kinen Kusuri Hakubutsukan, Gifu.

Medicines in America Before Federal Regulation (Princeton, N.J.: Princeton University Press, 1961).

Conclusion

Modern medicine?

After decades of growing unease with the *bakufu*'s handling of domestic and foreign policy in the wake of the unequal treaties of 1854-1858, Tokugawa Yoshinobu resigned from his position, thus becoming the last shogun. During his two years of rule, Yoshinobu had pushed a progressive reform-heavy agenda, but it was not enough to appease the calls for modernization and imperial restoration by the allied forces of Satsuma and Chōshu *samurai.* The military conflicts resulting from Yoshinobu's resignation affirmed the ascendancy of these pro-restoration forces, and despite ongoing fighting a modern, Emperor-centered government was officially convened in the summer of 1868. The first attempts made by the Meiji government to adjudicate commercial medicines and their retailers ended in failure. In 1870 (Meiji 3), the newly created government promulgated the *Baiyaku torishimari kisoku* [Regulations on the supervision of commercial medicines]. This law established two major stipulations for medicinal merchants. The first instituted a formal licensing system for the first time in Japanese history. The evocations of licenses (*go-men*) in early modern Japan were not the result of a restrictive system of evaluation, but rather indicated that a certain purveyor was affiliated with a particular imperial or *bakufu* official. After 1870, however, licenses for the sale of existing commercial medicines would be issued only after an examination of the product's ingredients and efficacy (*meijitsu kōhi chōsa*) by the Daigaku Tōkō, the predecessor of Tokyo University's medical school.[1] The second stipulation banned the

[1] *Nara-Ken Yakugyōshi: Tsūshi-Hen* (Nara: Nara-ken yakugyōshi rengōkai, 1991), 70. Okazaki,

use of qualifications such as "secretly transmitted" (*hihō*), "Dutch method" (*ranpō*), or "family recipe" (*kaden*) in the signage or advertisements for commercial medicine.[2] These indications of lineage and quality built around the early modern commercial system were no longer sufficient for the needs of the Meiji government.

Similar to the *bakufu*'s prohibition of "Dutch letters" in 1840, the Meiji government found it difficult to enforce these regulations. The Daigaku Tōkō was inundated with licensing requests, and disagreements ensued over what constituted "effective" medicine. Ultimately, the *Baiyaku torishimari kisoku* was repealed two years after its promulgation, although apothecaries were still encouraged to apply for government issued licenses.[3] Between 1872 (Meiji 5) and 1876 (Meiji 9), oversight of commercial medicines moved from the Daigaku Tōkō to the Ministry of Education's Bureau of Medical Affairs. Finally, licensing was placed under the auspices of the newly created Health Bureau in the Home Ministry, where it was decided that regulations for *baiyaku* should focus not on efficacy, but on safety or "harmlessness" (*mugai*).[4]

In 1877 and 1878 (Meiji 10 and 11), the government promulgated revised regulations for commercial medicines that focused on taxation more than supervision.[5] Government-issued licenses once again became mandatory for the sale of commercial medicine. Obtaining a license required that apothecaries submit the methods of formulation for these products in order to ensure no harmful substances were used. In

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Kusuri no rekishi, 230.

[2] *Kusuri no kōkoku bunka,* 7.

[3] *Nara-ken yakugyōshi,* 320.

[4] Kōda Hirofumi, "Meiji seifu no baiyaku-kan to Yamato baiyaku Tōyama baiyaku to no hikaku o chūshin toshite," *Keiei ryokusōsei kenkyū,* no. 12 (2016): 39.

[5] Sōda, *Toraiyaku no bunkashi,* 211.

addition, apothecaries had to pay an annual fee of 2 yen for each unique medicine sold. Notably, the use of terms like "secretly transmitted" (*hihō*) or "family recipe" (*kaden*) was also legally permitted if these two requirements were met.[6] Finally, in 1882, the government issued *Baiyaku inshi-zei kisoku* [Regulations on the taxation of trademarked commercial medicine], which set the tax for all commercial medicines at ten percent, within the same bracket as alcohol and tobacco.[7] While not outright banning or reorganizing the system of commercial medicine, the Meiji government nonetheless considered them to be not entirely necessary.

Unsurprisingly, these regulations reduced the number of apothecaries operating in Japanese cities. Collective payments to the *bakufu* by commercial organizations were replaced by individual taxes on individual products, prompting apothecaries to limit the number of medicines they sold, or abandon the medicine business for something in a lower tax bracket. Aside from this monetization of individual commercial medicines, however, as a whole the first decades of Meiji oversight closely resembled that of the *bakufu*. Unlike other medical therapies such as moxibustion and acupuncture, commercial medicines were not relegated to the category of traditional, "unscientific" medical practices.[8] Formal oversight was shifted to government ministries instead of the *wayaku aratame kaisho* in places like Osaka, Kyoto, and Edo. The use of familiar qualifications like "secretly transmitted" (*hihō*) continued, linking back to the diverse groups of medical practitioners in premodern Japan. The Meiji government emphasized safety in

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[6] Yoshioka, *Kinsei Nihon yakugyōshi,* 355-6. Okazaki, *Kusuri no rekishi*, 230-1.

[7] Kōda, "Meiji seifu no baiyaku-kan," 39.

[8] Susan Burns, "Marketing Health and Beauty: Advertising, Medicine, and the Modern Body in Meiji-Taisho Japan," in East Asian Visual Culture from the Treaty Ports to World War II, eds. Hans Thomsen and Jennifer Purtle (Chicago: Paragon Books, 2009), 178-9.

commercial medicine just like the *bakufu* strictly punished the sale of harmful *baiyaku*. Thus, while the number of apothecaries operating in late nineteenth Japan decreased, commercial medicine remained, with many popular early modern products continuing to be made and consumed in modern Japan. These *baiyaku* were moreover thought of as socially and legally distinct from pharmacies and pharmaceutical compounds, capable of being purchased without a prescription or the intervention of a medical professional.

Murakami's Theriac

Shifts in the market for commercial medicine were not entirely dictated by the newly consolidated central government. In 1757 (Hōreki 7), the Murakami family began selling medicine out of their residence in Kyoto. Known as Ebisu-ya, this property notably doubled as an inn for the annual court journey conducted by employees of the United Dutch East India Company from Nagasaki to Edo.[9] Taking advantage of this association, the Murakami family began marketing a variety of Dutch medicines. Their two most profitable products consisted of a "Dutch cold remedy" (*Oranda denpō kazegusuri*) priced at 10 *mon* per dose, and Teriyaka, which was based on theriac.

In accordance with regulations promulgated in 1870, the Murakami family submitted applications for licenses for their medicines to Daigaku Tōkō in 1871 (Meiji 4), but received no reply regarding the matter until two years later in 1873 (Meiji 6).[10] As Susan Burns notes, the scarcity of qualified inspectors at the Daigaku Tōkō was exacerbated by the fact that most of these officials were also advocates of modern,

[9] Sōda *Toraiyaku no bunkashi*, 205.

[10] Katagiri Kazuo, *Oranda-yado Ebi-ya no kenkyū: kenkyū-hen* (Kyoto: Shibunkaku, 1998), 163.

Western medicine and suspicious of "traditional" Japanese medicines.[11] Between this skepticism and a lack of personnel, few *baiyaku* were approved for licenses in the first years after the *Baiyaku torishimari kisoku* was promulgated. Whether the inspectors of the Daigaku Tōkō considered Murakami's medicines to be Western or not is unknown. Ultimately, they determined that no license should be issued to the Murakami's most popular product, Teriyaka, due to the use of opium (*ahen*) in its compounding.[12] The Japanese government, extremely wary of opium after witnessing its weaponization against the Qing government, had identified the product as extremely harmful for Japanese citizens.

In 1875 (Meiji 8), the Murakami family sought once again to obtain a license for Teriyaka by replacing opium with a kind of milkwort in their formulation. However, before the government completed its examination, Murakami Fusa, then head of the family, wrote to inform the licensing body of his intent to close the business and end the sale of "Dutch cold remedy" and Teriyaka entirely.[13] According to documents kept by the family, the cause of this decision was a lack of demand for Murakami's products. Sales of Teriyaka dropped precipitously from 676 units in 1872 to 375 units in 1875.[14] Thus, even before the annual fees and taxation of individual products, the Murakami had already deemed their medicinal business unprofitable. Fusa's decision to cease producing Dutch medicine was based in the same reason that products like Uruyusu and Katayama's Medesein had flourished in the early to mid-nineteenth century. From the inception of the

[11] Burns, "Marketing Health and Beauty," 178.

[12] Sōda *Toraiyaku no bunkashi*, 211.

[13] Katagiri, *Oranda-yado,* 166.

[14] Sōda, *Toraiyaku no bunkashi*, 212.

Murakami's medicine business, the appeal of their products resided in the family's direct connection to the Dutch, claiming them as the source of their formulas and using the annual court journeys to bring in curious customers. Since the turn of the nineteenth century, these court journeys had grown more and more irregular before ending in 1850. Furthermore, the value of Dutch knowledge and medicine had been eroded since the arrival of foreign physicians and specialists from Germany, the United States, and Great Britain after 1854. Simply put, just as the lure of "Dutch medicine" had faded by the late nineteenth century, so had the appeal of Murakami's medicines.



Figure 60 A comparison of early (left) and late (right) nineteenth-century packages for Kinakina-en or Kina-en sold by the itinerant merchants of Tashiro in Kyushu. Nakatomi Kinen Kusuri Hakubutsukan, Saga.

Conversely, other Dutch medicines continued to be made and consumed within modern Japan. The itinerant merchants of Tashirō changed the name of their *ranpō* Kinakina-en [Quinine pills] to simply Kina'en. Aside from removing the qualification of Dutch medicine entirely, they also began to display the name of the medicine in roman letters. They did, however, retain the stylized image of a seventeenth century Dutchman on the packaging of the medicine, no doubt because the image functioned as a sort of

trademark. They had such leeway because even the Meiji government acknowledged the efficacy of quinine as an anti-malarial and fever reducer, and granted Tashiro licenses to continue to sell the medicine.[15] The efficacy of quinine and the designation of the medicine as governmentally licensed (*kankyo*) balanced out any concepts that the Dutchman on the packaging might indicate that the medicine was outdated or "traditional."

Uruyusu also remained popular in the modern era, even being featured in *mitate banzuke* [ranked lists of esteem] from the turn of the twentieth century that listed the best medicines found across Japan.[16] The reasons for Uruyusu's continued existence in comparison to Murakami's decline are numerous. First, the product was formulated using Chinese rhubarb and other diuretics derived from vegetal sources that were considered harmless by the standards of the Meiji government.[17] Second, Higo-ya Jōemon, the creator of Uruyusu, invested heavily in promotional materials and had franchised (*hirome*) the medicine out to various apothecaries in Kyoto, Edo, Akita, and Sendai in the decades after its creation, leading to a larger network of consumers aware of the product and suppliers willing to offset the costs associated with its sale. Most importantly, by the late nineteenth century Uruyusu no longer relied on a specific cultural association with the Dutch as the Murakami family did.

As early as 1832 (Tenpō 3), Higo-ya Jōemon began to change the cultural associations of Uruyusu. That year, the reprinted version of *Akindo kaimono hitori annai*

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[15] *Nakatomi Kinen Kusuri Hakubutsukan tenji annai,* 50-51.

[16] *Kusuri no hakubutsukan: Nihonjin to kusuri no rekishi,* eds. Aoki Nobuo and Maekawa Kyūtaro(Tokyo: Nihon Tosho sentā, 2014), 50-51.

[17] Yoneda et al, "Dentō Baiyaku 'Uruyusu' Ni Tsuite (1)," 96–102.

featured an advertisement for the medicine that appeared quite different to the one found in the 1824 Edo shopping guide discussed in chapter five. The visual reproduction of the signboard for Uruyusu, with its strange array of roman lettering, was gone. Instead, the page simply read

> Originally from Nagasaki
> Compounded by Kenju-dō
> A medicine for phlegm, constipation, and cramps
> Uruyusu
> An exceptional medicine of *Heshisuteru* of Holland
> Main store Osaka
> West on Shinsaibashi road in the ward of Awaji
> Higo-ya Jōemon



Figure 65 - Uluus advertised in the 1833 reprint of *Akindo kaimono hitori annai.*

Noticeably, the term *ranpō* was also absent from this advertisement, although "*Heshisuteru* of Holland" remained as an indication of this product's connection to Dutch medicine. Given the later censure of "Dutch letters" by the *bakufu*, Higo-ya Jōemon possibly had received some kind of warning about his flagrant presentation of VLOYM VAN MITTR in earlier promotional materials. His choice to elide *ranpō* was more mysterious, particularly when other apothecaries in the guidebook were using this term freely. This gradual re-shaping of Uruyusu continued throughout the mid-nineteenth

century.

The entry for Uruyusu seen in *Osaka shōkō meikashū* [Famed merchants and artisans of Osaka, 1846 (Kōka 3)] was even more terse. The signboard was once again omitted, and "Heshisuteru of Holland" was gone entirely. Aside from these removals, the information presented on this page matched that seen in the 1832 advertisement. Thus, between 1824 and 1846, advertisements for Uruyusu in urban guides shed many of the initial associations with Dutch medicine, *rangaku*, and *ranpō*. Instead, the *katakana* name and mention of Nagasaki remained to gesture vaguely to an unspecified foreign source for the medicine.



Figure 66 - Uruyusu advertised in Osaka in 1846 alongside other *baiyaku*. Matsuoka Rihē, *Osaka shōkō meikashū* [Famed merchants and artisans of Osaka], 1846 (Kōka 3), woodblock printed book. Kōbe University Library, Kōbe.

A late nineteenth century signboard for Uruyusu illustrates the end result of this process. As opposed to a traditional rectangular doorplate, this sign was carved into the shape of a man on horseback. Complete with moustache and top-hat, he could be a generic Westerner or a Japanese man attired in Western garb. The red pigment used to color in his hair, eyebrows, and moustache are the only remnants of Uruyusu's original

claims of originating with the "red hairs." The smartly-dressed man carries a banner, on which is written Uruyusu in *katakana* and "Osaka, Matsuo Kenju-dō." Roman letters spell out a transliteration of the medicine's name, ULUUS. This strange reverse romanization from a word that originated as a Japanese pun positioned to look and sound foreign epitomizes the various marketing strategies adopted by purveyors of Uruyusu. Once located firmly within the particular cultural phenomenon of Dutch medicine and *rangaku*, by the turn of the twentieth century the product was just one of many medicines with foreign-seeming *katakana* names, seemingly brought from afar by this man on horseback and sold to Japanese consumers.[18]



Figure 67 – A Meiji signboard for Uruyusu, now romanized as "ULUUS." Late nineteenth century, pigment on wood. Naito Kinen Kusuri Hakubutsukan, Gifu.

Thus, the demise of the Murakami family's medicine business was not because of government intervention nor the introduction of "modern medicine," but particular political, economic, and intellectual shifts that occurred outside of canonical dates like 1854 or 1868. For Matsuo Jōemon and other successful retailers of commercial medicine,

[18] *Kusuri No Kōkoku Bunka,* 12.

such as the Kitani family's Jitsubosan or Morita Jihei's Hōtan, the nineteenth century was a not a time of rupture, but continuity and adaptation.[19] Aside from raising the economic barriers to entry for apothecaries, the Meiji government retained the much of the laissez-faire attitude of its predecessor. The *bakufu*'s laws against poisonous and counterfeit medicines became laws against harmful and non-trademarked medicine. People with no formal training could still make and sell *baiyaku*, which remained an alternative site of medicine for consumers that drew from an eclectic set of cultural and intellectual traditions. The Meiji government and its twentieth century successors actively promoted institutionalized medicine and the pharmaceutical industry, but never moved to demolish *baiyaku*. Even today, commercial medicines still lines the shops of groceries and convenience stores in Japan, available to purchase to anyone in need of them.

In closing

In the past few decades, scholars across various fields have begun to unravel the false binaries imposed between Western and indigenous knowledge. Historians of Japan have sought to create a more holistic understanding of science and medicine that considers various processes, technologies, and networks involved in the creation of knowledge. Generally, my research compliments these efforts. It emphasizes larger commercial and cultural implications related to Jannetta and Nakamura's *ranpō* physicians, and provides a counterweight to the top-down and institutional approaches of Hellyer and Clulow.[20] In addition, my analysis enriches Marcon and Fukuoka's

[19] For more on these particular circumstances and shifts into the twentieth century, see Burns, "Marketing Health and Beauty."

[20] Jannetta, *The Vaccinators,* 3, 181-2. Nakamura, *Practical Pursuits*, 2-3, 175. Clulow, *The*

discussions of *materia medica* by highlighting the perennial use of these natural objects as medicine. As a whole, my work contributes to the growing body of research that understands early modern Japanese engagement with foreign materials, texts, and ideas as particular and selective rather than universal or systematic.[21]

That said, there are still studies of Japanese history and culture that continue to point to *rangaku* and proclaim in the same manner as Fukuzawa Yukichi that the adoption of Western Science began long before the imposition of unequal treaties and Eurocentric modes of understanding the world. Even the broadest understanding of *rangaku* as a study of Dutch-language texts, however, precludes this continued conflation of the phenomenon with Western Science. Scholars of global medicine, exchange, and knowledge like Harold Cook and Benjamin Schmidt have already demonstrated that the Dutch were adept at collecting and dispersing commodities and information from across the world.[22] Why should it still be assumed that the qualifications of certain things as Dutch – in Japan or beyond – indicated European goods and ideas? These qualifiers were shaped by and for Japanese merchants and consumers. What mattered for these observers was that they considered things like cinnamon, theriac, and Uruyusu to be Dutch, not connections to a national or cultural polity.

One of the most recent monographs on Dutch studies evoked the same metaphor of germination used by Fukuzawa Yukichi in 1890, claiming that it was only the latter half of the eighteenth century that "the seed [of *rangaku*] that had been planted two

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Company and the Shogun, 1-25. Hellyer, *Defining Engagement,* 1-24.

[21] Marcon, *The Knowledge of Nature,* 7-27. Fukuoka, *The Premise of Fidelity*, 53-78.

[22] See Cook, *Matters of Exchange,* 1-41 and Chakrabarti, *Materials and Medicine,* 6-38..

hundred years earlier began to grow roots."[23] But *rangaku* was not an invasive species, nor was it a weed left to grow unchecked in a fallow field. It was actively cultivated and, even more importantly, *pruned* by Japanese officials, scholars, physicians, and apothecaries. Such figures were not passive recipients of the scientific epiphanies of Western civilization, but active participants in the adaptation and dissemination of information about medicinal substances and practices. Many things were brought by the Dutch to early modern Japan, but the choice to engage with these goods, texts, and ideas ultimately rested with Japanese actors. They told the VOC what they wanted for medicinal cargoes, and they decided to adapt certain aspects of medicine demonstrated by the European surgeons in residence on Dejima or found in Dutch-language texts.

This selective adaptation has been misinterpreted in many ways by modern historians: a rejection of modernity, a haphazard study of immediately necessary subjects, anti-foreignism, reactionism, or simple ignorance.[24] Ideas about agency and alternate methods of evaluation have been minimized not only from narratives of science and medicine, but also those of trade and commerce that seek to move away from purely intellectual analyses. These have framed Dutch material culture as something that exerted a unidirectional influence on Japan, or simply as playful diversions for Japanese consumers to enjoy. Yet objects by themselves cannot exert authority over a society or culture, but rather must be engaged with by human actors. [25] Similarly, playfulness

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[23] Jackson, *Network of Knowledge,* 1.

[24] See E. H. Norman, *Japan's Emergence as a modern state* (Vancouver: University of British Columbia Press, 2000), 323. Edwin O. Reischauer, *Japan, past and present* (New York: Knopf, 1964), 90-9. Boxer, *Jan Compagnie*, xxii-xiii. Numata, *Western learning*, 1-2. Goodman, *Japan and the Dutch*, 224-5.

[25] Chaiklin, *Cultural commerce and Dutch commercial culture*, 5-6.

regarding certain things can only occur after shared conceptions have been developed about their origins and purpose.[26] The roles and contexts of Japanese intellectual and material intermediaries thus must be recognized in any analysis about Dutch material culture.

The particular concerns and motivations underlying the development and consumption of Dutch medicine in Japan also resonate with broader analyses of Asian culture and history. Medicine was a key element of European conquest and colonization, both in terms of the extraction of resources and the re-ordering of indigenous knowledge and practices in the form of "colonial medicine."[27] In contrast, the restrictions imposed on foreign trade and diplomacy by the Tokugawa bakufu, which for so long were described as somehow closing Japan, staved off the economic and political ambitions of Europeans during a time of intensive colonization across the rest of Asia.[28] While the Japanese consumers certainly benefitted from the exploitative trade in medicines conducted by European groups, particularly after the turn of the nineteenth century, they nonetheless retained their intellectual autonomy. Japanese officials and physicians applied their own conceptions of value and efficacy to the medicinal substances and practices brought by the Dutch, and were able to integrate this diversity of ideas into an already eclectic system. There was never any conception that the novel medicines and

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[26] Screech, *The lens within the heart*, 31-61.

[27] See *Medicine, trade, and empire: Garcia de Orta's Colloquies on the simples and drugs of India in context,* ed. Palmira Fontes da Costa (Surrey: Ashgate, 2015), Warm *Climates and Western medicine*, ed. David Arnold (Amsterdam, Rodopi, 1996), and Chakrabarti, *Materials and Medicine.*

[28] While George Sansom acknowledges this point, but dismisses the Japanese response as a "flat negative" rather than a dynamic shaping of foreign policy. Sansom, *The Western World and Japan,* 170-177.

pharmacopeia imported by the Dutch might ever challenge or replace this existing system of knowledge and healing.

The Dutch medicine analyzed in this dissertation was present in city streets and maritime cargoes, the pages of pharmacopeia and shopping guides, and the pill-boxes and pouches carried around by the denizens of early modern Japan. Supplied by the VOC and its successors in the form of global substances and information collated into texts, Dutch medicine was acted upon by Japanese physicians and apothecaries, who made it materially and conceptually consumable for the Japanese public. The elision of this phenomena from histories of Japan is entirely the result of the modern Eurocentric and nationalistic biases that have artificially re-made what constitutes "Dutch" and what constitutes "medicine." While I have no aspirations to bring the reader to tears in the same manner that Sugita Genpaku's words purportedly did to Fukuzawa Yukichi, I hope that this dissertation will inspire others to consider the material, intellectual, global, and commercial aspects of medicine and knowledge formation in the premodern world.

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