TAKANO CHŌEI AND HIS COUNTRY FRIENDS: A RECEPTIVE HISTORY OF *RANGAKU*

by

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Doctor of Philosophy of the Australian National University

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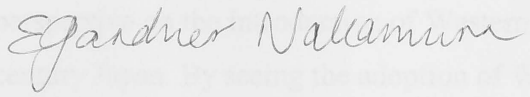
DECLARATION

Except where otherwise indicated, this thesis is my own work.



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Canberra

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ABSTRACT

This thesis uses the concept of 'receptive history' to provide a new perspective on the introduction of Western medical knowledge to nineteenth-century Japan. By seeing the adoption of Western knowledge in this period as a fragmentary, yet creative and adaptive exercise, rather than simply as the failure to adequately absorb Western science, this approach presents an alternative to the idea of 'Westernisation', common in previous histories of *rangaku.*

This is also a 'receptive' history in the sense that it tries to explore the introduction of Western medicine in places other than the large cities or the schools of famous scholars. In doing so, it becomes concerned with several recurring themes: networks; the spread of information and literacy; rural elites; and the social role of doctors.

A social approach to the history of medicine helps to provide an alternative to a straightforward narrative of 'progress' and the history of discovery. Instead, this work presents a picture of the way medical practitioners lived, trained and worked in the Edo period, how they identified themselves as members of various intellectual groups, and how they struggled to find a place for themselves within the social hierarchy.

The chapters of the thesis are all connected by various links to the central figure of Takano Chōei (1804-50). Although he was one of the foremost *rangaku* scholars of his time, his career was cut off in its prime when he became the victim of an intrigue in 1839. As a result, much of his early work has been overshadowed by the political events that followed. This study takes a different approach to the writing of Chōei's history by concentrating on his social role as a physician in the period before his arrest.

An examination of Takano Chōei and his association with a group of rural physicians in the province of Kōzuke provides a case study of the way in which country doctors adapted Western ideas, and applied them to contemporary social problems such as famine and epidemic disease, the social networks through which they communicated those ideas, and the geographical spaces that supported such activities. It sheds light on the role that doctors played in their communities, and on the way in which they went about their daily lives.

TAKANO CHŌEI AND HIS COUNTRY FRIENDS: A RECEPTIVE HISTORY OF *RANGAKU*

Illustrations

Sources for illustrations:

Figure 4: *Kyūkō Nibutsukō,* Takano Chōei Zenshū Kankō Kai, ed. *Takano Chōei Zenshū.* 2nd edition, 6 vols. Tokyo: Daiichi shobō, 1978, Vol. 4. pp. 29-30.

Figures 5 and 6: Illustrations of stills, from *Hieki Yōhō,* Takano Chōei Zenshū Kankō Kai, ed. *Takano Chōei Zenshū.* 2nd edition, 6 vols. Tokyo: Daiichi shobō, 1978, Vol. 1. p. 226.

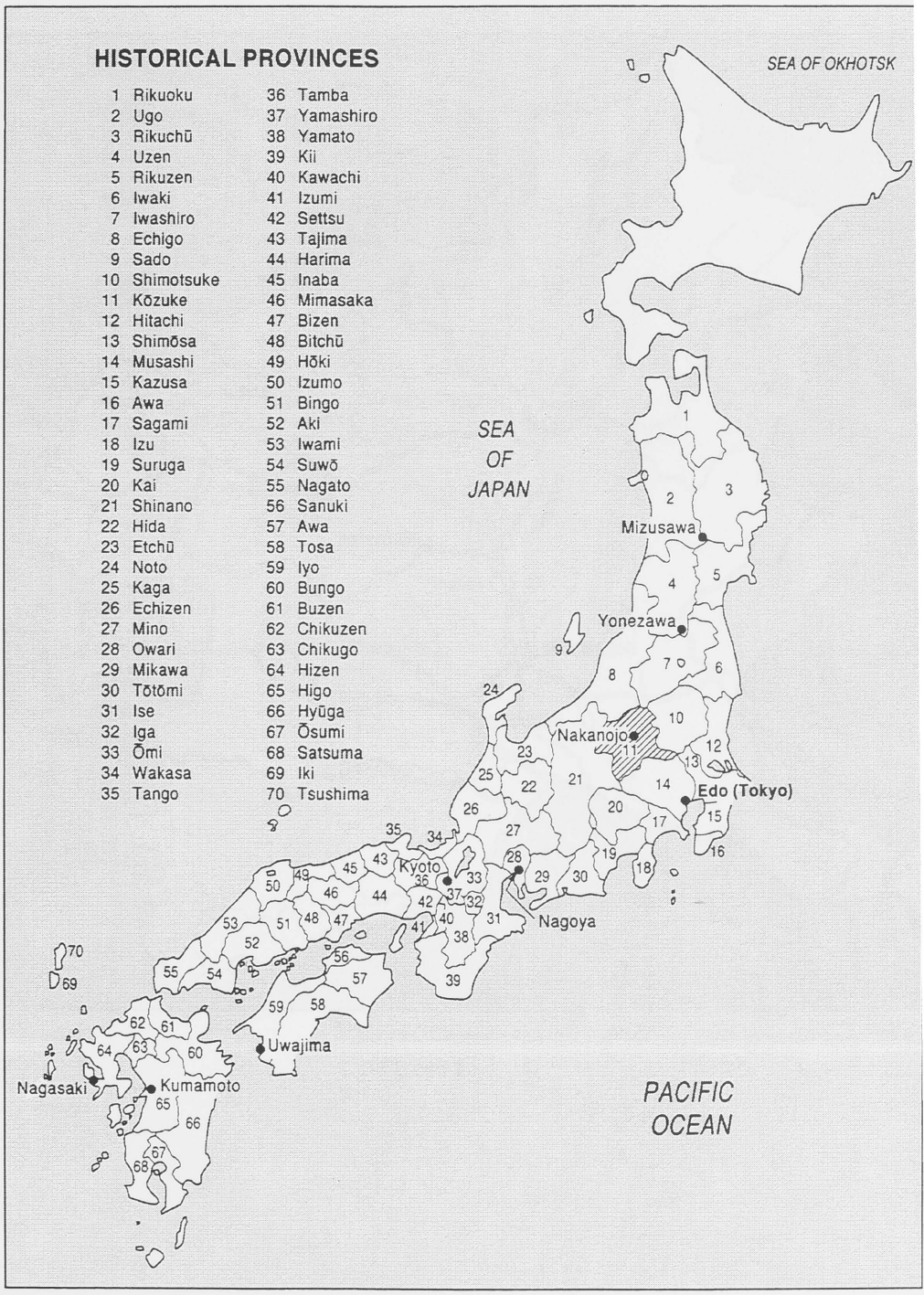
HISTORICAL PROVINCES
1 Rikuoku
2 Ugo
3 Rikuchū
4 Uzen
5 Rikuzen
6 Iwaki
7 Iwashiro
8 Echigo
9 Sado
10 Shimotsuke
11 Kōzuke
12 Hitachi
13 Shimōsa
14 Musashi
15 Kazusa
16 Awa
17 Sagami
18 Izu
19 Suruga
20 Kai
21 Shinano
22 Hida
23 Etchū
24 Noto
25 Kaga
26 Echizen
27 Mino
28 Owari
29 Mikawa
30 Tōtōmi
31 Ise
32 Iga
33 Ōmi
34 Wakasa
35 Tango
36 Tamba
37 Yamashiro
38 Yamato
39 Kii
40 Kawachi
41 Izumi
42 Settsu
43 Tajima
44 Harima
45 Inaba
46 Mimasaka
47 Bizen
48 Bitchū
49 Hōki
50 Izumo
51 Bingo
52 Aki
53 Iwami
54 Suwō
55 Nagato
56 Sanuki
57 Awa
58 Tosa
59 Iyo
60 Bungo
61 Buzen
62 Chikuzen
63 Chikugo
64 Hizen
65 Higo
66 Hyūga
67 Ōsumi
68 Satsuma
69 Iki
70 Tsushima
SEA OF OKHOTSK
SEA OF JAPAN
PACIFIC OCEAN
Mizusawa
Yonezawa
Nakanojo
Edo (Tokyo)
Nagoya
Kyoto
Uwajima
Kumamoto
Nagasaki

Figure 1

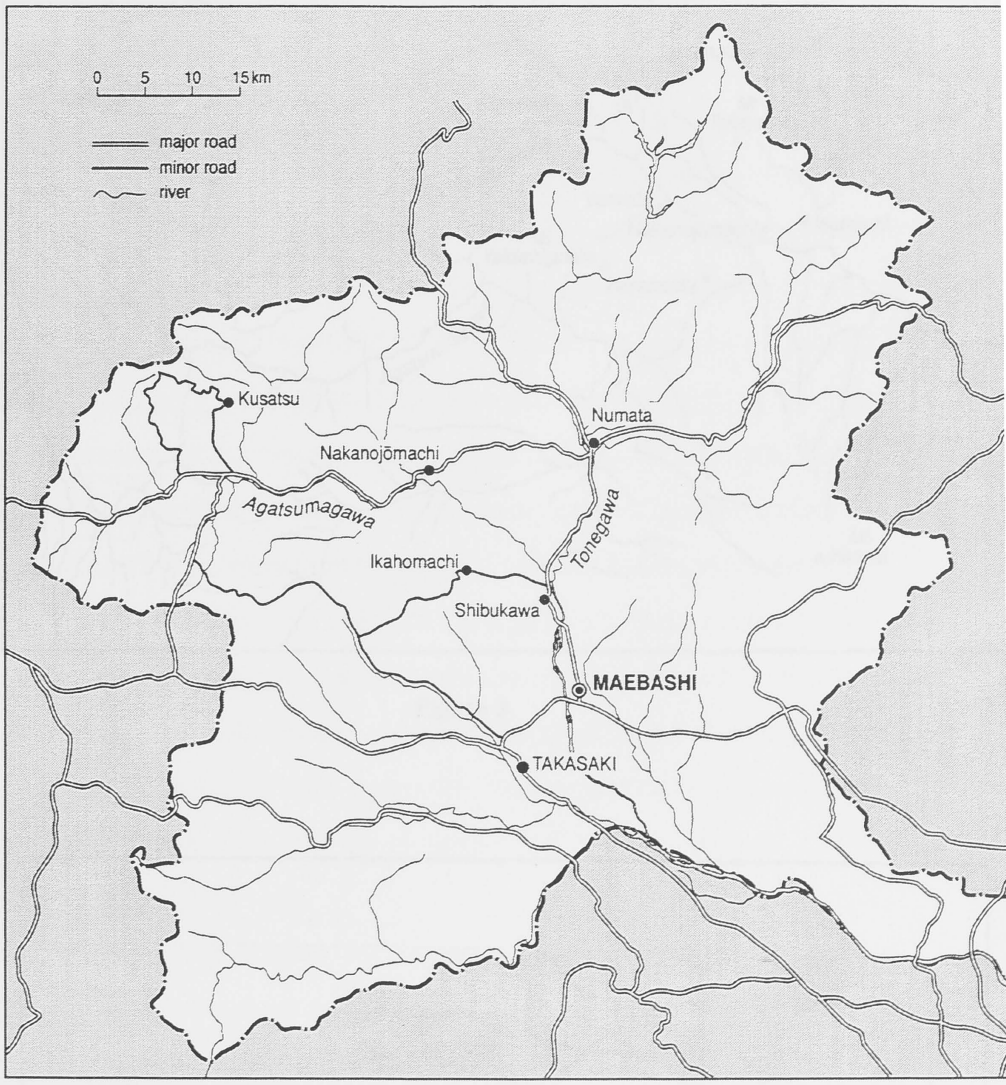
0 5 10 15km
major road
minor road
river
Kusatsu
Numata
Nakanojōmachi
Agatsumagawa
Tonegawa
Ikahomachi
Shibukawa
MAEBASHI
TAKASAKI

Figure 2

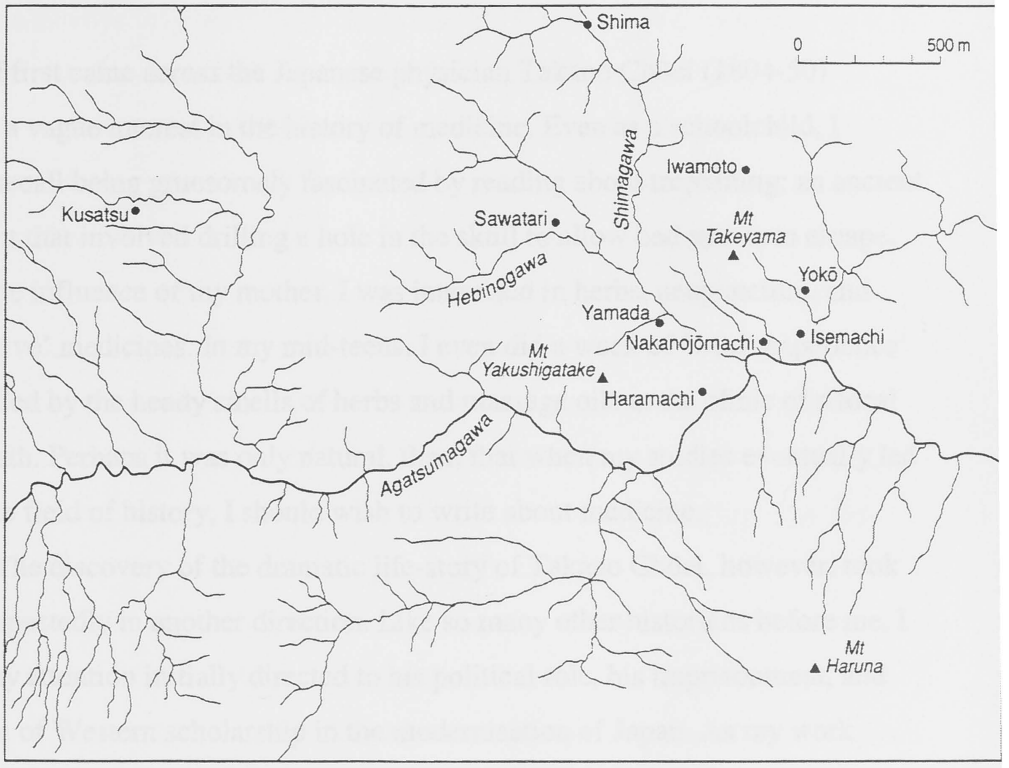

Figure 3

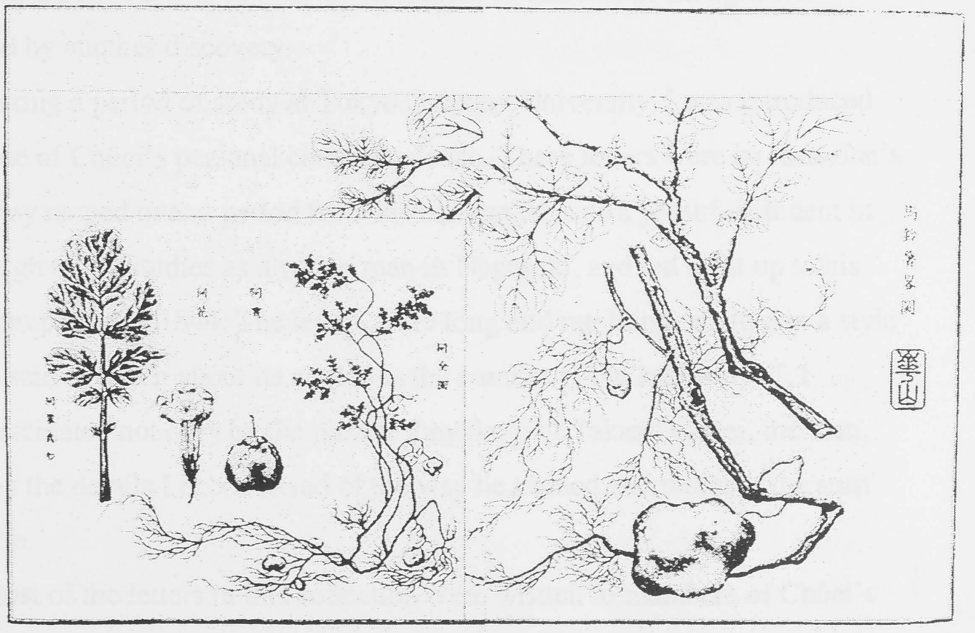

Figure 4

PREFACE

I first came across the Japanese physician Takano Chōei (1804-50) through a vague interest in the history of medicine. Even as a schoolchild, I vividly recall being gruesomely fascinated by reading about trephining: an ancient treatment that involved drilling a hole in the skull to allow bad spirits to escape. Under the influence of my mother, I was interested in herbs, acupuncture, and 'alternative' medicines. In my mid-teens, I even did a week of 'work experience' surrounded by the heady smells of herbs and massage oils at the clinic of a local naturopath. Perhaps it was only natural, then, that when my studies eventually led me to the field of history, I should wish to write about medicine.

The discovery of the dramatic life-story of Takano Chōei, however, took me unexpectedly in another direction. Like so many other historians before me, I found my attention initially directed to his political role, his imprisonment, and the place of Western scholarship in the modernisation of Japan. As my work progressed, however, I gradually began to feel that there was more to his life and work than was generally told. Influenced by the work of Satō Shōsuke, I began to explore the idea that perhaps Chōei was much more a scholar and a physician than he was a political activist. My development of this line of thought was interrupted by another discovery.

During a period of study at Tokyo Gakugei University, I was introduced to a volume of Chōei's personal correspondence. These letters were an historian's delight; they ranged over a period from his earliest days as a youthful student in Edo, through to his studies as a young man in Nagasaki, and led right up to his escape from prison in 1844. The letters were long and rambling, written in a style that often said as much about its author as the content of the letters itself. I became fascinated not only by the picture they drew of Takano Chōei, the man, but also by the details I encountered of the way he trained and worked: the stuff of daily life.

Most of the letters in this collection were written to members of Chōei's family: his adoptive father, his uncle, and cousin. Of the few remaining letters, one was addressed to Yanagida Teizō, a friend from the province of Kōzuke. Teizō was one of a number of doctors from this region, who supported Chōei

financially and helped with his works on famine relief and epidemic disease. I had been aware of the presence of these doctors for some time, from accounts in the work of Takano Chōun and Tsurumi Shunsuke. Principally, the doctors had been described in terms of the role they may have had in harbouring Chōei after his escape from prison. Now I became interested in the Kōzuke physicians in their own right. How had Chōei come to develop such a geographically compact group of supporters? What made these doctors persevere with their country practices when Chōei had been so ruthlessly determined to lead an urban life? How did they go about their daily work? I learned that Teizō, and another member of the group, Takahashi Keisaku, had both kept journals, and that these had both been published (one quite recently). Luck was truly on my side, and gradually the outline of this thesis began to take shape.

Thus, with the writing of this work, my interest in Takano Chōei has, after a period of several years, finally brought me full circle: back to the history of medicine. This work has a social slant that I probably never would have dreamed of all those years ago when I found myself irresistibly attracted to the gory details of past medical practice, but my basic interest in the history of everyday life remains unchanged.

A great deal of my research time has necessarily been devoted to working my way slowly through the primary materials in a place and time far removed from that in which they were written. Like the rural doctors of my study, however, I have been supported by a network of friends and colleagues, who have not allowed me to feel lonely or isolated for long. Throughout my PhD candidature, I have been blessed with conscientious and encouraging supervisors, supportive colleagues and administrators, and a comfortable working environment. Special thanks go to Professor Tessa Morris-Suzuki, who, despite problems of distance, always found time to read drafts and answer questions. Dr John Caiger was a caring and enthusiastic adviser throughout the entire project. I also owe a great deal to Dr Anthea Hyslop, not only for her role as adviser, but for her timely course on the history of medicine. Attending her classes opened up a whole new world for me, and inspired so much of my approach to this work. I am grateful to Dr Morris Low and Professor Gavan McCormack for their supervisory roles at various stages of the thesis. Dr Richard Mason provided invaluable comments on

the draft chapters and endless encouragement. Dr Colin Jeffcott and Professor Bill Jenner kindly helped with the translation of sections from Chinese. Dr Takeuchi Makoto, Dr Ōishi Manabu, Aoki Toshiyuki, Karasawa Sadaichi, Dr Ochiai Nobutaka and Dr Iriye Takanori all provided generous assistance. I would like to thank Dr Ann Jannetta, an anonymous referee, and the editors of *Social History of Medicine* for their critical comments on a revised version of Chapter Four. I am grateful to Colin Gardner, Maxine McArthur, and Dr Karen Welberry for proofreading the final draft, to Coombs Cartography for the wonderful maps, to Rosemary Jeffcott and Vanessa Ward for their warm companionship, and to Jun for not allowing me to give up.

CHAPTER ONE
INTRODUCTION AND HISTORIOGRAPHY

Rangaku: different interpretations

The story of the introduction of Western knowledge to Japan has often been told. It usually begins with the tale of a small group of Japanese men who battled to learn Dutch, and of the isolated European physicians who lived on the tiny island of Dejima, off the trading post of Nagasaki, and taught them. This exchange took place despite the limitations of a foreign policy that restricted international contact for approximately two hundred years, and it has captured the imagination of historians in Japan and the West alike.[1]

The word *rangaku,* which came to be applied to this scholastic endeavour, literally means 'Dutch learning'. The books studied in Japan included not only Dutch books, however, but Chinese translations of them, in addition to Dutch translations of other European works. Therefore, the word *rangaku* should be understood broadly to refer to European knowledge, particularly concerning medicine and technology, which was obtained through the medium of books imported at Nagasaki during the Edo period (1603-1868).[2]

Originally, the people who studied Dutch were official translators who had

[1] This policy, which later came to be called *sakoku* (closed country), has been the source of many misconceptions about the Tokugawa period, in both Japanese and Western scholarship. Implemented in 1633-9, and continuing until 1853, it placed strict limitations on travel abroad and on foreign ships wishing to enter Japan. Thereafter, Holland was the only Western nation to be granted permission to continue trading with the Japanese. This privileged position was awarded mainly because of the perceived lack of affinity between the Dutch and the zealous Catholic missionary activity practised by the Portuguese. The restrictions were in part an effort to rid Japan of Christianity and control trade. As Ronald Toby has demonstrated, however, there was another dimension to this policy. It was intentionally used by the *bakufu* government firstly to strengthen the position of the Shogun within the Tokugawa system, and secondly to give Japan a new sense of identity within the Asian region. It should be emphasized that the so-called 'exclusion edicts' were not implemented in order to, nor did they, cut Japan off from all foreign relations. Indeed, they were enforced only after the assurance that trading with the Dutch could be continued. Trading with China, the Ryūkyū Islands, and Korea was also a vital part of Tokugawa foreign policy. See Donald Keene, *The Japanese Discovery of Europe, 1720-1830* (Stanford: Stanford University Press, 1969) pp. 1-2; Bob Tadashi Wakabayashi, *Anti-Foreignism and Western Learning in Early Modern Japan* (Massachusetts: Harvard University Press, 1986) p. 61; Ronald Toby, *State and Diplomacy in Early Modern Japan* (Princeton: Princeton University Press, 1984) pp. xix-xx, 9.

[2] For convenience, year dates throughout the thesis have been converted to the Western calendar. Months and days, however, are expressed in terms of the lunar calendar. To reflect this, I refer to months by number, rather than by Anglicised name. For example, 'the first month' rather than 'January'.

dealings with the foreigners in Nagasaki. Later, under the encouraging policies of the Shogun Tokugawa Yoshimune (ruled 1716-45), *rangaku* began to develop into a field of scholarship.[3] By the nineteenth century, Japanese *rangaku* scholars were proficient enough in the Dutch language to use written Dutch materials as a source of knowledge. One of the most prominent nineteenth-century *rangaku* scholars to work in this way was Takano Chōei (1804-50), the central figure of this thesis.[4]

Due to a contemporary ban on Christianity, and a fear among official circles that Western knowledge could lead to the moral subversion of the populace, the importation of Western books, particularly those in Chinese translation, was strictly controlled. It was necessary for the proponents of *rangaku* scholarship to find justification for their study of the subject. This was important not only in order to gain official sanction for their work, but also to find a place for themselves alongside other intellectual groups. A significant part of the general approach to Western knowledge, therefore, was the idea of *jitsugaku,* or 'practical learning'. This term originated in China, and became popular during the early modern period in Japan among Confucianists, statesmen, philosophers, *rangaku* scholars, and patriots. In its first form, *jitsugaku* was more or less synonymous with Neo-Confucianism. As time passed, it came to be identified rather with various values or activities within the Confucian framework, according to the 'needs of the age'. Some of these values were 'moral solidity', 'social applicability', and 'intellectual substantiality'.[5] Concepts such as these could easily be used to justify the study of Western knowledge. The Shogun Yoshimune demonstrated this in 1720, when he allowed the importation of certain Chinese astronomical and mathematical texts that had previously been banned because they had been written by, or reflected the ideas of Christian missionaries in China.[6] In the sense of social applicability, *jitsugaku* became associated with the idea of assisting commoners, through careful administration and practical help. This too, was evident in the policies of Tokugawa

[3] See Patricia Sippel, "Aoki Konyō (1698-1769) and the Beginnings of *Rangaku*," *Japanese Studies in the History of Science* 11 (1972): 127-62.
[4] Japanese personal names throughout this thesis follow the convention of surname first, unless authors writing in English have reversed the order of their names for publication.
[5] Wm. Theodore de Bary, "Introduction," in *Principle and Practicality*, ed. Wm. Theodore de Bary and Irene Bloom (New York: Columbia University Press, 1979) 1-36, p. 32.
[6] Sippel, "Aoki Konyō," p. 128.

Yoshimune, who, in addition to the study of Dutch language, calendrical studies and other practical subjects, encouraged the cultivation of medicinal herbs and public health policies to deal with epidemic disease.[7]

Much of the knowledge obtained through *rangaku* scholarship was medical. Medicine was better tolerated than many other fields of Western scholarship within the conservative climate of Tokugawa society, precisely because of its tangible practical benefits. For example, the immediately visible benefits of anatomical studies were an important part of gaining acceptance of *rangaku.* When Sugita Gempaku (1738-1818) and Maeno Ryōtaku (1733-1803), attended a dissection in 1771 and compared what they saw there with diagrams of the human body in Johann Adam Kulmus' *Tafel Anatomia* (1731), they found them to be remarkably accurate, while the traditional Chinese ones they had known up until then were grossly simplified. This inspired them to make a translation of the book, which they eventually published with official sanction, as *Kaitai shinsho* in 1774. Their book did much to fuel the growing interest in Dutch learning.[8] Western medicine came to be known as *ranpō,* or 'Dutch style' medicine, as opposed to *kanpō,* 'Chinese style'.

The history of Western medicine in Japan, as an important part of *rangaku* scholarship, has usually been treated in both Western and Japanese scholarship as a straightforward account of the lives of important men, their discoveries, and the march towards the attainment of modern medicine and 'progress'.[9] This approach has often led to a culturally 'blinkered' perspective. Books such as John Bowers' *Western Medical Pioneers in Feudal Japan* and *When the Twain Meet* for example, told the history of medicine in Japan during the Tokugawa and Meiji periods by detailing the experiences and successes of a series of Western physicians at Nagasaki, paying only scant attention to the Japanese who worked with them.[10] The emphasis chosen by Bowers may in part be explained by the fact that his work was largely

[7] Ōishi Manabu, *Yoshimune to Kyōho no kaikaku* (Tokyo: Tōkyōdō shuppan, 1995) pp. 162-83.
[8] Keene, *The Japanese Discovery,* pp. 20-4.
[9] See for example, Hattori Toshirō, *Edo jidai igakushi no kenkyū* (Tokyo: Yoshikawa Kōbunkan, 1978), or, more recently, Koike Iichi, *Zusetsu nihon no 'i' no rekishi* (Tokyo: Daikusha, 1993). An exception is the following innovative collection of essays on a wide range of medical topics: Kuriyama Shigehisa and Yamada Keiji, eds., *Rekishi no naka no yamai to igaku* (Kyoto: Kokusai Nihon Bunka Kenkyū Sentaa, 1997).
[10] See John Bowers, *Western Medical Pioneers in Feudal Japan* (Baltimore: John Hopkins Press, 1970), and *When the Twain Meet* (Baltimore: John Hopkins University Press, 1980).

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[10] See John Bowers, *Western Medical Pioneers in Feudal Japan* (Baltimore: John Hopkins Press, 1970), and *When the Twain Meet* (Baltimore: John Hopkins University Press, 1980).

based on materials held in European archives, and his bibliography contained few Japanese sources. Grant Goodman, on the other hand, who wrote an intellectual history of Japanese *rangaku* scholars, may not be excused on this account. Using an impressive collection of Japanese works, he alleged the 'valuelessness' of *rangaku,* because the Japanese had taken on board only Western technology without Western ideology.[11] More will be said of Goodman's assertions later. Norman Ozaki wrote a complicated and abstruse intellectual history of medicine during the Tokugawa period that was basically free from such biases, but his aim was still to chart a history of conceptual 'progress' from Chinese to Western medicine.[12] More recently, Dutch scholars have undertaken some interesting work on the history of medicine. Haneveld, for example, turned the traditional Dutch-Japanese relationship on its head by writing about the introduction of acupuncture to the West.[13] A general 'post-colonial' history (so to speak) of *rangaku* scholarship in Japan, however, has yet to appear.

Under the influence of Marxist scholarship, general histories of *rangaku* in Japanese have usually been political histories. Scholars searching for the historical significance of *rangaku* typically were divided into two schools: those on the one hand who believed that *rangaku* had a role in reinforcing the feudal system and ideology, and those on the other who believed that proponents of *rangaku* were opposed to the feudal system and helped to overthrow it.[14]

Part of the problem with these intellectual and political histories is that they have been preoccupied with a linear process of modernisation leading inexorably to Japan's eventual adoption of a system of modern Western medicine and science. Cultural imperialism and ideas of 'Westernisation' and 'progress' have therefore been difficult to avoid. One of the aims of this thesis, following the ideas of Peter Burke in his history of the European Renaissance, is to write a 'receptive' history of

[11] Grant Goodman, *Japan: The Dutch Experience* (London: The Athlone Press, 1986) p. 228.
[12] Norman Takeshi Ozaki, "Conceptual Changes in Japanese Medicine During the Tokugawa Period" (PhD thesis, University of California, 1979).
[13] G.T. Haneveld, "The Introduction of Acupuncture into Western Medicine: the Influence of Japanese and Dutch physicians," in *Red-Hair Medicine Dutch-Japanese Medical Relations*, ed. H. Beukers, et al. (Amsterdam: Rodopi, 1991) 51-8.
[14] Satō Shōsuke, *Yōgakushi kenkyū josetsu* (Tokyo: Iwanami shoten, 1964) p. 4.

rangaku.[15] 'Reception theory' was originally used by literary theorists such as Hans Robert Jauss, as a new way of approaching literary history by examining literary works in terms of the way they were understood by their contemporary audience.[16] In applying this concept to history, Burke attempted to view the spread of culture during the Renaissance in terms of the way it was adopted in various places. He saw it as an 'active process of assimilation and transformation'. His focus was on the 'contexts', 'networks' and 'locales' in which 'new forms and ideas were discussed and adapted', and on the Renaissance's 'gradual permeation of everyday life', or 'domestication'.[17] By taking this approach, Burke's aim was to dissociate the Renaissance from modernity and its familiar place in the Grand Narrative of the triumph of Western civilisation. He tried to see the culture of Europe as simply one culture among others, and the spread of the classical style as a process of cultural exchange, which did not always involve Italy directly, and often incorporated local trends. Although Burke provided many individual examples from all over Europe, his receptive history ultimately failed in its task because his European panorama was unable to provide enough depth. The reader is left without any real sense of the 'context' into which Renaissance culture was introduced, and the role played by 'locales', and 'networks' in adopting that new culture.

Thus, in the context of Japanese history, this thesis is 'receptive' in the sense that it aims to focus on the acceptance of Western learning on the part of Japanese, rather than on the European 'benefactors'. As noted by Burke, the emphasis on 'reception' leads to a concern with 'the interaction between an international movement and local conditions'.[18] Unlike Burke, however, this work does not attempt to provide a panorama of *rangaku* scholarship. Instead, through the example of Takano Chōei and his friends, it will provide a detailed and specific examination of the context to which Takano Chōei and his colleagues in the countryside adapted Western ideas, the social networks through which they communicated them, and the geographical spaces that supported these activities.

[15] Peter Burke, *The European Renaissance* (Oxford: Blackwell, 1998) pp. 1-17.
[16] Hans Robert Jauss, *Toward an aesthetic of reception*, trans. Timothy Bahti (Minneapolis: University of Minnesota Press, 1982).
[17] Burke, *The European Renaissance,* p. 5.
[18] Burke, *The European Renaissance,* p. 12.

This approach ties in with a burgeoning field of history in Japan: *zaison no rangaku,* or 'study of *rangaku* in the countryside'. For a long time in Japanese historiography, *rangaku* was regarded as being something belonging to the warrior class. Particularly after the events of the *bansha no goku* repression in 1839 (see below), it was seen to be swallowed up and incorporated into the mechanisms of the *bakufu* government, to be used for the rulers' own purposes. This interpretation came about because of a focus on the history of the ruling classes, great men, and on intellectual and technological history rather than social history.[19] The idea of receptive history therefore helps to provide an overlying framework for these isolated local studies.

Throughout this thesis, *rangaku* scholarship will be presented as a creative and adaptive process. By focussing less on *what* scholars appropriated, than on what they *did* with it, I will seek to create a social, rather than an intellectual or political, history of *rangaku.* Whereas Goodman in his intellectual history could only conclude that *rangaku* was 'a kind of miscellaneous collection of practical data and techniques without cohesive structure or inner meaning', and that the central role played by physicians actually curbed rather than promoted the possibility of critical thought,[20] in this receptive history I propose that *rangaku* did indeed have a meaning. This meaning was closely associated with Japanese ideas of *jitsugaku* and may be found in the social function of *rangaku.*

The place of Takano Chōei in history

The politicisation of *rangaku* is nowhere more obvious than in the treatment of one of its most famous scholars, Takano Chōei (1804-50). Despite the fact that he wrote many medical works and was a prolific translator, Chōei is mostly remembered as a political figure. In some ways, this is hardly surprising. Along with Watanabe Kazan (1794-1841) and Ozeki San'ei (1787-1839), Chōei was a victim of what has become known as the *bansha no goku*: literally, the 'imprisonment of barbarian associates'. This was a dramatic repression of Western studies by the

[19] See Aoki Toshiyuki's historiographical discussion in Aoki Toshiyuki, *Zaison rangaku no kenkyū* (Kyoto: Shibunkaku, 1998) pp. 3-8.
[20] Goodman, *Japan: The Dutch Experience,* pp. 228-30. Quotation p. 228.

bakufu government in 1839, and it had far-reaching repercussions for *rangaku* scholarship. It should be seen, however, less as a result of anxiety on the part of the government, than as the culmination of fierce jealousies and fears within the powerful Confucian establishment that its official doctrine would be undermined.

Chōei's crime was to have authored *Bojutsu Yume Monogatari* (*The Tale of a Dream*), an essay criticising the application of the 'shell and repel' edict on foreign ships. This edict was promulgated in 1825, and ordered that foreign ships invading Japanese waters be sent away without providing provisions or other assistance, immediately and by violent means if necessary.[21] Chōei was prompted to write the tale in response to news he heard about the hostile treatment of the American ship *Morrison,* which had approached Uraga Bay in 1837.

In many accounts of Chōei's life, he has been glorified as a man who was tragically imprisoned, and eventually died, for his role in the modernisation of his country. Sadly, however, this has meant that these political events have been allowed to overshadow the significance of his early career, and the medical work on which his reputation was built has been rather neglected.

Scholarly work on Takano Chōei first became popular in the Meiji period (1868-1912). One of the first and most influential studies was a book entitled *Bunmei Tōzenshi*, published in 1884 by Fujita Mokichi (1852-92). Fujita, who was a graduate of Fukuzawa Yukichi's Keio Gijuku and a participant in the civil liberties movement, tended to see Chōei and Kazan as forefathers of that movement, and to glorify them as martyrs to the feudal system.[22] His work provided the basis for many popular ideas about Chōei, both in the Meiji period and beyond.

In 1898, Chōei received a posthumous official pardon from the Meiji Emperor, and a commemorative stone was erected the following year. These events seem to have inspired further research on his life, for there was something of a Chōei 'boom' over the next decade. According to one bibliography, there were six books

[21] Although the edict has often been interpreted as an example of Japan's xenophobic policies, at the time it was conceived of largely as an attempt to control unruly foreign whaling ships. See M. William Steele and John G. Caiger, "On Ignorant Whalers and Japan's "Shell and Repel" Edict of 1825," *International Journal of Maritime History* V, no. 2 (1993): 31-56.
[22] Satō, *Yōgakushi kenkyū josetsu*, pp. 131-3.

and one article published between 1898, the year of his pardon, and 1913.[23]

The most significant of the writers of this period was Takano Chōun (1862-1946). Chōun was a descendant of the Takano family (though he was not a blood relation of Chōei) and he too, was a doctor. His first effort was to approach the writer Nagata Kenjirō to write a book about Chōei. This was published in 1899 as *Takano Chōei Sensei Den.* Not content with this, however, Chōun continued his research, publishing the first edition of his important work *Takano Chōei Den*, a biography of Chōei, in 1928. A second edition was published in 1943. In the preface to this edition, he explained the reasons behind his efforts:

> I began the study of my ancestor Chōei fifty-two years ago, in the twenty-third year of Meiji (1890)...As Chōei was a wanted criminal, many of those who had been connected to him had purposely burned their documents in order to hide the truth. Fifty years after his death, his friends and acquaintances had already died, and evidence had disappeared without trace into oblivion, so my investigations were fraught with difficulty... Even after his death, it is regrettable that, for many years, novelistic biographies of Chōei continued to propagate mistakes. I thought, as his descendant, it was my duty to publish a true biography and correct all the false accounts. For this reason, I resolved that no matter how difficult, or what sacrifices I might have to make, I would not stop until I collapsed, and earnestly went about collecting materials...[24]

Chōun's biography was thus something of a personal quest, and its eulogistic nature must be taken into account when reading it. It nevertheless contains many documents and letters and it remains a detailed and useful account. Chōun followed up the biography with the publication of four volumes of Chōei's collected works from 1930-1931.

The first article to appear in English on Takano Chōei was a piece published by David Greene in the *Transactions of the Asiatic Society of Japan* in 1913. Writing just one year after the Meiji Emperor's death, Greene saw Chōei as a harbinger of the Meiji sovereign's 'reign of enlightenment'.[25] Although Greene did not reveal his

[23] Nichiran Gakkai, ed., *Yōgaku kankei kenkyū bunken yōran* (Tokyo: Nichigai Associates, 1984).
[24] Takano Chōun, *Takano Chōei den.* 2nd ed. (Tokyo: Iwanami shoten, 1943) pp. 3-4.
[25] David C Greene, "Life of Takano Nagahide," *Transactions of the Asiatic Society of Japan* 41. First series (1913): 390-492, p. 456.

sources (apart from some of Chōei's letters), it is likely that he referred to Fujita's *Bunmei Tōzenshi*, as the tone of the two works seems quite similar. Despite some inaccuracies, Greene's paper is still worth reading, particularly for his translation of Chōei's 1838 *The Tale of a Dream*. The fact that Greene wrote such a detailed piece at so early a date is testimony to the intrinsic interest that the story of Takano Chōei held for people living at the end of the Meiji era.

Much of the Japanese scholarship written after this came under the influence of the larger debate about the historical significance of *rangaku*. Those scholars, such as Itō Tasaburō (1909-84) and Numata Jirō (1912-94), who argued that *rangaku* scholarship reinforced the feudal system, claimed that although Western learning was modern in the sense of being a product of Western technology, it was interpreted by the Japanese through a filter of Chinese learning. In some ways their argument was similar to the one being presented here about the way in which knowledge is 'received' rather than simply transferred from culture to culture. Rather than as a positive thing, however, they saw the filter as an impediment to understanding. At the same time, they emphasised the way in which the Tokugawa regime harnessed scholars of Western learning and used them to its own advantage, thereby hampering 'progress'. On the other hand, Takahashi Shin'ichi (1913-85), who made good use of Fujita Mokichi's *Bunmei Tōzenshi*, argued that there was an anti-feudal, progressive element to Western learning in Japan. The Marxist historian Tōyama Shigeki pointed out that an event like the *bansha no goku* could only mean that some kind of revolution against the old way of thinking occurred. This revolution was effectively suppressed, however, by the *bakufu* government, with the result that *rangaku* scholars channelled their efforts into policies for strengthening the country and army.[26]

There is evidence of the influence of these arguments in English scholarship too, for they were of great interest to modernisation theorists as well as to Marxist historians. In 1950, the eminent English scholar of Japan, G.B. Sansom, included a section on Watanabe Kazan and Takano Chōei in his *The Western World and Japan*. As one might expect from its title, 'Forerunners Of The Restoration Movement',

[26] Satō, *Yōgakushi kenkyū josetsu*, pp. 4-7.

Sansom too, saw Kazan and Chōei as enlightened, though tragically oppressed, figures on the eve of the Meiji restoration.[27]

This view began to be challenged with the publication in 1951 of W.G. Beasley's *Great Britain and the Opening of Japan*. Like Sansom, Beasley included a very brief account of Chōei and Kazan; but he was careful to point out that despite their criticism of the 'shell and repel edict', both men still believed that trade with Western countries should be refused.[28] This clarification, along with a reminder that *rangaku* scholars, just as much as other intellectual groups, continued to see foreigners as 'predatory and degenerate' was reiterated in 1986 by Goodman,[29] and also by Wakabayashi, who characterised Takano Chōei as a xenophobe.[30]

Scholarship on the life of Takano Chōei cannot be considered without the work of a historian called Satō Shōsuke (1918-1997). After training at the University of Tokyo, Satō spent much of his career at Tōhoku University in Sendai. From the 1960s onwards, he made an enormous contribution to scholarship on Chōei and on Western learning in general. His last book was published posthumously, in 1997.[31] Satō's work was particularly interesting for the way it presented challenges to popularly held ideas about Chōei. His work was designed to correct what he saw as the biases of *Bunmei Tōzenshi* and *Takano Chōei Den*, which he believed he could do by an objective analysis of primary documents. In terms of the wider debate about Western learning, he proposed a compromise between the 'anti-feudal' argument put forward by Takahashi and Tōyama and the 'feudal' theory put forward by the positivist scholarship of Itō and Numata.[32] Satō remained steadfastly an empirical historian throughout his career, with a meticulous approach that can only be admired. As may be seen from the footnotes throughout this thesis, my own perceptions of Chōei owe a great deal to his work.

Naturally, Satō's scholarship was not infallible; there were times when he himself was forced to reconsider the validity of his approach. Indeed, there was a

[27] George Sansom, *The Western World and Japan* (London: Cresset, 1950) pp. 262-89.
[28] W.G. Beasley, *Great Britain and the Opening of Japan 1834-1858* (London: Luzac, 1951) p. 35.
[29] Goodman, *Japan: The Dutch Experience,* p. 210.
[30] Wakabayashi, *Anti-Foreignism*, p. 61.
[31] Satō Shōsuke, *Takano Chōei*, vol. 512, *Iwanami shinsho shin akaban* (Tokyo: Iwanami shoten, 1997).
[32] Satō, *Yōgakushi kenkyū josetsu*, pp. 6-7.

perceptible softening of many of his stances over the more than thirty years of his writing career. The following examination of the main issues he addressed in his work on Takano Chōei will give an indication of the impressive extent and depth of his scholarship.

One of the most important challenges Satō made to existing ideas, which is also the most pertinent to this thesis, was to question Chōei's image as a political figure and his role in the *bansha no goku*. Prior to Satō's work in the 1960s and 1970s, Chōei and Watanabe Kazan, who was his employer and mentor, had been seen more or less equally as targets in the events of the repression and as having similar ways of thinking about foreign affairs. This was largely the result of Fujita Mokichi's approach in *Bunmei Tōzenshi*. In response to this, Satō argued that Kazan and Chōei were scholars of quite a different nature. Kazan was a statesman and administrator with a sophisticated vision of foreign affairs, while Chōei was primarily a physician and scientist, who under Kazan's influence after 1832 had recently become interested in broader political and social issues.[33]

Satō pointed out that Kazan himself wrote figuratively of Chōei's political awareness, that he was 'no more than a corporal' and was 'not yet ready to become a general'.[34] This is hardly surprising when one considers that Chōei's training was in medicine, while Kazan was a trained politician with responsibility for coastal defence in his domain.

In a detailed study of the events surrounding the *bansha no goku*,[35] Satō argued that these were largely the result of a personal and professional grudge held against Watanabe Kazan by a particular *bakufu* official called Torii Yōzō. Most importantly, he argued, the plot was an attempt to prevent Kazan from making a report to the government about foreign affairs and coastal defence, and it demonstrated that Chōei was only a minor figure in Yōzō's scheme of things.

Of the original charges Yōzō laid against Kazan and Chōei, only Chōei's writing of *Yume Monogatari* was upheld. In the process of investigation however,

[33] Satō Shōsuke, ed., *Watanabe Kazan, Takano Chōei*, vol. 25, *Nihon no meicho* (Tokyo: Chūō kōronsha, 1972) pp. 59-60.
[34] Quoted in Satō Shōsuke, *Watanabe Kazan* (Tokyo: Yoshikawa kōbunkan, 1986) p. 86.
[35] Satō's writings on the *bansha no goku* are numerous. Perhaps the most accessible account is the 1997 *Takano Chōei.*

drafts of Kazan's *Shinkiron* and other manuscripts critical of *bakufu* policy were found at Kazan's home, and it was on the basis of these that Chōei and Kazan were prosecuted.

These revelations give the story of Takano Chōei an even more tragic nature, for it would appear he was only a token victim of the *bansha no goku* and that the reason for his arrest, the *Yume Monogatari*, was not at all representative of his work as a whole. Most of Chōei's work was in medicine, science and social welfare. Moreover, as Satō points out, *Yume Monogatari* was not even a very sophisticated piece of work compared to Kazan's *Shinkiron*.[36] It is interesting to consider, in the light of these reflections, the following passage from Chōei's *Tori no Naku Ne* (*The Cry of a Bird*), which was written in prison to proclaim his innocence. A possible reading seems to be that the *rangaku* to which Chōei referred meant his usual translation work on medicine, and that he did not consider *Yume Monogatari* to be *rangaku* at all.

> ...If one were to take *rangaku* as one's life's work and die for it, one would be loyal in both deeds and death. Thus, there would be nothing to resent in terms of reason, and in terms of virtue nothing of which to be ashamed. However, I could not but regret dying for the sake of my *Yume Monogatari*...[37]

Thus, while the events of the *bansha no goku* had a profound effect, both on *rangaku* in general and on the course of Takano Chōei's life as an individual, it would appear that writing political commentary was by no means what he considered his work to be.

Another of Satō Shōsuke's important contributions to scholarship on Chōei was a reappraisal of the manner of Chōei's escape from prison in 1844, and his movements and activities thereafter. Particularly sensitive was the issue of whether or not Chōei was involved in a plot to set fire to the prison. Takano Chōun vigorously denied this claim, arguing that the fire had been started accidentally. At

[36] A translation of Chōei's *Yume Monogatari* can be found in Greene's "Life of Takano Nagahide," 423-30. Kazan's *Shinkiron* has been translated by Bonnie Abiko in the appendix of her thesis: "Watanabe Kazan: The Man and His Times" (PhD thesis, Princeton University, 1982) 293-304.
[37] Takano Chōei, "Wasuregatami," in *Nihon shisō taikei 55*, ed. Sato Shōsuke (Tokyo: Iwanami shoten, 1971) 171-84, p. 182.

the same time, however, he still included a report from the trial of Chōei conducted after his death, which made reference to the arrest of a man called Eizō, who confessed that he was paid by Chōei to start the fire.[38] Satō took Chōun to task on this matter in his 1993 book *Yōgakushi Ronkō*[39] and again in *Takano Chōei* in 1997.[40]

Satō's last major challenge to previous scholarship on Chōei concerned his movements after his escape from prison. Most accounts since *Takano Chōei Den* had followed Chōun's line, which, because documentary evidence was extremely scarce, was based on oral history. According to Takano Chōun, Chōei first visited several friends in Edo, then a doctor called Takano Ryūsen, who lived in Musashi (Saitama), before travelling on to see friends in Kōzuke. From there he went on to visit his mother in Mizusawa, and on to Sendai, Yonezawa, and Echigo before returning to Edo in the late spring of 1846. In response to this, Satō asserted that oral history accounts cannot be trusted, and based his own version on inferences drawn from a detailed analysis of Chōei's translation work and that of his friend and student, Suzuki Shunzan in Edo.[41] After comparing the translations of Suzuki and Chōei, and finding a great many similiarities, Satō concluded that a large proportion of the work was in fact done by Chōei, and that the work was of such a scope and standard that it could not possibly have been done if he had spent such a long time hiding in the country. He argued that Chōei returned to Edo after visiting Takano Ryūsen in Musashi, shortly after his escape.[42]

However, some years later, Satō was forced to retract his assertions, with the discovery of documents supporting the claim that Chōei had gone to Yonezawa. This account had been included in Takano Chōun's oral history collection, but had no supporting documentary evidence. One of the new documents was a mention in the official diary of Yonezawa domain in Edo, that Chōei had visited the doctor Horiuchi Chūryō in Yonezawa on the seventeenth of the seventh month, and that an

[38] Takano Chōun, *Takano Chōei den*, p. 637.
[39] Satō Shōsuke, *Yōgakushi ronkō* (Kyoto: Shibunkaku shuppan, 1993) pp. 176-85.
[40] Satō, *Takano Chōei*, pp. 132-44.
[41] The results of this analysis are presented in Satō Shōsuke, *Yōgakushi no kenkyū* (Tokyo: Chūo kōronsha, 1980), pp. 386-493.
[42] Satō, *Yōgakushi no kenkyū*, pp. 401-2.

investigation had been ordered.[43] The other was a report made by Itō Kyūan, a doctor who had studied with Chōei in Nagasaki. In the report, Kyūan confessed that Chōei visited him on the night of the sixteenth of the seventh month. In the investigation that followed, he emphasised that he had not been close to Chōei and had not seen him since his Nagasaki days. Faced by this new evidence, Satō amended his account of Chōei's travels to include a visit home and to Yonezawa before returning to Edo.

The study of the life of Takano Chōei has been popular because he was seen as a martyr of the process of modernisation. The tragedy of his life as a victim of politics cannot be denied, especially since, as Satō demonstrated, he was in the large part simply caught up in a plot intended for others. To focus purely on the tragedy, however, is to do him the injustice of forgetting the triumph of his role as one of the most talented *rangaku* scholars of his time. It is therefore one of the aims of this thesis to return to the period before Chōei's arrest, in order to examine his place in history, not as a political victim, but as a *rangaku* scholar and doctor.

Outline of the chapters

Takano Chōei was a self-made man. In the beginning, he was nothing more than the son of a middle ranking *samurai* doctor in the village of Mizusawa in northern Japan. His move to Edo, and the constant struggle he faced there to make a living as a town doctor and medical scholar, tell us a great deal about the study and practice of medicine in early modern Japan. Social aspects such as these have been much neglected in the history of Japanese medicine.

Chapter Two of this thesis therefore begins with a short biography of Chōei based on the sources discussed above, followed by an examination of medical education in the Tokugawa period. This second section uses the letters Chōei wrote as a young man, together with a number of Japanese secondary sources. Different schools of medical thought are discussed, not for their theories as such, but for the way in which their members identified themselves and interacted with each other. Finally, the different kinds of doctors and their social status are addressed. This last section relies heavily on evidence found in humorous poems of the Edo period,

[43] Satō, *Yōgakushi no kenkyū*, p. 186.

which have been collected in a recent book by the physician Ono Sanataka.[44] These short, gently humorous verses were part of the culture of urban commoners, though increasingly, they were enjoyed by members of the warrior class too.[45] They often contained direct observations of everyday life, and are therefore an especially valuable source of information about the everyday history of medicine, which so often remained unrecorded elsewhere.

In keeping with the idea of a 'receptive' and social history of *rangaku* introduced above, Takano Chōei will be examined in the ensuing chapters in terms of the 'context' or social environment to which he adapted his ideas, the 'networks' by which he shared his new knowledge, and the 'locales' or places which supported those networks.[46]

The last of these terms will be dealt with first in Chapter Three. During the 1830s, Chōei built up a warm relationship with the doctors Fukuda Sōtei (1791-1840), Yanagida Teizō (1795-1855) and Takahashi Keisaku (1799-1875) in the province of Kōzuke. In return for their financial patronage, Chōei shared with them his knowledge of *rangaku* scholarship. They eventually wrote together two collaborative works on famine and disease, utilising Western knowledge in order to approach a local problem. This is a perfect example of how *rangaku* was received, filtered through networks, and creatively transformed into something new. The area around Nakanojō in Kōzuke, with its mountain herbs and thermal springs, formed a geographical background or 'locale' for this network of physicians. The physicians, their environment, and their relationship with Chōei will be explored in this chapter, drawing on a combination of local historical materials, and secondary sources in English.

The relationship between Chōei and the Kōzuke physicians has always held a great deal of interest for local scholars. A small exhibition was organised as early as 1891 or 1892, by Torahachi, descendant of Yanagida Teizō, and his friends Negishi Hanjirō and Koitabashi Kensaburō, both from families who were friendly with the

[44] Ono Sanataka, *Edo no machiisha* (Tokyo: Shinchōsha, 1997).
[45] Shuichi Kato, *A History of Japanese Literature*, trans. Don Sanderson, vol. 2 (Tokyo: Kodansha International, 1983) p. 209.
[46] These terms, too, are borrowed from Burke, *The European Renaissance*, pp. 9-12.

original group. Unfortunately, there is no remaining record of what was displayed at that time.[47] About the town of Nakanojō, various monuments pay tribute to each of the three physicians and their work with Chōei. The oldest of these public monuments is that erected to Fukuda Sōtei, by his son Bundō in 1880. Sadly, on this monument, and Sōtei's gravestone itself, Chōei remains nameless, being referred to only as a 'teacher'. At this stage, Chōei was still officially a criminal, for his posthumous pardon did not come until 1898. It was not until 1901 that Chōei was mentioned by name, on a large stone dedicated to Takahashi Keisaku erected in the precinct of the Agatsuma shrine near the village of Yokō. Built by Matsumoto Kōdō and other students, this monument provides some important clues about Chōei's first visit to Nakanojō. Finally, near the footpath on the busy main street of Isemachi, marking the place where Yanagida Teizō's house stood, is a monument dedicated to Teizō. The inscription was written by Takano Chōun, (before he died in 1946), and the man responsible for its erection in 1950 was Yanagida Ryūyō Takeyuki, great-great-grandchild of Teizō.

Many descriptive and documentary accounts have been written about the relationship between Chōei and the physicians. Some of the earliest accounts were in Takano Chōun's *Takano Chōei Den* which introduced several letters written by Chōei to the Kōzuke physicians, and in *Agatsuma Gunshi* in 1929. Arai Shinji, who was related to Fukuda Sōtei by marriage, wrote a piece about Chōei and Sōtei for a local historical journal in 1956.[48] Another product of the fifties was Maruyama Kiyoyasu's *Gunma no Ishi* (Medical History of Gunma), published in 1958. It was commissioned to commemorate the tenth anniversary of the Gunma Society of Physicians. Maruyama's work was particularly interesting for the way it grouped physicians in Kōzuke into several groups based on their geographical location. In Maruyama's analysis, Fukuda Sōtei and company formed part of the Northern Group, consisting of Agatsuma-*gun* and Tone-*gun*. The group also included five other physicians, not all of Western persuasion.[49] In 1977, Yashiro Shūji, a local

[47] Gunma ken Agatsuma kyōikukai, ed., *Gunma ken Agatsuma gun shi* (Nakanojōmachi: Gunma ken Agatsuma kyōikukai, 1929) p. 1159.
[48] Arai Shinji, "Takano Chōei to Fukuda Sōtei," *Jōmō shigaku* 7 (1956): 1-5.
[49] Maruyama Kiyoyasu, *Gunma no ishi* (Maebashi: Gunma ken ishi kai, 1958) p. 131.

doctor and scholar, wrote a book entitled *Takano Chōei to Gunma.* It contained a selection of Chōei's works and an introduction to the lives of several Kōzuke physicians, as well as other medical men who had connections or possible connections with Chōei. Tsurumi Shunsuke, in his biography of Chōei written for the publishing branch of the Asahi newspaper in 1975 (reprinted 1985), retraced the steps of Takano Chōun as he went about collecting materials and oral history for *Takano Chōei Den.* He included in his book interviews, stories, photographs and detailed descriptions of the places where Chōei was said to have hidden in the region.[50]

It is worth noting that Satō Shōsuke was almost completely silent on this aspect of Chōei's life. Perhaps this was because the secrecy surrounding the presence of Chōei in Kōzuke, possibly also as a fugitive after 1844, made him something of a local legend, and Satō, who relied solely on written documents for his history writing, was not prepared to make use of these local tales in his work.

Apart from an article about Takahashi Keisaku in the popular journal for local history, *Chihōshi kenkyū,* in 1984,[51] the most recent scholarship on the physicians has been carried out almost entirely by a local historian by the name of Kanai Kōsaku, with the co-operation of Takahashi Keisaku's descendant, Takahashi Tadao. Now over ninety years of age, Kanai continues to conduct research on the Kōzuke physicians. My own work in this thesis owes an enormous debt to the painstaking work of Kanai, through his editing the diaries of Keisaku and Teizō, and through his writing about the physicians in such enthusiastic detail.

All of the above scholarship tends to focus on the Kōzuke physicians in terms of local or descriptive interest rather than exploring the friendship in a wider historical perspective. Their relationship with Chōei is presented without drawing any conclusions from it. Even Kanai, who at least makes some observations about the social and geographical background to the history of medicine in Nakanojō, does not go on to compare these factors to the circumstances of physicians in other areas. Chapter Three will therefore explore the geographical significance of the relationship

[50] Tsurumi Shunsuke, *Takano Chōei*, vol. 276, *Asahi sensho* (Tokyo: Asahi shinbunsha, 1985).
[51] Tabata Tsutomu, "Bakumatsu ni okeru ichi chihō ran'i no jiseki ni tsuite," *Chihōshi kenkyū* 191, October (1984): 45-58.

between Chōei and the Kōzuke physicians from the perspective of the social history of medicine, rather than purely local history.

Consequently, while the chapter necessarily involves the study of a community of rural physicians and their environment, the challenge in writing a social history is then to link those lives to broader changes in contemporary society. I aim to do this by drawing upon a range of scholarship, both in English and in Japanese, which provides clues to the nature of life in Japan in the first half of the nineteenth century. The past decade or so has seen a number of studies in English on life in Tokugawa Japan.[52] My intention is to bring this wealth of recent scholarship in English to the local history so carefully undertaken by Japanese historians. This serves two purposes: to assist in hypothesising about the social and geographical conditions which allowed the Kōzuke physicians to live the lives they did, and to add a dimension of social history to the field of the local history of *rangaku*.

Chapter Four will be concerned with the 'context' for the reception of Western knowledge, as seen through specific examples of Takano Chōei's writing. It will take the form of a detailed examination of the collaborative works he wrote with the Kōzuke physicians. These two documents, *Treatise on Two Things for the Relief of Famine* (*Kyūkō Nibutsukō*) and *Methods of Avoiding Epidemic Diseases* (*Hieki Yōhō*), were written in 1836, at the height of the Tempō famine. Full English translations of each document appear in the Appendix. The chapter also contains excerpts from Yanagida Teizō's diary, which vividly describe the local effects of the famine in Kōzuke.

These writings formed part of a wider debate about famine in Tokugawa

[52] These works include both short and long general overviews by Nakane, Jansen, and Totman, a meticulous study of travel by Vaporis, and works on standards of living and material culture by Hanley. Relating to medicine, there is William Johnston's study of tuberculosis, and Ann Jannetta's work on epidemics. See: Chie Nakane and Shinzaburo Oishi, eds., *Tokugawa Japan* (Tokyo: University of Tokyo Press, 1990); Marius Jansen, "Japan in the early nineteenth century," in *The Cambridge History of Japan, Vol.5*, ed. Marius Jansen (Cambridge: Cambridge University Press, 1989) 50-115; Conrad Totman, *Early Modern Japan* (Berkeley: University of California Press, 1993); Constantine Vaporis, *Breaking Barriers* (Cambridge, Massachusetts: Harvard University Press, 1994); Susan Hanley, "Tokugawa society: material culture, standard of living, and life-styles," in *The Cambridge History of Japan Vol.4 Early Modern Japan*, ed. J.W. Hall (Cambridge: Cambridge University Press, 1991) 660-705 and *Everyday Things In Premodern Japan* (Berkeley: University of California Press, 1997); Ann Bowman Jannetta, *Epidemics and Mortality in Early Modern Japan* (Princeton: Princeton University Press, 1987); William Johnston, *The Modern Epidemic* (Cambridge, Massachusetts: Harvard University Press, 1995).

Japan, and demonstrate the influence of the idea of *jitsugaku* (practical learning) outlined above. For their inclusion of knowledge obtained from Western sources, however, they were still quite unusual. As will be seen, in some instances the documents contain quite surprising 'misinterpretations'. These kinds of errors have often been judged in intellectual histories as a 'failure' to understand Western knowledge correctly. However, they by no means detract from the meaning of the argument in its own time and place.

Chōei did not merely translate what he read in Dutch books, but tried to interpret and apply this knowledge to problems facing his own society: in this case, the issues of starvation and epidemic disease around the time of the Tempō Famine. In 'receptive' history, the issue is not the extent to which he understood on its own terms the Western knowledge he read, but what he did with that knowledge on his terms. It will be argued that even when dealing with medical concepts, it was necessary for Chōei to put them into a form in which they could be readily accepted and understood. This task was made easier by a basic compatibility between some of the concepts in Chinese and Western medicine of the time. By considering these documents in their social context, it is possible to see the reception of knowledge as a process not simply of transfer, but of creative adaptation. It becomes easier to understand *why* knowledge was interpreted in certain ways. Finally, it becomes possible to place Takano Chōei in a light in which he has rarely been seen: not as a political activist, but as a socially conscious doctor of medicine.

The aim of Chapter Five is twofold: to portray the everyday life of a country doctor of the Edo period, and to establish the role of members of the rural elite in facilitating the spread of medical and other knowledge through their social networks. Very little is known about the daily work of medical practitioners in early modern Japan. I hope to make a contribution to this field by means of conducting an analysis of the diary of Takahashi Keisaku (1799-1875), one of the Kōzuke physicians introduced above.

Keisaku's diary is a rich source of information, not only about his daily life, but also for his personal networks. Keisaku was a village official and a keen poet, in addition to his work as a medical doctor. Despite his rural environment in Kōzuke, he was far from isolated. In addition to the acquaintances he made in the course of his official duties, his connections with other doctors, poets, and local intellectuals

kept him supplied with a constant stream of visitors, from both near and far.

Social networks in Japanese historical context have been treated in the work of several different English language scholars. In her article "Village Networks Sōdai and the Sale of Edo Nightsoil," Anne Walthall examined the sale of nightsoil in Edo to demonstrate how villagers used large, regional networks for administrative and political purposes. She noted particularly how these networks were formed by village elites, whose roles as wealthy farmers, businessmen and community leaders were notably 'often played by one and the same person'.[53] In a later article, Walthall went on to study the geographically wide-ranging social and familial networks of the rural elite. These networks, she argued, helped to create a kind of 'class solidarity', which formed the basis for the business, religious, political and leisured activities of the rural entrepreneurs.[54]

Tessa Morris-Suzuki touched upon the significance of social networks in her technological history of Japan, where she introduced the idea of a 'social network of innovation'. She described this as 'the network of communications which linked research and production centres in Japanese society'.[55] During the Edo period, she argued, a network of productive centres arose, which created a 'dynamism and flexibility' that helped to determine the way Japanese society coped with the sudden influx of Western technology at the end of the nineteenth century.[56]

This network of productive centres was especially important in the countryside. There, as Morris-Suzuki noted, producers were free from the limitations of urban guilds, a factor which 'encouraged the diffusion of technology and skills'. Importantly, in association with this trend, there arose a class of wealthy farmers, 'often with a substantial interest in craft industry, who had both the time and the capital to try out new techniques'.[57]

Though Walthall and Morris-Suzuki's histories have quite different foci, it is

[53] Anne Walthall, "Village Networks Sōdai and the Sale of Edo Nightsoil," *Monumenta Nipponica* 43, no. 3 (1988): 279-303, p. 303.
[54] Anne Walthall, "The Family Ideology of the Rural Entrepreneurs in Nineteenth Century Japan," *Journal of Social History* 23, no. 3 (1990): 463-84, p. 469.
[55] Tessa Morris-Suzuki, *The Technological Transformation of Japan* (Cambridge: Cambridge University Press, 1994) p. 7.
[56] Morris-Suzuki, *The Technological Transformation*, p. 34.
[57] Morris-Suzuki, *The Technological Transformation*, p. 21.

significant that both authors should trace the importance of social networks to a particular class of rural elite. The rural entrepreneurs, or *gōnō,* with their curious status between ordinary peasants and the *samurai* ruling class, have been the object of much historical attention. Not only have they been credited with an important role in the diffusion and development of technology, as in Morris-Suzuki's work; they have also been recognised in a more general economic sense as carriers of Japan's modern economic transformation.[58] If medicine may be thought of as 'technology', it may be supposed that the networks of the *gōnō* had a similar role to play in preparing the way for the adoption of Western medicine in the Meiji period. Just as rural elites experimented with new technologies in areas such as silk production, they may have had the time, education, and courage to try new forms of medicine. By scouring Keisaku's diary for evidence of the number and nature of his personal networks, it may be possible to draw a picture not only of his sophisticated social life, but of the way technological and medical information came to reach rural Kōzuke.

The chapters that follow are all connected by various links to the central figure of Takano Chōei. They are also interwoven with the recurring themes outlined above: of the reception of *rangaku*; networks; the spread of information and literacy; rural elites; and the social role of doctors. This study suggests that scientific knowledge was not some kind of immutable entity that had to be absorbed as a whole in order to be of use. Instead, it was received in a piecemeal fashion and creatively adapted to fit in with the pre-existing intellectual framework. Furthermore, scientific exchange was not restricted to elite scholars who were based in the political and economic centres, but those on the margins of society were becoming active participants too. If the acceptance of new knowledge by a society is measured by its ultimate domestication and permeation of everyday life, then ordinary, provincial scholars cannot be left out of the picture. While literacy and the publication of books were vitally important to the dispersion of new information, the significance of social networks in obtaining and assisting the spread of such knowledge should not be overlooked. The role of the medical practitioner as an important receptor and adaptor of information at the local level is also worthy of

[58] Edward Pratt, *Japan's Protoindustrial Elite* (Cambridge, Massachusetts: Harvard University Asia Center, 1999).

further attention.

This kind of 'receptive' approach may be useful not only for the study of how Western knowledge came to reach Japan, but also as a way of thinking more generally about the interaction between cultures in other times and places. It is especially helpful as an alternative to the presentation of history as 'progress' or as a process of 'Westernisation'.

During the course of my research, I have found it helpful to consult works concerning the social history of European medicine. This will become obvious to the reader through comparisons that are made in the chapters to the contemporary situation in Europe and Australia. Mostly, these comparisons are limited in their extent to those possible through the study of secondary sources in English. The influence of this body of scholarship on my work, however, is far from superficial. Indeed, the very questions I found myself asking of my Japanese materials are a direct result of my encounter with studies of the social aspects of European medicine. In part, this is because the social history of medicine as a field in Japan is still relatively undeveloped, and I have had no choice but to turn elsewhere for inspiration. It is my hope that the comparative aspects of the present study will be illuminating for historians of European and Japanese medicine alike.

Finally, as a female historian, I am acutely aware that my thesis presents very much a 'history of men'. Within the confines of my materials, I have attempted to include women through short sections on the history of childbirth. Of the wives of these doctors, and of female physicians in Kōzuke, I have as yet unfortunately found little trace.

CHAPTER TWO
TAKANO CHŌEI AND THE MEDICAL ARENA IN NINETEENTH CENTURY JAPAN

The extraordinary life of Takano Chōei (1804-50) reads rather more like a historical novel than the biography of a medical practitioner. A brilliant scholar who, at the height of his career, was made a political prisoner, Chōei staged a dramatic escape and lived for several years as a fugitive before finally committing suicide when he was at last recaptured. What then, can the study of such an unusual man reveal about the workings of medicine in nineteenth-century Japanese society?

As one of the leading scholars of Western learning in the first half of the nineteenth century, Takano Chōei is worthy of attention for this reason alone. His academic training made him part of an elite group whose members studied with the finest teachers of Western medicine, including Franz von Siebold (1796-1866) in Nagasaki. Socially, however, Chōei was always a fringe-dweller. As a student, he perpetually struggled to pay his fees, and as an adult he relied on the patronage of his friends to help him make a living and introduce him to influential scholarly circles. It is the social relationships which Chōei maintained as a non-elite medical practitioner that are of particular interest in providing clues to the nature of medical practice in early modern Japan. In addition, Chōei left detailed records of his life as a young medical student in Edo, which are extremely helpful in creating a picture of how students lived and trained. After beginning with a short biography, this chapter will utilise these valuable letters to make an examination of his life within the context of the broader medical scene in early modern Japan. Finally, by making use of the many examples of humorous poems about doctors, a picture will be drawn of their training and social status, the different types of medical practitioners, and the relationships between various groups in the nineteenth-century medical arena.

Takano Chōei

Takano Chōei, who was known as Kyōsai during his early life, was born in 1804. He was the third son of Gotō Saneyoshi (Sōsuke), a samurai of middle rank, in

Mizusawa, present day Iwate prefecture.[1] As a young boy, however, he was adopted by his maternal uncle Takano Gensai, with the intention that he would eventually marry his cousin Chio and become head of the Takano family. Gensai was a doctor, and Chōei quickly came under a conspicuous medical influence. Gensai had studied under Sugita Gempaku (1738-1818), the famous pioneer of Western medicine in Japan. Chōei's grandfather Gentan, had also travelled to Kyoto as a youth to study medicine. Growing up with these well-trained physicians as examples, it is hardly surprising that Chōei should have expressed the desire to go away to study as they had done. Chōei's medical schooling seems to have been commenced at an early age, with him receiving basic training from his grandfather Gentan, and from a local doctor of Chinese medicine, Sakano Chōan.

In 1820, Chōei travelled with his elder brother Tansai and cousin Yōrin to Edo to study medicine. Apparently, he was barely able to persuade his father to let him go, for Gensai was not in a position to spend much money on his education. According to family legend, it was only after Chōei won some money in a lottery that he was finally able to have his way.[2]

Upon arriving in Edo, Chōei had some difficulty in finding a teacher. However, he finally managed to persuade a reluctant Sugita Hakugen, the adopted son of Gempaku, to take him as a day student. This arrangement lasted only a year, for Chōei left Sugita to study with Yoshida Chōshuku (1779-1824). It seems Chōei enjoyed a much better relationship with his new teacher, for it was Yoshida Chōshuku who gave him his name in 1822. It included a character from Chōshuku's own name, as a measure of the regard with which he was held.[3] Yoshida Chōshuku had trained with Katsuragawa Hoshū, and, at a time when Western medicine was largely restricted to surgery, was one of the first doctors to prescribe Western methods for internal medicine. He also served as an official doctor to Kaga domain.[4] It was on a journey to treat the *daimyō* of Kaga in 1824 that Chōshuku suddenly

[1] Unless otherwise stated, this biography is based on details recorded in Takano Chōun, *Takano Chōei den*.

[2] It appears that Chōei's elder brother Gotō Tansai was to be adopted by Sakano Chōan, and was presumably funded by him. See Takano Chōun, *Takano Chōei den*, pp. 58-60.

[3] Takano Chōun, *Takano Chōei den*, p. 88.

[4] Satō, *Yōgakushi no kenkyū*, p. 90.

became ill. When requested to continue his journey even if unwell, he hired a palanquin and pressed on, only to arrive one day too late to save the *daimyō*. The travel took a toll on Chōshuku's own health, and he died a short time afterwards.[5] The sudden death of his teacher shocked Chōei 'beyond words'. It would also appear to have influenced to a great extent his decision to continue his education in Nagasaki the next year.

Chōei's journey to Nagasaki took place in 1825, after a short spell working as a replacement teacher in Yoshida Chōshuku's school. Yoshida had died without appointing a successor, and his students were anxious to make sure that his school did not fall into ruin.[6] Chōei told his adoptive father of his decision to go to Nagasaki only after he had already departed. He did so in a letter requesting that Gensai repay the loan he had taken out in order to cover his travel expenses. The long suffering Gensai no doubt repaid the loan, but Chōei's impudence appears to have upset him so much that he never wrote to his son again before he died in 1827. Evidence for this can be seen in a New Year's letter Chōei wrote that year:

> Since the year before last I have had no way of knowing your circumstances and can do nothing but spend my time worrying night and day. With the days and months a blur, already three springs have passed. I surmise it is entirely because you disapprove of my studying in Nagasaki. Now, after all this time, there is nothing that can be done, and I pray a hundred prayers that you will forgive me.[7]

When the news of Gensai's death reached him, Chōei was on a visit to the islands of Iki and Tsushima, collecting medicinal herbs.[8] Claiming that he was ill, he did not return home to take up the position of head of the family, as duty required.

Chōei's purpose in going to Nagasaki was to study at the Narutakijuku, the school of Franz von Siebold. Siebold was an acclaimed German physician and

[5] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami* (Mizusawa: Takano Chōei Kinenkan, 1993) p. 73.
[6] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, pp. 76-7.
[7] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, pp. 105-6. English translations of Chōei's letters are based on those I made in Ellen Louise Gardner, "Takano Chōei no ningenzō-sono shokan o chūshin ni-" (MEd thesis, Tokyo Gakugei University, 1996).
[8] Satō, *Takano Chōei*, p. 46.

scholar, who first arrived in Japan to work at the Dutch compound in 1823. His task, given him by the governor general of the Dutch East Indies, was to learn as much about Japan as possible, and in exchange, to teach European medicine to the Japanese.[9]

Students gathered at the Narutakijuku from all over the country, because this was the first time that Japanese students were able to receive a systematic training in Western medicine from a European. The school was open from 1824 to 1828, during which time Siebold was permitted by the Nagasaki town magistrate to go there once a week to teach. In conjunction with his lectures in Dutch, he also taught by demonstration, which was something of a revelation in contemporary teaching practices.[10] There is evidence in the records kept by Miyahara Ryōseki, who was studying at the school of Yoshio Kōsai in Nagasaki, that Siebold came to the Yoshio school to carry out at least six surgical operations. They included cases of a build-up of fluid in the scrotum, haemorrhoids, cancer and inflammation of the throat, and a lipoma (a type of benign tumour) in a twelve-year-old boy. According to Miyahara's account, Chōei was among the students from Siebold's school who came to view this operation.

The case of this young boy is a poignant example of the extent to which Siebold's medical activities were restricted by official regulations. After the operation, Siebold was obliged to entrust the care of the patient to his Japanese students, and return to his home on the island of Dejima. Some time afterwards, the boy took a turn for the worse, and developed a headache and fever, eventually losing consciousness. His students rushed to ask their teacher's advice, but they were not allowed to visit Dejima at night, so even in this time of emergency, they were forced to send messages back and forth about how to proceed. Despite their best efforts, the

[9] Harmen Beukers, *The Mission of Hippocrates in Japan* (Amsterdam: Four Centuries of Netherlands-Japan Relations, 1998) p. 22.
[10] Beukers, *The Mission of Hippocrates*, p. 58.

young boy died.[11] Much of the teaching at the school, too, seems to have been done by Siebold's senior students.[12]

Some of the students who studied under Siebold were allowed to board at the school, the requisite conditions being that they were both talented and very poor. Satō suggests that this was because such students were not in a position to refuse to undertake projects for Siebold, even should the work involve something dangerous or unlawful.[13] Chōei was one such student. Siebold's pupils were expected to write reports about Japan in lieu of school fees. Chōei's essays are the most numerous of all those remaining; his work covered such diverse subjects as *ikebana*, the manners of Japanese women, temples in Kyoto, and the cultivation of tea.[14]

During this period, Chōei, whose language skills were already highly regarded, supplemented his income by writing translations. Satō has found evidence that Chōei began working on the major medical works he published in the early 1830s while still in Nagasaki.[15]

Chōei's peaceful days of study came to an abrupt end in 1828, due to a turn of events that has come to be known as the 'Siebold Affair'.[16] After several successful years of research, which had included a visit to Edo with the official Dutch procession in 1826,[17] Siebold had been preparing to leave with his collection of Japanese paraphernalia. When preparations were nearly complete, Nagasaki was struck by a typhoon which damaged Siebold's ship and forced him to have the contents unloaded. When they were inspected, several forbidden items were discovered, including maps of Japan given to Siebold by the respected astronomer Takahashi Kageyasu (1785-1829). Siebold was confined, investigated, and eventually expelled in 1829. Takahashi was sent to prison, where he fell ill and died. Some of Siebold's students were punished by being exiled from Nagasaki or

[11] Aoki, *Zaison rangaku no kenkyū*, pp. 243-50. A brief account of this operation also appears in Beukers, *The mission of Hippocrates,* p. 78.
[12] Satō, *Takano Chōei*, pp. 30-31.
[13] Satō, *Yōgakushi ronkō*, p. 151.
[14] See Takano Chōei Zenshū Kankō Kai, ed., *Takano Chōei Zenshū*, 2nd ed., 6 vols. (Tokyo: Daiichi shobō, 1978) vol. 6.
[15] Satō, *Takano Chōei*, p. 42.
[16] This account is based on that in Donald Keene, *The Japanese Discovery,* pp. 147-55.
[17] This journey is described in Bowers, *Western Medical Pioneers,* pp. 116-23.

prevented from entering the capital, Edo. The Narutaki school was completely shut down.

Siebold fulfilled a dream by managing to return to Japan in 1859, but it was a fruitless time and he was ousted in 1861 by European diplomats, who found him disruptive. He returned to Germany but is said to have never stopped yearning for Japan. He made an enormous contribution to both European knowledge of Japan, and the development of Western medicine in Japan.[18] Incidentally, his daughter Ine (1827-1903), by his Japanese mistress Sonogi, remained in Japan and went on to study medicine herself.[19]

Upon hearing of his teacher's detention, Chōei, probably fearing that he too, would be incriminated, fled to Kumamoto. He then made his way slowly, via Hirose Tansō's (1782-1856) school, the Kangien in Hida, to Kyoto. In Kyoto, he treated patients, gave some lectures, and made efforts to meet several prominent Kyoto *ranpō* physicians such as Fujibayashi Taisuke (1781-1836), Komori Tou (1782-1843), Koishi Genzui (1784-1849) and Shingū Ryōtei (1787-1854). Finally, in a letter to his family in 1830, Chōei declared that he was ill, and was unable to return home. It was a transparent excuse, however, for in the same letter he described his new research plans, and wrote that in order to carry out the work he intended to do, he needed to be in Edo:

> Edo being the place where I studied for several years, I have many close friends there and it is a good place to recover from my sickness. It is also a good place to be employed in the service of my homeland.[20]

Chōei returned to Edo towards the end of 1830 and went about opening a school, the Daikandō, in Kōjimachi. In refusing to return home to his family in Mizusawa, Chōei spurned his betrothed Chio, and cut relations with his feudal lord,

[18] For more detail on the career of Siebold, see Bowers, *Western Medical Pioneers,* pp. 92-173, and Beukers, *The mission of Hippocrates.*

[19] Sōda Hajime, *Zusetsu nihon iryō bunkashi* (Kyoto: Shibunkaku shuppan, 1989) p. 248. See also Beukers, *The mission of Hippocrates*, pp. 124-32.

[20] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, p. 124.

effectively losing his samurai status and stipend. Thus, he became a *machiisha*, a common town doctor.

Of his decision to settle in Edo, Chōei explained:

> Consequently, it is difficult for me now, because of my ill health, to learn techniques, and for myself, I would like to devote the rest of my life exclusively to study. By doing this I will be considered to be of no use to my lord, and all these years of study to have been to no purpose, a shameful situation. If possible I hope to serve by some other means, at least to repay one ten millionth of the favour from which I have benefitted. When I thought so hard that I forgot to eat and sleep, I selected one aspect of Western learning. Unless I am in Edo, it will be difficult for me to undertake this work. This is no ordinary undertaking, and...when it is completed, it will probably benefit all of Mizusawa and of course too I hope, his lordship.[21]

The 'one aspect of Western learning' to which Chōei refers is probably a reference to physiology, the subject of his major work, *Seisetsu Igen Sūyō* (*Fundamentals of Western Medicine*). This was the first comprehensive work in Japanese on Western physiology.[22] The first volume was in five parts, of which only the first was published in 1832. The other parts were circulated in manuscript form. Little is known about the second volume, which is no longer extant.

The content of volume one was as follows. The first part contained sections on the distinguishing features of living beings, the differences between humans and animals, and between the human races. This was followed by an overview of the human body (solids, liquids, vital power, spiritual power, and inherited character). Part two contained the various functions of different parts of the body, the senses, sleep, and the physiology of movement. Part three concerned circulation, breathing, and secretions. Part four dealt with digestion, absorption, blood production, body temperature, and excretion. The fifth volume covered the reproductive organs, fertilisation, nutrition of the fetus, and the physiology of childbirth. The work was based on Dutch translations of works in German by Blumenbach and T.G.A. Roose

[21] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, p. 123.

[22] Nichiran Gakkai, ed., *Yōgakushi jiten* (Tokyo: Yūshōdō shuppan, 1984) p. 50. The first volume is reprinted in full in Takano Chōei Zenshū Kankō Kai, ed., *Takano Chōei Zenshū*, Vol. I, 5-106.

(1771-1803) and in French by Joris de la Faye.[23] It was with the publication of this book that Chōei made his name as a scholar.

The next few years were to be the most stable and productive of Chōei's life. It was during this period that he came under the influence of Watanabe Kazan (1793-1841), the man who was in many ways to share his fate.[24] Kazan was born in Edo as the son of a highly ranked, but poor samurai of Tahara domain, in the province of Mikawa. He lived most of his life in the domain's official residence in the capital, where he was trained as a Confucian statesman and as an artist. Due to the domain's failing economy, as a youth Kazan was forced to sell his artwork to help support his family. Gradually, as he rose to a high rank in the Tahara bureaucracy, he became interested in famine, agricultural reform, and the military defence of the domain's coastline. It was in his role as an administrator, therefore, that he turned to Western learning for inspiration.

Kazan and Chōei met probably in 1832. The area in which Chōei lived in Kōjimachi was very close to the Tahara domain residence, and Kazan, who could not read Dutch, asked Chōei to translate for him, arranging for the indigent scholar to be paid a small salary by the domain. Ozeki San'ei, who had also studied under Yoshida Chōshuku, and another scholar by the name of Hatasaki Kanae, were similarly employed.[25] Soon, Chōei began to participate in a study group which Kazan also attended. This was called the *Shōshikai*, and was a gathering of intellectuals and officials interested in Western learning and foreign affairs. It had been founded by Endō Katsusuke (1789-1851), a Confucian scholar who had become friendly with Kazan through his literary interests. The immediate reason for creating the group seems to have been to discuss problems of famine, which afflicted the country throughout the 1830s. Although details are sketchy, there is

[23] Goodman, *Japan: The Dutch Experience*, p. 202.

[24] A detailed study of Kazan's life and career may be found in Bonnie Abiko, "Watanabe Kazan: The Man and His Times" (PhD thesis, Princeton University, 1982).

[25] Satō, ed., *Watanabe Kazan, Takano Chōei*, p. 53.

evidence that the group evolved into a medium for the exchange of new information, with a particular emphasis on Western learning.[26]

It was also during the early 1830s that Chōei began to associate closely with Takahashi Keisaku, Fukuda Sōtei and Yanagida Teizō, physicians from the province of Kōzuke. Their association was to be characterised by a number of visits, warm exchanges by letter, both social and academic in nature, and financial support from the doctors for Chōei's publications. In addition, it led to the collaborative works, *Kyūkō Nibutsukō* (*Treatise on Two Things For The Relief Of Famine*) and *Hieki Yōhō* (*Methods of Avoiding Epidemic Diseases*), both published in 1837.

Another important person to figure in the writing of these works was Uchida Yatarō (1805-86), who signed himself as the 'scribe' of both documents. Yatarō also appended his own postscript to *Treatise on Two Things For The Relief Of Famine*. Unlike Chōei's students in Kōzuke, Yatarō, who had also been a student under Chōei in Edo, chose to use *rangaku* as a means of branching out into the study of mathematics rather than medicine. At the time the Meiji government decided to implement the Western calendar in 1872, he was head of the Meiji calendrical office.[27] Yatarō appears to have been one of Chōei's most trusted students. According to Satō, it was Yatarō who looked after Chōei's wife and family during the years he spent in prison. He also named Yatarō as responsible for having created an opportunity for Chōei to work secretly for Uwajima domain after his escape. Chōei appears to have translated two books on astronomy for Yatarō as a token of his gratitude.[28]

Chōei's wife was a woman by the name of Yuki, whom he married in 1838. Little is known about her background, which has meant that scholars have speculated freely about her, some suggesting, for example, that she was a *geisha*

[26] Satō, *Yōgakushi kenkyū josetsu*, pp. 134-5. There has been some confusion about the membership of the *Shōshikai* and the extent to which it was a politically motivated group. I have followed Satō, who saw it purely as a study group, and argued that Chōei's later assertions about its political nature were exaggerated. An alternative interpretation may be found in H.D. Harootunian, "Late Tokugawa culture and thought," in *The Cambridge History of Japan*, ed. Marius Jansen (Cambridge: Cambridge University Press, 1989) 168-258, pp. 231-52.

[27] Masayoshi Sugimoto and David Swain, *Science and Culture in Traditional Japan A.D.600-1854* (Cambridge, Massachusetts: The MIT Press, 1978) pp. 345-6, 360.

[28] Satō, *Takano Chōei*, p. 164. The books were *Sonmuru Shiseihen* and *Seigaku Ryakki*.

from Fukagawa.[29] Chōei was not long married, however, before his life was turned upside down by his writing that year of *Bojutsu Yume Monogatari* (*The Tale of a Dream*).[30] It will be recalled that this was a piece written in 1838 to protest against the application of the 'shell and repel edict' on foreign ships. The events of the *bansha no goku* (imprisonment of barbarian associates) began with the arrest in 1839 of Watanabe Kazan. Chōei turned himself in to the city magistrate shortly afterwards. Ostensibly, the arrests were for criticising *bakufu* policy. However, as Satō Shōsuke has demonstrated, they are best seen as the result of a conspiracy by a man called Torii Yōzō, son of the director of the *bakufu*'s official Confucian school. The plan was designed to ensnare Kazan, against whom Torii had a personal and professional grudge.[31] Upon hearing of Kazan's arrest, Ozeki San'ei, fearing his own implication, committed suicide.[32] Kazan also eventually took his own life, while under house arrest in Tahara.

Chōei's commoner status meant that he was dealt a harsher punishment than his employer, Kazan. Far from a relatively comfortably house arrest, Chōei spent five years in the commoners' section of the Kodenmachō prison in Edo, where,

> ...neither sunlight penetrated, nor the wind circulated and where several people were squeezed in close together like fish-scales. The smell of sickness and squalor combined to form a strange stench, and because every corner of the prison was filled with it, the odour was indescribable...Furthermore, people who up until the day before had been healthy would fall down ill the following morning and die...[33]

Chōei's circumstances in the prison were, however, better than those of many of the other inmates. A sentence of life-imprisonment was actually quite unusual, and most inmates could expect to be either released or executed. It is believed that Chōei escaped execution only because he had turned himself in to the

[29] I have discussed various theories about Yuki in Ellen Gardner Nakamura, "A Portrait of Takano Chōei," *International Christian University Asian Cultural Studies* 24, no. March (1998): 19-29.
[30] *Bojutsu* refers to the year in which it was written. A translation of Chōei's *Yume Monogatari* is found in Greene, "Life of Takano Nagahide," 390-492. Kazan's *Shinkiron* has been translated in Abiko, "Watanabe Kazan: The Man and His Times," 293-304.
[31] See Satō, *Watanabe Kazan, Takano Chōei*, 60-80.
[32] Satō, *Takano Chōei*, pp. 105-6.
[33] Takano Chōei, "Wasuregatami," p. 177.

authorities. As a long-term prisoner, therefore, and as a medical doctor with valuable skills, he was therefore in a unique position. It was not long before he became the *rōnanushi*, which was the highest office among the inmates. The *nanushi* received a raised platform of ten *tatami* mats from which he could keep an eye on all the others. His job was to help the prison officials maintain order, to see that rules were obeyed, and to prevent prisoners from running away or committing suicide. He also had certain privileges, such as being able to obtain forbidden items, gamble, smoke, and so on.[34] Furthermore, Chōei's status appears to have assisted him in maintaining contact with the outside world. After becoming *nanushi,* he was able to send letters and money to his friends and family. When new prisoners entered the prison, it was customary for them to bring with them about ten *ryō* (quite a large sum of money). This would be divided among the inmate officers, and the *nanushi* would, of course, receive the most.[35] Thus, ironically, Chōei had more money than he had ever enjoyed before while in prison. His high status in the prison also no doubt assisted him in his plans for escape.

The letters Chōei wrote while in prison suggest that, with the help of various supporters, he was at first engaged in attempts to arrange a pardon. The custom was for such appeals to be made by the relatives of prisoners at Kan'eiji temple in Ueno, because when memorial services were held there for members of the Shogunal family, some amnesties were usually granted. The priests would make up a list of prisoners and forward it to the *bakufu*, whereupon bureaucrats would decide who should be pardoned. Since Chōei's crime was a political one, he had next to no chance of being freed in this manner.[36] Nevertheless, in a letter of 1842, he wrote about arranging for a friend to put his name on the amnesty list. The following year, he appears instead to have decided to earn favour in other ways. He wrote of making an application to undertake official translations and treat the sick in the government's labour camp. Suddenly, however, in 1844, he became much more secretive, and although he had always displayed an optimistic attitude in his letters

[34] *Kokushi daijiten*, 14 vols. (Tokyo: Yoshikawa kōbunkan, 1979-1993) vol. 14, p. 777.
[35] Satō, *Yōgakushi ronkō*, p. 173.
[36] Satō, *Yōgakushi ronkō*, p. 174.

regarding his release from prison, the following passage does indeed seem to be a covert reference to his plans for escape:

> ...this year there are many things that I am going to request. Even if just one of them is granted, I will have something on which to rely for the future. I think that probably at least one of them will be granted, and this being so, eventually I will be able to see you again...I am still well and do not intend to die with things as they are...in summer I hope to be given my freedom...[37]

According to Satō, Chōei made his escape in the early hours of the morning on the thirtieth of the sixth month, 1844.[38] It was a moonless night in summer. Taking advantage of a rule that in the event of a fire, prisoners were released for three days, Chōei arranged for a menial worker by the name of Eizō to set fire to the prison. As anticipated, the prisoners were released on the condition that they gather again at the Ekōin temple or the city magistrate's office, depending on the direction of the wind.[39] Those who returned would have their sentences reduced. Chōei, of course, did not return. Two days before this, his close friend Suzuki Shunzan, who had been working in his native Tahara, suddenly returned to Edo. Suzuki would later help Chōei find somewhere to live, and have him help with the translation of a military book.[40]

Chōei's accomplice, Eizō, was an outcaste (*hinin*) who worked along with a group of about thirty outcastes in the escort of prisoners and in various jobs in the prison. In the 'wanted' posters distributed after Chōei's flight, Eizō was described as having been born in the province of Ettchū, and at the time of writing as about thirty two or three years of age. He had been tattooed twice, and had difficulty in extending both of his hands.[41]

Satō has drawn on the work of Takayanagi to explain that there were two types of *hinin*: those who had been born into that class; and those who had for some

[37] Takano Chōei Kinenkan, ed. *Takano Chōei no tegami*, pp. 217-9.
[38] Satō, *Yōgakushi ronkō*, p. 181.
[39] Satō, *Takano Chōei*, p. 141.
[40] Satō, *Yōgakushi ronkō*, p. 177.
[41] Takano Chōun, *Takano Chōei den*, pp. 27, 35.

reason or other been demoted to it. There were many ways of becoming a *hinin*: for example, through a criminal act such as attempted double suicide, gambling, juvenile petty theft, or incest. During the Tempō period, however, it was common for the *hiningashira,* in charge of the compounds where *hinin* lived, to make a swoop on the poor and homeless in the vicinity, and enter them on the register of outcastes. They were then given a home in a compound for *hinin*, and put under the control of the leader of the compound (*koyanushi*). However, many found it unbearable and ran away. This was a punishable offence, and if caught, a *hinin* would be tattooed from the left shoulder to a point about nine centimetres down the arm. Upon his second attempt, he would be tattooed on his left wrist. If he were caught a third time, he would be killed.[42] Satō argued that because Eizō was born in Ettchū, it was unlikely that he was born as an outcaste. Presumably this was because there were few *hinin* in the north of Japan. Although this argument in itself is quite flimsy, Eizō's attempts to run away are a strong indication that he was not a *hinin* by birth. Moreover, as a disabled person, he would have been susceptible to an 'outcaste hunt'. From the description that Eizō had twice been tattooed, we can learn, Satō explained, that he had twice tried to run away, and had been tattooed as a punishment. Chōei presumably knew of the precariousness of Eizō's position when he chose him as his accomplice. Probably, Chōei also knew that, because he often came in and out of the prison to work, Eizō was not closely monitored by the prison guard. As someone who would not seem to have been born an outcaste, Eizō was in some ways like Chōei, a prisoner who desperately believed in the injustice of his condition. As Satō points out, in finding for his accomplice another man who had nothing more to lose, Chōei's shrewdness is impressive.[43] At the same time, the relationship of these two men is worth considering. Probably it was built up over some time, and it seems to reflect a certain affinity that Chōei had with the 'underdog'. Even in his earliest letters, Chōei appears to have been something of a

[42] Takayanagi Kaneyoshi, *Edo jidai hinin no seikatsu* (Tokyo: Yūzankaku shuppan, 1981) pp. 17-30, 88-90.
[43] Satō, *Yōgakushi ronkō*, p. 180.

victim of his own generosity in helping those in unfortunate circumstances.[44] Surely he would not have been able to tempt Eizō into so dangerous a plot by money alone.

Tragically, however, Eizō was to meet a grim fate. After the fire, it seems that at first his role in the escape was not fully realised, and that he was counted merely as one of the escapees. However, he was later captured and confessed that he had been paid by Chōei to set fire to the prison. He was indicted and executed in the fourth month of 1846.[45]

Chōei lived the remaining years of his life as a fugitive. At first, he appears to have lived off the money he had saved in prison. Thereafter, he relied on the protection of trusted friends, sympathetic *daimyō,* and his skills as a translator. There are several different accounts of his movements after the escape. What seems clear is that he travelled as far north as his native Mizusawa and Yonezawa before returning to Edo; and that from 1848 to 1849, he lived under the protection of Date Munenari of Uwajima domain on the island of Shikoku. Munenari was interested in using Chōei's translation skills in studying Western defence techniques. As knowledge of the Opium War spread, many *daimyō* became increasingly concerned about boosting their defences; in this respect, Chōei was lucky that his skills were in demand. Almost all of the translations completed after his escape from prison concern military science. A fugitive, however useful, cannot complain about his meagre wages, and, despite the stability of his position, it seems to have been financially a difficult time for Chōei, who had a wife and children to support in Edo.[46]

In 1849, the news reached Chōei that his presence in Uwajima had been discovered. He fled immediately, travelling slowly to Edo via Hiroshima, Unomachi in Shikoku, and Nagoya. He was finally found by police at his home in Aoyama, Edo, on the thirtieth of the tenth month, 1850. He had moved there only three months previously with his wife and children, to practise medicine under the name of Zawa Sampaku. Popular legend has it that Chōei burnt his face with chemicals so

[44] I have discussed this in detail in Nakamura, "A Portrait of Takano Chōei."
[45] Satō, *Takano Chōei,* p. 145.
[46] Satō, *Takano Chōei*, p. 202.

as to disguise it. Satō sees the move to Aoyama itself as a suicidal act,[47] and perhaps it was, for the area was home to the *hyakuningumi dōshin*, a kind of police.[48] As Satō points out, the stress of living six years on the run, trying to eke out a living, and rumours that restrictions on the translation of Western books were to be introduced by the *bakufu,* must have taken their toll. These restrictions were officially announced in the ninth month of 1850. Only books which had been inspected at Nagasaki were permitted to be bought and sold, and anyone dealing in or translating books other than these would be punished. *Daimyō* wishing to translate books about defence must first obtain permission and present a copy of the translation to the *bakufu* when completed.[49] Satō cites evidence that, shortly before Chōei died, he visited an acquaintance in Katori, leaving his two-volume dictionary and a translation of a military book in exchange for a loan of five *ryō*. Satō argues convincingly that two things can be read from this action. Firstly, that Chōei was desperately in need of money, and secondly, that, with his last major translation works completed, he had given up the idea of trying to live as a translator.[50] Perhaps his optimistic spirit had indeed at last been broken.

The precise circumstances surrounding Chōei's death are unclear. Some say he stabbed himself in the neck when confronted with the guards, others suggest he was beaten to death. There was a trial held afterwards, in which he was sentenced to death posthumously. His wife Yuki was forced into retirement. According to one writer, their daughter Moto was sold to a Yoshiwara brothel and died in a fire there after the great earthquake of 1855.[51] It is unknown what eventually became of Yuki or her two sons by Chōei, Yū and Risaburō, the second of whom was born in the year his father died.

[47] Satō, *Takano Chōei*, p. 216.
[48] Satō, *Yōgakushi no kenkyū*, p. 500.
[49] Satō, *Takano Chōei*, p. 209.
[50] Satō, *Takano Chōei*, pp. 212-3.
[51] Ōtsuki Fumihiko, "Takano Chōei Gyōjō Itsuwa," in *Fukken Zassan* (Tokyo: Kōbundō shoten, 1902) 386-98, p. 396.

Teachers and students

By some accounts, Chōei is said to have been arrogant and competitive amongst his *rangaku* colleagues.[52] On the other hand, he seems to have been blessed with the ability to build up warm and trusting friendships. His students, in particular, were prepared to risk everything to hide and protect him after his escape from prison. The loyalty of Chōei's students is an extreme example of the teacher-pupil relationship in the Tokugawa period, for of course not every student was tested by his preparedness to protect a convicted criminal. There does, however, seem to be a suggestion of a special element of trust. As we shall see, this relationship had roots in a tradition of secrecy, and had enormous implications for the exchange of knowledge in this period of history.

In Tokugawa Japan, there was no officially recognised system of medical training or qualification. Some teachers awarded their students certificates when they became independent, which no doubt carried some degree of weight, and some individual domains, such as Matsuyo domain in Shinano, introduced papers of accreditation in order to raise the standard of doctors,[53] but there was in general nothing to stop those with very little training from presenting themselves as medical practitioners. At the same time as there were doctors as well educated as Takano Chōei, anyone who was capable of reading one or two medical books could make himself a doctor.[54]

Similarly to the case in eighteenth-century England, where the vast majority of medical practitioners were ordinary surgeons or apothecaries who learned by apprenticeship,[55] medical education in Tokugawa Japan was also usually undertaken in an apprenticeship or private school run by an established practitioner. Medical apprentices usually lived and worked with their teachers for a period of some seven to ten years, during which they progressed from simple errands to the Chinese classics (or study of the Dutch language in the case of Western medicine), to mixing medicines and accompanying the practitioner on visits, to studies of medical

[52] Ōtsuki, "Takano Chōei Gyōjō Itsuwa," p. 397.
[53] Aoki, *Zaison rangaku no kenkyū*, p. 257.
[54] Maruyama, *Gunma no ishi*, p. 24.
[55] Dorothy Porter and Roy Porter, *Patient's Progress* (Oxford: Polity Press, 1989) pp. 19-20.

textbooks.[56] In the later stages of their training, apprentices would be allowed to represent the practitioner in his absence.[57] Evidence of this progression can be seen in Takahashi Keisaku's diary. His chief apprentice Gōsai began by helping around the farm, and finished up attending Keisaku's patients in his own right (see Chapter Five). There was a great deal of trust invested in this long and intense relationship, and medical practitioners and students alike needed to think carefully before committing themselves to it.

When Chōei first arrived in Edo and began to search for a suitable teacher, he does not yet seem to have understood the importance of this commitment. In a letter to his uncle in 1820, Chōei described how he approached one teacher, Toda, and made use of his accommodation, while fully intending to find someone else. Not surprisingly, Toda angrily threw him out when the truth was discovered:

> ...Although I made various enquiries, there was not one place that would take us on...after consulting with Toda I gave him one month's board until another teacher could be found. As Toda seemed willing to put us up as we pleased, I went to consult with cousin Yōrin. We decided that we should move our baggage into Toda's house, as though we were to become his pupils. However, as I wanted to search for another teacher, I suggested that Yōrin become Toda's pupil in my place, to which, much to my relief, he readily agreed. However, when the matter came to Toda's ears he was furious and told me to go straight to Sugita.[58]

Connections and letters of introduction were all-important. Teachers often appear to have looked after young men from the same province as themselves. Toda Kensaku in the letter above, for example, was originally from Ichinoseki, quite near Chōei's birthplace of Mizusawa, and this may well have influenced his decision to give him lodgings. Chōei appears to have believed his father's connections to Sugita Gempaku would win him a place with his heir Sugita Hakugen, but he was hindered in this because his father Gensai had not supplied him with suitable letters of

[56] Maruyama, *Gunma no ishi*, p. 29.
[57] Ono, *Edo no machiisha*, p. 233.
[58] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, pp. 8-9.

introduction. Chōei goes on in the same letter of 1820 to explain how he eventually talked his way (somewhat untruthfully) into acceptance:

> I had no other choice but to go immediately to Sugita-*sensei* to whom I said, 'Toda Kensaku is from the same region as I, so I met him and for the time being, upon his orders, became a boarder at his house. When I received a letter from home, I was intending to come in any case, but the letter has not yet arrived and as Toda is very poor at the moment, I hesitate to board there for a long time. If it could in some way be arranged, I hope very much you will have me,' and so on. Sugita-*sensei* looked as though he thought it a great imposition, but he said that as my situation could not be helped, he would allow me to visit as a day student. I went to reason with him again but he seemed far from understanding.[59]

Chōei was disappointed in Hakugen's responses because, unlike a full apprentice, a day student had to find and pay for his own lodgings, rather than board with his teacher. Even when one had proper letters of introduction, the search for a teacher was not an easy task. Chōei's brother Tansai (who came to Edo at the same time) had to rely on the good offices of a man from Mizusawa to find him a place, after his letters of introduction had proved to be of no use.[60]

The importance of trust in the teacher-pupil relationship also manifested itself in other ways. Some apprentices were required to sign contracts when they graduated, promising that they would not divulge medical secrets learned in the practice to others.[61] Secrecy was vital to protect the interests of doctors in an open medical market where there was no minimum standard of qualification. The transmission of secret knowledge, not only regarding medicine, but also many other technologies, had been practised by families and clans in Japan since ancient times. Families tried to keep a hereditary control on their professions by keeping knowledge within the family. This tradition of secrecy was also widely used in many private schools in the Tokugawa period,[62] and was as important in schools attended

[59] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, pp. 10-11.
[60] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, pp. 12-13.
[61] Maruyama, *Gunma no ishi*, p. 29.
[62] Richard Rubinger, *Private Academies of Tokugawa Japan* (Princeton: Princeton University Press, 1982) pp. 155-7.

by only a few students as those in which there were hundreds. For example, in a certificate awarded by Hanaoka Seishū, there were many references to the secret teachings the student had received. Hanaoka had one of the largest schools in the country, with students numbering in the hundreds.[63] It has been suggested, however, that by the middle of the Tokugawa period, due to the diversification of culture and geographical and social changes in education, this system was beginning to break down.[64] As will be discussed in the next chapter, the lecture series given by Takano Chōei in rural Nakanojōmachi in 1833 has important implications in terms of breaking out of these traditional patterns of secrecy.

Evidence in Chōei's letters that both he and his brother began to earn money from their medical activities while still undergoing training attests to the idea that medicine could be freely practised without qualification. After being accepted by Sugita Hakugen as a day student, Chōei lodged at the Kanzakiya, a pharmacy run by a friendly man from Mizusawa, and began to work at night to earn enough for his meals:

> ...Well, it is said that having an artistic accomplishment can save one from ruin. I am at last making use of the massage that I learned previously in Higashiyama. When I go out every night, I can manage about four customers on a good night, about two hundred *mon*...Using this money I buy my morning and evening meals, although it is not much, at a teahouse.[65]

As a medical apprentice, Chōei thus appears to have kept himself afloat by working as a masseur. Doctors had traditionally learned the art of massage to help them become familiar with the pressure points of the body.[66] In the Tokugawa period, however, massage commonly became the work of blind people. They were divided into guilds, undertook examinations and charged according to their level of

[63] The certificate is quoted in Maruyama, *Gunma no ishi*, p. 32.

[64] Rubinger, *Private Academies*, p. 157.

[65] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, p. 12.

[66] This information is based on Margaret M. Lock, *East Asian Medicine in Urban Japan, Comparative Studies of Health Systems and Medical Care* (Berkeley: University of California Press, 1980) pp. 59-61; U.A Casal, "Acupuncture, Cautery and Massage in Japan," *Folklore Studies* 21 (1962): 221-35; and *Kokushi daijiten*, Vol. I, p. 401.

skill. A man called Sugiyama Waichi did much to enhance the reputation of these blind masseurs when he purportedly healed the Shogun Tsunayoshi (1646-1709) of an illness. He was later given an official position in charge of the blind masseurs. Despite their capacity to earn quite well, the status of these people generally remained low, and higher-class doctors sometimes looked down upon the practice. Nevertheless, it was not entirely unusual that Chōei should practise massage. Firstly, he was not in a position to be choosy about his work. In addition, in the late Edo period, a new style of massage called *Yoshida-ryū* was popularized, and massage performed by non-blind practitioners flourished.

As early as 1822, when he was still only eighteen years old, Chōei wrote of treating patients on a journey to Nikkō. The following year, Chōei's brother Tansai fell gravely ill and died. Chōei was forced to neglect his studies and become responsible not only for his brother, but also for his patients.

> ...although we do not have anything much left over, Tansai has a few patients and I go about treating them. It is very worrying to go out and leave Tansai on his own, so have asked a neighbour to look after him. By going out to work, I am able to make just enough to cover our meals, but have nothing in the way of savings...[67]

In 1825, Chōei made the long journey from Edo to Nagasaki to further his studies, as one of the privileged few to study with von Siebold. There, he wrote of his studies:

> The Dutch (sic) doctor with whom I am currently studying has an excellent reputation and the many students come from all over, so the school is at the height of prosperity. The Dutch doctor is extremely interested in medicinal plants and sometimes (we) go out to collect them. Also, we go out to treat the townspeople and so on, it is indeed most enjoyable.[68]

[67] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, p. 24.
[68] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, p. 104

In Nagasaki, Chōei was able to support himself by doing translations for wealthy Japanese residents, and also for Siebold himself. In a letter to his father Gensai in 1827, Chōei wrote:

> ...I have been doing translations from day to day for a man called Matsubara Kenboku, who pays for such things as my food supplies. A wealthy resident of Hagi, Chōshū, by the name of Kumagai Gorōzaemon is currently staying in Nagasaki, and since he has a long-standing interest in *rangaku* I have translated some materials on the theory of health care for him.[69] So little by little I have been receiving his support. Also, for Siebold, I have been translating some materials from Japanese into Dutch, which helps to cover various expenses. In any case, since coming here I have for the first time managed to escape hardship in having enough to eat, drink, and for miscellaneous expenses...[70]

Matsubara Kenboku's real name was Yamada Taien (1756-1831). He was a doctor, and it appears that he had accumulated a large debt to Kanzakiya, the pharmacy where Chōei had lived in Edo. When the proprietor of Kanzakiya discovered that Yamada was living in Kyūshū under the name of Matsubara Kenboku, and was working for Matsuura, the *daimyō* of Hirado, he generously instructed Chōei to go and collect the money from him and use it towards his studies. So, in the summer of 1826, Chōei set off for Hirado. When he arrived, Yamada unfortunately did not have the money to repay him. He did, however, have access to the large library of Dutch books belonging to the domain, and arranged for Chōei to be able to read them. Before long, he was living at the Hirado domain quarters in Nagasaki, making translations for the *daimyō*.[71] In fact, his trip to the islands of Iki and Tsushima in early 1828 appears to have been an official one undertaken for Matsuura.[72] These favourable circumstances must have greatly assisted Chōei's work. Indeed, they may well have been the reason he did not accompany Siebold on

[69] This translation was called *Ransetsu yōjō roku* and was a translation of a work by Hufeland, undertaken jointly with another of Siebold's students, Oka Kenkai (Satō, *Yōgakushi ronkō,* p. 156).
[70] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, p. 106.
[71] Satō, *Yōgakushi ronkō*, p.152.
[72] Satō, *Takano Chōei,* p. 46.

his official journey with the Dutch to Edo in 1826. In a letter dated the tenth month of 1825, Chōei wrote to his father:

> ...although I was expecting to return to Edo next spring with the Dutch party, having nothing to show for coming all this way to Nagasaki, I would very much like to stay here next year and continue my studies. If I choose to do so, there are people here who are prepared to look after me, so I am trusting their judgement...[73]

From this time onwards, Chōei seems to have become increasingly scholarly, relying less on practical healing skills than on his linguistic and academic talents. This career path was to lead him in quite a different direction from ordinary doctors. Eventually, it was to lead him to his tragic downfall. At this juncture, it may be helpful to examine the many different types of medical practitioner in Tokugawa Japan, and what indeed, an 'ordinary doctor' was.

Schools and identities

In most histories, medical practitioners are discussed in terms of their intellectual training or 'school'. This kind of approach tells us a great deal about the theories behind the therapeutics of the day, but little about how doctors went about their everyday lives, and whether this differed from school to school. Medical schools, however, seem to have formed an important part of how practitioners saw themselves and other doctors.

The secretive nature of medical training helped to define the boundaries between various schools of medical thought. Broadly speaking, six schools of medicine can be identified in Tokugawa Japan. Most of these were based on Chinese medical thought, which had been brought to Japan by Korean doctors as early as the fifth century.[74] By the Edo period, Japanese versions of Chinese medicine had developed to varying degrees into something which, although based on Chinese medical theories, was quite different from them.

[73] Takano Chōei Kinenkan, ed., *Takano Chōei no tegami*, pp. 101-2.
[74] Lock, *East Asian Medicine*, p. 50.

The *goseiha* ('latter-day') or *rishu* school developed in Japan in the sixteenth century. It was influenced by Chinese medicine of the Chin and Yüan periods (c.1125-1368). As a school of thought, it was based on the same metaphysical principles as Neo-Confucianism, and though it tried to bring together speculative and pharmaceutical texts, it remained highly theoretical. On the other hand, proponents of the school in Japan also 'valued their own practical experiences, and tried to create their own methods of treatment'.[75] This school was represented by Tashiro Sanki (1465-1537), who studied in China, and his pupil Manase Dōsan (1507-94), of Kyoto. It flourished until the beginning of the eighteenth century.

The *goseiha* school was eclipsed around this time by the *koihō* ('old way of medicine') school, popularised by Gotō Gonzan (1658-1733) and Yoshimasu Tōdō (1702-73). The development of the *koihō* school of Chinese medicine paralleled the rise of *kogaku* in Confucian scholarship. Both movements called for a return to Chinese classics, and were thus 'reactionary'. In particular, the *koihō* scholars called for a return to a book called the *Shang han lun (Shōkanron* in Japanese), which was written around 200 AD and was predominantly a practical textbook of pharmacotherapeutics.[76] Yet the *koihō* scholars' rejection of theoretical entities and emphasis on an empirical approach to medicine actually took them closer to the position of solidists in the West, who, as Nakayama explains, 'tried to locate the seat of a disorder in a solid part of the body, such as the stomach or the brain,' than to the more traditional, holistic approaches of Chinese medicine.[77]

The *kōshōgaku* ('historical investigation') school was centred around the Taki family, one of the most powerful medical families in the Edo period. Taki Mototaka (1695-1766) had a formidable pedigree; he was a descendant of Tamba Yasuyori (912-95), author of *Ishinpō,* the oldest extant medical book in Japan. Mototaka was made an official *bakufu* doctor in 1747, and the private school which

[75] Yasuo Otsuka, "Chinese Traditional Medicine in Japan," in *Asian Medical Systems: A Comparative Study*, ed. Charles Leslie (Berkeley: University of California Press, 1976) 322-40, pp. 325-8, quotation p. 328.

[76] Otsuka, "Chinese Traditional Medicine in Japan," pp. 323-5.

[77] Shigeru Nakayama, "Ways of Thinking of Japanese Physicians" (paper presented at the International Symposia on the Comparative History of Medicine-East and West, Shizuoka, Japan, 1976-7) 3-19, p. 9.

he had founded was made into the *bakufu*'s official medical school in 1791. Thereafter, the Taki family became its hereditary directors.[78] While continuing its function as a training centre, the school also had responsibility for official publications.[79] The Taki family and their followers emphasised a minute examination of Chinese and Japanese medical classics, and were influenced by a similar movement in Confucian studies. The group made a great contribution to classical studies, but remained steadfastly conservative in its medical approach.[80]

Towards the end of the Edo period, another group of doctors, known as the *wahō* ('Japanese way') school, tried to find a peculiarly 'Japanese' way of healing by studying the Japanese classics. They were obviously influenced by the national learning (*kokugaku*) movement of the time, though eventually it disappeared as a school of medicine. Motoori Norinaga (1730-1801), founder of the national learning movement, was by profession a provincial doctor. He emphasised observation based on the five senses and experience, rather than the theoretical constructs of Chinese medicine. He believed that on an everyday level, Chinese medicine had become 'Japanified' and he was not troubled by the fact that the medicine he practised was Chinese in origin.[81] Ueda Akinari (1734-1809) and Tanigawa Kotosuga (1709-76), also doctor-scholars, were similar in this respect. Later, Hirata Atsutane (1776-1843) argued that all medicine (including Chinese and Dutch) was given to the world by the two gods, Ōanamuchi-no-kami and Sukuna-biko-na-no-kami. In 1852, a doctor and *kokugaku* scholar from Sunpu by the name of Hananoi Yūnen wrote *Ihō Seiden (A True Account of Medicine).* Like Atsutane, he argued that Japanese gods had given medicine to the world, but that foreign countries had lost this information.[82] He claimed there was a need to test the wisdom of Chinese knowledge on Japanese soil, because diseases and medicines differed from country to country. Thus, he emphasised practical, traditional knowledge, rather than (Chinese) written knowledge. Hananoi lauded the achievements of Japanese botanists such as Niwa

[78] Hattori, *Edo jidai igakushi no kenkyū*, p. 13.
[79] Ogawa Teizō, *Igaku no rekishi, Chūō Shinsho 39* (Tokyo: Chūō Kōronsha, 1964) pp. 154-5.
[80] Hattori, *Edo jidai igakushi no kenkyū*, pp. 13-14.
[81] Hattori, *Edo jidai igakushi no kenkyū*, p. 152.
[82] Hattori, *Edo jidai igakushi no kenkyū,* p. 154. Tsukamoto gives the date for this work as 1851.

Seihaku and Kaibara Ekken. He asserted that disease came from abroad, and that Japan was a land without indigenous diseases. Illnesses which were not brought to Japan by foreigners were caused when the gods went on a rampage.[83]

The *kanransettchū* ('Chinese-Dutch eclectic') school was influenced by the study of Western anatomy, and began to introduce elements of this into its clinical practice. Hanaoka Seishū (1760-1835), who is representative of this school, saw a need to unify surgery and internal medicine. He became famous for his innovations in surgery. In particular, he was remarkable for his development and use of an anaesthetic in 1805, forty years before it was developed in the West. The medicine consisted of a mixture of six crude drugs from the traditional Chinese pharmacopeia.[84] It included both aconite and datura, which were noted for their anaesthetizing, and poisonous, qualities. In the process of refining the drug, Seishū used his wife Kae as a human subject, an experiment that caused her to lose her sight.[85] The story of her sacrifice has been fictionalised by Ariyoshi Sawako in a novel that explores the traditional relationships between man, wife and mother.[86]

Finally, there was the *ranpō* school of doctors, whose members studied and translated Dutch medical texts. It is important to remember that the *rangaku* doctors practised Western medicine in name, not necessarily in nature. As will be seen in Chapter Four, *ranpō* was still very much a blend of Chinese and Western methods. Nevertheless, it is equally important to recognise that by calling themselves *ranpō* physicians, these doctors identified themselves as doctors of Western medicine, quite distinct from other contemporary schools.

Chōei's sense of identity can be seen in a letter dated 1823, when he wrote: 'this year, I hear there will be a re-registration of doctors. Even if I have to beg, I want to put my efforts into *rangaku.*' The precise nature of this registration of doctors is unclear, but Chōei's loyalty to his subject is obvious.

[83] Tsukamoto Manabu, *Tokai to inaka* (Tokyo: Heibonsha, 1991) pp. 239-42.
[84] *Kodansha Encyclopedia of Japan*, 8 vols. (Tokyo: Kodansha Ltd., 1983) Vol. III, p. 94.
[85] Nichiran Gakkai, ed. *Yōgakushi jiten*, p. 573.
[86] Ariyoshi Sawako, *The doctor's wife*, trans. Wakako Hironaka and Ann Siller Kostant (Tokyo: Kodansha International, 1978).

A discussion of medical schools inevitably raises the question: what kind of relationship did doctors from differing schools of thought have with one another? As noted above, the atmosphere of secrecy surrounding medical education did little to encourage harmonious relations. Western medicine in particular, seems to have been viewed with a great deal of suspicion by some schools of Chinese-based medicine. It is well known that fear and jealousy of *rangaku* in its more political form was one of the reasons behind the *bansha no goku* oppression of 1839, in which Takano Chōei was imprisoned. Writing in prison, Chōei described the situation in the following way:

> ...recently *rangaku* has greatly proliferated, with each branch of learning ranging from medicine as a matter of course, through to astronomy, geography, military strategy, and engineering, having its own *rangaku* school and specialist...Moreover, because Western geographical studies shed light on things such as war and peace, the customs, human character and rise and fall of all nations, recently various great scholars have turned their attention to *rangaku* and taken it up rather than Confucianism. As a result, there are other people who are full of hatred and jealousy (towards these converts)...[87]

The repression of the *bansha no goku* was followed by a dark period for Western learning. Medicine actually fared better than other disciplines, for it alone was exempted from a general ban on Western learning in 1840. It did not escape, however, when this climate of oppression culminated in 1849 with an outlawing of all forms of *ranpō* medicine except surgery and opthalmology. According to Bowers, the ban was never strictly enforced,[88] but it nevertheless remained in place until 1858. The powerful and conservative Taki family, with its strong connections to the *bakufu,* appears to have been influential in the crushing of Western medicine during this period.[89]

Not all doctors trained in Chinese medicine were antagonistic towards Western medicine. Hanaoka Seishū, who emphasised Chinese theory and Western techniques, is a fine example of this. Moreover, many doctors from the *koihō* school

[87] Takano Chōei, "Wasuregatami," pp. 173-4.
[88] Bowers, *Western Medical Pioneers*, p. 143.
[89] Hattori, *Edo jidai igakushi no kenkyū*, p. 14.

seem to have moved quite easily into *rangaku*, because of a similar emphasis on practical, rather than speculative methods.[90] Chōei's friends from Kōzuke, who were in their thirties and forties before they moved from *koihō* to *ranpō* medicine, exemplify this trend.

Apart from the intricacies of diagnosis, the everyday life of medical practitioners seems to have differed less according to intellectual school than according to popularity and status. However, there was a certain degree of hierarchy among the schools, to the frustration of proponents of Western medicine.

Livelihoods

The lack of formal standards of qualification in the Tokugawa medical market meant that there was an enormous range of ability among medical practitioners. It is therefore helpful to classify medical practitioners according to their status or social role. Following this approach, there were basically two types: those with official, salaried appointments and those without. Salaried doctors included those who served the court, the *bakufu*, and *daimyō* governments. Some of these positions were hereditary, but there were also opportunities for talented doctors to obtain official posts.

In the *bakufu,* there were more than ten ranks of salaried doctors. The highest ranking position was largely an administrative one, and was filled in a hereditary manner by two families. Next in rank were those directly responsible for the care of the Shogun's everyday health and medical oversight of the women's quarters. These doctors were called *okuishi* and were appointed by merit. There were usually about sixteen *okuishi* in total, divided into specialties of internal medicine, surgery, acupunture, opthalmology and dentistry. Although the value of Western surgery had been recognised in the appointment of Katsuragawa Hoshū (1751-1809) as an *okuishi* surgeon, the power of conservative medicine within *bakufu* circles in the nineteenth century meant that it was not until 1858 that *ranpō* physicians, such as Totsuka Seikai (1799-1876) and Itō Genboku (1800-71), were finally appointed to

[90] Lock, *East Asian Medicine*, p. 57.

this high ranking position.[91] Interestingly, it was the inability of the established *okuishi* to heal the Shogun Iesada's (1824-1858) illness, which seems to have provided the impetus for this appointment.[92] The ban on Western medicine enacted in 1849 was also lifted concurrently.

Lower ranking official doctors were responsible for other groups within the castle. There were opportunities too, for promotion by merit by attracting the attention of *daimyō* leaders. *Daimyō* tended to base their medical bureaus on the *bakufu* system, although this naturally differed slightly from domain to domain.[93] *Daimyō* appear to have been generally less conservative about the promotion of doctors from different intellectual schools. For example, Itō Genboku, who was of humble origin, was recognised by Saga domain as early as the 1830s, well before he finally became an *okuishi* in the *bakufu*.[94]

Official doctors who were able to live off their medical salaries seem to have existed even in ancient Japan.[95] By the first half of the nineteenth century, the *okuishi* Taki Anshuku is said to have received as much as two thousand *ryō* per year.[96] This, however, was the top of the social scale, and it has been suggested that official doctors were actually rewarded quite poorly compared to other kinds of official appointments.[97] As an example of the salary of a domain doctor, Tsuboi Shinryō received about thirty *ryō* per annum when he was appointed an official doctor to Echizen domain in 1853.[98] Perhaps the situation in Tokugawa Japan was similar to that in England, where poorly paid public appointments were sought for their prestige and the likelihood of attracting patients to private practice.[99] A salaried position did at least give the medical practitioner some guaranteed income as well as the opportunity to enhance his reputation.

[91] Hattori, *Edo jidai igakushi no kenkyū*, p. 769.
[92] Hattori, *Edo jidai igakushi no kenkyū*, pp. 709-10.
[93] Fujikawa Yū, *Isha no Fūzoku, Meishin*, ed. Fujikawa Eirō, *Fujikawa Yū Chosaku Shū* vol. 3, (Kyoto: Shibunkaku, 1975) pp. 33-4.
[94] Goodman, *Japan: The Dutch Experience*, pp. 177-8.
[95] Fujikawa, *Isha no Fūzoku, Meishin*, p. 47.
[96] Nakajima Yōichirō, *Byōki Nihonshi* (Tokyo: Yūzankaku Shuppan, 1995) p. 291.
[97] Fujikawa, *Isha no Fūzoku, Meishin*, p. 51.
[98] Miyachi Masato, *Bakumatsu ishinki no bunka to jōhō* (Tokyo: Rekishigaku sōsho, 1994) p. 193.
[99] See Anne Digby, *Making a medical living : doctors and patients in the English market for medicine, 1720-1911* (Cambridge: Cambridge University Press, 1994).

In contrast to salaried doctors, private practitioners, who in towns were known as *machiisha* (town doctors), battled to make a living in a highly competitive market. They were hampered by a traditional tendency to see medicine as an act of charity rather than as a livelihood. Rich salaried doctors could afford such acts of philanthropy, but ordinary practitioners needed to make their basic living first.

Some doctors needed to overcome a personal reluctance to receive money for medical treatment, and they did this by adopting certain methods. For example, the amount paid was sometimes left to the patient to decide.[100] It was also sometimes paid in kind. Humorous poems testify to the way the amount of rice one paid the doctor could be subject to the scrutiny of one's peers in the waiting room.[101] Payment was generally seen to be for the medicines dispensed, not for the medical skills provided by the practitioner.[102] This, too, was similar to the situation in England, where it was not until the mid-nineteenth century that doctors came to be paid for their services.[103] Since medical fees were usually only collected twice a year, at New Year and the *bon* festival in the middle of the year, non-payment was a desperate problem for practitioners, just as it was in England where the custom was to bill yearly. There, the problem was such that sometimes practitioners found it helpful to employ debt collectors on commission to collect their fees by instalments.[104] Chōei too, complained of this problem in a letter to his father in 1823:

> This *bon* festival season, the collection of fees was extremely difficult and I managed to collect about four *ryō*, not even a half of what I anticipated...When I added up the monthly expenses, even though I economised, they amounted to more than one *ryō* and two *bu*. I made the treatment for syphilis payable in cash, so I had for the time being just enough to make do, but I still owed a little for the cost of medicines from Kanzakiya. With the money that you sent last time I

[100] Fujikawa, *Isha no Fūzoku, Meishin*, p. 49.
[101] Ono, *Edo no machiisha*, p. 50.
[102] Fujikawa, *Isha no Fūzoku, Meishin*, p. 48.
[103] Digby, *Making a medical living*, p. 37.
[104] Digby, *Making a medical living*, p. 158.

> was able to pay off everything, so that I do not owe anything to anyone...[105]

Chōei's letter also gives a good indication of how much he earned as a young medical student. Far from the two thousand *ryō* earned by the Shogun's doctors, he scraped by on four *ryō*, perhaps eight, if he collected fees twice a year. What did this amount mean in real terms? In the late Tokugawa period, one *ryō* could generally buy enough rice to feed an adult for a year. A male wage labourer could earn around three *ryō* per year over and above his food and clothing.[106] In individual cases in the 1840s cited by Hanley, a tenant farmer earned twelve *ryō* per year, and a carpenter in Kyoto earned double this.[107] This tends to confirm Fujikawa Yū's theory that the status of unsalaried doctors in the Tokugawa period was roughly equivalent to that of peasants.[108] Unlike a wage labourer or tenant farmer, however, Chōei presumably had to buy his own food and pay his school fees from his earnings. As can be seen from the letter above, he also had the burden of purchasing medicines for his patients, from whom he had no guarantee of payment. Even taking into account the fact that he does not seem to have been very good at managing his finances, it is not difficult to see why he still depended on his father for financial support.

During the 1830s, Chōei was assisted financially by the three doctors from rural Kōzuke. These men, by contrast, appear to have been quite well off. They were, however, supported by secondary occupations: Fukuda Sōtei ran an inn; Takahashi Keisaku was a farmer; and Yanagida Teizō had a large inheritance. It is, therefore, difficult to determine what proportion of their wealth came from medical activities. The medical fees which Takahashi Keisaku recorded in his diary range from as little as ten *hiki* (about one hundred copper *mon*) to as much as one *ryō*, but the majority of payments were in *hiki*.[109] This suggests that he adjusted his fees according to the wealth of his patients, or that they simply paid him whatever they could.

[105] Takano Chōei Kinenkan, ed, *Takano Chōei no tegami*, pp. 35-6.

[106] Thomas Smith, *The Agrarian Origins of Modern Japan* (Stanford: Stanford University Press, 1959) p. 125.

[107] Hanley, *Everyday Things In Premodern Japan*, p. 20.

[108] Fujikawa, *Isha no Fūzoku, Meishin*, p. 31.

[109] Kanai Kōsaku, *Takahashi Keisaku nikki* (Nakanojōmachi: Takahashi Keisaku nikki kankōkai, 1995) pp. 581-2. One gold *ryō* was, in the 1830s and 1840s, equivalent to about 6500 copper *mon*. A

When a doctor gained enough experience, he could 'open his gate' and begin to take students. Teaching was a very useful way of making extra income. According to Rubinger, fees in private schools were usually paid in the form of an entrance fee, followed by fees for the teacher's services, to be paid regularly at festival times.[110] Similarly, in Kōzuke, Takahashi Keisaku's pupils frequently brought a gift of wine upon entering the arrangement, as well as at the end of the year.[111] The fees at schools of Western learning in Edo appear to have been very expensive, much more so than Confucian or National Learning (*kokugaku)* schools. One scholar suggests a figure of around five *ryō* per year for the school of Tsuboi Shindō (1795-1848), one of the leading scholars of Western learning in Edo.[112] Shindō is said to have made as much as 600-700 *ryō* per year.[113] In a society which was becoming increasingly entrepreneurial, success was no longer dependent on official appointment. Personality, however, did play an important role, and it has been suggested that Takano Chōei's inability to flatter his patients was a factor in his failure to become a popular doctor.[114] Another reason, however, was perhaps that he was more interested in his own research and translation than in visiting patients, or indeed, in making money.

Types of doctors

Rather than intellectual orientation, it is also possible to think about medical practitioners according to the kind of work they did. Just as in England, where (to a certain point) medical practitioners were divided into physicians, surgeons, and apothecaries, there were several types of practitioner in Tokugawa Japan. There was no official system of training or registration in Japan, but the hierarchy of status

carpenter in the 1830s might earn 420-450 *mon* in a day. See Katsu Kōkichi, *Musui's Story*, trans. Teruko Craig (Tucson: University of Arizona Press, 1995) p. 174.

110 Rubinger, *Private Academies*, pp. 70-1.

111 For example, on 1864,1,25, when five new students entered Keisaku's school, they brought five *shō* of *sake* (presumably one each), and three small dishes. Wine was the most common end-of-year gift Keisaku received.

112 Quoted in Rubinger, *Private Academies*, p. 121.

113 Quoted in Rubinger, *Private Academies*, p. 135.

114 Sugiura Minpei, *Kazan to Chōei* (Tokyo: Daisan bunmeisha, 1977) p. 105.

appears to have been quite similar. Doctors of internal medicine (the physicians of England, by comparison) were seen to be mainstream. Judging from the diary of Takahashi Keisaku, they treated a variety of disorders, including fevers, colds, digestive problems, sexually transmitted diseases, eye problems, and some skin problems.

Surgeons, who had prospered in war time, found in Tokugawa peace time that their work was mainly confined to treating injuries, boils, and sexually transmitted diseases. They tended to be looked down upon by other doctors because of their association with knives, needles, moxibustion, and the pigs that their apprentices used to practice upon. Satirical poems suggest that they set up their practices in rough neighbourhoods so that they might profit from the injuries resulting from quarrels that went on there. One poem pointed out rather cruelly that a doctor who treated haemorrhoids 'ate off the bottoms of others'.[115] This was not the entire picture, however. Hanaoka Seishū, mentioned above, mixed his surgery with Chinese internal medicine and was tremendously successful. Takahashi Keisaku, as a country doctor, was more or less obliged to take on surgical cases. Farming was a dangerous occupation, and he was called to many accidents that required stitches. Far from finding this degrading, he seems to have taken a special interest in these cases, recording them in unusual detail in his diary (see Chapter Five).

Other doctors specialised in eye problems, or women's health. So-called 'women's doctors' were in many cases actually abortionists. The abortionists appear to have flourished despite a ban on the practice implemented in the Shōho years (1644-8). There were both male and female 'women's doctors', who developed a custom of hanging long curtains at the entrance to their practices for privacy, and built several entrances, so that it was easy for people to come and go quietly. Pompe van Meerdervoort, a Dutch doctor at Nagasaki, observed in his diary from the years 1857-63, that:

[115] Ono, *Edo no machiisha*, pp. 61-2, 83-5.

> In Nagasaki, there were two old women who were notorious because of their way of practicing abortus by means of a lance which they were able to handle quite well. To these and similar individuals, people in Japan sometimes go for help, and I must say that it is specifically the wealthier ones, those who would be quite able to support their children, who most frequently do this. Another woman achieved the same effect with live mercury; she did not have such a large practice because the results were not always successful. As soon as I had sufficient proof of the actual existence of these crimes, I discussed this with the authorities in charge, but they found my complaints exaggerated. It is true that murder was outlawed in the country, but then the victim would be alive first, and an unborn fruit was not considered to be a living individual as yet. It belonged to the mother, they said, as part of her body, and she was free to do what she wanted with that body. I did not succeed in bringing about any improvement in this state of affairs, and both ill-famed women still carry on a thriving practice as 'famous abortionists'.[116]

Although Pompe van Meerdervoort's account gives no indication of this, abortionists could be looked down upon. They were seen to carry the spiritual weight of the work they did, and if they vacated their premises, others were reluctant to move in, at least until proper purification prayers had been performed:

> *Chūjō no ato, akidana de yayashibashi*
> After the abortionist, the shop stays vacant for a while.
>
> *Chūjō no ato, yagitō ni nen wo ire*
> After the abortionist, take care with the house-blessing.[117]

Abortionists were able to charge high fees due to the delicate nature of their business. Some of them even gained an evil reputation for lending money at high rates. Other poems refer to how abortionists were able to build grand storehouses with their ill-gotten gains, without ever a patient to be seen.[118]

Childbirth was usually assisted by female relatives, or increasingly, by midwives who were known as *toriagebaba* (literally, old-women-deliverers). Pompe

[116] Elizabeth P. Wittermans and John Z. Bowers, eds., *Doctor on Desima Selected Chapters From Jhr J.L.C. Pompe van Meerdervoort's Vijf Jaren in Japan* (Tokyo: Sophia University, 1970) p. 39.
[117] Ono, *Edo no machiisha*, p. 110.
[118] Ono, *Edo no machiisha*, pp. 100-11, 142-4.

van Meerdervoort noted in his diary how in wealthier families, an experienced woman would be employed to stay with the family her entire life.[119] The midwife usually had no special training, other than her many years of experience. Even her apprentices were said to start from over the age of fifty. Although little is known about how she was paid, a midwife's work was treated seriously. For example, midwives had special permission to cut across *daimyō* parade trains, and would not be questioned by local town guards. Her work was not confined to the birth itself; she usually attended every night for the first seven days to bathe the newborn baby. Indeed, Pompe van Meerdervoort found that the parturient woman was usually the victim of too much attention, rather than too little:

> She is not allowed a moment's rest until the whole act of delivery is completely finished. Every moment she is shifted from one position to another, now higher, then lower; on the back, then turned on the side...Japanese midwives have the idea that 'rest' after the delivery is particularly harmful, and they do not even allow the woman in childbed the sleep which contributes so much to restore the forces spent during delivery. The reasons are superstitious in origin, although I have never heard a clear statement about it...[120]

If the birth was complicated, the midwife sometimes called in a male doctor to assist.[121] This is evidenced too, by the fact that Takahashi Keisaku assisted at several births in Kōzuke. Pompe, however, complained of the lack of scientific knowledge of obstetrics among Japanese doctors. He made only one exception: Franz von Siebold's daughter, Ine, in Nagasaki. When he saw her serving as an obstetrician for European women, he found that 'she really was most satisfactory'.[122]

Quack doctors were known as *yabui* (bush doctors), or *takenokoisha* (bamboo shoot doctors). Presumably, 'bamboo shoot' doctors were young, green, and inexperienced. The origin of the expression 'bush doctor' is less clear. One suggestion for the name is that this type of doctor could not afford to buy his own

[119] Wittermans and Bowers, eds. *Doctor on Desima,* p. 41.
[120] Wittermans and Bowers, eds. *Doctor on Desima,* p. 42.
[121] Ono, *Edo no machiisha*, pp. 245-67.
[122] Wittermans and Bowers, eds. *Doctor on Desima,* p. 42.

medicines, and went into the bushes to collect them himself.[123] *Yabui* were the subject of many humorous poems. They blundered about in their shabby clothes, killing patient after patient, better known for their fast talking than their medical skills. Some of them associated with the professional jesters *(taikomochi)* of the pleasure quarters in order to make a living on the side, and others, taking advantage of their wide circles of acquaintance, were employed as marriage matchmakers.[124] Though these poems probably contain an element of truth, it is worth remembering that not all alternative practitioners were frauds, and that for mainstream doctors, denunciation of 'quackery' was the only defence they had against it. As Dorothy and Roy Porter have argued in the context of eighteenth-century England, quack medicines might taste better, or sometimes even work better than regular medicines, as well as being cheaper. In such medically uncertain times, patients were often willing to try anything, seeking the advice of both regular and irregular practitioners.[125] Both trained and untrained doctors at times found themselves the object of distrust and ridicule.

Doctors and Status

The struggle for status often manifests itself in appearances. In England, it has been suggested that patients were inclined to put their faith in social criteria such as the personal connections, grooming, tact, and so on of physicians, because the rudimentary state of medical knowledge did not allow a great deal of public confidence in their healing abilities.[126] Physicians, therefore, had to earn the trust of their patients on an individual basis.[127]

In Tokugawa Japan, physicians adopted a particular style of dress in order to set themselves apart from ordinary commoners. They did this within the confines of a dress code based on class distinctions, and the trend became increasingly

[123] Ono, *Edo no machiisha*, p. 179.
[124] Ono, *Edo no machiisha*, pp. 175-213.
[125] Porter and Porter, *Patient's Progress*, pp. 106-7.
[126] M.J. Peterson, *The Medical Profession in Mid-Victorian London* (Berkeley: University of California Press, 1978) p. 130.
[127] Porter and Porter, *Patient's Progress*, p. 58.

pronounced over the course of the period. Originally, doctors shaved their heads and dressed much as priests did, in a kimono (*kosode*) with a short coat (*jittoku)* over the top. This was the formal dress of doctors, painters, poets, and priests.[128] Gotō Gonzan of the *koihō* school was influential when he rebelled against this practice by pulling his hair back in a ponytail, wearing a divided skirt (*hakama*), and a special coat (*hōekihō).*[129] The *awase* was a coat adapted from the European cape. Most people wore it short, but samurai, wealthy commoners, priests and doctors took to wearing a longer style.[130] Doctors were also famous for their *haori,* another kind of coat. Unlike samurai, who wore the *haori* more formally with a divided skirt, doctors simply wore it over their kimono. For this reason, the *haori* became something of a trademark of the doctor.[131] Thus, although prevented from dressing as samurai, commoner doctors distinguished themselves in various ways from ordinary folk.

By the nineteenth century, doctors were being criticised for their luxurious habits. Here is what one writer had to say:

> Because their fees are too generous, doctors these days neglect their studies and grow increasingly extravagant. Their clothes are exquisitely beautiful and their houses have proper entrances, studies, and every other amenity. Even their servants exercise their authority. At home, they live in a most noisy and ill-mannered fashion, and eat only the best food and drink. Because they do not understand the deeper principles of medicine, they are unkind. While ostentatiously behaving as if they were the epitome of a good doctor, they deceive people. Doctors with official posts and those with something of a reputation are especially proud, and they ride in palanquins even when visiting patients. Their palanquin bearers and other attendants behave like samurai. In addition, there are some attendants, who work for the recent new kind of popular doctor, who try to make themselves look busy and rush around the streets creating more fuss than a samurai's passing, troubling people when their paths cross. Sometimes they start a quarrel, and if anyone should happen to touch the medicine box, it immediately comes to blows. They take an aggressive stance, saying that the medicine chest is an important tool for the medical way. When

[128] Tanida Etsuji and Koike Mitsue, *Nihon Fukushokushi* (Tokyo: Koseikan, 1989) p. 104.
[129] Fujikawa, *Isha no Fūzoku, Meishin*, p. 55.
[130] Tanida and Koike, *Nihon Fukushokushi*, p. 125.
[131] Fujikawa, *Isha no Fūzoku, Meishin*, p. 41.

> these attendants go to visit a patient, it is customary for them to demand money for their 'lunch', sometimes 50 *hiki,* sometimes 100, or 200 *hiki.* This is enough to buy a half, or one or two bags of rice. Even though there are just four of five of them, this is more than enough lunch money to feed eight or nine people...[132]

The situation was such that even the *bakufu* government was forced to issue an edict in 1841 prohibiting that doctors' attendants demand money for *sake* or lunchboxes when accompanying the doctor on medical visits.[133] These documents provide an interesting indication of the medical practitioner's rise in importance (or at the very least, self-importance) in the late Edo period. By association, even his attendants appear to have felt that they could put on airs.

There were various methods popular doctors could employ to attract more patients. One well-known strategy was to keep a large number of people in the waiting room in order to create the appearance of a good clientele. Even when this was not the case, it took time to grind and dispense medicines. A large number of humorous poems depict such a scenario:

> *Doka ochi nosenu you ni isha hito wo tame.*
> The doctor hoards people, to avoid a slump.
>
> *Shibaraku matasetamae chōgō no jisetsu*
> Mixing medicine: make them wait a little.[134]

The bored patients slowly began to show their frustration:

> *Ryūkō isha genkan ni taenu ōakubi.*
> At the door of the popular doctor, endless, huge yawns.[135]

If the poems are to be believed, some patients appear to have entertained themselves with all sorts of antics; fighting over sunny spots, tidying their beards,

[132] From *Fūzokukenbunshū* Vol. II, quoted in Fujikawa, *Isha no Fūzoku, Meishin*, p. 42.
[133] Fujikawa, *Isha no Fūzoku, Meishin*, pp. 39-43.
[134] Quoted in Ono, *Edo no machiisha*, p. 36.
[135] Quoted in Ono, *Edo no machiisha*, p. 38.

chain-smoking, gambling, even writing obscene graffiti on the unfortunate doctor's wall.

Not only did patients waiting for their medicines become restless, they also became hungry:

> *Ōzei ni hidarugarasete chōgō shi*
> Mixing medicine makes the masses hungry.[136]

> *Kusuritori kanzō kuite shikarareru*
> Waiting for medicine: scolded for eating the licorice.[137]

It should, however, be remembered that only popular doctors could afford to treat their patients in such a manner. As an example of life at the other end of the social scale, there are poems poking fun at quack doctors borrowing their shabby long coats, getting motion sickness on unfamiliar palanquin rides, and bringing in their bumpkin attendants from the country.[138]

Something should perhaps be said about the sheer number of humorous poems concerning doctors. It suggests a remarkable fascination with them, in all their various categories. The desire to poke fun at doctors may well have come about through a general uncertainty and a touch of jealousy about their new place in society. As Porter and Porter have suggested with regard to the situation in England, it was natural for people to distrust doctors, when increasingly they were putting themselves in their hands.[139] Furthermore, they argued that the 'growing affluence and airs of the rank-and-file of the profession excited astonishment and envy'.[140] Significantly, there were complaints about the pretensions of physicians in England, hurtling around the streets in their chariots, just as we have seen in the Japanese example above.[141]

[136] Quoted in Ono, *Edo no machiisha*, p. 47.
[137] Quoted in Ono, *Edo no machiisha*, p. 48.
[138] Ono, *Edo no machiisha*, pp. 181-6.
[139] Porter and Porter, *Patient's Progress*, p. 57.
[140] Porter and Porter, *Patient's Progress*, p. 126.
[141] Porter and Porter, *Patient's Progress*, p. 124.

Although they usually go hand in hand, wealth is not always commensurate with status. By the late Tokugawa period, the traditional class distinctions of warrior, farmer, artisan, and merchant had become blurred. Many wealthy commoners were better off than lower ranking samurai. If Chōei's students from Kōzuke are any indication, the life of wealthy regional farmer-physicians, for example, appears to have been quite a comfortable existence indeed, and within the confines of the village, they enjoyed an elite status. Quite apart from the fact that there was probably a genuine need for local physicians and a great deal of moral satisfaction to be gained from helping one's own community, it is not unreasonable to think that men such as these were quite content to be 'big fish in a small pond'.

For those who desired it, however, there were indeed opportunities for outstanding scholars, regardless of hereditary rank, to rise to advisorial positions. Takano Chōei is a fine example of this ambition, for although he was of middle-ranking warrior class by birth, he chose to reject the stipend and comforts of family succession for an ambitious scholastic career. There is a suggestion, too, in Fukuda Sōtei's poems, that he had a frustrated desire for greater things.

In his essay on 'Center and Periphery', Edward Shils described society as having a centre which is not so much geographical as social, dominated by the central value system created by elites.[142] He argued that most of the masses in pre-modern societies did not notice their alienation from such a 'centre'. There were, however, some more 'sensitive or intelligent' persons, who became acutely aware of their position on the 'outside' and often gained access to the centre by becoming school teachers, priests, or administrators.[143] Although it is uncertain whether Shil's vision of 'society' can be applied across boundaries of space and time, this idea does find some echoes in Totman's idea of the 'savant' in Tokugawa Japan.

Totman used the word 'savant' to refer to the career paths of physicians, teachers, or scholar-advisors.[144] A scholarly career was an attractive way in which masterless samurai (*rōnin*) could make a living, because it had a fluid status not

[142] Edward Shils, "Center and Periphery," in *The Constitution of Society*, ed. Edward Shils (Chicago: University of Chicago Press, 1982) 93-109, pp. 93-5.
[143] Shils, "Center and Periphery," p. 106.
[144] Totman, *Early Modern Japan,* pp. 163-66; 186; 349.

specifically defined by the hereditary system of 'samurai-peasant-artisan-merchant'. This was particularly true of the careers of scholar-physicians. Physicians who were engaged by *daimyō* or the *bakufu* as advisors could gain a great deal of wealth and prestige, normally available only to those who had been born to it.

As Totman has indicated, there was also considerable respect for the scholarly tradition of Chinese medicine, for it involved the study not only of practical therapies, but also of classical Confucian texts. A physician might well turn to a teaching career and evolve into a scholarly advisor. Although the early savants were mainly masterless samurai, (whether they were second sons, or had for some other reason lost their samurai stipend), in the later Edo period, scholarly careers were increasingly important as a means for wealthy commoners to improve their status. Totman has given the example of Itō Jinsai (1627-1705) as a fine example of a scholarly commoner.

Although Takano Chōei was robbed of the opportunity to reach the heights to which he aspired, in many ways, he seems to epitomise the career of the 'savant'. A *rōnin* of his own volition, he professed that he would rather take his chances on an interesting scholarly career than be safely tied to rural obscurity in Mizusawa. It is here, of course, that Chōei differed from his friends in rural Kōzuke, because, although they continued to have important social and intellectual links to Edo (and thus in Shils' scheme of things, maintain access to the central value system of the elite), they seemed content, or at the very least resigned, to building their careers in their rural homeland.

Ian Inkster has described medical practitioners in the provinces of England as 'marginal men', that is, men who moved in more than one social world, but belonged to neither.[145] They were 'marginal' both in the sense of belonging to an occupational group which had not yet established its place in society, and because they lived in the provinces, rather than fashionable London. Doctors such as these had a particular need to appeal to the community for their status, and they did so through activities such as work on committees, in local literary societies, public

[145] Ian Inkster, "Marginal Men: Aspects of the Social Role of the Medical Community in Sheffield 1790-1850," in *Health Care and Popular Medicine in Nineteenth Century England*, ed. John Woodward and David Richards (London: Croom Helm, 1977) 128-63, p.128.

donations, and the dissemination of medical information through public lectures. Many parallels may be drawn between the ways in which physicians attempted to attain respect and wealth in nineteenth-century rural England and the social and academic activities engaged in by Takahashi Keisaku in rural Kōzuke.

Willis has noted that in Australia, it was easy for elite physicians, who had the ability to draw on traditional class mechanisms, to become involved in public affairs and active as community leaders.[146] In Japan, too, the nineteenth century saw the rise of wealthy farmer-physicians in rural areas, who made use of the affinity between public affairs and medicine. Aoki has suggested that it was easy for powerful farmers and village officials to become doctors because the conditions under which they operated were in many ways complementary.[147] In their positions of power, it was easy for such local officials to gain access to medical information. If notices arrived from official domain doctors, it was the village officials who would have to read and distribute the information among the villagers, and in such cases, some kind of medical knowledge was often helpful. Village officials served as distributors for official medical supplies, and were therefore in a beneficial position to receive information about medicines. They also maintained useful connections with official doctors and private medical suppliers. Through their administration of mountains and fields, local officials had knowledge of the medicinal plants that grew there. Wealthy villagers were able to pay for medical services and drugs themselves. They could afford to spend money on medical education and books, and possessed the time and necessary skills in order to read them. Their social status meant that they associated with warriors, official physicians and other wealthy commoners.

Medicine also had a role to play in the maintenance of the local political system. A village official who gave *gratis* medical treatments, whether officially supplied or of a personal nature, would help to consolidate his position in the community. In many cases, public health measures were the responsibility of village

[146] Evan Willis, *Medical Dominance* (Sydney: George Allen and Unwin, 1983) p. 45.
[147] This section is based on Aoki, *Zaison rangaku no kenkyū,* pp. 257-75; and Aoki Toshiyuki, "Sōmō no rangaku," in *Nihon no kinsei 14: bunka no taishūka*, ed. Takeuchi Makoto (Tokyo: Chūō Kōronsha, 1993) 219-68.

officials. Thus, powerful locals would be able to gain respect by becoming medical practitioners and similarly, those who were already physicians were looked up to as a local elite.

The importance of the local doctor has been illustrated by Aoki, who introduced documents which show how villagers without the services of a physician attracted them to their communities by drawing up contracts and paying them out of village funds.[148] In one example, the villagers supplied a house for the doctor and his family, paid for his medical expenses in the event that he became sick, and even his funeral expenses were covered by the contract. A contract was often for three years, but if the doctor was well liked in the community, the agreement could be extended. The conditions would depend somewhat on the financial status of the village. A physician in a rural community was also desirable because he often had a role to play as a teacher, not only of medicine, but also of local children in a *terakoya* school. The popularity of these schools, which provided a basic education, reflects an increasing awareness of the value of literacy among commoners. Some doctors were hired specifically to be local teachers. Aoki's examples come from Shinano (Nagano prefecture), but among the Kōzuke physicians of this study too, both Fukuda Sōtei and Takahashi Keisaku appear to have taught medicine. In addition, Keisaku was employed in his later years as a *terakoya* teacher. A document from 1869 records that he had as many as eighty-five pupils.[149]

These examples demonstrate that doctors of the nature of Takano Chōei and the Kōzuke physicians, who were by no means elite physicians in the sense of being domain doctors or serving the Shogunal family, were able to command a certain amount of respect within their communities. On the one hand, by virtue of his scholarly abilities, Chōei was accepted into a circle of quite high-ranking scholars and officials in Edo. The Kōzuke physicians, on the other, were part of a local elite. They were by no means poor, although it is difficult to know what percentage of their earnings came from medical activities. Takahashi Keisaku and Yanagida Teizō belonged to families who traditionally served as village officials; Keisaku himself

[148] Aoki, *Zaison rangaku no kenkyū*, pp. 171-80.
[149] Kanai Kōsaku, *Takahashi Keisaku nikki* (Nakanojōmachi: Takahashi Keisaku nikki kankōkai, 1995) p. 565.

became headman in 1857. The Kōzuke physicians may be seen to typify a new kind of rural doctor who emerged from the level of the local elite in the early part of the nineteenth century.

CHAPTER THREE
THE KŌZUKE PHYSICIANS: *RANGAKU* IN THE COUNTRYSIDE

Nestled among the mountains of provincial Kōzuke, the villages around Nakanojōmachi were perhaps an unlikely setting for lively scholastic activity. In the 1830s, however, the region was a picturesque backdrop to a number of exchanges between Takano Chōei and a network of country doctors. Chōei shared his knowledge of Western medicine with his provincial friends through visits, lectures, letters, and eventually, two collaborative publications. Their activities provide an excellent example of the way new knowledge was received in a rural locale, and clearly demonstrate that some form of Western knowledge was penetrating even remote, mountainous areas of Japan well before the Meiji period.

The first part of this chapter will explore the significance of Nakanojōmachi as a geographical 'locale' for this special relationship. It will provide an introduction to the lives of the Kōzuke physicians, their medical community, and the nature of their connections to Chōei. The second part of the chapter will bring a shift in focus. It paints a broader picture of nineteenth-century Japanese society in order to see how the rise of medicine and networks fitted in with contemporary economic and social developments. This leads into a final section that examines the growing network of *ranpō* doctors beyond the borders of Kōzuke.

The lectures of 1833

From the twenty-third of the seventh month, until the twenty-fifth of the eighth month, 1833, Takano Chōei held a series of medical lectures in the province of Kōzuke (present-day Gunma prefecture). They took place at the country villa of Yanagida Teizō, a wealthy Kōzuke physician, and were attended by a small group of interested locals. In addition to the host Teizō, present at the lectures were a pharmacist called Negishi Shūzō; three physicians, Mochizuki Shunsai (1802-45), Takahashi Keisaku, and Endō Genryō (who was Takano Chōei's cousin, living in Kōzuke at the time); and a man by the name of Ichimata Junsai.

Details of Chōei's lectures and the names of the attendees were taken down in careful notes by the physician Takahashi Keisaku. Later, he lent these notes to his

teacher of Chinese medicine, Itō Chūtai (Rokuri) (1778-1838), who copied them and left them for historians to discover, years later, in his storehouse in Nagano.[1]

Chōei based the lectures on his book, *Fundamentals of Western Medicine,* which had been published just one year previously, in 1832. Significantly, it was this group of Kōzuke physicians that had given him financial backing for the work. It is therefore probable that the lectures were a way for Chōei to express his appreciation of their support.

Judging from their content, the lectures were by no means intended for a wider audience. In addition to the material based on his book, Chōei discussed the treatment of specific diseases, and made a detailed theoretical exposition on the 'general theory of disease'. In this, he explained that in the West there were two theories of disease: one that treated diseases as single entities, and one that explained the reasons behind all diseases. Following the ideas of G.W.C. Consbruch (1764-1837), he argued for a general theory of disease, in which illness occurred as the body's natural reaction against some kind of threat (usually the result of neglectful health practices). He preferred this theory to those arguing for imbalances in the body, pointing out how the eye produces water to flush out dust, and the skin produces pus to fight against a splinter. He went on to define a disease nosology based on symptoms, signs, and causes. He noted that there were some traditional classifications in the Chinese *Shōkanron,* such as the three stages of yin and yang, but criticised this work for making no mention of causes.[2]

This lecture series is of enormous historical significance, for it means that Chōei was delivering the latest in Western medicine from his recently published book to ordinary physicians and pharmacists in provincial Japan. Most of these local doctors had trained in Chinese, not Western medicine. Modest and somewhat exclusive though the audience was, it gives an indication of a blossoming professional identity among the provincial physicians.

In the late Tokugawa period, it was quite common for Edo-based authors,

[1] The notes are reproduced, with a short introduction, in Aoki Toshiyuki, "Itō Chūtai hisshya 'Takano shi sōbyōron'," in *Jitsugakushi kenkyū*, ed. Jitsugakushiryō kenkyūkai (Kyoto: Shibunkaku, 1993) 253-68.

[2] Aoki, "Itō Chūtai hisshya 'Takano shi sōbyōron'."

artists, and poets to make tours of the countryside, giving lessons, lectures, and recruiting students, in order to raise funds.[3] Takano Chōei, who, as we know, was always short of cash, would appear to have been no exception. Yet there is some evidence to suggest that his relationship with this group of doctors in rural Kōzuke evolved into something far more significant than merely a business arrangement based on financial need.

Takano Chōei and the Kōzuke physicians: Fukuda Sōtei, Yanagida Teizō, and Takahashi Keisaku

Fukuda Sōtei, Yanagida Teizō, and Takahashi Keisaku were three physicians who lived in villages around Nakanojōmachi, in the province of Kōzuke. During the 1830s, when they became pupils of Western style medicine, the three men built up a close association with Takano Chōei. The famous *rangaku* scholar had many students during his lifetime, so the fact that he taught them is nothing remarkable in itself. Nevertheless, their relationship is worth considering for several reasons.

Firstly, as we have already seen, the rural physicians became his patrons as well as his students, and helped to finance his important publications. They also assisted in inspiring and editing Chōei's works on famine. These works were precipitated by a visit Chōei made to Kōzuke in 1836. According to *Treatise on Two Things For The Relief Of Famine*, which was the first of the collaborative documents, Sōtei gave Chōei some buckwheat, and Teizō gave him a potato; through their discussion, they interested him in these crops as a preventative measure against famine. Not only did the pair assist in editing the work, but they also gave it their financial support. On the other hand, Takahashi Keisaku, who studied in Chōei's school in Edo, assisted Chōei in compiling *Methods of Avoiding Epidemic Diseases* from one of his previous works. The contributions of all three are properly acknowledged by Chōei in the works themselves. This, along with the fact that the Kōzuke physicians were roughly the same age as, or slightly older than Chōei, suggests that their relationship may well have been that of colleagues more

[3] David Howell, "Social Disorder and Moral Reform in Late Tokugawa Japan" (paper presented at the Japanese Studies Association of Australia Biennial Conference, Central Queensland University, Rockhampton, 1999) p. 14.

than that of teacher and students.

Fukuda Sōtei (Kōsai) was the oldest of the Kōzuke physicians, and it is he who is said to have been the initiator of the relationship with Takano Chōei. There is however, some confusion as to how it all began. The most common theory is that he invited Chōei to come to Kōzuke, most probably around 1831, the time when Kōsai, already in his early forties and a physician of considerable reputation, began to study the Dutch language.

Sōtei was born at Sawatari thermal springs, as the eldest son of a physician, in 1791. He had two elder sisters, and a younger brother. It was customary for the head of the family to take the name of Sōtei, and this Sōtei was the fifth generation. After completing preliminary schooling with a Confucian scholar by the name of Maruyama Hakuhō in Nakanojō, Kōsai was sent at the age of seventeen to Edo, where he studied the Confucian classics under Ichikawa Beian (1779-1858). Beian's father, Ichikawa Kansai (1749-1820) was a highly distinguished poet, a fact which, it has been suggested, may have influenced Sōtei's poetic inclinations.[4] Following this, he studied medicine under Ninomiya Dōtei, a physician of the *koihō* school. It was not until the age of thirty, that, shortly before his father's death, he returned to Sawatari to take over the family practice.

Perhaps assisted by the long history of his family as local physicians in the area, Sōtei became an extremely successful rural physician. He was able to maintain secondary practices in Haramachi and as far away as Takasaki.[5] Of his personal life, little is known, although Sōtei does appear to have been married twice. His second marriage took place in 1836, to a woman called Nobuko. It was she who bore Sōtei his two children, Haruko and Bundō.

According to the inscription on Sōtei's burial monument, his interest in Western medicine was sparked when, frustrated with his inability to heal certain ailments, he was impressed by a translation of a Dutch medical book, and began to experiment with the treatments described therein.[6] Kanai Kōsaku has suggested that

[4] Kanai Kōsaku, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," *Gunma Bunka* 203 (1985): 29-46, p. 35.

[5] Kanai Kōsaku, "Rangaku to waga Nakanojōmachi," in *Nakanojōmachi shi*, ed. Nakanojōmachi shi hensan iinkai (Nakanojōmachi: 1976) 1104-1158, p. 1121.

[6] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 37.

the book may have been J.A. van de Water's pharmaceutical treatise, a book which was listed on the ledger of the pharmacy Sōtei patronised. However, since a translation of this work was not published until 1856,[7] this is highly unlikely. Takahashi Keisaku made a copy of this work too, but this was not until 1860.

Concrete evidence of Chōei's first visit to Nakanojō is lacking, and must be pieced together from accounts on the memorial tablets of Fukuda Sōtei and Takahashi Keisaku. If we are to believe these, Chōei first came to Nakanojō at the invitation of Sōtei, probably in 1831. Perhaps the visit was largely a social one, giving Sōtei the opportunity to meet Chōei, and the scholar the opportunity to relax in the waters of Sawatari thermal springs. Kanai has suggested that Sōtei's student, Takahashi Gentan, as well as Takahashi Keisaku, were probably present at this first meeting. It is also likely that Chōei brought with him at this time chapters of the Dutch text which Sōtei proceeded to study by correspondence. The first forty-seven chapters of this text, which was a copy of a book on surgery by David von Geshez, were both copied and translated in Chōei's hand. Later chapters of the work were copied in Chōei's hand, but translated in Sōtei's, giving an indication of his progress. The encouraging manner in which Chōei answered Sōtei's queries remains documented in Sōtei's books. For example, Chōei praised one of Sōtei's translations, writing, 'this chapter is very clear, with no mistakes at all'. In another chapter, Sōtei wrote, 'I cannot understand this chapter', to which Chōei replied that he could not understand it very well either.[8]

Despite Chōei's patient teaching, learning Dutch was not an easy task, especially with such limited resources. When Chōei made a third visit to Kōzuke in the eighth month of 1836, Sōtei recorded the occasion in his diary.[9] In the same entry, he also wrote down a proverb in Dutch, which translates roughly as: 'Drops of water make a stone hollow, not by their force, but because they fall so many times upon it.' Usually, this is interpreted as Chōei's response to the frustrations expressed

[7] Nichiran Gakkai, ed., *Yōgakushi jiten*, p. 785.

[8] Kanai, "Rangaku to waga Nakanojōmachi," pp. 1119-21.

[9] Nakanojōmachishi hensan iinkai, *Nakanojōmachishi shiryōhen* (Nakanojōmachi: Nakanojōmachi yakuba, 1983) p. 968. All further quotations from Sōtei's diary are from this source.

by Sōtei at the difficulties of learning Dutch.[10] In the same entry Sōtei noted down instructions for preparing a medicine which Chōei brought with him, along with the names of several of his teacher's associates in Edo.

In return for Chōei's lessons, Sōtei helped Chōei financially, in particular with the publication of his first major work, *Fundamentals of Western Medicine (Seisetsu Igen Sūyō)*. At the time of Chōei's visit in 1836, Sōtei's diary states: 'Takano Zuikō came. Lent him *delie Kopan* to have *Sūyō* carved for printing'. *Delie kopan* is probably a corruption of the Dutch for 'three *koban*', which were pieces of gold used in the Edo period.[11] As noted in the previous chapter, only the first part of *Fundamentals of Western Medicine* was originally published in 1832. This *Sūyō* therefore may have been one of the other parts which had circulated in manuscript form, or, as Kanai suggested, the second volume.

The following letter was written by Chōei to Sōtei in 1838. It was a plea for financial aid to help with the reconstruction of Chōei's house after it was all but destroyed by fire:

> ...it has not been long since I moved house, and in principle I should have been able to pay off my old debt by the coming seventh month. After the seventh month I was also looking forward to being able to pay back the money I borrowed last year. I am extremely perplexed to have had this stroke of bad luck. Accordingly, I ask you again even though I have not yet returned the money I borrowed last year. I have spoken of the matter of the timber, and asked for your help. I assure you that you will not be out of pocket. As I said in the last letter, please help me just for a short while by sending the timber. I will pay you immediately it arrives...[12]

It was not only Sōtei who came to Chōei's assistance in this time of need. The Kōzuke group's efforts appear to have been co-ordinated by Negishi Kenbei, the local *daikan*. Evidence for this can be found in a letter thought to have been written by Kenbei to Mochizuki Shunsai, a doctor from Nakanojō who studied with Chōei in Edo, and attended the lectures in 1833. In the letter, Kenbei asked Shunsai to

[10] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 38.

[11] Kanai, "Rangaku to waga Nakanojōmachi," p. 1129.

[12] Takano Chōun, *Takano Chōei den*, pp. 324-5. Maruyama Kiyoyasu quotes a section of this letter as being addressed to Yanagida Teizō. I have decided to follow Takano Chōun, who quotes the entire letter as being addressed to Sōtei.

inform his teacher that Sōtei would contribute 260 planks of cedar, Teizō 60 posts, and that he and his relative Shūzō (the pharmacist) would buy 100 pales (which were somewhat expensive).[13] Even if Chōei did intend to repay the loan as he claimed, their generosity and level of co-operation is remarkable.

Of Sōtei's personal character, it is said that he had a generous nature, and that he often treated poor patients free of charge, even going so far as to give them money for their journey home.[14] It would be easy to assume that such generosity, and also that displayed towards Chōei, meant that he had plenty of money to spare. This, however, does not appear to have been the case. Kanai demonstrates how, when his father died, Sōtei was left with many debts to families in neighbouring villages, which, despite his booming practice, he struggled to pay off.[15]

In the third month of 1836, Sōtei made a resolution in his diary. In it, he promised to determine the duties of each day at daybreak, see patients until lunch time, read and write poetry in the afternoon, and to drink only two cups of wine with an evening meal of barley and vegetables. In an addition dated the seventh of the fifth month, Sōtei promised to give up the two cups of wine as well, the result of some gall pain which was brought on by the extended celebrations accompanying his second marriage. So sad and sorry did this make him that on the following eighth day, he chided himself for having made no progress in his studies and not perfected his skills, despite his forty-six years, and having brought his illness upon himself through wine and women. We can suspect from this that Sōtei was cruelly self-disciplined. The doctor's dissatisfaction with his achievements also seems to be reflected in the following poems.

> The clergy in black and laity in white
> One after another, they visit
> Medical diagnosis is already in decline
> In our land, heroes can be counted on a few fingers
> Sadness buried in my *sake* cup, I smile alone.

[13] Kanai Kōsaku, "Takano Chōei monka Nakanojōmachi Mochizuki Shunsai no hizō monjo o haiken shite," *Gunma Bunka* 247 (1996): 19-32, p. 21.
[14] Maruyama, *Gunma no ishi*, p. 144.
[15] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 40.

The wind over Snake River billows and sighs heroically
A frosty wind dapples the peak of Mt. Haruna with colour
A forty year old man, yet to gain a reputation.
As my hair grows white, I shed secret tears.

A precious sword, buried for an eternity in a box
Thick with dust, there has been no way to draw out its shine
No one yet knows its amazing value
Its rainbow like brilliance unrevealed, I cry alone in pain.[16]

Perhaps Sōtei regretted the lateness with which he had turned to Western studies, or perhaps he felt the limitations of his career as a provincial physician, especially after having lived such a long time in the capital. In any case, shortly before he died of a cerebral haemorrhage in 1840, the year after Chōei was arrested, he appears to have been a frustrated man. The inscription on his gravestone, said to have been written by his student Takahashi Gentan, records that he shortened his own life through his devotion to study and helping others.[17] Sōtei's son, Bundō, was as yet unborn when his father died. Sōtei was succeeded in his medical practice at first by a nephew, but his own son Bundō eventually followed in his footsteps as the seventh generation Sōtei.

Not far from Sawatari thermal springs, in the village of Isemachi (present day Nakanojōmachi), lived Yanagida Teizō, host of the 1833 lecture series. He too, was a physician with a long family history of medical practice in the area. According to family records, the first member of the Yanagida family to settle in Isemachi was Teizō's ancestor Ryūboku. Born in Harima, he served as a doctor to the *daimyō* Asano Takuminokami (1667-1701). After the demise of Asano in 1701, Ryūboku settled in Kōzuke. The Yanagidas' large house was situated on what is now the main street of Nakanojōmachi. Through a flourishing medical practice and careful management, the family gradually became quite wealthy. This, of course, meant that Teizō was a valuable associate for the struggling Takano Chōei.

Little is known about Teizō's education.[18] Presumably, he learned his work

[16] Quoted in Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," pp. 40-1.
[17] Maruyama, *Gunma no ishi,* p. 148.
[18] This account is based mostly on the information contained in the preface to Kanai Kōsaku, ed., *Yanagida Teizō no Tempō kiji* (Gunma: Jōmō Shinbunsha, 1980).

from his father. In addition to this, he appears to have specialised in fevers, under the tutelage of a man called Hagi Zaemon, and learned calligraphy with a man called Ryōko. Teizō's father, Yanagida Ryūan, was acquainted with Itō Chūtai, who has already been introduced as the copier of the lecture notes of 1833. Chūtai was a physician from Saku-gun in neighbouring Shinano who trained in the *koihō* school under Yoshimasu Nansho. He was also interested in Western medicine and made many copies of Western medical books. Chūtai opened a medical practice in Itahanashuku, Kōzuke, and seems to have associated closely with physicians from Nakanojōmachi.[19] It was Itō who wrote the inscription on Yanagida Ryūan's gravestone when he died in 1824. Since Itō was also the teacher of Takahashi Keisaku, perhaps Teizō learned from him too.

The relationship between Yanagida Teizō and Takano Chōei is, in terms of personal correspondence, the best documented relationship of all the three Kōzuke physicians. There are seven letters addressed to Teizō included in the *Takano Chōei Den.* Perhaps more than anything, this is a reflection of the warmth of their friendship. Teizō appears to have made a habit of sending Chōei a gift of pheasants every year, as may be seen from the following letter he received in thanks.

> Thank you again, for the four pheasants, this year as every year. I cooked and enjoyed them immediately. However, it is a long way, and I am always deeply grateful for your kindness.[20]

Despite the risks involved in keeping documents related to Chōei following his arrest and escape from prison, a large number of Chōei's works were found hidden in Teizo's home after he died.[21]

Like Fukuda Sōtei, Teizō was a welcome source of financial support for Chōei. As we have seen, in 1838, when his house was burned down, Chōei called upon Teizō, just as he did Sōtei, for financial help. In a letter dated the fourth month of 1838, Chōei went into great detail about the fire and the damage to his house, and asked Teizō to send wood for reconstructing it. He claimed to have heard of the

[19] Aoki, "Sōmō no rangaku," pp. 251-3.
[20] Takano Chōun, *Takano Chōei den*, p. 326.
[21] Kanai Kōsaku, *Takano Chōei to Agatsuma* (Nakanojōmachi: Kanai Kōsaku, 1992) p. 18.

existence of a lumber business quite close to Isemachi, and that buying from there would be much cheaper than purchasing timber in Edo. In any case, as can be seen from the letter written to Sōtei quoted above, Chōei seems to have had no money on hand.

During the Tempō years, Teizō kept a journal, the *Tempō Kiji*, which included many anecdotes, copies of official documents, and snippets about current affairs. The most interesting entries are perhaps those concerning the plight of the common people during the Tempō famine, and these will be discussed further in the following chapter. Teizō was probably inspired to write these passages by his work on Chōei's *Treatise on Two Things For The Relief Of Famine.* The journal is also important because it demonstrates the extent to which Teizō was able to obtain information about events in the capital and elsewhere.

Teizō often seems to have stayed the night at the house of Takahashi Keisaku, of Yokō-mura. This is a useful indication of the warmth of their friendship, for their houses were separated only by a distance requiring about twenty minutes at a brisk walk. There is evidence in Keisaku's library notebook that he was lending Teizō books as early as 1827. As suggested above, the two may also have been connected by Keisaku's teacher, Itō Chūtai. Tabata Tsutomu has suggested that the friendship between Teizō and Keisaku may have cooled somewhat in later years, because whereas Keisaku chose to live quietly as a farmer and village official, Teizō displayed a very critical view of political affairs in his *Tempō Kiji*.[22] This idea may be thoroughly refuted, however, by a careful reading of Keisaku's diary. Not only did Keisaku attend Teizō as he lay critically ill in 1855, he continued to visit and treat his family members with similar compassion long after his friend's death (see Chapter Five).

Takahashi Keisaku was youngest of the three physicians, and the only one to live on into the Meiji period. He was born into a farming family in the village of Yokō-mura, (present day Nakanojōmachi) in 1799. His main farming interests were in grains, beans and silk, although early in his life farming seems to have taken second place to medicine. Tabata has suggested that Keisaku's interest in studying

[22] Tabata, "Bakumatsu ni okeru ichi chihō ran'i no jiseki ni tsuite," p. 58.

Dutch could have sprung from an interest in silk production,[23] though this factor compares poorly with the influence of his teacher of medicine, Itō Chūtai. Keisaku's ancestors had served as village headmen; thus the Takahashi family was a well established presence in the village.

Keisaku displayed an interest in learning from a young age, and studied Chinese medicine under Itō Chūtai. Keisaku seems to have entered Takano Chōei's school, the Daikandō in Edo, in 1831, one year after it was established. Significantly, this is also the year in which Fukuda Sōtei is believed to have first invited Chōei to Kōzuke, which suggests that Keisaku may well have followed him to Edo at this time. Within a year, he had become head student, responsible for transcribing Chōei's lessons and lecturing in his absence. The notes he took at the 1833 lectures may have been in this official capacity as Chōei's chief assistant. Accounts differ as to when he returned to Kōzuke. The inscription on his grave suggests it was 1838, and refers to some kind of internal dispute within the school which encouraged him to leave. The inscription also claims that Chōei had received an invitation to become a doctor to a particular *daimyō*, and encouraged Keisaku to take the position in his place, but Keisaku refused, and returned home. Maruyama Kiyoyasu has suggested that this inscription is somewhat unreliable, and argued for a much earlier date of 1834 for Keisaku's return to the village. He based his argument on an examination of the kind of materials Keisaku had been reading.[24]

Upon his return, Keisaku continued his medical work, and began to teach. He kept a record of the books that he borrowed and lent, which provides an interesting picture of the people with whom he associated. He also made several translations of Dutch books, which he used in his teaching, but did not publish. Keisaku kept a diary faithfully until he died, with the significant exception of the years 1840-52, 1859 and 1866. The reasons for these lapses will be discussed in detail in Chapter Five. Suffice to say here that the first one implies a deep, personal reaction to Chōei's imprisonment, which discouraged him even from practising medicine. During this period, Keisaku was involved in farming activities and village affairs, becoming village headman in 1853. He returned to medical work only after

[23] Tabata, "Bakumatsu ni okeru ichi chihō ran'i no jiseki ni tsuite," p. 45.
[24] Maruyama, *Gunma no ishi,* p. 138.

Chōei's death. In later life, Keisaku taught actively and was involved in immunising his community against smallpox. He was also deeply involved in poetry and calligraphy circles.

There has been much speculation as to whether Chōei visited the Kōzuke physicians again after his escape from prison in 1844. Local legend and oral histories have it that Chōei hid in several places close to Nakanojō. For example, it is said that Fukuda Sōtei's pupil Takahashi Gentan hid Chōei near the village of Mishima, where he lived, in a small pavilion devoted to the god Jizō. In an inn called the Nabeya, in the middle of Nakanojōmachi, there lived a man by the name of Tamura Hachirōemon, who, due to his involvement in a local disturbance during the Tempō years, found himself in the same prison as Takano Chōei. His daughter Riu later testified that she could remember Chōei being hidden in the storehouse when she was a child.[25] A letter and paintings by Chōei, and a measuring spoon said to have been used by him are kept in the inn today. Takahashi Keisaku, too, is said to have hidden Chōei in a temple, the Bunshuin, near his home in Yokō village. Although it is impossible to determine how much of these accounts is fact and how much is fiction inspired by the mystery surrounding Chōei's whereabouts, it is difficult to believe that he would not have taken the opportunity to pass through Kōzuke on the journey he made to the north after his escape. Looking at the landscape around Nakanojōmachi too, which even now retains its stillness, it is easy to imagine it was the perfect place to hide.

Of Chōei's visits to the Kōzuke region, it is perhaps most difficult to account for the very first one. As may be seen from his own life, it was common for students from rural areas to travel to Edo to study. Yet the scholar made efforts to travel to Nakanojōmachi himself, and at least one of these journeys was something like a lecture tour. Was it simply the strength of Fukuda Sōtei's personal reputation that lured him there? Or, like so many other Edo scholars in his time, did he find the prospect of some financial patronage too good to refuse?

In answer to this, there is some evidence to suggest that Chōei already had some personal connections in Kōzuke before 1831. Murakami Zuiken (1798-1865)

[25] Kanai, *Takano Chōei to Agatsuma*, p. 12.

is usually thought of as the pioneer of Western medicine in Kōzuke. Zuiken settled in Sakaimachi in 1828, but before this, he studied with Yoshida Chōshuku (also Chōei's teacher) in Edo, and is also said to have studied with Siebold in Nagasaki. At least one letter written by Chōei to Zuiken exists to testify to their acquaintance.[26]

More importantly, Chōei was acquainted with a physician by the name of Kogure Shun'an (1798-1867), from Tadanori, another village near Nakanojō. Shun'an studied under such major figures as Hirata Atsutane, Hanaoka Seishū, and Yoshida Chōshuku. Following Chōshuku's death, in 1824, Shun'an also studied under Chōei, who, as we have seen, took over the teaching at the school for a short time in an emergency capacity. In Nakanojō, there is evidence in Takahashi Keisaku's library book that Shun'an borrowed a book from Keisaku in 1827, so these two were obviously acquainted. It is therefore highly probable that Shun'an was a key figure in introducing Keisaku and the Kōzuke physicians to Chōei.[27] This unfortunately does not explain Chōei's connection to Fukuda Sōtei, if indeed it was Sōtei that first invited him. The question also remains as to why Sōtei was conspicuously absent from the lecture series in 1833.

On the other hand, there are other conceivable reasons why Chōei might have wished to visit the Nakanojō region, both as a physician of Western medicine, and a tourist. Were there indeed, as Kanai Kōsaku has suggested, geographical and economic factors which predisposed Nakanojō to become a rural centre for Western learning?[28]

The physicians and medicinal plants

In his *Takano Chōei Den*, Takano Chōun claimed that on one of Chōei's visits to Kōzuke, he, Sōtei and the others went to Mt. Haruna together to collect herbs.[29] If this was the case, then Chōei had very good reason for visiting the area in person.

Fukuda Sōtei's great-grandfather was supposed to have been interested in

[26] See Takano Chōun, *Takano Chōei den*, p. 313.
[27] Kanai, *Takano Chōei to Agatsuma*, p. 24.
[28] Kanai, "Rangaku to waga Nakanojōmachi," pp. 1106-15.
[29] Takano Chōun, *Takano Chōei den*, p. 310.

botany, a factor which, it is said, tempted him to settle in Sawatari and become a physician.[30] According to local documents, the reason behind the construction of Sawatari bridge in 1721, was that Niwa Seihaku (1700-52) was visiting on his search for medicinal herbs. Niwa Seihaku had been ordered at this time by the Shogun Yoshimune to travel all over the country and collect medicinal herbs for study. Kanai went so far as to suggest that Niwa probably stayed in the Fukuda inn when he visited.[31]

According to Kanai, the literary figure Hirasawa Kyokuzan (1738-92), also visited Sawatari, and wrote in his *Manyū Bunsō* that he met travellers on the road, each carrying medicinal herbs in his hand.[32]

Takano Chōei appears to have had a particular interest in the collection and cultivation of medicinal herbs, especially Western ones, which he shared with the Kōzuke physicians. In 1833, while studying in Chōei's school, Takahashi Keisaku compiled a book of the medicines his teacher commonly used in his treatments, which he called *Zuikōdō Hōshū (Collection of Treatments at Zuikō's School).*[33] Chōei himself translated two volumes on Western pharmacy, which included the Latin and sometimes Chinese names of drugs, and detailed explanations of their uses.[34]

Further indication of a shared interest in medicinal herbs can be seen in a letter written by Chōei to Yanagida Teizō in the fourth month of 1838:

> ...For several years, we have been interested in procuring the seeds to some Dutch medicinal plants, and gradually began to approach various translators (*tsūji*) about the matter. Through various agents they sent a request to Holland, and when the Dutch came on their official visit to Edo this year, they brought the seeds of about twenty different varieties of plants. Since it would have been a great shame if they gave them to anyone else, we bought them all up with eighteen carat gold. According to the law, we planted them immediately. The seven

[30] Karasawa Sadaichi, *Agatsuma Shichō*, vol. 9, *Shichō Series* (Maebashi: Miyama Bunko, 1998) p. 158.

[31] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 33.

[32] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 33.

[33] Zuikō was one of Chōei's pen names.

[34] Both these works may be found in Takano Chōei Zenshū Kankō Kai, ed., *Takano Chōei Zenshū*, Vol. 1.

varieties listed below have already begun to sprout:

yaratsupa, soikuruorutoru, uirude salaate, shiuringu, tokerekerusu, supina, jiirootebiitooruteru.[35]

We also planted some saffron, but it is yet to sprout. Of the plants, the *yaratsupa* is especially useful. Two stalks are sprouting. We should be able to harvest a great many seeds in the sixth and seventh months.

The 'afternoon lady'[36] now has many seeds. The chrysanthemum seeds are said to be the first in Japan. Although nothing has grown apart from these, I am very hopeful.

I hope in the seventh month I will be able to give you some seeds from the *yaratsupa* as a token of my thanks for the timber. However, this is strictly confidential, so please do not speak of it to others.[37]

The 'we' of this letter probably refers to members of the *Shōshikai.* Watanabe Kazan, with the help of translators, is known to have interviewed the head of the Dutch factory, Niemann, when he made this journey to Edo in 1838,[38] so perhaps the seeds were obtained through these connections. Although these plants, apart from the *yaratsupa* (jalap), may give the impression of ordinary vegetables rather than medicinal plants, beet, and cress at least, had a medicinal history in Europe, and spinach and sorrel were both used as pot-herbs.[39] Furthermore, the Dutch had their own vegetable garden in Dejima, which indicates that the seeds for these plants were possibly obtained within Japan. There is evidence that the Dutch were eating spinach at least, on the island.[40]

Apart from this letter's depiction of the professional and personal nature of the relationship between Chōei and Teizō, it an extremely important example of the direct role *ranpō* physicians such as Chōei had in introducing new plants, and the

[35] The identification of these plants has proved difficult. The following is a list of estimates: *yaratsupa* (jalap), *soikuruorutoru* (suikerwortel=sugar beet), *uirude salaate* (wilde salade=wild lettuce), *shiuringu* (zuring=sorrel), *tokerekerusu* (kers=cress), *supina* (spinazie=spinach), *jiirootebiitooruteru* (krootbeetwortel=beetroot).

[36] *Mirabilis japala*

[37] Takano Chōun, *Takano Chōei den*, pp. 320-3.

[38] Satō, *Watanabe Kazan*, pp. 124-35.

[39] L.H. Bailey, *The Standard Cyclopedia of Horticulture*, 3 vols. (New York: Macmillan, 1930); Edward Hyams, *Plants in the Service of Man* (London: J.M. Dent and Sons, 1971); N.W. Simmonds, ed., *Evolution of Crop Plants* (London: Longman, 1976).

[40] See Yanai Kenji, ed., *Nagasaki Dejima no shokubunka* (Nagasaki: Shinwa bunko, 1993).

way in which personal networks such as that between Chōei and the Kōzuke physicians facilitated the dispersal of them among the medical community. It is unclear in what sense Chōei wished this information to be confidential. Since he wrote that they planted the seeds 'according to the law', it would not appear that the purchase of the seeds in itself was illegal. Perhaps he simply did not wish Teizō to tell his friends of the seeds because he could not extend the same favour to them all.

In another letter addressed to his cousin Genryō, Chōei asked him to tell Kogure (Sokuō) of Shibukawa that the arnica flowers near Mizusawa were still in full bloom, and that he should make sure he collected a quantity of them immediately.

Fukuda Sōtei, too, appears to have actively encouraged the cultivation of medicinal plants. In a letter he wrote to Mochizuki Shunsai, he answered his colleague's request to explain the cultivation of aloes, licorice and other herbs. Sōtei encouraged Shunsai to plant as many as possible, ending the letter by saying: 'if you intend to plant a lot, I am happy to come over and advise you'.[41] In this way, the exchange of practical information such as that concerning the cultivation and collection of medicinal herbs was part of the support the physicians provided for each other.

A place to practise

The abundance of medicinal herbs around Nakanojōmachi was not the only factor in favour of the region as a location for medical practice. A journey from Tokyo to Nakanojōmachi on the Agatsuma train line provides a scenic introduction to the area's geography. The great metropolis of Tokyo fades slowly to flat fields dotted with buildings, interspersed again with the built-up areas of Takasaki and Maebashi. The level Kantō plain is left abruptly at Shibukawa, as the train swings to the north-west and begins to climb. Following the course of the Agatsuma river as it flows from the west down into the Tonegawa at Shibukawa, the line passes through Nakanojōmachi before terminating in the mountains at Ōmae. The entire journey

[41] Kanai, "Takano Chōei monka Nakanojōmachi Mochizuki Shunsai no hizō monjo o haiken shite," pp. 22-3.

now takes less than three hours. In the Edo period, it usually required four days.[42]

Nakanojōmachi is situated in the centre of the Nakanojō plain, a mountain plain which stretches along the middle reaches of the Agatsuma river about 350 metres above sea level. The plain is surrounded by mountains on all sides: Takeyama in the north, Yakushigatake in the west, Harunasan in the south, and Jūnigatake and Onokoyama in the east. The mountains, along with an abundance of bubbling rivers which flow into the Agatsuma provide the area with a spectacular scenic beauty. Indeed, Nakanojōmachi and nearby Sawatari thermal springs, about ten kilometres to the north-west, are not unworthy of their place on one of Japan's 'romantic roads' for tourists. Although Nakanojōmachi now administratively incorporates several villages such as Sawatari, which are dotted along the local rivers, these villages originally had quite separate identities.

As a natural link between the mountain and farming villages further beyond in the north and west, and towns on the Kantō plain, Nakanojō was ideally situated for economic exchange. There is some evidence that, as a result of increasing economic activity, the region was already beginning to take on such a role even before the Edo period. Thereafter, Nakanojō continued to develop as a market town, which marketed locally some of the rice which came through from Echigo on its way through to Edo, and as a 'post station', which provided horses and other transportation facilities.[43]

Nakanojō's success as a market town was partly due to a lack of rice in the local region.[44] Although the centre of Nakanojō's economy was essentially agriculture, the nature of the land and climate allowed only a small quantity of poor quality rice to be grown. The main crops were therefore barley, wheat, millet, buckwheat, red beans, white radishes and other vegetables, grown in dry fields. In addition to these, Takahashi Keisaku planted rape seed, burdock, corn, cucumber, eggplant, as well as cash crops such as mulberry, and tobacco. Men were able to supplement their incomes by rope-making and woodcutting. Women wove cloth and

[42] Kanai, "Rangaku to waga Nakanojōmachi," p. 1112.
[43] Koike Zenkichi, *Edo jidai no Nakanojōmachi-machizukuri: jinkō: nōgyō* (1963) pp. 4-7.
[44] Koike, *Edo jidai no Nakanojōmachi-machizukuri: jinkō: nōgyō*, p. 6.

participated in sericulture.[45] Paper, oil, tofu and many other daily necessities could be bought at the market. Local breweries sold rice wine, and there were cloth dyers and pharmacies in town.

Nearby Sawatari thermal springs appear to have had even fewer agricultural opportunities. Apart from some dry field farming, charcoal making, lacquer work, and a little silk farming were carried out. Interestingly, a number of guns were permitted in the village, and hunting was customary.[46] Sawatari appears to have had its heyday in the early part of the nineteenth century, when it began to develop as a resort. Important to both the development of Nakanojō as a post station and Sawatari as a thermal springs resort was good access to the Tokugawa transportation network.

Roads for transport and communication were essential to the political functioning of the Tokugawa state. Initially, they were used to move armies, officials, and to send messages. Later the roads became important for *daimyō* paying their respects in the capital, and for the transportation of tax rice.[47] The Tokugawa Shogunate extended its control over the transportation network by nationalising five important highways and eight auxiliary roads, equipping them at regular intervals with a system of 'post stations' to supply horses, porters, and accommodation to official travellers. To assist with the economic burden placed on the town, a post station was granted tax exemptions, and had a salaried manager. *Daimyō* employed a similar system of roads, post stations and official documents in their own domains.[48]

Nakanojōmachi and Sawatari thermal springs did not lie directly on important national highways, but they did have important connections to them. Nakanojōmachi lay on the Nitta (Numata) road, which already was an important road in medieval times. This road connected Nakanojō with Nakayama post station, which lay on the north-south running national highway, the Mikunikaidō, and Numata further east. In the west, the road passed through Naganohara and the barrier station at Ōse, before crossing the border into Shinshū (Nagano prefecture). Nakanojō was also connected to the north by the Mikunikaidō Wakiōkan, an

[45] *Nihon chimei daijiten* (Tokyo: Kadokawa, 1984) Vol. X, p. 691.
[46] Karasawa, *Agatsuma Shichō,* p. 146.
[47] Vaporis, *Breaking Barriers,* pp. 17-18.
[48] Vaporis, *Breaking Barriers*, pp. 22-6.

important supplementary road running from Nakanojō through Sugawa to Nagai post station near the Echigo border.[49] As a post-station, Nakanojō had a role to play in supplying transportation services. Most goods were moved in and out of the town by pack horse, and many residents were involved in this business, either full time, or in the agricultural off season.[50] The main road was interspersed at regular intervals with inns and tea houses to provide for the needs of travellers.[51]

The main road from Nakanojōmachi to Sawatari thermal springs formed part of the Kusatsudō, an important road running from the nearby resort town of Kusatsu, through Sawatari, Nakanojō, the springs at Ikaho, and finally to Edo.[52] This road was opened in the Edo period and prompted a great increase in the number of travellers from Edo.[53] Sawatari was also connected to Nakanojōmachi's rival market town of Haramachi by a road which connected up with the barrier station of Ōto, on the Shinshūkaidō. This way was not as steep as the Kusatsudō, and was, in economic terms, an important road for Sawatari. Incidentally, according to Kanai, this is the road by which Fukuda Sōtei sent his mail to Edo, and by which he received his medicines from Takasaki.[54]

In terms of administration, excluding a brief period in which it formed part of Numata domain, the land around Nakanojōmachi remained essentially directly in the hands of the Tokugawa Shogunate throughout the Edo period. At times the area was administered by a government intendant (*daikan*), whereas in later periods it was divided up into two *hatamoto* domains.[55] The province of Kōzuke as a whole was important to the Tokugawa government as a defence against the Tōhoku and Kansai areas, and many chief retainers were placed there. That the administration of Nakanojō remained under central rule can, therefore, perhaps be thought of as a reflection of its geographical role as a gateway to the Kantō plain. It was also significant for the Kōzuke physicians, in that they were in close contact with administrators who often had business in the capital.

[49] Based on entries and maps in *Nihon chimei daijiten*.
[50] Koike, *Edo jidai no Nakanojōmachi-machizukuri: jinkō: nōgyō,* p. 7.
[51] Kanai, *Takahashi Keisaku nikki,* p. 206.
[52] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 30.
[53] Karasawa, *Agatsuma Shichō,* p. 114.
[54] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 31.
[55] *Hatamoto* (sometimes translated as 'bannermen') were Shogunal retainers of middling rank.

In addition to these geographical factors, however, the rise of medicine is best seen against the background of broader social and economic changes that became increasingly pronounced in the second half of the Tokugawa period.

The diversification of culture: travel and amusements

Early nineteenth-century Japan was characterised by a 'flowering of material and artistic culture in the great urban centers'.[56] It saw a spread of culture to the lower classes and regional areas. The diversification of culture, its commodification, incorporation into daily life, and the rise of the information age were important features.[57] Some of the activities which symbolise the culture of the early nineteenth century include a publishing and reading boom, visible in the proliferation of book sellers and lending libraries; training in light artistic accomplishments, particularly among young girls; a passion for street theatre, and frequenting festivals and places of amusement; tourism and pilgrimage. These kinds of activities were enjoyed particularly, although not exclusively, by commoners.

Despite the traditional image of the Edo period as a time of immobility, travel restrictions, within Japan at least, do not seem to have been as severe as they were on paper.[58] Travel on medical and religious grounds was readily approved.[59] The commercialisation of the economy, too, especially in rural areas in this period, increased the need for travel, and hence for facilities such as well maintained roads and post stations. With improved communications and increasing travel, the culture of Edo quickly spread to other regions. In areas outside the great cities, castle towns, post stations and thermal springs resorts were often the focus of commercial and cultural activities, not all of which were desirable. The increase in the circulation of money for example 'brought an increase in gambling, highway robbery and prostitution...'[60]

Gambling, though frowned upon by some, was an increasingly common

[56] Jansen, "Japan in the early nineteenth century," p. 71.
[57] Takeuchi Makoto, "Shomin bunka no naka no Edo," in *Nihon no kinsei 14: bunka no taishūka*, ed. Takeuchi Makoto (Tokyo: Chūō Kōronsha, 1993) 7-54, pp. 7-8, 54.
[58] Vaporis, *Breaking Barriers,* p. 5.
[59] Jansen, "Japan in the early nineteenth century," p. 64.
[60] Totman, *Early Modern Japan*, p. 481.

activity in the late Edo period. For many farmers and merchants, gambling was no more than a pleasurable pastime. According to Takeuchi, one author complained that in Edo even women could hardly wait for their husbands to go out to work, so that they might meet their friends for gossiping and gambling.[61] In Kōzuke, where silk production and improved transportation meant that disposable income was quite high, gambling was rampant, and people came from many different provinces to gather at thermal springs and post stations to gamble. In the eyes of the government, gambling was a serious problem which took agricultural workers away from the land. It was therefore deemed to be immoral and banned repeatedly.[62] There is evidence in Sawatari too, of a local ruling which required that inn-keepers warn their guests not to gamble within their premises.[63]

Alongside important shrines and temples, thermal springs were extremely popular travel destinations in the nineteenth century for those with sufficient financial resources. Patients usually made their journey to the thermal springs on foot, and stayed for quite long periods of time.[64] The journey itself was often quite a trial, especially for those with diseases such as syphilis, for whom walking could be painful. Humorous poems of the period such as the following one testify to this:

> *Tosho no ayumi de yō yō to Kusatsu nari.*
> With the plod of a beast to the slaughter house, Kusatsu at last.[65]

In Kusatsu, a popular destination for Edo dwellers, people normally stayed at least ten days, which was known as 'one round'. Some patients stayed for as long as 'five rounds'.[66] During their visits, patients would usually rent a small room, and cook for themselves. Basic cooking equipment was borrowed from the proprietor of the inn, and other amenities could be bought from merchants in the town. There were also tea houses, archery ranges, lending libraries, and so on to cater for the

[61] Takeuchi, "Shomin bunka no naka no Edo," p. 36.
[62] Gunma ken shi hensan iinkai, ed., *Gunma ken shi*, vol. Tsūshihen 6 (Maebashi: Gunma ken, 1992) pp. 296-98.
[63] Karasawa, *Agatsuma Shichō,* p. 155.
[64] Watanabe Shinichirō, *Edo no onnatachi no yuami* (Tokyo: Shinchōsha, 1996) p. 199.
[65] Translated from Watanabe, *Edo no onnatachi no yuami,* p. 223.
[66] *Gunma ken shi*, Tsūshihen 6, p. 265.

visitors. Many merchants were attracted from out of town, bringing their wares by horse or ox.[67] The influx of visitors thus helped to make thermal springs resorts important economic centres.

As for the layout of the baths themselves, the German scholar Engelbert Kaempfer, (1651-1716) described an interesting example in Kyūshū in his journal:

> The area was neatly fenced off with a bamboo hedge, and there was also a guard house and leisure pavilion. Inside, running along the length of the area, was a roofed corridor with six compartments branching off, each compartment containing a specially stone-lined bath tub the size of one mat. These were arranged in such a fashion that a pipe brought both cold water from the river as well as hot water from the well, and so each person could mix the two according to his desire. At the side, under a separate straw roof, was a rest area. The hot-water spring had been enclosed in a shallow basin, two feet square and under a straw roof, but the subterranean fire caused it to boil with a roaring noise, and it was so hot that nobody dared to dip his finger into it. I noticed that the water had no smell and no taste, and therefore I do not hesitate to ascribe its efficacy purely to the heat...[68]

Kaempfer was not, however, entirely sceptical of the healing powers of thermal springs. Elsewhere, he wrote of thermal springs at Takeo and Ureshino in Hizen, saying that both of these baths would be curative, 'if people understood their use properly'.[69]

Gradually, not only those who were ill, but pleasure-seekers too, began to congregate at thermal springs. This was especially true in the summer time, when people from Edo flocked to mountainous places such as Kusatsu in order to escape the heat. Competition among inns was tough; the solicitation of custom through bribes and so on was rife, particularly among smaller or more out of the way inns, which found it harder to attract customers.[70] Local residents, too, appear to have enjoyed an occasional pleasure trip. In the eighth month of 1858, for example, Takahashi Keisaku made a visit to a thermal spring in neighbouring Tone-gun. He

[67] *Gunma ken shi*, Tsūshihen 6, pp. 265-7.
[68] Engelbert Kaempfer, *Kaempfer's Japan Tokugawa Culture Observed*, trans. Beatrice Bodart-Bailey (Honolulu: University of Hawaii Press, 1999) pp. 291-2.
[69] Kaempfer, *Kaempfer's Japan Tokugawa Culture Observed*, p. 58.
[70] *Gunma ken shi*, Tsūshihen 6, pp. 268-71.

set out in the early morning, and arrived at the inn in the late afternoon. There, he was joined the next day by several of his poetry friends and disciples, who brought gifts and rice wine. The next three days appear to have been one long poetry party. On the final night, Keisaku stayed up correcting poems until dawn.[71]

Most establishments at thermal springs were supplied with women known as *yuna*. These women scrubbed backs and assisted patients with their washing, but were, in essence, prostitutes bought by the men who stayed for long periods at the springs.[72] It was well known that prostitutes were a highly effective means of attracting custom to inns. At post stations, the economic benefits of prostitution were recognised even by the *bakufu* government; it taxed the prostitutes' income in order to boost the finances of the station to which they were attached.[73]

Nakanojōmachi and Sawatari thermal springs, too, were able to prosper in this period of 'Edo culture' during the Bunka and Bunsei years (1804-30). Evidence of the lure of Nakanojōmachi can be seen in the way people floated in from Echigo and Shinshū in search of work. Men usually found work in breweries or as sweet-makers, while women worked in food stalls, inns, or as waitresses.[74] Perhaps they also worked as prostitutes. Apart from workers such as these, there was a general flow of travellers and tourists through the area, from whom, as we shall see, Fukuda Sōtei was able to benefit. One reflection of this is that in a report he made about the people he treated, there were many more people from Edo than from Nakanojō.[75]

Thermal springs have had, of course, an important role as places of healing throughout Japanese history. Judging from archaeological evidence, it is likely that humans, like the animals they hunted, used thermal springs for bathing from prehistoric times.[76] This is also true of places in England like Bath, where it is believed early humans were attracted to the good hunting around the hot springs.[77] The area around Nakanojōmachi and the springs at Sawatari too, have revealed archaeological remains dating from the Jōmon period (to 300 BC). From early times,

[71] Kanai, *Takahashi Keisaku nikki*, p. 175 (1858;8;9-13).
[72] Watanabe, *Edo no onnatachi no yuami,* p. 225.
[73] Vaporis, *Breaking Barriers*, p. 81.
[74] Koike, *Edo jidai no Nakanojōmachi-machizukuri: jinkō: nōgyō,* p. 11.
[75] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 36.
[76] Taketa Katsuzō, *Furo to yu no koborebanashi* (Tokyo: Muramatsu shokan, 1977) pp. 2-3.
[77] Barry Cuncliffe, *The City of Bath* (Gloucester: Allan Sutton, 1986) p. 2.

springs were associated with healing miracles, and were called *kami no yu*, or 'divine baths'.[78] They became devoted to holy men, saints, or figures such as *yakushi nyorai*, the Buddhist 'physician of souls'.[79] Springs were used by warriors to heal their wounds, to the extent that in the warring states period, Takeda Shingen (1521-1573) banned civilians, nobles and commoners alike, from using the springs at Kusatsu so that they could be used exclusively by his warriors.[80]

Thermal springs were often used to provide relief from diseases which affected the skin, such as syphilis, scabies, and haemorrhoids. They were also said to be helpful in the treatment of rheumatism and lameness. Takahashi Keisaku's daughter-in-law Kise, for example, made a journey to the springs at Ikaho in 1868 because she was suffering from severe pain in her left shoulder. She returned home after about six days, having found no relief.[81] Other women made journeys to hot springs if they were having difficulty in conceiving.[82]

Due to the varying qualities of their waters, most thermal springs gained a reputation for the treatment of specific diseases. Kusatsu was popular for the treatment of syphilis. As reflected in humorous poetry, not only men and prostitutes, but married couples too, made the journey from Edo, sometimes unable to tell even their neighbours where they were going, due to the embarrassing implications of the disease.[83] At Sawatari too, Fukuda Sōtei's father (referred to here as Sōtei IV) made a medicine for syphilis which sold well.[84] Sawatari was most famous for skin complaints. It was particularly popular as a stopping place for patients on their way home from Kusatsu to Edo. Not only was it *en route*, the waters at Sawatari were also perfect for soothing skin which had been roughened by the acidic water at Kusatsu. In this way, Sawatari was able to benefit directly from the success of Kusatsu as a resort town.

As the town of Sawatari began to prosper, Fukuda Sōtei, as his ancestors had

[78] Peter Grilli and Dana Levy, *Pleasures of the Japanese Bath* (New York: Weatherhill, 1992) p. 109.
[79] Taketa, *Furo to yu no koborebanashi,* p. 6.
[80] Karasawa, *Agatsuma Shichō*, p. 125.
[81] Kanai, *Takahashi Keisaku nikki,* pp. 364-5 (1868;4;9-15).
[82] Watanabe, *Edo no onnatachi no yuami*, p. 206.
[83] Watanabe, *Edo no onnatachi no yuami*, p. 221.
[84] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 34.

before him, was able to combine successfully the role of physician with innkeeping. Sōtei's ancestors are believed to have settled and worked as physician-innkeepers in Sawatari from the Kyōho period (1716-36). From the Tenmei period, (1781-89) there was an increasing number of visitors coming to the area, and to have a physician in the inn where one stayed was a very attractive feature. Sōtei IV prospered so well that in 1803, neighbouring innkeepers filed a law suit against him.[85]

There were two branches of the Fukuda family in Sawatari, and they owned rival inns facing across the road from one another in the narrow main street. It was members of the rival Fukuda family, along with a man called Sekiguchi, who instigated the lawsuit against Sōtei IV. The complaint ran along the lines that the Fukuda family had come into the village and made itself wealthy, so that now Sōtei IV was proud and tried to cheat the other villagers. He built a three storey house which overlooked the inn of the rival Fukuda family, and moreover built a high fence which washed away in the rain and damaged the rival Fukuda's property. In reply to this, Sōtei IV claimed that his house was only two stories, but that he had built a storage place for his medicines on the roof. He added that he was not wealthy, but that he had many patients, and that the rival Fukuda was jealous of this.

The matter did not end there. In the tenth month, Sōtei made a complaint that rival inns were making extensions on their buildings so as to house more guests, while his own inn was made the subject of an unwarranted inspection which was disrupting his medical work. The accusations flying back and forth demonstrate the keen competition between rival inns in Sawatari. It is likely that all of the innkeepers were making additions to their houses, as well as trying to attract business in other ways. (One innkeeper, for example, was running a firing range on the side). The advantages which Sōtei held through the success of his medical practice were therefore a source of great jealousy among the other innkeepers.

[85] The following account is based on the documents and discussion in Karasawa, *Agatsuma Shichō*, pp. 158-67.

Pharmacies and the circulation of medicines

As we have seen, Sawatari could not rely heavily upon its agriculture. In addition to the business of a resort, the collection of medicinal herbs appears to have been an economic sideline. A merchant by the name of Arai Iuemon in Haramachi, for example, sent local game and medicines to Takasaki and Edo.[86] Indeed, all over the country, hunters, itinerant priests, and ascetics who lived in the mountains had a role to play in collecting medicines such as bear gall, monkey brains and fox liver for medicinal purposes.[87] In Shinshū, which, like Kōzuke, was mountainous, medicines have been documented as an important part of the pack horse trade.[88] The increasing commercialisation and circulation of medicines in the Edo period were part of more general economic changes, including urbanisation, rural commercialisation, better transportation, and rising living standards for many groups of people. In villages, people 'were gradually able to buy goods that had been previously available only in urban centers or to purchase items that had formerly been made in the household'.[89]

Traditionally, most ordinary people were unable to afford to pay a physician for medical treatment. They relied on religious prayer and folk remedies based on herbs they could collect themselves. For example, many people presented wooden tablets at temples illustrated with or cut in the shape of the part of the body they hoped to heal. Tablets painted with eyes were very common, which suggests that eye diseases were a problem in the Edo period.[90] Home remedies included for example, an infusion of dried earthworms for fever, sacred bamboo for stomach pains, and balloon flower root for coughs.[91] Increasingly, however, people relied on commercial preparations too. Originally, it was physicians who collected or bought crude drugs from pharmacists and mixed them appropriately. In the Edo period, however, especially from the end of the seventeenth century, some drug merchants

[86] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 31.
[87] Sugiyama Shigeru, *Kusuri no shakaishi* (Tokyo: Kindaibungeisha, 1999) p. 166.
[88] Aoki, *Zaison rangaku no kenkyū*, p. 169.
[89] Hanley, "Tokugawa society: material culture, standard of living, and life-styles," p. 696.
[90] Tatsukawa Shōji, *Edo yamai no sōshi: edo jidai no byōki to iryō* (Tokyo: Chikuma shobō, 1998) p. 375.
[91] Sugiyama, *Kusuri no shakaishi*, p. 112.

began to mix and sell their own preparations.[92] Handbooks for household medicines also became popular. Niwa Seihaku and Hayashi Ryōteki, for example, wrote a book, *Fukyū Ruihō* (*Treatments for Dissemination*) in 1729, in which they selected medicines easily obtainable in mountains and fields, in order to help people in remote villages who had poor access to pharmaceuticals.[93] As Yoshioka has pointed out, household manuals also gave people clues as to how to go about making their own medicines, both for sale and for private use.[94]

Not only drug merchants, but also physicians, warriors, temples, perfumers and peddlers sold medicines. Drug stores tended to be confined to cities and towns, but peddlers took medicines all over the country.[95] Peddlers from Toyama used a system whereby they left their medicines with customers and came back later to collect money for those used and replace them if necessary. People could use only what they needed and pay for it later.[96] Commercial medicines were thus within the reach of most people. Some merchants advertised their medicines quite aggressively. Santō Kyōden (1761-1816), a popular writer who supported himself by running a drug store, unashamedly made reference to his medicines in his literature, not merely in the form of advertisements but in the stories themselves. Another clever merchant by the name of Matsuura Shichibei (born 1782), who had a shop on the Nakasendō, lent umbrellas painted with his advertisements to travellers.[97]

Some drug merchants and temples handed down secret recipes from generation to generation, in the same way as physicians were careful to guard their family secrets. The mystery in which these medicines were shrouded often worked as a selling point. Medicines developed by priests or temples, for example, although they were actually based on Chinese medical theories, were associated with magical religious properties, and were very popular.[98] One such medicine, called *kintaien*, was sold at stalls in temple grounds where tourists and pleasure seekers gathered.[99]

[92] Yoshioka Shin, *Edo no kigusuriya* (Tokyo: Seiabō, 1994) p. 101.
[93] Yoshioka, *Edo no kigusuriya*, p. 35.
[94] Yoshioka, *Edo no kigusuriya*, p. 40.
[95] Yoshioka, *Edo no kigusuriya*, pp. 61-5.
[96] Sugiyama, *Kusuri no shakaishi*, p. 165.
[97] Amano Hiroshi, *Kusuri bunka ōrai* (Tokyo: Seiabō, 1992) p. 86.
[98] Amano, *Kusuri bunka ōrai*, pp. 60-72.
[99] Takeuchi, "Shomin bunka no naka no Edo," p. 39.

Quite a large proportion of commercial medicines claimed to be 'cure-alls'. This perhaps fulfilled a psychological need for reassurance on the part of customers who were trying to treat themselves.[100] This was also surely part of the success of medicines like *kintaien*. Pensabene, in his study of medicine in late nineteenth-century Australia, revealed a similar situation. An antiseptic soap, for example, 'claimed to prevent typhoid, bubonic plague and other infectious diseases'.[101] In Australia, just as in Japan, the druggist played an important role for those who used self-medication rather than go to the trouble and expense of visiting a medical practitioner.

Pharmacies were quite numerous in post stations, where they could attract the custom of travellers passing through. In the Nakanojōmachi region, there were four pharmacies in the village of Isemachi alone. As we have seen, Fukuda Sōtei seems to have bought medicines from Takasaki, also an important post station and political centre. Umenoki village, a post station on the Tōkaidō near Kusatsu (Shiga prefecture), became very famous for a medicine for stomach pains called *wachūsan*. Engelbert Kaempfer, who passed through there on a journey to Edo with the Dutch mission, gave a detailed description of the medicine and its sale:

> The houses of Menoke (Umenoki) are scattered along the highway, and the village consists of several parts. It is famous for a powdered medicine called *wachūsan,* which was discovered here and cannot be produced anywhere else. This is taken as a remedy for a number of illnesses, but especially the local colic, and consists of putchuk (one of the foreign, bitter costus roots) and various local roots and bitter herbs growing in the surrounding mountains. They are ground to powder together with the costus (after all the ingredients have been dried and cut into rough pieces) and sold in three separate stalls and houses located at some distance from each other. On our return journey we saw that the grindstone is turned by four men the way our mustard seed mills are operated. The remaining work is carried out by two women, who gather up the powder and carry it into the warehouse. There it is wrapped into four-cornered pieces of paper, each side the width of four fingers, on which the name, strength, and dosage have been printed in red and black letters. Each portion of powder weighs a little over two

[100] Yoshioka, *Edo no kigusuriya*, p. 73.
[101] T.S. Pensabene, *The Rise of the Medical Practioner in Victoria* (Canberra: Australian National University Press, 1980) p. 9.

> drams and is taken one to three times with warm water depending upon the person and the illness. In these houses the same herbs are also steeped in fresh water and served like common tea to those who care for it. The inventor was a pious, poor man who lived in the settlement of Tebara. He claimed that the deity Yakushi (the local Apollo and patron of medicine) appeared to him one night in a dream, showing him these herbs in the mountains and ordering him to prepare them for the use of his sick fellow citizens. This claim benefited the medicine and its sales greatly, and in a short time he rose from poverty to position and wealth...[102]

This description provides a fine example of how such popular medicines were sold, and the potential wealth which they could bring to their inventors. Although Kaempfer mentioned only three stalls in Umenoki village, another author recorded that there were as many as fifty-six pharmacies there.[103] It was not only merchants and pharmacists, but doctors too, who made use of commercial medicines. Takahashi Keisaku and his pharmacist friend, Koitabashi, made a medicine in 1872 (6,1), which they called *dokushogan* (reading pills). Perhaps they were inspired to this by the commercial success many years earlier of Santō Kyōden, the writer mentioned above for his medical 'puffery'. A medicine of the same name was one of his best-selling preparations. It was claimed to strengthen the spirit, assist with forgetfulness, colic, and general ill health, and was especially recommended for travellers, those in poor health, and during the hottest part of summer.[104] Similarly, an advertisement for Yanagida Teizō's practice mentioned a special eye medicine,[105] and as we have seen, Fukuda Sōtei IV sold a medicine for syphilis.

Much of the discussion above concerning the rise of commercial medicine in late Tokugawa Japan is remarkably similar to the situation in England (particularly during the eighteenth century).[106] There, too, was a culture of self-healing, reinforced by medical consumerism. Doctors were not shy about self-publicity, and their 'puffery' in newspapers and popular literature was akin to Santō Kyōden's stories. Just as Takahashi Keisaku and his friends developed commercial medicines,

[102] Kaempfer, *Kaempfer's Japan Tokugawa Culture Observed*, p. 328.
[103] Amano, *Kusuri bunka ōrai*, p. 46.
[104] Yoshioka, *Edo no kigusuriya*, p. 106.
[105] A reproduction appears in Kanai, *Takano Chōei to Agatsuma,* p. 23.
[106] This discussion is based on the information in Porter and Porter, *Patient's Progress*.

doctors in England too, were happy to put their names to nostrums. Porter and Porter argued that the freedom of capitalist relations in England, in combination with a tradition of independence, Protestantism, and Enlightenment individualism contributed to the formation of this type of medical culture, which was absent in other European countries such as France.[107] A comparative analysis of this argument in the Japanese context is well beyond the scope of the present work. That such a similar medical culture existed in Tokugawa Japan, however, certainly is worthy of further investigation.

Beyond Kōzuke

In his discussion of the reasons why Takano Chōei came to be connected to the Nakanojōmachi region, Kanai Kōsaku suggested two important factors. One, that the region had an abundance of medicinal herbs, and two, that it was a popular thermal springs resort.[108] There were indeed many physicians in the area, several of whom became interested in Western learning.[109] It is interesting to note that in nineteenth century England too, Waddington found that physicians tended to be concentrated in spa, cathedral and seaside towns.[110] In this chapter, it has also been suggested that there were several social and economic factors, such as the rise of commercial medicine and travel for pleasure, which contributed to the prosperity of medicine in the Nakanojōmachi region at this time. These conditions, as well as the reputation of Fukuda Sōtei and the possibility of financial backing, would seem more than sufficient to have aroused Chōei's interest.

That Chōei did form a connection to the physicians in this rural area is a significant example of the way knowledge of Western medicine, transmitted by means of personal networks, was beginning to penetrate peripheral areas of Japan. Indeed, the Kōzuke physicians were by no means an isolated phenomenon. By the

[107] Porter and Porter, *Patient's Progress,* p. 209.
[108] Kanai, *Takano Chōei to Agatsuma*, p. 56.
[109] Kanai, "Rangaku to waga Nakanojōmachi," pp. 1107-8.
[110] Ivan Waddington, "General Practitioners and Consultants in Early Nineteenth Century England: The Sociology of an Intra-Professional Conflict," in *Health Care and Popular Medicine in Nineteenth Century England*, ed. John Woodward and David Richards (London: Croom Helm, 1977) 164-88, p. 173.

first half of the nineteenth century, medicine in general, and to an extent, *ranpō* medicine, too, was alive and well in the countryside all over Japan. It had a place not only in the houses of great *daimyō* in the provinces, but at village level too. A surprising number of these doctors were wealthy commoners, who trained in the great cities and returned to their local regions to practice.

For many years, the presence of Western style, *ranpō* doctors in the countryside was virtually ignored by historians. This began to change late in the 1960s with the work of Tasaki Tetsurō, who pointed to the example of rural doctors in Mikawa province (Aichi prefecture). His essays were eventually published collectively as *Zaison no rangaku* in 1985.[111] During the 1970s and 1980s, similar studies began to appear, focussing mainly on the history of smallpox inoculations and the local history of *rangaku* in terms of *jitsugaku* (practical learning).[112] Recent collections of essays have tried to examine the extent to which *rangaku* had permeated the countryside, though the picture is still far from complete.[113]

According to a poll made in 1874, early in the Meiji period,[114] the total number of doctors in Japan came to 28262. Of this number, 5247, or roughly 18 per cent professed to be doctors of Western medicine. Of these *ranpō* doctors, 258 were based in Tokyo, meaning that some 4989 others were based in outlying regions. This suggests that Western medicine already had quite a firm base in regional areas even before Meiji period legislation began to require it.

Another important clue to the extent of the *rangaku* network comes from the registers of students kept at prominent *rangaku* schools. Aoki Toshiyuki has made a study of the origins of some 5134 medical students listed on the rolls of 12 famous *ranpō* schools.[115] According to his research, of Japan's 69 provinces, only one, the island of Iki, had no students in these schools. Even the island of Sado boasted 27 students of Western medicine, hardly less than Kōzuke, which had 30. By

[111] Tasaki Tetsurō, *Zaison no rangaku* (Tokyo: Meicho Shuppan, 1985).
[112] Aoki, *Zaison rangaku no kenkyū,* pp. 3-8.
[113] For example, Tasaki Tetsurō, ed., *Zaison rangaku no tenkai* (Kyoto: Shibunkaku, 1992).
[114] The figures come from an appendix to *Isei hyakunenshi* (Kōseisho Imukyoku, 1967), and are quoted in Tasaki Tetsurō, "Yōgaku no denban, fukyū," in *Bakumatsu no yōgaku*, ed. Nakayama Shigeru (Kyoto: Minerva Shobō, 1984) 51-65, pp. 57-8. Please note that there is a misprint in Tasaki's figures.
[115] Aoki, *Zaison rangaku no kenkyū*, pp. 16-17. Aoki includes Hanaoka Seishū's school, though he was not strictly a *ranpō* physician.

comparison, the provinces with the largest numbers of *ranpō* students were Mino and Bizen, with over 200 students each, mostly in the schools founded by Hanaoka Seishū and Ema Shunrei (1747-1838). Thus, when seen against the background of the large number of doctors studying Western medicine in other provinces, Kōzuke was far from outstanding.

The register for Takano Chōei's school, the Daikandō in Edo, is unfortunately not extant, so Takahashi Keisaku and friends are not included in this figure. Fukuda Sōtei and Yanagida Teizō in any case did not undertake formal study in Chōei's school and are unlikely to have been listed. Thus, there are several difficulties in using schools registers to measure the number of *ranpō* doctors, and they must be used only as a general guide.

From Aoki's examination alone, it is also impossible to determine how many of the students listed on these registers returned to their homes to practise medicine in the countryside. There is, however, reason to suspect that many of them did.

Tasaki Tetsurō's research, which focussed mainly on *ranpō* doctors in the province of Mikawa, has suggested that there was a trend among doctors of farmer origin to commence their studies with Chinese medicine and branch out into Western medicine later in their careers.[116] Most rural doctors went away from their homes to study in private medical schools for a period of ten years or so, after which they returned to succeed their fathers in medical practice at the local level. Although not all of them studied in Edo, the physicians in Kōzuke too, appear to fit this general pattern.

Tasaki argued that the tendency for these doctors to return home was due to a strong sense of local loyalty and the absence of a developed meritocracy which would allow them to aspire to distinguished careers in the cities. He also suggested that such doctors had a strong sense of responsibility and self-awareness of their role as village leaders.[117]

Sometimes, village officials may have sent their sons to study medicine for political reasons. Aoki gave the example of a doctor in Matsuyo domain, in Shinshū, who was born into a wealthy farming family whose members often had to vie for

[116] Tasaki Tetsurō, *Chihō chishikijin no keisei* (Tokyo: Meicho Shuppan, 1990) p. 278.
[117] Tasaki, *Chihō chishikijin no keisei,* p. 285.

appointment as village headman. As the eldest son, Miyahara Ryōseki was sent to study medicine in Nagasaki for three years. Although he returned to the village, Ryōseki's younger brother later took over as village headman, leaving Ryōseki free to practise medicine. During the Tempō Famine, Ryōseki was congratulated by his domain for boiling and serving two day's worth of rice porridge to more than 600 starving villagers. Aoki has suggested that having a doctor in the family helped village leaders to solve problems of health and poverty in the village, and hence maintain their popularity. Eventually, Ryōseki was given an offical position as doctor to the Matsuyo domain.[118]

By returning to their villages, doctors did not cut themselves off from the outside world, or even the possibility of promotion. Some domains went so far as to begin to promote the training of village doctors. Miyahara Ryōseki's domain of Matsuyo was one of the few domains to implement a form of licensing for doctors. It did this by offering official lectures once a month and encouraging those from outlying areas to attend. The lectures were based on Chinese learning, for this was seen to be a necessary base for both Chinese and Western medicine. Farmers from all levels applied to attend, although those from powerful families had certain advantages.[119]

Lessons in medicine could also be taken via correspondence. This is well demonstrated by the letters between Takano Chōei and Fukuda Sōtei, discussed above. For people separated by distance, letters were a means of maintaining and reinforcing social relationships. For many country students who studied in the cities, they were a lifeline that kept them in touch with their teachers and colleagues after they returned to the countryside. Takano Chōei's adoptive father Gensai (1775-1827) is an interesting early example of this, for he continued to exchange letters with his famous teacher Sugita Gempaku and colleague Ōtsuki Gentaku long after he returned to his native Mizusawa.[120]

Miyaji has noted the example of Tsuboi Shinryō (1823-1904), who, from his

[118] Aoki, *Zaison rangaku no kenkyū*, pp. 244-54.
[119] Aoki, *Zaison rangaku no kenkyū*, pp. 257-74.
[120] According to Satō Shōsuke, however, none of the extant letters concern medical matters. See Satō, *Takano Chōei*, p. 10.

origins as the second son of a doctor in Takaoka in the province of Ettchū, became the adopted son of Tsuboi Shindō and had a prestigious career as a *bakufu* doctor, serving the Shogun Yoshinobu. From 1846 until 1877, Shinryō sent detailed letters to his elder brother, who, after his studies, had returned home to succeed to the practice in Takaoka. The letters were full of all the Edo news and current affairs; their nature changed only after 1874, when Shinryō began to send a newspaper instead. Shinryō also sent books and information on publications, and even other documents, so that his brother might understand the books.[121] This is indeed a powerful example of the role of letters as a source of information in early modern Japan.

In the context of European history, Pearl has written a short article about the importance of correspondence in the spread of scientific information in early modern France. Pearl argued that, unlike books, letters were not subject to censorship, and they did not take a long time to publish, meaning that they could be filled with the latest information. Furthermore, the author argued, 'newly received letters were read aloud at gatherings of interested scholars, and copies were made and forwarded to others'.[122] One innovative provincial scholar, Nicolas Fabri de Peiresc (1580-1637), was able to organise an observation of the same lunar eclipse in 1635 in Paris, Aix, Rome, Naples, Cairo, Aleppo and Quebec, all by letter.[123] Issues such as censorship and the length of time taken to publish were significant in Japan too, especially in the oppressive climate of the Tempō period. Although there is no record of Chōei's letters having been read aloud, there is little doubt that their contents at least, were shared among his friends in Kōzuke.

Having thus studied a particular rural 'locale' and formed a more general picture of its 'networks' and the spread of new knowledge, the next chapter will make an examination of the type of information Takano Chōei brought to rural Japan. The focus here will be the 'context', or practical needs of society, which influenced his ideas and the way in which he applied them.

[121] Miyachi, *Bakumatsu ishinki no bunka to jōhō,* pp. 177-212.
[122] J.L. Pearl, "The Role of Personal Correspondence in the Exchange of Scientific Information in Early Modern France," *Renaissance and Reformation* 8, no. 2 (1984): 106-13, p. 107.
[123] Pearl, "The Role of Personal Correspondence," p. 111.

CHAPTER FOUR
FAMINE, EPIDEMIC AND THE SOCIAL ROLE OF PHYSICIANS

In the autumn and winter of 1836, at the height of the Tempō famine, Takano Chōei busied himself writing two works on ways in which to relieve the plight of the common people. Perhaps best described as pamphlets, they were inspired by conversations held with the physicians in Kōzuke. Indeed, it was shortly after Chōei visited the group in the eighth month of that year that he embarked on the project. Their joint efforts resulted in the publication of two pamphlets: *Treatise on Two Things for the Relief of Famine,* and *Methods of Avoiding Epidemic Diseases.*[1] In the first of these, Chōei described a special type of buckwheat and the white potato, and their possible role in warding off starvation when other crops failed. In the latter, he gave practical information aimed at preventing the diseases that tended to strike after famine.

The writing of these documents provides an example of the way knowledge from Western sources spread through social networks, was interpreted, adapted, and used for practical purposes at the local level by scholars such as Chōei and the Kōzuke physicians. This chapter is therefore concerned with the 'context' for the reception of Western knowledge, as seen through specific pieces of Chōei's writing. It attempts to examine what Chōei did with Western knowledge on his own terms, and in his own time and place. As the chapter unfolds, it will reveal the influence of *jitsugaku* (practical learning) on the way *rangaku* scholarship was applied to problems of famine and disease, not only in this particular case, but also in other instances.

Furthermore, *Treatise on Two Things for the Relief of Famine* and *Methods of Avoiding Epidemic Diseases* help to form a picture of the kinds of problems facing the common people during this time of famine and the physicians who tried to treat them. They supply clues as to how physicians perceived their social role as

[1] *Treatise on Two Things for the Relief of Famine (Kyūkō Nibutsukō)* in Takano Chōei Zenshū Kankō Kai, ed., *Takano Chōei Zenshū*, Vol. IV, 1-33; *Methods of Avoiding Epidemic Diseases (Hieki Yōhō)* in ibid., Vol. I, 217-31. *Treatise on Two Things for the Relief of Famine* was reprinted by the Gunma prefectural government in 1883, and it is this version, (in handwritten text), that is reproduced in the *Takano Chōei Zenshū.*

intellectuals and as protectors of community health, both as authors and transmitters of medical information. The two documents are translated in full in the appendix. Firstly, however, in order best to understand the 'context' of these works, that is, the reasons why Chōei and the physicians utilised the new knowledge in the way they did, it is important to look at the historical background to this period of famine.

The Tempō famine

The Tempō Famine, usually designated as the last of three so-called great famines in Japan's early modern period, lasted seven years from Tempō 3 (1832) until the autumn of Tempō 10 (1838).[2] It was characterised by a series of crop failures caused by unseasonably damp and cold weather. To be successful in growing rice, which was an important food as well as the basis of the taxation system, two important conditions needed to be satisfied: one, that there was enough water; and two, that the temperature was warm (usually not less than twenty degrees in summer).[3] In the Kantō and Tōhoku areas, where summer temperatures were often cooler than was required for rice-growing, crop failure was a common occurrence. This problem was usually known as *reigai,* or 'cold damage'. In contrast, drought was more often the source of crop failure in the west of Japan.[4] Thus, there were considerable regional differences in the harvest for particular famine years. In 1836, which was the most devastating year of the Tempō famine, not only areas in the north, but even Shikoku and the areas around the Inland Sea were affected, harvesting little more than half a normal crop. As a whole, the country averaged around twenty percent of a regular harvest.[5]

That the people were starving could not, however, be blamed entirely on the inclement weather. The complex economic relationship between the domains and the central government, the volatility of the price of rice, and the failure to store

[2] Kikuchi Isao, *Kinsei no kikin* (Tokyo: Yoshikawa kōbunkan, 1997) pp. 1-5.
[3] Arakawa Hidetoshi, *Saigai no rekishi* (Tokyo: Nihon Rekishi Shinsho, 1967) p. 67.
[4] Kikuchi, *Kinsei no kikin*, pp. 12-14.
[5] Uesugi Mitsuhiko, "Tempō no kikin to bakuhan taisei no hōkai," in *Edo jidai no kikin*, ed. Harada Tomohiko, Hayashiya Tatsusaburō, and Kodama Kōta (Tokyo: Rekishi Kōron Books, 1982) 105-15, p. 106.

enough of it were some of the factors in this complex and tragic situation. Amino Yoshihiko has argued, for example, that starvation was first and foremost a problem for those people who were not necessarily poor, but were not self-sufficient and could not afford to buy their food at exorbitant prices.[6] As will be seen later, Chōei, too, noted that for some, a day's wage was not enough to buy a day's food supply. Amino's argument serves as a reminder of the need to consider not only crop failure itself, but the rice market and the various ways in which it was manipulated in any examination of famine.

Others were able to benefit from fluctuations in the price of rice. In her book on everyday life in pre-modern Japan, Susan Hanley wrote about a woman by the name of Kawai Koume, who was the wife of a Confucian scholar living in Wakayama. Although she noted the high rice prices in her diary in 1837, she did not appear to be suffering any discomfort. On the contrary, it appears her family was able to profit from the high prices at which her husband's rice stipend was sold.[7] As will be seen later, it is clear that Chōei and his associates, too, certainly were not going hungry. At the other end of the scale, Matsuoka Hideo has observed that in addition to the regular forms of discrimination that they suffered, *eta* ('untouchables') were sometimes denied the aid that was distributed to other poor people in times of famine.[8]

Nor was the famine simply a problem of the rice harvest. The extent to which ordinary farmers ate rice is hotly debated. According to Susan Hanley, rice appears to have become increasingly common as a staple food over time, especially in the cities. In the countryside, people probably ate a mixture of barley, millet, and some rice to 'glue' it all together.[9] As will be seen below, in areas such as Nakanojō, in Kōzuke, which was not climatically suited to growing rice, Yanagida Teizō appears to have been just as troubled by the poor quality of the wheat crop as that of rice. At the same time, however, he took a careful interest in the fluctuations of the rice market. He, and Takahashi Keisaku alike, made detailed observations of the market

[6] Amino Yoshihiko, *Zoku nihon no rekishi o yominaosu* (Tokyo: Chikuma shobō, 1996) pp. 176-81.
[7] Hanley, *Everyday Things In Premodern Japan*, p. 89.
[8] Matsuoka Hideo, "Kikin to sabetsu," in *Edo jidai no kikin*, ed. Harada Tomohiko, Hayashiya Tatsusaburō, and Kodama Kōta (Tokyo: Rekishi Kōron Books, 1982) 131-4, p. 132.
[9] Hanley, "Tokugawa society: material culture, standard of living, and life-styles," p. 683.

price of rice in their journals.

Hunger was not the only suffering inflicted by the famine. It was commonly understood in the Edo period that famines were often followed by outbreaks of epidemic disease. In his *Methods of Avoiding Epidemic Diseases*, Chōei suggested that the strange eating habits people adopted in times of famine may have been a source of intestinal upset and disease. He went on to note that epidemics were far more damaging to people than famine.

Modern historical interpretations of the situation are less clear. The impact of epidemics has been interpreted by some scholars from population records, in which the number of deaths was highest in the year after severe crop failure.[10] It has been suggested that this was because people's immune systems were weakened by malnutrition, making them more susceptible to disease. As Walter and Schofield have pointed out, however, the immune system fails only in conditions of extreme malnutrition, and in the case of some diseases, moderate malnutrition may even help. Only in extreme circumstances, for example, if people began turning to poisonous or polluted foods, did they run the risk of a fatal digestive infection.[11]

As Mary Dobson observed for the situation in south-east England, the pre-modern conception of 'epidemic fever' was very general and may have included any number of diseases which induced a feverish state, including enteric fevers and influenza.[12] Chōei's treatments for epidemic fevers included those for symptoms such as headache, insomnia, pain from intestinal worms, and a constricted chest. He advised readers to diagnose epidemic fever when 'there is an epidemic fever in the vicinity, and the patient complains of heavy limbs, headache, feels a terrible chill, and breaks out in a sweat.'[13]

Ann Bowman Jannetta, on the other hand, using figures from a temple death register, argued that the problem of the 1830s was a subsistence crisis, rather than epidemic disease. She noted that records of an epidemic in Hida during the Tempō

[10] Kikuchi, *Kinsei no kikin*, pp. 12-4.
[11] John Walter and Roger Schofield, eds., *Famine, disease and the social order in early modern society* (Cambridge: Cambridge University Press, 1989) pp. 19-20.
[12] Mary Dobson, *Contours of death and disease in early modern England* (Cambridge: Cambridge University Press, 1997) p. 459.
[13] Takano Chōei, *Methods of Avoiding Epidemic Diseases,* p. 227. All quotations from this pamphlet are my own translations from the edition cited above.

famine described an acute diarrhoea, which may also be a symptom displayed by the human body in the final stages of starvation.[14] This evidence, however, is not reinforced by that of Chōei, who, while stressing the importance of a clean digestive system, made no mention of diarrhoea. Furthermore, he stated that 'In this period of peace and prosperity, the administrators have a policy of charitable alms, and the people are thereby saved from starvation.' Although this assertion may have been simply designed to curry favour with government officials, a further investigation of the link between famine and disease in early modern Japan is clearly required.

Assessing the impact of the Tempō famine and the disease by which it was accompanied can be seen as forming part of an ongoing debate about the general level of well-being in pre-modern Japan. In the words of Conrad Totman, scholars can be divided into 'those who see Tokugawa rural history as essentially an optimistic story of progress and human betterment' and those who 'view it as a grim account of human degradation and immiseration that generated revolutionary rage'. Totman pointed out that these differences can often be put down to whether a political or an economic approach has been taken.[15] In many cases, such debates are also connected with population studies, which generally show that population growth in Japan as a whole slowed from about 1700 until the Meiji Restoration. The reasons given for this trend, however, are highly contested.[16] In accounts by scholars belonging to Totman's latter classification, famine and epidemics have been commonly cited as significant influences on the 'stagnant' population during this period. Such historians often focus on the most seriously affected areas in the north of Japan, to demonstrate the devastating effect of famine.[17] Practices such as infanticide and cannibalism are cited to show the terrible lengths to which people went in order to survive. In the other school of thought, scholars such as Hanley and Yamamura have, while acknowledging the significance of famines, particularly in the Tōhoku region, found that famine and disease are not sufficient to explain the

[14] Ann Bowman Jannetta, "Famine Mortality in Nineteenth-Century Japan: The Evidence from a Temple Death Register," *Population Studies* 46 (1992): 427-43.
[15] Conrad Totman, "Tokugawa Peasants: Win, Lose, or Draw," *Monumenta Nipponica* 41, no. 4 (1986): 457-76, p. 463.
[16] Totman, *Early Modern Japan,* p. 250.
[17] For example, Nakajima Yōichirō, *Kikin nihonshi* (Tokyo: Yūzankaku, 1976) pp. 118-21.

low rate of population growth. They suggest that people controlled reproduction intentionally, with the aim of increasing their standard of living, rather than as an act of desperation in response to famine.[18] More recently, Totman has argued that these issues need to be addressed in view of ecological history. He suggested that the Edo period population had reached the limits of its ecosystem, and the slowing population growth and frugal existence lived by so many people was a reflection of the need to 'make do' with the resources they had.[19]

Images of famine in Yanagida Teizō's *Tempō Kiji*

Whatever the impact in concrete terms, the extent to which the Tempō famine was written about in the literature of the time gives an indication of its social impact. Even if these stories were exaggerated or based on hearsay, the very fact that they were written is important in itself. Yanagida Teizō of Isemachi was one of the many who felt compelled to write about the suffering he witnessed around him, as people struggled to find enough to eat. His journal, which he called *Tempō Kiji* (*Tempō Annals*),[20] contained many anecdotes about the famine. His sympathetic descriptions touched on different aspects, sometimes sad, sometimes amusing, sometimes astonishing. The stories are unfortunately too numerous to quote at length, but some representative ones are included here. The first example is a local story from Yamada village. It is followed by one concerning the prostitutes in the famous Yoshiwara quarter in Edo.

> In the autumn of 1836, there had been a series of thefts of millet at night, so watchmen were placed in huts to guard the crop. In Yamada village, there was an elderly couple found taking the millet in broad daylight. The owner of the field, extremely indignant, scolded them. The couple said that they had no choice but to steal because they had nothing to put in their pot to cook. It would make no difference to them whether they were given the millet or killed on the spot, they would be

[18] Susan Hanley and Kozo Yamamura, *Economic and Demographic Change in Preindustrial Japan 1600-1868* (Princeton: Princeton University Press, 1977) p. 320.
[19] Totman, "Tokugawa Peasants," p. 470.
[20] The journal has been edited and published by Kanai Kōsaku. All of my translations are based on this version. See Kanai, ed., *Yanagida Teizō no Tempō kiji*.

> grateful in any case. The owner, lost for words, let them be and returned to the hut.[21]
>
> In Edo, Yoshiwara is to be particularly pitied. When a famous establishment went to ruin, all the others in Yoshiwara were ordered by the *bakufu* to give their assistance. Because the prostitutes are made to eat a rice gruel like water, they are long and thin like sick eels, scarcely able to climb the stairs. Relying on their artistic skills, getting a meal out of their guest is their main aim...[22]

On a lighter note, Teizō recounted the following:

> There was a man called Matsugorō from Arikawa-mura whom I employed as a servant. When I took him with me on an errand, he found some excrement on the side of the road which had millet and azuki beans mixed in with it. He was extremely surprised, and exclaimed that in a year as bad as this one, the person who had left behind excrement of this nature must have been of considerable standing. 'This must be indeed what it means "to know the shape of something by its shadow!"' I laughed.[23]

Sometimes, Teizō's interests as a doctor came to the fore. For example, he made a note of successful methods of curing constipation for his future use. Teizō also demonstrated a keen interest in the kind of foods that people were eating. He recorded that arrowroot made a good substitute for wheat flour, and that straw could be used to make a drink. Also noted was the fact that people in the northern province of Dewa ate dirt, by washing it and making it into something similar to a glutinous rice cake, but since Teizō made no comment, it is impossible to know whether he thought this a dangerous or innovative practice. Certainly, he was suspicious of some eating habits. He warned of the danger of eating yam and cock-sorrel at the same time, and also made the following observation:

> People who are starving should not eat a lot of food. Also, they should not make things made from azuki beans. There are some who have died immediately. In the last eleventh month someone came to

[21] Kanai, *Yanagida Teizō no Tempō kiji*, p. 11.
[22] Kanai, *Yanagida Teizō no Tempō kiji*, p. 20.
[23] Kanai, *Yanagida Teizō no Tempō kiji*, p. 12.

Nakanojōmachi from Gotanda-mura. After he ate four or five bowls of *sekihan*,[24] he died on the outskirts of Nakanojō-machi.[25]

Against such a background of hunger and disease, the Tempō years saw frequent outbreaks of civil unrest in both rural and urban areas. Such forms of protest were common during times of famine. Traditionally, peasants were permitted to instigate law suits about economic matters and against corrupt local officials, as a means of defusing tension. Over the course of the Edo period, as protests became larger and more frequent in response to social changes, increasingly it was the *bakufu* which took control of peasant protests rather than individual domain lords.[26] This was particularly the case when protests crossed domain borders. This was accompanied, too, by a gradual shift in peasant consciousness, in which peasants saw themselves increasingly not as subjects of their domainal lords, but of the *bakufu*.[27] This is why rebellions such as that of Ōshio Heihachirō in Osaka in 1837, which was initiated by a man of samurai rank and aimed directly against the *bakufu* 'shocked the state to its roots'.[28] Thus, it provided an important impetus for the Tempō Reforms, administrative reforms that were initiated by Mizuno Tadakuni in 1841.

Ōshio Heihachirō's famous rebellion also inspired similar uprisings, one of which was that of Ikuta Yorozu, who, incidentally, came from Kōzuke.[29] Yanagida Teizō gave detailed accounts of these rebellions in his *Tempō Kiji*. He included a complete transcription of Ōshio's call to arms, even going so far as to describe the size and cover of the book from which it was copied. Perhaps it can be said that the care with which Teizō recorded these events was a political statement in itself. It is not possible, however, to determine any particular political affiliation in his commentary. While admitting the faults of the authorities, many of whom were dismissed after Ōshio's rebellion, Teizō also noted the bravery of many on the side

[24] A dish made from glutinous rice and azuki beans, usually eaten at times of celebration.
[25] Kanai, *Yanagida Teizō no Tempō kiji*, p. 21.
[26] James White, "State Growth and Popular Protest in Tokugawa Japan," *Journal of Japanese Studies* 14, no. 1 (1988): 1-25, p. 18.
[27] White, "State Growth and Popular Protest in Tokugawa Japan," p. 24.
[28] White, "State Growth and Popular Protest in Tokugawa Japan," p. 23.
[29] Totman, *Early Modern Japan*, pp. 514-18.

of the administration.

Victor Koschmann has suggested that rural elites in the late Edo period were displaying an increasing intellectual interest in political issues.[30] It is possible to see Teizō's journal as a confirmation of this idea. From his journal entries, it is obvious that he had a wide-ranging interest in current affairs, and that he was well informed about events in places as far away as Edo and Osaka. This is also a reflection of the effectiveness of the transportation and communication networks discussed in the last chapter.

An interest in national political affairs did not prevent Teizō from thinking about agricultural issues closer to home. The following excerpt reflects a concern for the quality of crops as a factor in famine, an idea that is also visible through his work with Chōei on *Treatise on Two Things for the Relief of Famine*.

> In 1836 it was said that wheat was a huge success, the kind of harvest that happens only once in every fifty years. However, perhaps because it was an unlucky year, the wheat appeared to have little moisture, and even though one ate more than usual, it was not satisfying. Everyone says that they eat more in a bad year. In 1837, too, there was as much wheat as usual. It would seem to be because in a bad year even though crops look good on the outside, in reality they are poor on the inside.[31]

One final passage from Teizō's diary is worth noting in relation to the topic of famine. The following quotation describes a visit made to Chōei's house in Edo. It is important because it displays the relative wealth of these men compared to those to whom they addressed their writings, and because it gives an indication of the genuine feeling Teizō seems to have had for those less fortunate, which would not allow him to make light of their predicament:

> When we visited Takano Chōei's house in Kōjimachi (Edo), there was a man from Ōshū who joined in the party. This man said he knew of a way to avoid starvation in a famine year, and fanning himself, went on to say quietly, that if one always ate polished rice with no dregs, cooked to perfection fish that were not oily, and ate strictly three meals

[30] Victor Koschmann, *The Mito Ideology* (Berkeley: University of California Press, 1987) p. 136.
[31] Kanai, *Yanagida Teizō no Tempō kiji*, p. 17.

> a day, along with a fine *sake* according to one's taste, no matter how bad a famine year, one would never starve, at which everyone laughed heartily. However, there is a time and a place for jokes. At Takano-kata's we were treated to some *sake*, which tasted so unusually good that I enquired about it. This *sake* cost fourteen *momme* of silver for one *shō*. I had drunk sake here and there before, but it had a strong smell and was not good *sake*. Sometimes one can find cloudy *sake*.[32]

Here it is obvious that Teizō was uncomfortable making jokes about starvation when so many people were indeed going hungry. The source of his indignation seems to have been Chōei's guest rather than Chōei himself, so we can only guess as to what the *rangaku* scholar's part in it was, and as to whether or not the expensive wine belonged to him. Rather than attempting to make any observations about the relationship between Teizō and Chōei from this passage, perhaps it is better interpreted as an indication of the seriousness with which Teizō regarded the famine, both in his public role as a physician and in his private life.

Takano Chōei and writings on famine

In Edo, Chōei was also actively involved in issues to do with the famine. As described in Chapter Two, he became involved, through the influence of his employer and mentor, Watanabe Kazan, in a study group of scholars, intellectuals and concerned officials, called the *Shōshikai*. It will be recalled that this group was formed by a man called Endō Katsusuke in order to discuss famine relief,[33] and that many of the members were involved in Western learning.

In engaging with ideas and writing about famine, these men were adding their voices to a growing field of scholarship. The genre of *kyūkōsho* (famine books) developed in Japan over the eighteenth and nineteenth centuries. Produced partly as a reaction to the visible suffering caused by famine, it grew also out of a realisation that seventeenth-century botanical scholarship could be applied to the problem of famine, for example, by identifying edible wild plants.[34]

[32] Kanai, *Yanagida Teizō no Tempō kiji*, p. 13.

[33] Satō, *Yōgakushi kenkyū josetsu*, pp. 134-5.

[34] Unless otherwise indicated, this section is based closely on the work of Shirasugi Etsuo in his article, "Nihon ni okeru kyūkōsho no seiritsu to sono engen," in *Higashi ajia no honzō to*

The idea that rulers should govern wisely and provide for their people in hard times was an ancient Chinese one, and took root from early times in Japan. Thus, many writings on famine were concerned with good governance, rather than what the common people could do for themselves. Many other works of this period were based on the system of grain storage houses designed by the Chinese philosopher Chu Hsi, in which villagers contributed to and managed their own grain stores in case of emergency.[35] This method is said to have first been introduced to Japan only at the end of the seventeenth century by Yamazaki Ansai (1618-82).[36] The privileged position that Chu Hsi philosophy (Neo-Confucianism) held as the doctrine officially promoted by the *bakufu* no doubt contributed to the popularity of these ideas.

The first Japanese scholar to write a book directed at the suffering commoners about the types of wild plants that could be gathered and eaten as a defence against famine, was the physician Takebe Seian (1712-82).[37] Although trained in Western medicine in the Katsuragawa school, for this work Seian relied heavily on Chinese Ming period botanical works on famine. His two works, *Minkan Bikōroku* (1756) and *Bikōsōmokuzu*, published posthumously in 1833 by his son Sugita Hakugen, were frequently quoted and had a great influence on other writers in the field.

Shirasugi Etsuo has listed over eighty books dealing with famine published between 1615 and 1866.[38] Probably, there were more than this. Included in Shirasugi's list were Takano Chōei's *Treatise on Two Things for the Relief of Famine*, and a work called *Kyūkō Benran* by the *Shōshikai* founder Endō Katsusuke. There were also works by Itō Keisuke (1803-1901), a physician who, like Chōei, had studied under Franz von Siebold in Nagasaki, and returned to Edo to practice medicine. Itō was, therefore, in every sense, Chōei's contemporary (and perhaps competitor).

Interestingly, beginning not least with Takebe Seian, there was a very strong

hakubutsugaku no sekai, ed. Yamada Keiji (Tokyo: Shibunkaku shuppan, 1995) 138-73, pp. 156-7.

[35] Kikuchi, *Kinsei no kikin*, pp. 180-1.

[36] Kikuchi, *Kinsei no kikin*, pp. 181.

[37] Shirasugi, "Nihon ni okeru kyūkōsho no seiritsu to sono engen," p. 149.

[38] Shirasugi, "Nihon ni okeru kyūkōsho no seiritsu to sono engen," pp. 167-73.

tradition of writing about famine within the field of *rangaku* (particularly by physicians). Perhaps this reflects a natural connection between the botanical and pharmaceutical studies undertaken by physicians and their duty to relieve the physical suffering of fellow human beings. Takebe Seian shared a close relationship with that famous founding member of *rangaku*, Sugita Gempaku (1738-1818). Gempaku, too, portrayed images of famine in his *Nochimigusa*.[39] The relationship between the two was such that Seian gave his son Tsutomu to Gempaku for adoption.[40] This son became Sugita Hakugen: the same Sugita Hakugen with whom Chōei had a brief spell of study as a young student.

Thus, there were many possible sources of inspiration, both within Chōei's immediate circle of acquaintance and in the general scholarly arena, for him to write the first of his 1836 pamphlets, *Treatise on Two Things for the Relief of Famine*. Yet he wrote quite plainly in the preface that the inspiration for the work came from his friends Fukuda Sōtei and Yanagida Teizō in Kōzuke. The discussion below will trace the steps by which they came to apply their knowledge of Western crops to local problems of famine.

Treatise on Two Things for the Relief of Famine

i) Potatoes

Treatise on Two Things for the Relief of Famine (Kyūkō Nibutsukō) was written by Chōei in Edo in 1836, shortly after a visit to Kōzuke. The preface contains a rather touching account of how it came to be written, which shows something not only of the companionable relationship between Chōei and his Kōzuke friends, but of the way they tested out and exchanged ideas with each other (see appendix A for the complete text):

> In the middle of the eighth month of this year, I (Chōei) met Fukuda Sōtei of Sawatari in Jōmō. The Sōtei family has for generations been surgeons by profession, and is very skilled in its art. Also, Sōtei reads

[39] Kikuchi, *Kinsei no kikin*, pp. 152, 156-7.
[40] Shirasugi, "Nihon ni okeru kyūkōsho no seiritsu to sono engen," p. 147.

> Dutch books in order to study the subject further. I have enjoyed a warm relationship with him from the beginning, and one evening, just when our conversation was getting into full swing, he pulled out a scoop of buckwheat and showed it to me, saying,
>
> 'In general, the reason why people die in a bad year is because they do not have enough to eat. And the reason why there is not enough food is because there are not any crops which can be harvested several times a year. This buckwheat should mature three times a year. Do you not think that it would be a great treasure for the poor people?'
>
> I was very surprised and grateful, and...took (the buckwheat) gladly. Later I was given a type of potato by a man called Yanagida Teizō from Isemachi in the same province.[41]

Since the Tempō Famine was due largely to the problem known as 'cold damage', because summer temperatures were too cool for growing grains, Chōei saw possibilities in substituting other crops which could better tolerate such weather conditions:

> Consider this. Although the countries near the North Pole are intensely, bitingly cold, and there are only one or two months a year in which the ice melts, why do the people there not starve? It is because they plant things to eat that do not fear wind, cold, heat or damp...When people in the countries near the North Pole choose their crops, they choose ones that grow quickly. If these crops were grown in a warm area, they would mature several times a year...[42]

Chōei went on to write in detail about the buckwheat and potato given to him by his friends, supplying details in the text about how to grow them, cook them, store them, make flour, and use them for brewing.

In writing about the usefulness of potatoes, Chōei had an important predecessor in Aoki Konyō (1698-1769), a famous *rangaku* forefather who had actively promoted the cultivation of sweet potatoes (*satsumaimo*) as a measure against famine. It came to the attention of the *bakufu* during the Kyōho famine (1732-3) that the low number of deaths from starvation in Satsuma domain seemed to be related to the cultivation and consumption of sweet potatoes. Konyō wrote a

[41] *Treatise on Two Things for the Relief of Famine*, pp. 3-5. All quotations from this pamphlet are my own translations from the edition cited above.
[42] *Treatise on Two Things for the Relief of Famine*, pp. 3-4.

piece called *Banshokō* (*Thoughts About Sweet Potatoes*), which he submitted to a government official by the name of Ōoka in 1733 or 1734. It was intended to back up an application for public office made for him on his behalf by a friendly patron. Subsequently, he was employed by the government of Shogun Yoshimune to oversee the cultivation of experimental sweet potato plots.[43]

The Kyōho Famine was caused by a combination of cold summer rain and problems with 'leaf hopper' insects,[44] so the circumstances in Satsuma were slightly different from those in the north during the Tempō Famine. Nevertheless, Chōei saw advantages in the white potato over the sweet potato, claiming that it was less sensitive to cold, and that it would not become too sweet and acidify like the sweet potato. He added that 'because (potatoes) have the advantage of greatly nourishing the stomach for a long time, and allowing people to forget hunger, people in the West reserve their praise not for the sweet potato but only for the potato.'[45]

In much the same way as Aoki Konyō, Chōei seems to have been promoting the cultivation of crops that had actually been known for some time in Japan. Both sweet and white potatoes appear to have been introduced to Japan by the early seventeenth century.[46] Chōei's stance, however, would suggest that the white potato was not very widely cultivated for human consumption. There were at least two reasons for this. Chōei's detailed instructions imply that ordinary farmers did not know how to grow potatoes, a problem which Chōei seems to be addressing. There was also another factor at work here; the people were afflicted by superstitious fears:

> It is commonly said that because the potato is inimical to ink, those in the literary profession should not eat it, but this is wrong. A long time ago when pumpkins and *satsumaimo* were first grown, people thought that they were incompatible with fish or meat, or that they would prevent people from writing with ink, and people everywhere were afraid and did not eat them very much. Now, people eat a great deal of them, even with fish and meat, and only then do they learn of the untruth of such sayings. Potatoes are another case of this. Previously, in the West, there was a time in Bolgonie (Boulogne) (a place in

[43] Sippel, "Aoki Konyō," pp. 133-4.
[44] Totman, *Early Modern Japan*, pp. 236-7.
[45] *Treatise on Two Things for the Relief of Famine*, p. 27.
[46] Hanley, "Tokugawa society: material culture, standard of living, and life-styles," p. 682.

> France), when it was said that potatoes caused scabies, and growing them was banned. However, since then people have eaten a great deal of them and there has been no record of any ill effects, which is proof of this. Ah, although all countries differ in their climate and customs, perhaps it is not only human sentiment that is the same![47]

Thus, in some ways, Chōei's message seems to have been as much about having the courage to try new things as about the usefulness of the crops themselves. The meaning of the final sentence is not easy to determine, but it is possible to interpret it as a remarkable profession of human universalism. It is especially remarkable for a man whom at least one American scholar has categorised (with little justification) as a 'xenophobe'.[48] Here was a man who had never left his own country, who had met only a few Europeans, and whose picture of Europe was still flawed by insufficient and misinterpreted information. Yet he seemed to be trying to say that humans have much in common and there is much that can be learned from each other. Far from being overly suspicious of Europeans and their practices, it is possible to argue on the contrary, that precisely because his information was so limited, Chōei was prone to exaggerate the benefits of Western technology and customs.

It is fascinating to see Chōei successfully explaining France's initial resistance to the consumption of potatoes. A modern scholar, Bourke, claims that the disease of which the French were afraid was leprosy, whereas Chōei referred to scabies.[49] This was, however, presumably a problem of translation, and he has understood the gist of the problem quite well.

It is worth quoting Chōei's introduction to the potato at some length, for it demonstrates the way in which he endeavoured to piece together information from various sources and interpret it in such a way as to make it easy for his readers to understand.

> The origin of this tuber is also unclear. It is said that it was imported to

[47] *Treatise on Two Things for the Relief of Famine,* pp. 27-8.
[48] Wakabayashi, *Anti-Foreignism,* p. 61.
[49] Austin Bourke, *'The visitation of God'? The potato and the great Irish famine* (Dublin: The Lilliput Press, 1993) p. 14.

> Kai and Shinano and grown from early times. When one considers that it is called *jagataraimo* or *appura* (which is a dialect of the hinterland and probably a corruption of *aardappel*) it would seem that it was brought by the Dutch. According to Dutch books, this potato grew originally in the West Indies, after which it was grown by the French and the English. After this it was introduced to the Dutch region. Also it is very common in America, where it seems the people who have emigrated there from Europe make this tuber the staple of their diet. That is, originally, this tuber came from the West Indies and America. It was grown for the first time in Holland about one-thousand-six-hundred years after the beginning of the era (this is about two hundred years before the present year of 1836) and people still use it as their staple. Linnaeus (mentioned above), in his book writes about the three virtues of the potato. One, that it will flourish in areas with sandy and stony soil where other grains will not grow. Two, it will not be damaged by strong winds, heavy rain or long frosts. Thirdly, it is easy to grow and does not require a lot of labour. Also, an inch of land will give the yield of a foot of land, so it is also called a *hasshōimo*.[50] It certainly may be said to be a good crop for a bad year.[51]

It is easy for modern historians to forget that in Europe too, the potato was promoted originally as a supplementary food to provide against famine. It was noted particularly for its hardiness under wet and dreary conditions, that is, for precisely the same features which attracted Takano Chōei. The potato was pioneered as a famine relief measure in Ireland, with other European countries following suit. Scotland grew potatoes in response to famine in the 1740s, the British government actively encouraged the growth of potatoes in 1795-6, and likewise, Frederick the Great in Germany in 1745. It was not really until the end of the eighteenth century that a decline in the quality of varieties grown and increasing problems with disease broke the 'potato utopia' spell. By this time in Ireland, potatoes already made up roughly sixty percent of the nation's food supply, and many of the poor relied upon them entirely for their sustenance. They had nothing therefore, to fall back upon when potato blight devastated the crop.[52] Relying on the Dutch books that trickled through the port of Nagasaki for his information, Chōei could not have known that, at the same time over the other side of the world, potato-dependent Ireland was

[50] Literally, 'eight *shō* (=1.8 litres) tuber'. Eight was considered to be a lucky number.
[51] *Treatise on Two Things for the Relief of Famine,* pp. 15-17.
[52] Bourke, *'The visitation of God'?*, pp. 11-14, 52.

slipping towards a devastating famine.

Despite Chōei's efforts, potato consumption in Japan increased only slowly. In Hokkaido, which is now Japan's main centre for their cultivation, potatoes were introduced from Russia in the eighteenth century, and were encouraged by the Shogunal government in land reclamation schemes late in the Edo period. Cultivation on a large scale began in the Meiji period after 1868, and potatoes now form the largest proportion of all tuber crops grown in Japan.[53]

ii) Buckwheat

The particular type of buckwheat which Chōei recommended in *Treatise on Two Things for the Relief of Famine* is described as a rapidly maturing crop which grows bigger and is more resistant to cold than regular buckwheat. This is much more difficult to identify than the potato, which is helpfully illustrated in the pamphlet in exquisite detail by Watanabe Kazan. Even Chōei himself wrote that he was unsure of where the first of these buckwheat seeds came from. He called the buckwheat *hayasoba* (quick buckwheat), *sandosoba* (three-times buckwheat, because it matured three times a year), or *Sōteisoba*, after his friend the physician Fukuda Sōtei, who gave it to him.

Buckwheat is native to the Himalayas, and has been grown in Japan since early times. It is of the same botanical type, *fagopyrum esculentum*, as the common buckwheat known today. There are, however, several variations within the same type, such as summer and autumn varieties, and a notch-seeded buckwheat, in which the edges of the hull extend to form wings. Chōei believed this last type to be the one grown in Siberia, and expressed regret that seeds were not available in Japan, because it could perhaps be harvested more frequently in a warmer climate. However, the Siberian type would more likely be *fagopyrum tataricum*, or Tartary buckwheat. This actually belongs to a different species, and is a hardier, but poorer plant. As a tentative conclusion, it seems probable that Sōtei had come across a

[53] *Kodansha Encyclopedia of Japan*, Vol. VI, p. 231; *Nihonshi daijiten*, 7 vols. (Tokyo: Heibonsha, 1992) Vol. III, p. 1046. The promise with which the white potato was viewed in the early twentieth century may also be seen in *Outlines Of Agriculture* (Tokyo: Agricultural Bureau, Department of Agriculture and Commerce, 1910).

variety of *fagopyrum esculentum*, rather than some kind of new and better Western variety. From the description given, it can be inferred that it was a summer variety, which may help to explain why it grew both bigger and faster.[54]

There are several prominent examples of misinformation in *Treatise on Two Things for the Relief of Famine*. Chōei's confusion about the type of buckwheat grown in Siberia is relatively understandable, considering that the source of his information was probably a Dutch book. The reason for other mistakes is much less clear. For instance, when describing a place in Friesland, Holland, a topic presumably much more familiar to the Dutch or West European writers than Siberian agriculture, Chōei says it is a very mountainous place where the cold is extremely severe, and where nothing can grow except the above mentioned buckwheat. Perhaps the place he read about was not in Friesland at all, or perhaps he misinterpreted what he did read about Friesland. Mistakes such as these help to serve as a reminder of the enormous physical and linguistic boundaries which Chōei and the physicians were attempting to cross. In any case, the error does not seriously detract from his argument that there were cold and mountainous regions in the world where this crop had proved to be useful.

Malnutrition, disease and *Methods of Avoiding Epidemic Diseases*

In considering further why Chōei and the Kōzuke physicians became interested in growing new crops as a weapon against famine, it is worth remembering that all of these physicians grew up in rural areas, close to the farmers who were affected by the elements, for better or worse, every day of their lives. Mizusawa, Chōei's birthplace, it will be remembered, was in the north of Japan, where rice cultivation was hampered by the cold climate. Similarly, the mountainous regions of Kōzuke were not suited to growing rice, and it was natural for the Kōzuke farmer-physicians to experiment with other crops. Fukuda Sōtei was even inspired to

[54] Makino Tomitarō, *Makino's New Illustrated Flora of Japan* (Tokyo: Hokuryūkan, 1962; Alphonse De Candolle, *Origin of Cultivated Plants*, Reprint of 2nd ed. (New York: Hafner Publishing Co., 1959; N.W. Simmonds, ed., *Evolution of Crop Plants* (London: Longman, 1976). I am grateful to Beatrice Bodart-Bailey for helping me to formulate this hypothesis.

write a series of 'buckwheat poems' and send them to his teacher.[55] *Treatise on Two Things for the Relief of Famine* provides further clues. In the following passage, Chōei shows sympathy for the workers on the land, but is at once aware of the larger scale of the problem, including the consequences of malnutrition on the health of the populace:

> Ah, how the farmers give their energies to farming! Although showered with rain and combed by the wind, irritated by sweat and the oil on their skins all dried up, they work untiringly and look forward to the harvest, only to meet with such disaster and have their efforts evaporate all at once. How can one not feel sorry for them? Accordingly, such a great calamity is not just that of the farmers, but of society at large. Even though these are prosperous times now and there are few who starve to death, if the price of rice jumps, then a day's work is not enough to buy a day's food. With regard to this matter, in desolate villages and cold hamlets, it comes to scraping the bark from trees or washing the muddy earth to eat. By doing so people are able to ward off starvation for a time, but because such foods are unusual, within one or two, or perhaps three or four months, there are many who fall ill and die. This is the reason why there is much sickness after a poor harvest. I am always worried by this.[56]

Chōei continued with this theme in the second pamphlet, *Hieki Yōhō (Methods of Avoiding Epidemic Diseases)*. This was based, Chōei explained, on a preliminary discussion of epidemic diseases which he had written in a book called *Treatise on Contagious Diseases (Onekikō)*. He entrusted the revision and simplification of this medical work to his student Takahashi Keisaku. At the time, Takahashi was in Edo, as the head student at Chōei's school.

The pamphlet begins with a preface, in which Chōei described the synchronous relationship between epidemic diseases and famine, and the need for a method not only of treating epidemic diseases, but of preventing them. He explained that, in order to facilitate people's thorough understanding, he wrote in Japanese rather than Chinese, the latter of which was the language of the literati.

The content of *Methods of Avoiding Epidemic Diseases* can be summarised

[55] Kanai, "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku," p. 39.
[56] *Treatise on Two Things for the Relief of Famine*, pp. 2-3.

as follows (see appendix B for the full text). It begins with an outline of methods of preventing epidemic diseases. In this, Chōei explained the dangers of miasmic atmospheres and the importance of caring for the digestive system through regular purging. This is followed by sections on hygienic practices for those caring for or visiting patients with epidemic diseases; what to do after people have died; information on preparing drugs; and finally a section on practical treatments for the sick.

The discussion below is an attempt to analyse these methods and treatments in terms of 'receptive' history. In order to do this, it will be necessary to ask to what extent it is possible to view such treatments as 'Western' or 'Chinese' in nature. The aim of this is not to judge how 'progressive' the Japanese physicians were, but to gain an understanding of the process by which *ranpō* physicians introduced Western elements into their medical treatments, and used them in conjunction with more traditional therapies.

One of the most striking aspects of *Methods of Avoiding Epidemic Diseases* is the emphasis placed on preventive medicine. Another important feature in Chōei's writing is the idea of miasma, in which poisonous vapours present in the environment are thought to be responsible for causing disease. Thus Chōei wrote:

> Essentially at times when epidemic fevers are rampant, they occur because there is a different kind of miasma in the land, so that there are times when even if one is not infected immediately as a result of visiting someone sick, one can unintentionally be exposed to this atmosphere and spontaneously develop the disease. For this reason, people should take care of their bodies in order not to catch the disease.[57]

Chōei wrote that there were many fevers in rural areas because the front of the courtyard was not cleaned properly and the inside of the rooms was gloomy. 'Even if there were no poisonous fever in the first place, it spontaneously develops there,' he stated.[58] He also emphasised the importance of adequate ventilation:

[57] *Methods of Avoiding Epidemic Diseases,* p. 219.
[58] *Methods of Avoiding Epidemic Diseases,* p. 220.

> According to the customs of our country, not only with regard to epidemic fevers, but also in general, when we have a feverish illness we use heavy bedclothes and shut the window tight, or we place a screen around in order to keep out any draught. However, to think it is a good thing to do nothing but sweat is a terrible mistake.[59]

By implicitly setting the customs of his own country against those of another, Chōei appears to have obtained his information from foreign sources. However, similar concepts, which can be thought of broadly as 'miasmatic' were employed in both Chinese and Western medical thought at this time.

Traditional Chinese medical thought was based on a complex system which linked the macrocosmic universe and microcosmic man through a series of cyclic shifts based on geographical direction, the four seasons and the five elements (earth, water, fire, metal and wood). Concepts such as yin and yang and the five elements were all manifestations of *ch'i* (or *ki* in Japanese), which can be thought of as the fundamental energy which forms the basis of all things.[60] Disease occurred when imbalance prevented *ch'i* from circulating properly.[61] Such imbalance was in turn due to influences known as *hsieh* (or *ja* in Japanese), literally translated as 'harmful emanations', 'miasma', or 'evil'. These influences could be internal or external, and created excesses or deficiencies in energy, and hence imbalance and disease.[62] The external factors could be seasonal and epidemic diseases, or climatic changes. Internal factors were imbalances of the emotions. Thus, the entire system of Chinese medical thought was based on an intimate correlation between the human body and cosmological, environmental, and psychological factors.

Similarly, in the West, the ancient Hippocratic idea that 'airs, waters and places' affected the state of health was very influential. In the seventeenth and eighteenth centuries, there was a renewed interest in the environment, and particularly in bad smells, as a source of disease. As Mary Dobson has related, it was a time when doctors became interested in connecting Galenic humoral theory, with

[59] *Methods of Avoiding Epidemic Diseases,* p. 220.
[60] Norman Takeshi Ozaki, "Conceptual Changes in Japanese Medicine During the Tokugawa Period" (Phd, University of California, 1979) p. 35.
[61] Lock, *East Asian Medicine,* p. 37.
[62] Ozaki, "Conceptual Changes," p. 34.

its ideas of imbalances and predisposition to disease, with Hippocratic ideas about environmental and atmospheric influences.[63] Even in nineteenth-century Europe and America, the body continued to be seen 'metaphorically as a system of dynamic interactions with its environment'.[64] Thus, even if Chōei was being inspired to write by the latest he had read on Western theories of disease and epidemics, it was an easy task to equate concepts such as miasma with traditional Chinese ideas.

Carol Benedict has suggested that Chinese physicians may well have been influenced by Western miasmatic theorists. She noted Chinese physicians promoting 'foreign' methods such as cooling down underneath a tree or by a lake, or a 'new' method of isolating plague victims. Benedict went on to say, however, that the idea of contagion, with the implication that the source of illness was within the body, was foreign to Chinese traditions, and isolation was not seriously advocated.[65] Benedict argued that the absence of the idea of contagion in China was the reason for major differences between public health policy in Europe, where quarantines were enforced, and that in China, where they were not.[66] Chōei, on the other hand, wrote of the need to isolate patients in hospitals, so that they might simultaneously receive better care and prevent the spread of infection. He pointed to the successful prevention of smallpox in some areas of Japan through the isolation of victims. He was, however, also aware of humanitarian concerns, and urged people not to abandon their loved ones out of fear. His apparently inconsistent attitude towards the relationship between miasma and contagion was probably not as strange as it first might seem. As Christopher Hamlin has indicated, contagionist and anticontagionist miasmatic explanations were not necessarily mutually exclusive, and environmental factors such as adequate ventilation could be important in both.[67]

There is one particularly interesting question raised by *Methods of Avoiding Epidemic Diseases* about the conception of death. In the section about procedures

[63] Dobson, *Contours of death,* p. 10.
[64] Charles E. Rosenberg, 'The Therapeutic Revolution: Medicine, Meaning, and Social Change in Nineteenth-Century America,' *Perspectives in Biology and Medicine*, 20: 4 (1977): 485-506, p. 487.
[65] Carol Benedict, *Bubonic Plague in Nineteenth-Century China* (Stanford: Stanford University Press, 1996) p. 109.
[66] Benedict, *Bubonic Plague*, p. 130.
[67] Christopher Hamlin, "Predisposing Causes and Public Health in Early Nineteenth-Century Medical Thought," *Social History of Medicine* 5:1 (1992): 43-70, pp. 48-9.

for burial of the victims of disease, Chōei wrote: 'When a patient dies from an epidemic fever, the body should be quickly prepared and buried. However, people who die from epidemic fever sometimes come back to life when they are exposed to the vapours of the earth, so be well aware of this and continue to watch out even after burial.' It was commonly believed that for a period shortly after the time of death, the spirit had not yet completely separated from the body, and remained close by. Sometimes the name of the deceased was chanted in order to try to bring him or her back.[68] According to this interpretation, perhaps the idea of someone coming back to life was entirely reasonable.

In some Chinese theories, pestilential *ch'i* was believed to be an 'earthly' *ch'i* rather than an atmospheric one, although what implication this idea would have in Chōei's scheme of things is unclear. Another suggestion is that the notion of coming back to life could somehow be related to the kind of idea expressed in a Chinese book of 1895 called *Compilation on Plague* (*Shuyi yuebian*). According to this story, a man who was taken for dead and was about to be closed up in his coffin was saved by a thief who stole his burial clothes in the night, because their removal exposed him to cooling breezes which brought about his recovery.[69] Of course, Chōei's writing predated this book; however, the stories expressed in the Chinese work may not necessarily have been new. Western writers, on the other hand, appear to have been more concerned about the continuing damage the dead might do to the living through the miasmas associated with burial grounds. There was a movement during the eighteenth century in several European countries to have burials conducted outside the limits of towns and cities.[70]

As Margaret Lock has observed in a discussion of medical systems and medical context, medical theory is culture bound, because 'the questions raised by theoreticians and the methods used to answer them are products of a particular period in history'.[71] She went on to say that, even if medical ideas and practices are introduced into a particular society, it is very difficult to introduce the social and

[68] *Kodansha Encyclopedia of Japan*, vol. II, p. 80.
[69] Benedict, *Bubonic Plague*, p. 108.
[70] James C. Riley, *The Eighteenth-Century Campaign To Avoid Disease* (Basingstoke: Macmillan, 1987) pp. 100-10.
[71] Lock, *East Asian Medicine*, p. 11.

cultural context of the new medical system at the same time. Although an individual doctor who has studied abroad 'may change his beliefs radically...the system in which he must practice and the attitudes of patients will be important limiting factors on rapid changes in meaning associated with health and illness.'[72] Thus, it was also important for Chōei, regardless of whether he had understood the European books on their own terms or not, to put new information into a form in which it could be readily accepted and understood. Similarly, in writing about the response of nineteenth-century physicians in America to ideas such as disease specificity, which undermined the traditional view of therapeutics and the body, Charles Rosenberg gave examples of the reluctance of physicians to part with traditional therapeutics, because they still had to satisfy the demands of the patient in the traditional doctor-patient relationship.[73]

In practical terms, new treatments were implemented only very slowly, and this is reflected also in Chōei's document. Although physicians such as Chōei called themselves 'physicians of Dutch medicine', most of the medicines mentioned in the text were herbs which can be identified in books of traditional Chinese *materia medica.*

In *Methods of Avoiding Epidemic Diseases,* an emphasis is placed on emetic and purgative medicines, and on sweating. These treatments were probably based on ideas in Japanese schools of Chinese medicine, which attached importance to eliminating stoppage or stagnation in the body. Such ideas were, however, just as common in Western medicine as in Chinese, where the concept of balance encouraged the use of purgatives, emetics, sweating, and bleeding.

In his thesis on conceptual changes in Japanese medicine, Norman Ozaki suggested that it was innovations within Confucian studies and medicine in Japan over two centuries that created a theoretical basis for the acceptance of Western medicine. He argued that it was only by changing the nature of traditional Confucian studies in such a way as to be no longer antagonistic to Western thought, that

[72] Lock, *East Asian Medicine*, p. 12.
[73] Rosenberg, "The Therapeutic Revolution," pp. 497-504.

rangaku could find an intellectual base.[74] This, he proposed, was why people from many different intellectual backgrounds were able to enter into *rangaku* quite readily.[75] Certainly, the way the Kōzuke physicians became interested in Western medicine, even though their training was in Chinese, appears to corroborate these observations. Nakayama Shigeru, too, noted the role of the *koihō* school in Japan, which 'rejected the theoretical entities of Chinese medicine and undertook an empirical approach to clinical treatment', in easing the way for Western anatomy.[76] Both Fukuda Sōtei and Takahashi Keisaku studied with physicians trained in the *koihō* school of Chinese medicine.

The changes which occurred in Japanese medicine were not simply due to a wave of enlightenment from Europe that was at last allowed to wash its benefits over the Japanese people after the Meiji Restoration. It was a long, slow process of reception and adaptation in response to both internal and external factors. Rather than Western medicine, Chōei and the Kōzuke physicians were practising a kind of hybrid medicine, which combined elements of both Western and Chinese traditions. They were able to do this because some schools of Chinese medicine in Japan had already divorced themselves from many of the traditional Chinese theoretical aspects incompatible with Western ideas. Furthermore, an important factor which facilitated this was the similarity of the traditional concept of the body and therapeutics in both Western and Asian medical systems of the time.

Readership

For whom were Chōei's pamphlets intended? The question of readership is always a difficult one, linked inevitably to questions of literacy. Although literacy levels in Edo period Japan are believed to have been very high,[77] one must also address the question of what kinds of materials people at different levels of society

[74] Ozaki, "Conceptual Changes," p. 233.
[75] Ozaki, "Conceptual Changes," p. 238.
[76] Shigeru Nakayama, "Ways of Thinking of Japanese Physicians" (paper presented at the International Symposia on the Comparative History of Medicine-East and West, Shizuoka, Japan, 1976-7) 3-19, pp. 9-12.
[77] Moriya Katsuhisa, "Urban Networks and Information Networks," in *Tokugawa Japan*, ed. Chie Nakane and Shinzaburo Oishi (Tokyo: University of Tokyo Press, 1990) 97-123, pp. 118-123.

were interested in reading. Here it will be argued that it was not the lowest echelons of society at which these pamphlets were directly aimed, but those wealthier farmers and physicians who had the capacity to transmit such information. Indirectly at least, some sort of official attention was also probably desirable.

In the preface to *Methods of Avoiding Epidemic Diseases*, Chōei wrote: 'Although this is too insignificant and trifling a composition to be given an audience, if people are thereby able to escape such suffering, surely this project may be of some benefit to society.'[78] While attempting to display the requisite amount of modesty, his intentions are clear. Similarly, in *Treatise on Two Things for the Relief of Famine*, he emphasised the wide-reaching benefits of growing new crops as opposed to the limitations of building storehouses of grain, quoting a colleague as saying 'This is a fine and virtuous plan which should reach the whole land for all time.'[79] In order to have such plans implemented far and wide, Chōei and his colleagues needed readers.

Some clues as to how they went about reaching these readers may be seen in the connections Chōei made through the *Shōshikai* study group in Edo. As noted above, the members of the *Shōshikai* were vitally interested in the problems of famine relief, and may well have provided some of the impetus for Chōei and his friends to engage in the writing of these works in the first place. Some evidence of the way in which Chōei was supported by the *Shōshikai* comes in the form of the botanical illustration of the potato plant for *Treatise on Two Things for the Relief of Famine*, drawn by Chōei's mentor Watanabe Kazan. In addition, *Methods of Avoiding Epidemic Diseases* contained a brief afterword, written by a man called Hagura, which praised the content and aims of the work. Since Watanabe Kazan maintained a friendship with an influential scholar called Hagura Geki, it is reasonable to assume it was he who had been asked to supply the afterword. Hagura served as the government intendant of several provinces in the Kantō region, including Kōzuke, and was therefore a *bakufu* official of some status. He was later employed by the Senior Councillor (*rōjū*) Mizuno Tadakuni in the Tempō

[78] *Methods of Avoiding Epidemic Diseases*, p. 218.
[79] *Treatise on Two Things for the Relief of Famine*, p. 6.

Reforms.[80]

It can be assumed that having a man such as Hagura write the afterword to the pamphlet would have greatly increased both the document's credibility and its chances of being noticed by important government officials. Indeed, it was increasingly common for the work of unknown authors to carry the recommendation of a more prominent person.[81] Although it is questionable whether Chōei could be described in 1836 as an 'unknown' (having published his ground-breaking *Seisetsu Igen Sūyō (Principles of Western Medicine)* in 1832), he was in social terms merely a 'town doctor', and was presumably in need of some helpful introductions to those in authority. A man such as Hagura Geki with his *bakufu* connections was of no small importance to Chōei. Since the government had previously been encouraged to officially promote the cultivation of sweet potatoes, perhaps Chōei had good reason to think that officials might do the same for his potato.

An official audience was desirable both in terms of influencing policy-making, and for the status-enhancing possibilities it offered if the works were well received. However, these pamphlets seem to be concerned firstly with educating the ordinary public in order that they may help themselves. *Methods of Avoiding Epidemic Diseases,* at least, was overtly aimed at commoners. As we have seen, Chōei stated in the document that he wrote in Japanese rather than Chinese so as to facilitate understanding, and that he recommended only medicines which could be used by lay people without harm. It was not unknown for works of this genre to be distributed to commoners and officials alike. Takebe Seian, discussed above for his role in writing about famine, is said to have presented his *Minken Bikōroku* to domain leaders in 1756, but, unable to wait for their official instruction, he made several copies and distributed them in rural areas.[82]

Jennifer Robertson has noted with respect to farm manuals, the way in which farmer authors cultivated contacts with the scholar Hirata Atsutane (1776-1843) in order to use his many connections throughout the country, and have their books disseminated as widely as possible. In turn, Atsutane used the farm manuals as a

[80] Satō, *Yōgakushi kenkyū josetsu*, p. 197.
[81] Peter Kornicki, *The Book in Japan* (Leiden: Brill, 1998) p. 188.
[82] Shirasugi, "Nihon ni okeru kyūkōsho no seiritsu to sono engen," p. 144.

way of promoting his theology in rural circles.[83] Robertson pointed out that gaining official permission to publish a book in the Edo period was a complicated procedure. Thus, someone such as Atsutane, who was well informed of the many obstacles, would have been a great help to the novice authors.[84] Although the case of Chōei and the Kōzuke physicians is a little different, because Chōei shared a significant responsibility for the authorship of the works, it is possible to imagine that they shared a similar relationship.

Some of the information contained in the two pamphlets suggests that it may have been intended to be transmitted by physicians or wealthy farmers, such as Chōei's students themselves. There is evidence that Chōei wrote to Harazawa Yoshimichi, a respected and wealthy physician from Noda, and sent him several copies of *Treatise on Two Things for the Relief of Famine*, asking him to distribute them among his acquaintances.[85]

Many of the instructions in *Methods of Avoiding Epidemic Diseases* dealt with simple things such as ventilation and general cleanliness, which the average householder could easily understand and carry out. Humanitarian concerns, such as the importance of not being afraid to stay and care for sick loved ones, were also emphasised. However, there were also detailed descriptions of the preparation and uses of medicine, including Western medicines such as white soap from Holland, saffron, and ipecacuanha. Although large quantities of drugs like saffron were imported through Nagasaki,[86] there is some doubt as to whether they were readily available in rural communities. Chōei himself admitted this, for in the text he sometimes suggested alternatives to be used instead of these drugs in places where they could not be obtained. One of the procedures described was the distillation of sulfuric acid, which required a full day's work. Even if they had the necessary equipment, one must ask whether ordinary commoners would have had the time and energy to spend making a preparation such as this. Perhaps Chōei wished to encourage some industrious wealthy entrepreneur (of which there were many,

[83] Jennifer Robertson, "Sexy Rice Plant Gender, Farm Manuals, and Grass-Roots Nativism," *Monumenta Nipponica* 39, no. 3 (1984): 233-60, pp. 253-4.
[84] Robertson, "Sexy Rice," p. 252.
[85] Letter quoted in Maruyama, *Gunma no ishi,* p. 89.
[86] Martha Chaiklin notes 167 pounds of saffron in 1835 (personal communication, October, 1998).

physicians included), to produce and market it.

Thus, in many cases, the procedures described in *Methods of Avoiding Epidemic Diseases* make more sense if thought of as being transmitted by physicians to those they were designed to assist. Similarly, it is reasonable to surmise that it was those educated farmers who had the economic capacity and the courage to plant new crops who would have been most interested in a work such as *Treatise on Two Things for the Relief of Famine*. Certainly Takahashi Keisaku practised what he preached; there is evidence in his diary that he was still planting Fukuda Sōtei's 'three times buckwheat' in 1872.[87] Presumably, the seeds for these plants would have been rather expensive if not yet readily available. Hence, even if Chōei and the physicians planned to distribute seeds, without official support, their capacity to do so would have been limited. So they looked to encourage wealthy farmers to join in their plan, hoping to attract them perhaps as much by a desire for personal profit as a sense of humanitarianism.

In *Methods of Avoiding Epidemic Diseases*, one thing in particular stands out as an indication of the kind of people Chōei was trying to reach. In writing of the best method for preventing epidemic diseases, Chōei described the setting up of an isolation ward funded by wealthy merchants, farmers and powerful persons in a 'certain far away country'. Chōei saw this as an important way of preventing the spread of disease from person to person. He related it to instances in his own country where smallpox cases had been isolated, and suggested that this was the reason why there were some places now free from smallpox. In writing of the importance and need for hospitals, Chōei can only have been trying to mobilise those who had enough power or money to set them up.

Finally, perhaps the excursion of Takano Chōei and the Kōzuke physicians into the field of famine literature can be seen as a kind of preliminary professionalisation strategy. Douglas Klegon has described the process of professionalisation along two dynamics: the first, the internal dynamic, refers to the efforts of practitioners to raise their status, define their special services, achieve and maintain autonomy and influence through various strategies; the external dynamic

[87] Kanai, *Takahashi Keisaku nikki*, p. 459 (1872,4,16).

refers to the relationship of an occupation to arrangements of power and the way in which this relationship affects the social meaning of an occupation.[88] Although it is questionable to what extent physicians as a whole regarded themselves as a coherent group, and there was as yet no sign of a code of ethics, or calls for registration, scholars of Western learning seem to have had a strong sense of identity. They linked their families through marriage and adoption. They attempted to demonstrate the value of Western learning through the practical application of new knowledge (to which they had exclusive access through their mastery of the Dutch language) to distressing social problems such as famine and epidemics. Their attempts to gain both popular and official acceptance of their publications can be seen as a desire for recognition: not merely in personal terms, but of the worth of their scholarly realm.

[88] Douglas Klegon, "The Sociology of Professions An Emerging Perspective," *Sociology of Work and Professions* 5, no. 3 (1978): 259-83. See especially pp. 268-69, 271.

CHAPTER FIVE
'THE WAY OF MEDICINE': TAKAHASHI KEISAKU'S DAILY WORK

Takahashi Keisaku (1799-1875), of Yokō village, was the youngest of the three Kōzuke physicians. He was five years Chōei's senior, but he outlived his ill-fated teacher by twenty-five years. Apart from the time he spent in Chōei's school in Edo during the early 1830s, Keisaku chose to live his long life quietly in Kōzuke. The following study of his activities provides a valuable portrait of the daily work of a country doctor in the Edo period. In particular, it demonstrates that Keisaku had many other duties apart from those of a medical doctor, and that these other roles had a great influence on the way he conducted his medical practice. The chapter also gives an indication of the expanse of Keisaku's personal networks. His constant stream of visitors and varied social life suggest that this was an important part of the way that medical, technological, and other information came to reach the mountains of provincial Kōzuke.

Keisaku: a *gōnō* physician

Takahashi Keisaku sometimes signed his aesthetic works with the sobriquet '*hannō*', meaning 'semi-farmer'. It is fitting that he should do so, for an examination of his diary quickly reveals that it is very difficult to separate the various roles he played in his community as farmer, doctor, village official, and poet. During certain periods of his life, such as the year he served as village headman, one role was allowed to dominate his work almost completely. Most of the time, however, he worked here and there according to demand.

As a farmer, Keisaku possessed land with an assessed yield of 11 *koku*.[1] He was not the richest in the village, nor was a holding of this size especially large, but as one of only five landholders who had more than 10 *koku*, he was unquestionably among the village elite. His income also seems to have been substantially enhanced

[1] A *koku* is generally considered to be equivalent to 4.96 bushels of rice. The information on holdings in Yokō village comes from the appendix to the diary. Kanai, *Takahashi Keisaku nikki*, p. 602.

by silk farming; in the most profitable year of 1860, he sold his cocoons to a local merchant for as much as 15 *ryō* (1860,6,8).[2]

Keisaku appears to have done only a little of the farm labour himself; this fell mainly to his sons and to the women of the household. Many of his projects, including his period of study in Edo during the early 1830s, and the brief establishment of a secondary medical practice in Maebashi, were possible only because he was free from the daily workings of the farm. Indeed, one is struck by the apparent freedom of his lifestyle; he was frequently absent from home on medical business and on pleasure outings such as drinking and poetry parties. Keisaku's successive wives and his daughter-in-law Kise played a central role in supporting such a lifestyle. Even in 1873, when the household consisted of an aged Keisaku, Kise, her seventeen-year-old daughter Riya, and her two sons aged fourteen and eleven, the family still managed to record a harvest worth fifteen *ryō*. The crops included barley, soybeans, millet, glutinous and regular rice, red beans, wheat, and silk thread (1874,11,20). During the busiest times, other relatives and some wage labourers, both men and women, were employed. Similarly, after the death of his second wife, Keisaku arranged for the wife of his friend Yanagida Teizō to find him a housekeeper. This woman remained with Keisaku for some time, but was known in the diary only as the 'Echigo-baba' (old woman from Echigo) (1855,9,15).

That life was often difficult for these rural women may be seen from the numerous examples in Keisaku's diary of local women running away from their marital homes. In his capacity as a village official, Keisaku was responsible for marriage counselling in the community. This usually involved persuading a woman who had run away from her domestic situation to go back to her husband. Even within his own family, his daughter-in-law Kise ran away and spent a period of time at her maternal home before being persuaded to come back. His granddaughter Riya, who was married off to her cousin at the tender age of fourteen, sought refuge at home the following year, and was eventually allowed to divorce. His daughter Kano required marriage counselling too.

[2] All references to the diary text in this chapter come from Kanai, *Takahashi Keisaku nikki*. For convenience, references will be made to the text in the form (year, month, day/s). The abbreviation 'inter' refers to 'the intercalary month of'.

Keisaku's mediatory role did not stop there. As a member of the local elite, he was involved in the tax affairs of the village, sorting out the return of loans, serving as a mediator in local disputes, and similar activities. He served as village headman for one year only in 1857. In 1862, he asked to be relieved of his official duties, and passed his responsibilities to his son Keisuke, though he continued to be deeply involved in village affairs.

Keisaku did keep a careful eye on the agricultural work, however, especially the silk farming, and recorded in his diary the various crops planted and harvested. For silk farming at least, this was typical practice. Work was carried out by women and supervised by the male household head.[3] As a highly educated member of the rural elite, who experimented successfully in sericulture, Keisaku was a typical example of his *gōnō* class. He recorded his silk raising techniques in painstaking detail, bought in silkworm egg cards and some of his mulberry leaves, and raised both spring and summer crops of worms. This kind of experimental approach, carried out with meticulous care, that was taken by Japanese silk farmers during the Edo period has been described as an important factor in developing attitudes that shaped Japan's technological policies later on.[4] It remains to be seen in this chapter whether the same may be said for wealthy rural physicians in their approach to medicine.

The diary

Takahashi Keisaku's diary stretched over thirty-six years of the latter part of his life, from 1838 until 1874. Amounting to more than five hundred printed pages, it was published in 1995 through the efforts of his descendant Takahashi Tadao, and a local historian, Kanai Kōsaku. Rather than a literary work, the diary was a concise record of Keisaku's daily activities, medical visits, visitors, and of the workings of his farm. It also contained detailed observations of the economic market and some current affairs. On the back cover of one of the volumes, he wrote 'this diary should

[3] Tessa Morris-Suzuki, "Sericulture and the Origins of Japanese Industrialization," *Technology and Culture* 33, no. 1 (1992): 101-21, p. 112.
[4] Morris-Suzuki, "Sericulture," p. 121.

never be lost', which indicates something of the importance he attached to it.[5]

On the whole, the daily entries of the diary were kept remarkably faithfully. There were, however, several significant gaps in the record over its thirty-six year course. These lapses, which occurred in the years 1840-52, 1859 and 1866, each appear to have been associated with traumatic events in Keisaku's life. For example, although there is no overt mention of the event in the text itself, the final entry in 1840 came just six days after Takano Chōei was sentenced to life in prison. When Keisaku finally picked up his brush again at the beginning of 1853, Chōei had been dead for about two years. He entitled the new volume 'Silk Farming Diary', and there is little evidence of medical activity. His matter-of-fact style is particularly prominent at this time, as demonstrated by the first few entries:

1st Month
1st day Fine. Cold.
2nd day Warm.
3rd day Ditto. My wife died at about ten in the morning (1853,1,1-3).

Sporadic entries continued for a month or so, before settling down to a daily pattern. The next break came in 1858, following the death of his sister-in-law, Okono. The period surrounding her death too, was marked by infrequent diary entries, followed by a two-week lapse, and a fresh start in a new book. It was another five months, however, before entries become regular and informative again. Furthermore, the following year of 1859 is missing. Finally, the missing year of 1866 was that in which his youngest son Shirō, died of illness. In other instances of the death of friends or relatives, too, the entries immediately following often contained only weather reports, even if the diary was not left off completely.

Thus, although Keisaku seldom expressed his emotions in the diary itself, his writing appears to have been an activity significantly connected to the way he felt. The decade of silence prompted by Takano Chōei's arrest would seem to indicate that it caused an enormous upheaval in Keisaku's life. Similarly, the lack of medical activity following the recommencement of the diary in 1853, and the emphasis

[5] Kanai, *Takahashi Keisaku nikki*, p. 246 (1861).

during this period on silk-farming, suggest that the events of the *bansha no goku* may have discouraged him from practising medicine, only to return to it after Chōei's death. Judging from the number of medical visits he recorded, he appears to have made a full return to medical practice only in 1855.[6]

Even in 1873, nearly twenty years later, when doctors were required to submit their *resumes* to official inspection, Keisaku does not appear to have felt he could write the truth about his relationship with Chōei. He recorded in his diary the details that he planned to submit: that he began to study with Takano Chōei in 1826, much earlier than he really did, and that he returned home in 1828, though Chōei was at this time still in Nagasaki (1873,7,8). It is likely that in so doing he was trying to distance himself from the period in which Chōei found himself in trouble. Several days after this entry, however, he complained that 'due to the imprudence of the local authority' his *resume* had not been passed on, and he was forced to rewrite it. Unfortunately, he did not give any indication of whether or not he chose to tell the truth the second time.

Medical life

The average annual number of medical visits Keisaku made over the entire period of the diary was 126 visits on an average of 83 days per year.[7] The vast majority of visits were made in his own village of Yokō. Therefore, even taking into account the amount of time it took to travel from village to village on foot, this was far from a full time occupation. The busiest year was 1862, in which Keisaku made a total of 432 visits in 156 days. Notably, this was a year in which Japan was hit by epidemics of measles and cholera, which will be discussed in detail below. The smallest number of visits was made in 1853, the first year after the recommencement of the diary. All but one of the visits in this year were made to his brother-in-law and friend, Ōzuka Ampei.

Despite, or perhaps because of, the fact that there was not generally enough

[6] This view is shared by the editors of Keisaku's diary, and Tabata Tsutomu in his article, "Bakumatsu ni okeru ichi chihō ran'i no jiseki ni tsuite," pp. 45-58.
[7] Kanai, *Takahashi Keisaku nikki*, p. 576.

medical work to fill the days, when the diary opens in the fourth month of 1838, Keisaku had recently opened a secondary medical practice located in what is now the outskirts of Maebashi. Making an average of around one medical visit per day, his enthusiasm bubbled over into the translation in his spare time of a Dutch book by ten Haaf (1720-91).[8] The secondary practice was, however, abortive; he returned home to Yokō village just four months later. This decision may well have been based on his own state of health, rather than the failure of the practice, for during his four months in Maebashi, he was plagued by an eye infection (apparently caught from a patient) that affected his ability to read and write, and recurring bouts of fever, headache and ague. This was followed by a severe stomach cramp shortly after his return, which prompted him to request treatment from his friend and neighbour, Yanagida Teizō (1838,7,30).

Keisaku's medical work consisted of a mixture of home visits, examinations performed upon request at his own house, and the simple dispensing of medicine. There were also instances in which he examined patients at the house of a third person. Severe cases, or those in distant villages often involved an overnight stay, usually at the house of the patient. In other urgent cases, he sent his palanquin to fetch patients and bring them to stay with him (1857,9,8). Incidentally, Keisaku appears to have procured the palanquin, which was an important status symbol, in 1856 (7,22), the year after he returned to medical practice.

The name, sex, and native village of his patients were carefully recorded in diary entries. As one might expect of a country practice, there was a mixture of men, women and children of all ages. After the initial visit, most patients required one or two follow-up visits, often made on a daily basis. In severe cases, Keisaku sometimes made as many as nine or ten visits.

Payments were not generally mentioned in the diary. A separate record was

[8] Ten Haaf was a Dutch surgeon and lithotomist from Delft. The name of the book Keisaku translated was *Verhandeling over de voornaamste kwetzuuren, die den scheepsheel-meesteren kunnen voorkomen;mitsgaders over het niet of al afzetten der leden,*and was published in Rotterdam in 1781. A copy of Keisaku's manuscript, which he entitled *Gunchū Biyō* (*Preparations for the Battlefield*), is held by the Kyoto University Medical Library, and contains translations of the three chapters on bruises, gunshot wounds, and head wounds (Miyashita Saburo, "A bibliography of the Dutch medical books translated into Japanese," *Archives Internationales D'Histoire Des Sciences* 25 (1975): 8-72, p. 46). Another of Ten Haaf's books was translated by Satō Taizen (1804-72) (Goodman, *Japan: The Dutch Experience,* p. 175).

discovered, however, which detailed for one year only the medical problems of patients, the drugs used to treat them, and remuneration received. As these cases do not overlap with those in any of the years in the diary, Kanai has suggested that this record may have been for one of the missing years of 1859 or 1866.[9] Of the 114 patients treated in the year, 65 made some form of monetary payment, which ranged from ten *hiki* to one *ryō*. This would suggest that people paid whatever they could afford. In the diary itself, Keisaku commonly recorded only end-of-year presents such as fish and rice wine. These tended to be from students rather than patients. On the other hand, people quite often brought a keg of wine when they requested a house call.

The separate record of visits is also a valuable source of information about the problems Keisaku treated, for in the diary itself he did not usually reveal their nature. This does not seem to have been out of respect for privacy, for he happily named patients even when they had embarrassing problems such as syphilis (for example 1863,5,26). Perhaps this reflects, rather, the tendency of Chinese medicine to be more concerned with the patient's total physical state than with the diagnosis and description of individual diseases. According to the medical record, the great majority of problems Keisaku dealt with were gastro-intestinal disorders, with symptoms such as vomiting, diarrhoea and stomach pains. These were followed in number by syphilis and skin complaints, including scabies, and wounds. There were also fevers and chills, and eye inflammations. Women's disorders included morning sickness, cramps, and cracked nipples. Several of the syphilis patients were women. Worms, haemorrhoids, and urinary problems were also mentioned.

The drugs Keisaku used for treating these disorders reflect a mixture of herbs, imported medicines, and prepared medicines. In addition to common medicinal herbs such as peony, Chinese rhubarb, liquorice, and bitter orange, some medicines were referred to by generalised names such as 'stomach tonic', or 'pills for protecting the soul'. This suggests that they were probably prepared medicines, either mixed in advance by Keisaku himself, or bought commercially. Several of

[9] Kanai's summary of this document is provided in the appendix to the diary (Kanai, *Takahashi Keisaku nikki*, pp. 578-82).

these prepared medicines are listed in Keisaku's *Zuikōdō hōshū (Collection of Treatments at Zuikō's School).*[10] It was not unusual for the prepared medicines to contain a combination of traditional and imported ingredients. For example, a 'strengthening tonic' used a combination of cinchona, camphor, and bitter orange peel. Ipecacuanha was mixed with potassium tartrate (an emetic), flour, and sea onion for a purge. Other Western medicines Keisaku used were magnesia and jalap. Interestingly, in some instances he referred to drugs such as hollyhock and cinnamon by Western names (*alta*, *kaneel*, written in *katakana* script) while in others he referred to the same drugs by their Chinese characters. Did this depend on the source of his prescription? Or was he simply as comfortable with one name as with the other? In any case, his use of drugs as evidenced by these documents provides a firm indication of the 'hybrid' nature of *ranpō* medicine in the late Edo period.

Those problems which Keisaku did mention in the diary itself are almost exclusively surgical cases, often the result of accidents. For example, he attended several instances of attempted suicide (1839,2,20; 1856,6,7; 1861,8,20; 1865,8,4), farming accidents with hatchets and sickles (1855,11,3; 1862,3,5), injuries sustained when falling from or being trampled by horses (1861,8,11; 1870,10,3), and a patient who fell from a tree (1867,9,8). He often recorded the administering of cupping treatments, and the piercing of boils. Women with swellings on or in their breasts were another frequent problem. Other common diseases to appear in the record were syphilis, smallpox, and eye infections. Not all surgical cases were due to accidents: Keisaku treated a relative who had her ear cut by a retreating robber (1861,12,12). He also attended a policeman who sustained injuries to the shoulder, arms, brow, and behind the ear when trying to arrest a member of a rebel group (*akutō*) in the turbulent year of the 1868 Restoration (1868,9,6). Presumably, the fact that he specifically mentioned the details of these cases meant that they were unusual or interesting to him, while the silent majority of intestinal disorders was too mundane to record.

Although childbirth was traditionally attended by midwives, Keisaku appears

[10] This document is contained in Takano Chōei Zenshū Kankō Kai, ed., *Takano Chōei Zenshū*, Vol. I, 245-63.

to have had at least some involvement in obstetrics. He was called to two difficult childbirths (1860,1,11; 1862,2,10), and on two occasions carried out an 'operation' to remove the afterbirth (1855,1,5; 1870,6,4). In another instance, he dispensed a medicine to stimulate the discharge of the afterbirth rather than attending himself (1871,10,29). He was also present when his own daughter Kato was giving birth in 1863 (10,20). The baby was in the wrong position, and he called on a local doctor, Hayashi Kenryū, of Ōzuka village, to go with him and turn it around. He was required to remove the placenta in Kato's case too, which he did surgically 'with a hook'. Leaving difficult births in the hands of male doctors and restricting the use of obstetric tools among midwives is often discussed as part of the medicalisation of childbirth, and the gradual monopolisation by men of a traditionally female occupation. If Keisaku's role in obstetrics is any indication, this process was already underway in rural Japan. This is an interesting point, because birth was traditionally thought to be 'impure', and female relatives who assisted in the delivery were expected to observe a period of taboo.[11] Keisaku does not appear to have made any such observance, for he treated patients as usual the following day. Was, as Nishida Tomomi has suggested, the conception of blood as 'death' and 'pollution' giving way to the conception of blood as 'life'?[12] Or was the process of birth already seen to be a medical, rather than ritual activity? These questions are worthy of further investigation.

At the same time as Kato was giving birth, Keisaku's daughter-in-law, Kise, who was in the last month of pregnancy, had her waters break. She continued in this state, with no sign of labour pains, for the next five days. Keisaku became so worried about her that he resorted to writing three *waka* poems and took one of them to the local Shinto shrine to pray. While he was yet to return, Kise finally gave birth and he came home to find both mother and child doing well (1863,10,25). It is important to note that even as a doctor, he felt he could achieve more by devoting a poem to the shrine than by staying at the woman's bedside.

Keisaku does appear to have been circumspect about which cases he chose to

[11] Brigitte Steger, "From Impurity to Hygiene: The Role of Midwives in the Modernisation of Japan," *Japan Forum* 6, no. 2 (1994): 175-187, p. 177.
[12] Nishida Tomomi, *'Chi' no shisō* (Tokyo: Kenseisha, 1995) p. 2.

take on. He was not above putting his own needs before those of his patients. There were times when he refused to make visits because of a hangover (1856,11,23), because he was drunk (1861,3,28), because he had a cold (1855,3,4), or because the road was too hard for his old legs (1863,9,15). Some cases were simply rescheduled for a more convenient time. Others were refused on medical grounds. For example, in 1856 he refused to visit a patient because he 'disliked his medicine and the treatment would be of no use' (1856,3,9). Sometimes there was simply nothing more he could do. In 1855, after treating a woman with an unspecified illness nine times over a period of two months, she appeared to be making no improvement, so he refused to make any further visits (4,15). Similarly, when called to treat an infant with an intestinal tumour or ulceration, he judged the condition to be already too critical to treat (1856,10,28). In other difficult cases, such as Kato's confinement above, it appears to have been quite common for the local doctors to call upon each other's help. No matter how sick they might become, close relatives, friends, or influential people were watched over until the very end.

As a doctor, and a man who lived to a remarkably old age in a medically precarious world, Keisaku was no stranger to death. Within the space of two years, he lost his first and second wives to illness. As quoted above, his first wife Tsutako's death occurred at the very beginning of the 1853 'Silk Farming Diary', and her symptoms were not described. His second wife Isako, however, appears to have suffered dreadful stomach pains before her death in 1855. Keisaku sent a messenger to call for Teizō, but by the time he was able to come, she had already died (1855,7,10). Shortly, the tables were turned, when Teizō fell gravely ill later the same year. Keisaku stayed at Teizō's bedside for four nights before he died. Two other doctors acquainted with Teizō were present too: one local and one who had made the journey from Shibukawa (1855,11,17-21).[13] Keisaku's devotion to Teizō and his family may be measured by the fact that, over the years, he was present at the deaths of his adopted son Teizō (II) in 1861, and eldest grandson Sachūta, in 1865, and that he treated intensively his third grandson Asaburō (who was also his student)

[13] Kogure Sokuo (1789-1862). Kogure was a doctor and nativist scholar who studied medicine with Hanaoka Seishū and Takano Chōei.

prior to his death in 1872. In his own family too, Keisaku was forced to watch three of his five children die of illness.

Standing by, watching loved ones die, with so little in his power to help them, how did a doctor come to terms with his own inadequacies? Something of an answer may be found in Keisaku's case, in a preface he wrote for his student Yamamoto Taian, in 1859.[14]

> Listen and learn: medicine is the art of benevolence. Benevolence and righteousness are the highest ways of the world. They are not something made by people, but happen of their own accord.
>
> Thus, benevolence and righteousness, which are decreed by heaven, are called nature, and acting according to nature is called the Way. Lao Tsu also said that the Way is something that springs from nature. Therefore, a person who practices medicine should recognise that to suffer illness is in the first nature of humans, and treat others with a selfless sincerity and consideration.
>
> Although it is not at all bad to follow this basic advice, there is more to be said about the way of medicine. As the world changes and time passes, society strays from the Way of nature, and there are often no longer any seeds to grow into flowers. It is natural that people become sick, and natural that they recover. When a doctor gives people medicine, or uses various other skills to try to heal them, he is only assisting nature. Perhaps he can be called a servant to the natural powers of nature. There is something I always say. In medicine, there is only error, never success. To heal the various illnesses completely is to think deeply about and absorb the meaning of the power of nature. If, when all manner of medicines and skills have been exhausted to no effect, it means one's own thought has gone against the natural powers of nature, and this must be called medical error...

Thus, for Keisaku, medicine was subordinate to the natural healing processes of nature. It was 'natural that people become sick, and natural that they recover'. Presumably, it was also natural that some patients died, and in these cases, no matter what techniques the doctor might use, his efforts would be fruitless, and errant. When seen in this light, the turning away of difficult cases appears less cold-hearted. Indeed, though family members, close friends, and influential people warranted a compassionate bedside presence until the very end, the doctor could do little more

[14] This preface is reproduced in Kanai, *Takahashi Keisaku nikki,* pp. 183-4.

for them than if he had turned them away.

This was also the traditional attitude in England, where, as Porter and Porter described, 'Both medical theory and practice respected the fact that living and dying lay in Nature's hands, as the best Classical medicine stipulated, or were directed by Providence.'[15] It was the duty of physicians only to make the prognosis of death, so that people could prepare themselves properly; after that they were not necessarily expected to attend the death. In the eighteenth century, however, there was a gradual change in the perception of the physician's role at the deathbed. Increasingly, he was expected to provide comfort, often in the form of pain relief through alcohol and opium, and to attend as a friend, when there was nothing more to be done. Death, too, was slowly becoming medicalised.[16]

Of course, not all illnesses were incurable, and despite his shortcomings, the doctor was in demand. This was especially so during times of epidemic disease. In 1862, the Nakanojō region was hit by an epidemic. Keisaku first identified the epidemic as an outbreak of measles (*mashin*). He was quick to note that many 'foolish people' were dying from the overuse of medicines such as ginseng, poisonous snake, quinine, and saffron (6,26). By the middle of the next month, he found himself treating nine patients a day, and recorded that the patients had diarrhoea, collapsed, and died within twenty to thirty days.[17] He did note, however, that many patients who had the disease in combination with another medical problem, or who used a 'warming' medicine died, whereas only a few of those who used a 'cooling' medicine did so (7,18). A close friend who succumbed to the disease displayed symptoms of sepsis, and died within the space of five days (7,22-26).

Things went from bad to worse. At the beginning of the eighth month, prayers were being held to drive away the measles spirit. As the number of victims increased, Keisaku progressed from taking his favourite student Gōsai with him on his rounds, to sending him in his place. He found he had to limit his visits to his own

[15] Porter and Porter, *Patient's Progress*, p. 144.
[16] Porter and Porter, *Patient's Progress,* pp. 147-52.
[17] Diarrhoea is common in severe cases of measles in places where it is accompanied by protein-calorie malnutrition, such as rural Africa (Norman Grist, et.al., *Diseases of Infection An Illustrated Textbook* (Oxford: Oxford University Press, 1987)).

village in order to cope. Even so, he treated as many as eighteen patients in a day, lamenting the fact that instead of writing poetry, as he would normally be doing, he had to spend the beautiful clear, autumn nights in vain (8,15). During this period, he often did not return home until nine or ten o'clock at night. When the wife of his student Yamamoto Taian fell critically ill with the disease, Keisaku was forced to decline, much against his will, for the journey would take too long, and mean neglecting patients closer to home (8,16). At the end of the eighth month, he included news of an outbreak of a severe epidemic disease in Edo and along the Nakasendō, in Maebashi and Kiryū. It was popularly called *korori,* though Keisaku was sure the disease must be scarlet fever. He did not appear to relate this outbreak to the disease currently afflicting his community (8,30). Towards the end of the intercalary eighth month, however, someone from a nearby village died from *korori* disease (inter 8,21).

Keisaku's account of measles and the strange new *korori* disease is somewhat confusing. The word *korori* meant something like 'suddenly', or 'without resistance', and was used because of the alarming rapidity with which people succumbed to the disease. Later, when it was recognised as cholera, the term was used interchangeably with the word *korera*. In 1862, both measles and cholera were epidemic in Japan,[18] so it is quite possible that Keisaku's account is confused because the diseases were circulating at the same time.

Public health and vaccinations

As we saw in the last chapter, part of the doctor's role was to educate the public. At the time of an earlier outbreak of cholera in 1858, Keisaku recorded an official notice from Edo, which suggested cinnamon, dried ginger root, and longan[19] as protection against the disease. Its frightening capacity to kill in the space of days encouraged all sorts of rumours about its cause. Many of these reflected a resentment of foreigners, who, not surprisingly, were thought to have brought the disease with them. For instance, rumours suggested that someone had put poison in

[18] See Jannetta, *Epidemics and Mortality.*

[19] *Nephelium longana*, a plant related to the lychee.

the Tamagawa River in Edo, or that returning American ships had caused it by poisoning or doing a lot of washing in the sea (1858,8,15). Considering that cholera is often spread by contaminated water, perhaps the rumours were not so far off the mark. Keisaku simply commented that the rumours were a bad sign of the times. Another outbreak in 1874 prompted Keisaku to write: 'Recently, many adults and children alike suffer from sudden abdominal pain, diarrhoea, and vomiting. The children with severe cases can die within as little as a day and a night. This disease is popularly called *korori*, and it is said that if a sheet of red paper with the characters for 'horse' and 'cow' written on it is hung outside the doorway, the disease will not come inside. What absurdity!' (1874,7,6).

The achievements of *ranpō* doctors in helping to bring Jennerian vaccinations against smallpox to Japan have often been noted. It is arguable that the dramatic results achieved by vaccination did much to encourage the wider acceptance of Western medicine, not only among private physicians, but eventually by the Shogunate itself.[20] As Ann Jannetta has indicated, the difficulties of obtaining vaccine and keeping it alive brought together groups of Japanese physicians who eventually created 'a national network of physicians aligned with Western medicine'. These networks, she continued, 'became the professional networks that would successfully advance the cause of Western medicine in the Meiji era'.[21] Even here, however, the principle of practicality reigned. As Beukers has argued, variolation and vaccination were 'not accepted because they were theoretically better founded, they were accepted for their proven effectiveness'.[22]

Although the exact scale of Keisaku's work is unclear, he also had a role to play in bringing vaccinations against smallpox to his community. The first instance of this in the diary occurred in 1860, when he obtained a vaccine through connections he had with a local poetess, Morita Kōgetsu. She brought the vaccine with her from her village of Iwamoto. With this, Keisaku vaccinated his

[20] See Harm Beukers, "The Fight Against Smallpox in Japan. The Value of Western Medicine Proved," in *Red-Hair Medicine Dutch-Japanese medical relations*, ed. Harm Beukers, et al. (Amsterdam: Rodopi, 1991) 59-77.

[21] Ann Bowman Jannetta, "The Introduction of Jennerian Vaccination in Nineteenth-Century Japan," *Japan Foundation Newsletter* XXIII, no. 2 (1995): 6-9, p. 9.

[22] Beukers, "The Fight Against Smallpox in Japan," p. 76.

granddaughter Riya (1860, inter 3,4). Twelve days later, the family held a celebration for the success of the vaccination. After thus confirming that the vaccine had taken, Keisaku vaccinated his grandson from the next village (1860, inter 3,21). Two days later, he returned the vaccine to Kōgetsu in Iwamoto.

Unfortunately, we do not know in what form this vaccine came. The easiest way to transport the fragile cowpox virus was in the bodies of children who had recently been vaccinated.[23] Perhaps this is why Keisaku obtained the vaccine through a female friend, so that she might accompany a small child carrying the virus. Keisaku made no mention of a child, however, so it is possible that the vaccine was in the form of scabs. He made no further record of other vaccinations at this time. Given the difficulties of keeping the vaccine alive, however, and the careful delay he made between the vaccination of one grandchild and the next, he probably intended to use the vaccine for the wider community. A further interest in vaccination can be seen in the fact that his student, Yamamoto Taian, appears to have gone to Edo in the eighth month of the following year (1861), for a period of around two months to study under Ōtsuki Shunsai at the Edo Vaccination Institute and obtain a vaccination licence (1861,10,7).

In another entry, Keisaku visited a doctor in Nakanojō to obtain cowpox vaccine. With this, he attempted to vaccinate his two-year old grandson, Matsusaburō, but the attempt failed (1864,4,27). Presumably, the vaccine had already lost its potency. Later, this doctor, Noguchi Ryōsuke, was ordered by the prefectural government to carry out extensive vaccinations on all children under the age of ten years in 1871 (3,6). This appears to have been the first instance in which the government in this region actually had a role in promoting vaccinations against smallpox, despite the fact that some domains had taken an active stance as early as 1849, when the cowpox vaccine first arrived in Japan.[24] In other parts of Kōzuke, Annaka domain took up vaccinations in 1856, and Maebashi in 1857.[25] Perhaps the Nakanojō region was hindered by the fact that it was *hatamoto* land, and effectively under direct *bakufu* rule. Even though the cowpox vaccine had reached many areas

[23] Jannetta, "The Introduction of Jennerian Vaccination," p. 7.
[24] Jannetta, "The Introduction of Jennerian Vaccination," pp. 8-9.
[25] Maruyama, *Gunma no ishi,* p. 379.

of Japan in the first year of its introduction, vaccinations were not supported in the capital until 1858.[26] The Edo Vaccination Institute was made official only in 1860. An indication of the reluctance to embrace vaccination is that even the *hatamoto* overlord Tominaga lost two of his children, aged six and nine, to smallpox in 1857 (1,14).

On the other hand, it has been suggested that because of the limited rights that *hatamoto* had over their villages, their territories may actually have had more autonomy than elsewhere.[27] It is therefore difficult to explain why Keisaku, with his strong medical networks, took so long to promote vaccination in his village after his return to medical practice in 1855. Possibly, he had been so badly frightened by the events of the *bansha no goku* in 1839 that he did not feel free to participate until the *bakufu* government had given the procedure its full blessing.

Networks and book-lending

The logistics of keeping cowpox vaccine alive made it essential for regional doctors to co-operate. As we have seen in the example of Keisaku's poetess friend, even those from outside the medical arena were willing to help. These networks were, however, established long before the discovery of vaccine. For example, the local doctors living in Nakanojōmachi and its surrounds seem to have helped each other out on a regular basis. They called on each other to assist with difficult treatments, and often met at the houses of patients who could afford more than one doctor. Sometimes they lent each other equipment. In 1850, Keisaku received a letter from another doctor asking him to visit a certain patient. As he was unable to attend himself, he lent the other doctor a catheter (6,13). Further evidence for the way doctors co-operated can be seen in a letter from Takahashi Kenji of Shibukawa to Mochizuki Shunsai, of Nakanojō, in which Kenji apologised for administering medicine in Shunsai's absence, and asked him for his opinion of the treatment.[28]

Keisaku often stayed the night at Teizō's house in Isemachi, sometimes

[26] Jannetta, "The Introduction of Jennerian Vaccination," p. 9.
[27] Howell, "Social Disorder and Moral Reform in Late Tokugawa Japan" pp. 4-5.
[28] Kanai Kōsaku, "Takano Chōei monka Nakanojōmachi Mochizuki Shunsai no hizō monjo o haiken shite," *Gunma Bunka* 247 (1996): 19-32, p. 24.

returning home from parties there 'well inebriated' (1839,10,30). He continued to visit and stay the night occasionally even after the death of his friend. With the addition of the local pharmacist Negishi Shūzō, Keisaku and Teizō appear to have formed something of a threesome. They often boiled up ointments together at Shūzō's house, which was situated quite close to Teizō's in Isemachi (for example 1839,10,25). It was without doubt a convenient location, for Shūzō was the proprietor of a combined drug store and brewery. Not only were the ingredients for the ointment close at hand, but the wine for parties afterwards, too. All three participated in Takano Chōei's lecture series in 1833, and Shūzo's name also appears in Chōei's letters. Keisaku often exchanged books with Shūzō, whose reading interests extended to books on poetry, medicine, and calligraphy.

Indeed, one of the ways in which the doctors cemented their relationships was through the exchange of books. In the absence of public libraries, the private exchange of books in the Edo period was common practice.[29] Even with the advent of publishing, it was still common to copy complete books by hand, especially if they were rare.[30] There are numerous instances in Keisaku's diary in which he and his students copied the books they borrowed, especially those concerned with Western learning.

Keisaku kept a library notebook between the years of 1826-37, and from 1845-8, in which he recorded the titles of the books he borrowed and lent, and the names of the people who borrowed them.[31] Later, he no longer kept a separate notebook, but made entries in his diary noting when books were lent or returned. As might be expected, most of the identifiable borrowers of medical books were doctors (with the notable exception of an ascetic monk). Interestingly, it is largely the same group of names which appears against the titles of all kinds of other books, ranging from *waka* and *haikai* poetry collections, to Confucian studies, to Chinese poems, to military and travel tales and books about manners and customs. In the library notebook, there is a marked drop in the number of medical books loaned after 1845,

[29] Kornicki, *The Book in Japan*, p. 405.
[30] Kornicki, *The Book in Japan*, p. 243.
[31] A summary of the notebook appears in the appendix to Keisaku's diary (Kanai, *Takahashi Keisaku nikki*, pp. 525-32).

which is probably a reflection of the period in which Keisaku was not working as a doctor. One of the most frequent borrowers, of both medical and other books, was Teizō. Similarly, Keisaku borrowed many books in return, including copies of the Analects, a military biography, a book on gonorrhoea, books of *waka* poems and many others.

If Keisaku did not buy his medicines from Shūzō, then he bought them from the owner of another drug store in Nakanojō, Koitabashi Kensai (1798-1862). Kensai had been born into a priestly family, but handed his hereditary responsibility over to his younger brother and became a doctor. After studying medicine under Hanaoka Seishū, he returned home to run the pharmacy. Both Kensai and his brother Yoshisato, who did become a Shinto priest, exchanged books with Keisaku. Yoshisato, the priest, was interested in *kokugaku*, poetry, language, and orthography. In 1856, he asked Keisaku to write out a copy of the Sanskrit alphabet for him. It is a fine reflection of the level of Keisaku's skill as a calligrapher that he was able to do so.

Kensai, the pharmacist, was interested in Western medical books and *kokugaku*. By the nineteenth century, local intellectuals were expected to have knowledge of both *kokugaku* and *rangaku.*[32] Both schools of scholarship were influenced by the concept of *jitsugaku,* or 'practical learning'[33] and it is perhaps this aspect, in addition to the very strong influence of the Shinto faith in the local community, that attracted commoners such as Kensai and Keisaku. For example, in 1860, Kensai lent Keisaku a *kokugaku* book written by Ōta Junzō (1816-62), a patriot who rejected the spread of Western learning and called for a 'holy way'. This book appears to have greatly impressed Keisaku with its 'unshakeable opinions' (1860,11,30).

It is possible that Keisaku's interest in book lending was inspired by Itō Chūtai, his teacher of medicine from Shinano. He, too, appears to have had an extensive library and book lending network. According to the research of Aoki Toshiyuki, many of the books in Chūtai's collection were hand-written manuscripts,

[32] Miyachi, *Bakumatsu ishinki no bunka to jōhō,* p. 23.
[33] Aoki, *Zaison rangaku no kenkyū,* p. 77.

for he was a diligent copyist. Although Chūtai was a doctor of *koihō* medicine, he was interested in Western medicine too, and made copies of many Dutch books during a period in which he was working at Osaka castle.[34] Indeed, it was thanks to Chūtai's copy of Keisaku's notes that historians were able to learn of Takano Chōei's lecture series in 1833. As documented in Keisaku's notebook, the two also shared other books. Several books in their respective collections overlap, indicating that they may have been copied from one another. In addition, Chūtai appears to have been a frequent visitor at Teizō's house, where he made copies of Chōei's books. He recorded the fact that the books were Teizō's along with the date that he copied them in the back of at least two of these.[35] As for Chūtai's own book lending network, Aoki cited at least one example that another doctor was willing to pay Chūtai to borrow and copy his books.[36] The exchange of books between Chūtai and Keisaku demonstrates that book lending was not limited to close-knit village circles, or even between Edo and individual villages, but was also developing interregional links in country areas. Importantly, the links in this case were facilitated by a teacher-student relationship.

Keisaku was also visited at least once by a commercial book-lender, which suggests that they were not merely a phenomenon of the cities, but were permeating rural areas too. On this occasion, he returned ten volumes of a well-known Chinese novel, and borrowed another ten of the next series (1856,12,4).[37]

Village officials, poetry circles, religious and cultural activities

Keisaku's book lending network consisted not only of doctors, but also of poets, officials, and other educated members of the local elite. These relationships provide a good picture of the way private circles overlapped with official ones. Nagai Jōzan (Ryūsuke), for example, was a village headman from Tochise, in

[34] Aoki, *Zaison rangaku no kenkyū*, pp. 192-3.
[35] Aoki, *Zaison rangaku no kenkyū,* pp. 202-4.
[36] Aoki, *Zaison rangaku no kenkyū,* p. 206.
[37] The novel was *Seiyūki*, by the sixteenth century writer, Wu Ch'eng En. It was a grand novel based on traditional stories about a T'ang dynasty prince's travels to India. It would be interesting to know whether or not Keisaku read it in the original Chinese.

Keisaku's village of Yokō. As a fellow official, Keisaku shared with Jōzan the official business of the village. On a personal level, too, they had much in common. Like Keisaku, Jōzan was a wealthy farmer who had interests in silk farming. He was a painter, and exchanged books with Keisaku on subjects such as *haikai* poetry, Confucianism, and Dutch grammar. Perhaps the most significant indication of the way their public and private interests overlapped is that Keisaku entrusted Jōzan's two sons with the hands in marriage of his two daughters, Kano and Kato. Thus related by the marriage of their children, they shared a close and binding relationship.

Keisaku was also close to his brother-in-law, Nara Ampei (1809-65), who lived in nearby Ōzuka village, and was married to Kono, the younger sister of Keisaku's first wife. Like Keisaku, Ampei was a wealthy farmer, and a distinguished local poet. Throughout the diary, Keisaku can be seen visiting him on a regular basis, often staying the night. At least one of these visits was a *renga* poetry party hosted by Ampei (1855,2,5). The two loaned each other books of poetry, and it was Ampei whom Keisaku trusted to correct his *waka* poetry. When Kono fell ill, Keisaku treated her intensively, and as noted above, her death appears to have caused a lapse in the diary.

Keisaku's status as a village official gave him many important connections to others of similar standing. Not least of these was his relationship with Negishi Kenbei (Kenroku) of Isemachi, who was employed as the *daikan* (intendant) of seven villages in the area. Kenbei had duties at the official residence in Edo every second month, and was thus an important source of news for those who remained in the village. For example, he passed on news that he received about the activities of the Americans, as noted by Keisaku in the following entry: 'It is said that the Americans have been granted three thousand *tsubo* of land in Shimoda, in Izu province, to land their ships. The American ship is still in the bay in Izu. Negishi said that he received a letter from the Hoshina (*hatamoto*) residence in Edo.' (1854,4,6). There is evidence that Kenbei purchased and brought back *rangaku* books that Keisaku requested from Edo (1857,2,24). Furthermore, during the 1830s, Kenbei seems to have served as messenger and co-ordinator of correspondence between Takano Chōei and the group in Kōzuke (1839,9,12). This means that the highest local representative of *bakufu* authority in the village was not only 'on-side',

he was an intimate member of their circle of acquaintance.

Something of the breadth of Keisaku's role as an educator and local intellectual in his community may be seen from his involvement in poetry circles. He was a keen poet, and served as a local adjudicator, or *tenja,* for many surrounding villages. He consistently recorded the requests he received for *haikai* adjudications in his diary, and sometimes also the remuneration he received for this work. Interestingly, many of these requests were associated with village shrines. In such cases, Keisaku was probably employed to make a selection of outstanding poems, which would be framed and presented to the gods at the shrine concerned. The devotion usually included a prayer for continued progress in writing poetry.[38] As we have seen, he sometimes dedicated his own poems too.

Poetry or 'elegant' parties were an important part of the social scene. Those attended by Keisaku appear to have been intense affairs, often lasting two or three days, and with a period of consultation and anticipation before the event. For a party held by his friend Hokkei of Arigawa village in 1857, he was wooed with *sake* and snacks several days in advance in order to persuade him to write a flyer for the event (1857,7,17). He stayed two nights at the party; the whole day in between was spent writing, painting and drawing (1857,7,29). Two weeks later, the same group of poetry friends (including the poetess, Morita Kōgetsu) gathered again for a moon-viewing, and Keisaku stayed another two nights at Hokkei's house (1857,8,15). If the diary is any indication, such parties were held quite infrequently, and the gatherings themselves appear to have been less important than the relationships they fostered. Hokkei, for example, was a frequent visitor at Keisaku's house. He often came bearing gifts of *sake,* which presumably the two shared.

In another example of a poetic gathering, the following year, a group of Keisaku's beginner poetry students brought some wine, and they wrote poetry together until daybreak to commemorate the death of the poet Bashō (1858,10,12).

The poetess Morita Kōgetsu, of Iwamoto village, was the niece of a well-respected poet, Gotsū. When her uncle died, she asked Keisaku to write the inscription for his memorial tablet, and had him organise a special poetry session in

[38] Aoki Toshiyuki, (personal communication, September 1999).

his memory (1855,3,28). Kōgetsu associated with Keisaku over a period of many years (gradually he came to call her 'old Kōgetsu'). Eventually, she came to live with a wealthy merchant in Nakanojō (1871,8,22).

Another contact Keisaku made through his interest in poetry was Inō Setsuryō. Setsuryō was a village headman from Iwamoto, where Keisaku had many poetic friends. Although Setsuryō was seventeen years younger than Keisaku, he became a regular visitor after 1860, often bearing gifts of *sake* and staying the night. Together, they seem to have been involved in a *kōshin* religious fraternity, and on more than one occasion, the purpose of Setsuryō's visit was to ask Keisaku to write the inscription for religious stone monuments (for example 1862,1,18).

There is an interesting relationship between the *kōshin* religion and medicine. Originally, the religion came from a Taoist tradition that there were three worms, which lived in the head, stomach, and lower part of the human body. They were present in the human body from birth, and each worm was associated with the three human desires for material wealth, food and drink, and sexual gratification. The word *kōshin* referred to a year or day in the Chinese sexagenary cycle. On these nights, it was believed that the worms, who knew all about one's human failings, would creep away to reveal one's sins to God, and thus shorten one's life. Therefore, people stayed awake all night on these nights.[39] As the tradition became associated with Buddhism, priests and ascetics, who often served as medical healers, encouraged the formation of *kōshin* groups all over the country. Yamazaki Ansai called for a 'Japanese' *kōshin* religion, and associated it with the Japanese god, Sarudahiko no Mikoto. Thus, the religion had Buddhist, Shinto, and Ascetic versions, and the wakeful night ranged from a time for reflection to an all-night party.[40]

The worms themselves were sometimes conceived of as godly, and sometimes simply as ordinary parasitic worms. In this way, the religious and medical aspects of the tradition became confused, and the three worms were often

[39] Shirasugi Etsuo, "Senki to Edo jidai no hitobito no shintai keiken," in *Rekishi no naka no yamai to igaku*, ed. Yamada Keiji and Kuriyama Shigehisa (Kyoto: Kokusai Nihon Bunka Kenkyū Sentaa, 1997) 63-92, pp. 80-3.

[40] See *Kokushi daijiten*, Vol. 5, pp. 397-9.

associated with common medical problems such as colic. Indeed, the story of the worms was included in Japan's oldest medical book, the *Ishinpō*. Even when the role of healing began to be filled by secular doctors rather than Buddhist priests, *kōshin* ideas continued to be propagated by medical men.[41] Perhaps Keisaku's strong association with the *kōshin* religious fraternity reflects this traditional relationship.

Keisaku's poetic skills and interest in Western studies seem to have served him well when he visited Edo on official business in 1857. At the time, he was employed as the village headman, and made the customary New Year's trip to the residence of the *hatamoto* overseer of the village, Tominaga Magorokurō. Tominaga appears to have been interested in Western learning, for during Keisaku's visit he asked to see an original Dutch book, which Keisaku gave to him, and Keisaku in turn was ordered to go and inspect a collection of Dutch grammar books at the house of Tominaga's relative. Upon Tominaga's request, Keisaku gave him two notebooks of poems he had written, and requested poetry notebooks in return from Tominaga and his wife (1,14; 1,16). This kind of exchange demonstrates something of the privileged position village officials such as Keisaku held when it came to obtaining information, and the way in which literary pursuits such as poetry facilitated social interaction.

Incidentally, this trip was quite an adventure for Keisaku, for it is the only one he made to Edo throughout the entire period of the diary. It is possible, however, that he never wanted to go again. Despite the fact that he rode a horse for much of the journey, he complained of a sore knee and muscle pain that was 'extremely hard to bear' (1857,1,9). After he returned, he suffered from infected blisters on his toes, which gave him a burning pain that made walking difficult, and forced him to send his son Keisuke to attend his duties in his place (1,25). The pain did not even begin to ease until twelve days after his return, and he does not appear to have gone anywhere for about a month.

Not only was Keisaku a respected poet, he was also a calligrapher and was interested in art. He kept a sizeable collection of paintings, scrolls, and decorated fans. There were innumerable instances in the diary in which his artwork was

[41] Shirasugi, "Senki to Edo jidai no hitobito no shintai keiken," pp. 80-3.

commissioned by friends and neighbours. Sometimes he made a note at the end of the year of the money he received for his paintings, writing, and poems (1860,12,30). It does not appear to have been a large sum (a little over one *ryō* for 1860), but the fact that he recorded it suggests that it had a certain significance for him. As a further example of Keisaku's role as an authority in his community, in 1869, when people were required to change their personal names to fit certain specifications, villagers came to him for help in choosing their new names (1869,10,1; 1869,12,28; 1871,3,11).

Travellers

Poetry, medical, and social circles came into play when travelling poets, artists and scholars were passing through town. Travellers often came with letters of introduction supplied by members of a network. From the diary, it can be seen that Keisaku played host to many poets and scholars from far-away places. These visitors included priests from Mt Haruna and Shinshū, doctors from Shikanuma (now Tochigi prefecture), Echigo (Niigata), Osaka (though Keisaku was absent and missed him), Kanazawa (Ishikawa), and Kyoto. Travelling poets and calligraphers visited from places such as Echigo, Numata and Edo. Depending on how well he liked the visitors, Keisaku might give them money or board for a night. For example, in 1865 he wrote, 'A medical student by the name of Satō Jun'an visited from the post-station of Kōnosu. He was quite a calligrapher, so I gave him one *shu* in coins' (1865,5,26).

In 1863, a Chōshū Confucian scholar by the name of Sekiguchi came bearing a letter of introduction from Gakkai, a priestly associate of Keisaku who was interested in poetry and painting. At the time, his house was in a mess and he felt unable to put up the visiting scholar, but he took him instead to the house of his chief medical student Gōsai. Keisaku in turn wrote the visitor an introduction to a house in Nakanojō (1863,6,6). In this way, travellers could literally move along a chain of social networks forged by common interest.

Wealthy rural commoners such as Keisaku were usually happy to have new company and stimulation. When he had a visit from a poet by the name of Gen'a in 1864, he enthused that their discussions about poetry were 'extremely interesting'.

Gen'a stayed five nights before Keisaku sent him on to Isemachi with an introduction to Negishi Kenbei (1864,8,23).

Sometime in the 1830s, Takano Chōei too, wrote a letter to Teizō introducing his friend Fukuda Hanka, visiting from Edo:

> The bearer of this letter is called Fukuda Hanka, one of the closest of my friends. He is a landscape painter and since he was keen to visit the area, he asked me to write a letter of introduction to (you and to) Sawatari too. His character is certainly not that of an aimless wanderer: he is a very upright and warm hearted man. Please look after him. He would like to earn a little money, so I hope you will help him in this respect too. Please talk to Keisaku-*shi* and be so kind as to act as his guide. Fukuda will tell you all about my circumstances. I will write everything in a later letter. In the meantime, I write in haste to ask you this favour. Please give my best regards to your wife.
>
> 16th day of the New Year
> Takano Chōei
> To Yanagida Teizō-*sama*[42]

There were of course, unpleasant exceptions. In 1861, Keisaku was visited by a Numata poet who 'pressed him' into an exchange of *renga* poetry. After a stay of three nights, Keisaku's sigh of relief can almost be heard as he wrote 'Shūkei finally left' (1861,9,3). Furthermore, not all such travellers were genuine, as may be seen by the following entry: 'There is a man going by the name of Hattori Eijirō, who presents himself as a student of (the poet) Satō Issai. Saying that he is extremely poor, he sells fake copies of Issai's books. This is literary imposture. He uses the pen name Shōan, which is also a false name'(1863,4,7).

Travellers were great sources of information. As Tessa Morris-Suzuki has noted in her *Technological Transformation of Japan,* the benefits of travel for the spread of technology were well recognised by domains, which 'encouraged a small but significant direct flow of skilled workers from one district to another'.[43] As can be seen from Keisaku's diary, private travel also had an important role to play in bringing news and knowledge. When for example, a pharmacist from Shinshū visited Keisaku a few days after the great Kanto Earthquake in 1853, he brought

[42] Takano Choun, *Takano Chōei den*, p. 316.
[43] Tessa Morris-Suzuki, *The Technological Transformation,* p. 33.

news of damage done in the provinces of Kai and Izu (1853,11,18). When a doctor from Kanazawa came, he stayed two nights and Keisaku talked about medical matters with him 'all day'. He recorded in the same entry the titles of several medical books, presumably recommended by the visitor (1861,3,8).

Often, members of the rural elite seem to have shared their special visitors with others in their circle. For example, when the Numata calligrapher Ubukata Teisai (1795-1856) visited Teizō in 1839, Keisaku went along to meet him, participated in a sight-seeing day trip to Sawatari, and stayed the night at Teizō's house (1839,4,25). From Takano Chōei's letter above, it can be imagined that a similar expedition was arranged for Fukuda Hanka.

Apart from private houses, Keisaku often appears to have met other doctors at the local pharmacies, which were natural gathering places for those interested in medicine. Drinking establishments were another source of interesting contacts. At Negishi Shūzō's business, which was both pharmacy and brewery, the two of course overlapped. One of the more unusual examples of Keisaku's visitors was a retired *sumo* wrestler from Edo, whom he met at one of his regular drinking places when he called in on his way home from a fishing expedition. He gave the visitor some fish, and as he was apparently interested in elegant pursuits, he invited him home to stay the night (1863,9,22).

Old age

As he became older, Keisaku's students became an increasingly important part of his life. They came to him at various stages of their lives, and for various reasons. Many of the youngest students were the children of local village officials who learned basic literacy skills. Others came to read the Confucian classics, to study poetry, calligraphy, *rangaku,* and medicine. The older students became friends, drinking partners, and colleagues with whom to share information and books. Although Keisaku recorded the instances when students first came to him, he unfortunately did not usually give details of the lessons thereafter. Poetry students often appear to have come in groups, whereas other promising students were given individual attention. The frequency of lessons also appears to have varied. The eight-year-old son of Keisaku's closest disciple came for lessons four or five times a

month, whereas older students visited much less often, presumably because they had other commitments. Keisaku appears to have written many 'model texts', which he gave to students to study and copy. Upon request he would give lectures on specific books, such as certain of the Confucian classics or medical books (1860,10,12; 1868,3,7).

Far from spending a quiet retirement, Keisaku was encouraged by his students to remain academically active right up until he died. In 1874, the final year of the diary, Keisaku spent the entire year working on an anatomical book called *Zentai Shinron (New Thesis on the Whole Body).* Koitabashi Ryōsaburō, successor to the Koitabashi pharmacy, brought the book to Keisaku early in the year, requesting that they read it together (1874,1,25). It was not long before another medical student joined in. Not only did Keisaku read it with his students, he was inspired to write a commentary on it, which he spent the remainder of the year writing and revising. *Zentai Shinron* was written in Chinese by the English medical missionary, Benjamin Hobson (1816-73). It was published in Shanghai in 1851, but was not printed in Japan until 1857. Though he probably did not know it, Keisaku was actually beaten to the post by Ishiguro Atsushi, who translated and published the work as *Zentai Shinron Yakkai* that same year.[44]

1874 was also the year in which Yokō village opened its own school, in the hall of the village temple.[45] Keisaku made a generous donation of fifteen yen to the school, and attended all day for the first two days of classes. In consultation with the local administrator, who was a long-time student and friend, he researched and wrote the school regulations. He was also in close contact with one of the first school teachers, Seki Saburō. The two exchanged books, and read school texts, such as Fukuzawa Yukichi's *Gakumon no susume,* together (1874,9,15; 12,9).

Despite living on into the early Meiji period, in many ways Keisaku's life as a doctor and local intellectual continued as it always had. As long as official policy did not begin to encroach too much into the rhythms of his daily life, he appears to have been content not to comment on events in the wider political realm, at least in

[44] Nichiran Gakkai, ed., *Yōgakushi jiten,* p. 401.

[45] After the beginning of the Meiji period, the influence of Shinto in the village was extremely strong. Perhaps the Buddhist temple was all but unused. See Kanai, *Takahashi Keisaku nikki*, p. 513.

his diary. He was the kind of man who, when there was a ban on the traditional celebration of 'little new year' in 1867 due to the recent death of the Emperor Kōmei, simply made his rice cakes secretly at night.[46]

This does not mean to say that he was always happy with the changes that he saw around him. In 1868, in the midst of a spate of looting and arson attempts on the houses of local well-to-dos, he complained: 'the lawlessness of the world is truly frightening'(1868,3,28). Again, he was quite critical of the new government's policies:

> The national laws are still undecided. The official notices are all sent out in the morning, only to be revised in the evening. Many of the taxes on transportation and the like are unfair. In the first notice about silk farming, we were asked to write down the yield for the last five years, now it is thirteen! (1872,3,29)

Despite his interest in Western medicine, Keisaku appears to have been wary of the Westernisation of Japanese culture. In 1867, he wrote:

> According to the orders of the Shogunate, the various military families gradually have begun to wear foreign-style clothing, let their hair and beards grow long, and have ruffles at the wrist. Clothing is sewn together and of foreign origin, people wear shoes when they present themselves at the castle, and sit on chairs even in front of their superiors. Japanese customs are disappearing more and more, and to see the way they are assimilated into Western ones is vexing and truly a terrible shame (1867,2,30).

With regard to changes in medicine, although he made a note in his diary of new pharmaceutical standards in 1874 (8,31), he did not mention the laws passed in the same month, which made examinations in Western medicine compulsory for all new practising physicians. It was Keisaku's students, rather than he, who had to deal with these changes. One wonders whether, had he lived, Keisaku would have taken these changes in his stride, much in the same way as he embraced the new school system. His students certainly kept him up to date with the latest developments. In the year before he died, in addition to working on his commentary for *Zentai*

[46] *Koshōgatsu* was celebrated around the fifteenth of the first month according to the lunar calendar, and along with the making of rice cakes, involved several kinds of festivities related to agriculture.

Shinron, he copied a clipping of a Tokyo newspaper with news that Gotō Shōbun had developed a treatment for leprosy (1874,4,14), and was reading Japan's first medical journal, Tsuboi Shinryō's *Iji Zasshi* (1874,6,22). This journal was published by Shinryō in monthly instalments, between the years 1873-5. It contained translations and annotations of new theories discussed in Dutch medical circles.[47]

Rangaku and modernity

There is some evidence, however, that the changes occurring in the field of medicine during the Meiji period were not always easy to cope with, even for students who had been trained to an extent in *rangaku.* Seki Gōsai (1844-1907) was Keisaku's closest disciple. The first mention of him made in the diary was in 1857, when Keisaku sent him to the pharmacy in Isemachi on an errand (5,12). Although it is unclear whether he actually lived with Keisaku, he appears to have been an apprentice in a true sense, for he was also required to help out with silk reeling, weeding, and other household tasks (1857, inter 5,18; 6,7). By the time of the epidemic in 1862, Gōsai was making visits as a locum for his teacher. Keisaku gave him the freedom to set up an independent practice in 1863, at the age of nineteen (1863,4,3). Nevertheless, the two continued to maintain a firm friendship, and Keisaku began teaching Gōsai's son, Gōzō (who later became a dentist), in 1871 (3,5).

On the other hand, Gōsai had also been studying *kokugaku* with the Shinto priest, Koitabashi Yoshisato, and became devoted to the imperial cause.[48] In 1873, he was appointed to the local Shinto shrine. In 1877, after Keisaku's death, he gave up this post, and made a return to medicine, entering the prefectural medical school. He passed the medical examinations in 1879, and gained an appointment at a public hospital. Shortly before he was meant to take up his post and begin private practice in Numata, however, he suddenly had a change of heart, and decided instead to go to Tokyo. His objective was to study *rangaku* and surgery, and become a military

[47] Nichiran Gakkai, ed., *Yōgakushi jiten*, p. 122.

[48] The information in this section is based on selections from Gōsai's *Tokyo Diary*, introduced in Kanai, "Rangaku to waga Nakanojōmachi," pp. 1146-51; and Kanai, *Takano Chōei to Agatsuma,* pp. 38-9.

doctor. Before departing, he visited Fukuda Bundō (Sōtei's son) in Sawatari to ask for a letter of introduction to the army doctor Hayashi Kenkai (1844-1882), son of the leading *rangaku* scholar, Hayashi Dōkai (1813-1895).[49] When he met Dōkai in Tokyo, however, he was told that *rangaku*'s heyday was already over; he should learn French or German instead. Furthermore, at the age of thirty-six, he was already too old to become a military doctor. For lessons in surgery, he should approach Satō Taizen of the *Juntendō* school. Gōsai, however, remained adamant. He wanted to learn *rangaku.* He could still remember some of what he had learned when young, and at his age, surely it would be better to continue with Dutch than begin a new language. No matter how he pleaded, however, Dōkai would not agree, and Gōsai, who had run out of money, turned dejectedly homeward, selling his books and clothing to pay for his journey. He returned to private medical practice and to the Shinto faith, opening a private school, which he called *Kōdōgakkan (Hall of Learning for the Imperial Way*).

Actually, Gōsai's desire to study more *rangaku* may not have been his own, but his teacher Keisaku's. In a letter to Fukuda Bundō, Gōsai wrote, 'I cannot throw away the instructions given me by my deceased teacher. Even if this field of learning continues to decline and one day becomes obsolete, I will have not the slightest regret about becoming outdated with it'.[50] Gōsai was already a qualified medical practitioner, and he had no practical need to study *rangaku* texts any further. Indeed, the study of *rangaku,* and the Dutch language, in particular, had become something quite divorced from the study of modern, Western medicine. In 1870, the Japanese government decided that Western medicine would be introduced on the basis of a German model, and a succession of German professors was invited to teach in Japan. The study of Dutch language and the translation of Dutch texts became practically obsolete. Gōsai's journey to Tokyo is best seen as a tribute to his teacher Keisaku, who had left him with the legacy of a dying art. It was Gōsai, rather than Keisaku, who had the uncomfortable experience of trying to straddle two worlds,

[49] Fukuda Bundō (1841-87) had studied under Hayashi Dōkai in Edo, but the letter of introduction was to his son, Kenkai. Perhaps this was because Gōsai expressed an interest in a military medical career. In Tokyo, Gōsai appears to have met Kenkai first, and then requested a meeting with his father Dōkai.

[50] Kanai, "Rangaku to waga Nakanojōmachi," p. 1149.

and discovering that the one he knew best had lost its very meaning.

Similarly, it was the new generation of local doctors who began to experience the professionalisation of medicine. They undertook formal schooling and examinations, were appointed to newly established hospitals, and joined professional medical associations. It was a world far removed from that in which local doctors, with little sense of territorial competition, studied together, shared books and knowledge, and even patients.

Some scholars have discussed the importance of *rangaku* in terms of the creation of a social foundation for modernisation. Bartholomew, for example, noted the importance of Western studies in the Tokugawa period, not for intellectual development, but for recruiting talented scholars to science after 1868.[51] Goodman granted *rangaku* a role in fostering a 'curiosity about the West' and helping *rangaku* scholars to identify European techniques as superior, which assisted in smoothing the way for the rapid assimilation of Western knowledge in the Meiji period.[52]

One must be wary of interpreting the changeover from *rangaku* to Western medicine that was led by these men as a simple, linear process. Seki Gōsai re-trained and served his community as a doctor of Western medicine in the early Meiji period. In this sense, he may be seen as one of *rangaku's* recruits to modern medicine. However, the story of his aborted trip to Edo to study surgery and *rangaku* demonstrates that his belief in the value of *rangaku* was not to be equated with a belief in the path to the new, Western modernity. Gōsai studied Western medicine as was required of him by new laws, but this did not prevent him from wanting to study Dutch. Importantly, he still wanted to study it despite the fact that he knew it was outdated. We are reminded that 'progress' did not always happen in the patterns in which we might expect.

Having said this, it is important to remember that nineteenth-century European medical practice was yet to enter the age of bacteriological discovery. Physicians in Europe and America, just as much as in Japan, were struggling to come to terms with the implications that science held for medicine. During the long

[51] James Bartholomew, *The Formation of Science in Japan* (New Haven: Yale University Press, 1989) p. 4.
[52] Goodman, *Japan: The Dutch Experience*, p. 234.

Tokugawa period, a slow process of medical change took place, which was brought about in response to the assimilation of, and developments in, both Chinese and Western ideas. By the time the Meiji government passed the law requiring all physicians to study Western medicine, the Japanese physicians were in a similar position to their Western counterparts, who, together with the Japanese, were to undertake enormous theoretical steps early in the twentieth century. That Japanese scientists such as Kitasato Shibasaburō (1852-1931) played an important role in such research is a sure indication of this.

Gōnō, literacy, and networks

An examination of Keisaku's diary reveals that it is impossible to consider his work as a country medical practitioner separately from his position in the community as a farmer, village official, poet, and calligrapher. Apart from the time when the village was struck by an epidemic, his medical practice was never a full-time occupation. Perhaps he is best thought of as a rural intellectual, who liked to participate in the various fields of learning that his education had made available to him. These interests were shared with other members of the rural elite, some of whom were relatives, others doctors, others well-to-do farmers. He may be said to typify the new class of educated rural entrepreneur or *gōnō* that is commonly credited with an important role in Japan's economic and political modernisation.

When characterising Dutch studies in Japan, Grant Goodman wrote in 1986 that '*rangaku* was never a "grassroots" movement and did not reflect any demands from below.'[53] If Goodman's statement is considered against the evidence in this thesis, perhaps it is true to the extent that doctors such as the Kōzuke physicians, as members of a local elite, were of an 'in between' status, by no means at the lowest level of society. Yet at the same time they were operating on a level quite different from official domain or *bakufu* doctors.

The men behind medicine's move into the countryside were in many cases *gōnō*. Their wealth and high level of education (often undertaken in the cities)

[53] Goodman, *Japan: The Dutch Experience*, p. 7.

supplied them with the financial and intellectual means and necessary leisure to pursue the study of medicine, while business and official connections provided them with information and an abundance of patients. As discussed in Chapter Two, a link may be seen between the privileged access to medical information held by village officials and their propensity to become doctors.

Village officials had a role in the dissemination of both information and medicines. Such displays of benevolence were meant to reinforce the Tokugawa political system. In the area of public health, for example, Takahashi Keisaku recorded in his diary an official notice that recommended certain treatments for cholera. To give another example, Brett Walker has discussed the role of sponsored smallpox vaccinations of the Ainu population in Hokkaido as a part of the Tokugawa *bakufu*'s attempts to bring these people into its realm.[54]

Central to the elite villagers' access to official information was of course, their literacy. As discussed by Tsukamoto Manabu in extensive writings about the relationship between literacy, medicine, and authority, the rise of literacy in the countryside during the Edo period was brought about initially through a need for written communication between the samurai class in the cities and the village officials who administrated in their absence.[55] It was in the interest of village officials not only to be able to read and write, but to know the correct expressions to make legal and other applications. Style books were popular, and the trends of the warrior class were copied by villagers in their writing.[56]

Tsukamoto has argued that there was a gap between members of the ruling class, who learned their writing from Chinese culture, and commoners, who learned from city culture as it spread. City learning tended to be based on classical studies, whereas village learning was practical and concrete. For village officials, written culture could be perceived as a way to gain recognition of their rights by the ruling class.[57]

[54] See Brett Walker, "The Early Modern Japanese State and Ainu Vaccinations: Redefining the Body Politic 1799-1868," *Past and Present* 163 (1999): 121-60.
[55] Tsukamoto Manabu, *Tokai to inaka* (Tokyo: Heibonsha, 1991) p. 193.
[56] Tsukamoto Manabu, "Toshi bunka to no kōryū," in *Nihon no kinsei 8: mura no seikatsu bunka* (Tokyo: Chūō Kōronsha, 1992) 333-82, pp. 356-9.
[57] Tsukamoto, "Toshi bunka to no kōryū," pp. 364, 376.

Anne Walthall has argued in a similar vein that many rural elites began to keep family records, such as diaries, in order to 'define a place for themselves and their families'. As they gained new power and wealth in their communities, they needed to legitimise their position by creating a family tradition.[58] Literacy was therefore a powerful tool by which elites could distinguish themselves from ordinary commoners.

Tsukamoto's 'gap', however, must be viewed with a certain degree of suspicion, at least when considering the better educated village officials. Moriya has suggested that there was 'no great difference, in terms of literacy, between peasant officialdom and samurai'.[59] Although villagers may have had interests different from those of urban samurai, their down-to-earth 'practicality' did not prevent them from writing poetry in both Chinese and Japanese (as did Fukuda Sōtei and Takahashi Keisaku), or abstract Confucian essays (as did Keisaku's teacher in Shinano, Itō Chūtai). Some, like Fukuda Sōtei, spent long years studying in prestigious private academies in the cities, and were therefore as well-educated as many *samurai.*

There does, however, appear to have been some variation in the level of literary skill achieved by village officials. In a diary entry for 1868, Keisaku recorded that, in recent years, the use of Chinese expressions in official documents had increased, making them difficult for village officials to read. People were beginning to come from here and there to ask his help in reading them. He roundly criticised the impertinence and lack of consideration of the rulers in circulating such documents (1868,1,16).

It is possible to draw some interesting parallels between the spread of written culture and the acceptance of medicine into villages. Indeed, Tsukamoto has suggested that the flow of medicine from towns to villages itself rode on the wave of a new dependency on the written word. In the absence of a system of registration, it was easy for anyone who had read a few medical books to set himself up as a doctor. With the arrival of accessible medical treatment in the countryside in the form of these *gōnō* doctors, villagers gradually began to replace their traditional folklore

[58] Walthall, "The Family Ideology of the Rural Entrepreneurs," pp. 464-66.
[59] Moriya, "Urban Networks and Information Networks," p. 118.

based on an oral tradition, with faith in a medicine based on written culture.[60] Slowly, the idea began to take root that when one became sick, the natural thing to do was to seek the advice of a doctor. As a consequence, ordinary villagers became more dependent on local doctors, who were already members of the rural elite and in many cases in a position of authority through their roles as village officials. It was a growing dependence on formal medical knowledge, of course, that would eventually facilitate the success of state-sponsored medicine in the late Tokugawa period and beyond.

Well-educated, rural physicians were in a unique position because they had access to both written Chinese, and traditional, local forms of knowledge. Perhaps this was a factor in the success of the cooperation between Takano Chōei and his farmer-physician friends in Kōzuke, when they wrote about crops and famine relief in 1836. Equipped with both 'hands on' practical experience and the authority of the written word, rural physicians were in an ideal position to gain the trust of their local communities, as doctors and local intellectuals.

Far from being simply the ability to read official notices and write tax reports, however, literacy was to many rural elites the very axis of their social worlds. As may be seen from the social life of Takahashi Keisaku, literacy gave rural physicians a powerful tool not only for their working lives, but also for leisure. Many rural elites devoted their spare time to aesthetic pursuits such as poetry, calligraphy, and study. Due to their popularity and the way in which they were enjoyed, aesthetic pursuits were by no means lonely or isolating, even in rural areas. Just as city scholars and literary figures gathered to socialise, share ideas and activities, rural elites held their own poetry parties, flower-viewings, and study meetings.

Tanaka Yūko has shown how *haikai* poetry networks all over the country could be used as a highly effective distribution system. In 1762, Hiraga Gennai (1728-79) was the organiser of an enormously successful exhibition in Edo of 1300 botanical specimens from all over the country. According to Tanaka, he owed his success to a series of collection points he set up in many regions, so that people

[60] Tsukamoto, *Tokai to inaka,* p. 212.

might bring in their specimens. These collection points were, however, none other than pre-existing collection points used by *haikai* poetry networks.[61]

Thus, as may be seen from the life of Takahashi Keisaku in rural Kōzuke, *gōnō* farmers were in an ideal position to experiment with medicine, just as they did with sericulture and other technologies. Far from living an isolated existence, members of the rural elite in nineteenth-century rural Japan were connected by many different 'synapses'. The social networks of the rural *gōnō* contained a dynamic mixture of overlapping medical, literary, commercial, and official circles. These networks facilitated the flow of information, including that concerning *rangaku,* into rural Japan.

[61] Tanaka Yūko, *Edo no sōzōryoku* (Tokyo: Chikuma Shobō, 1986) p. 66.

CHAPTER SIX
CONCLUSION: THE RECEPTION OF *RANGAKU* AND THE ROLE OF COUNTRY DOCTORS

In this thesis, I have attempted to use the concept of 'receptive history' to provide a new perspective on the introduction of Western medical knowledge to nineteenth-century Japan. By seeing the adoption of Western knowledge in this period as a fragmentary, yet creative and adaptive exercise, rather than simply as the inadequate absorption of an immutable body of knowledge, this approach presents an alternative to the idea of 'Westernisation' put forward in some previous histories of *rangaku. Ranpō* doctors did not generally understand European medical knowledge on the scientific terms in which it was later formally introduced. Yet this does not mean to say their work had no meaning.

The concern of this thesis has been with the Japanese 'receivers' of Western learning, rather than its European roots. The preceding chapters have attempted to examine what was *done* with the knowledge obtained through *rangaku* scholarship, that is, to examine the transformation process through which it was interpreted and applied, rather than simply compare it unfavourably to European medical science. The study has focussed on several specific case studies. In doing so, it has been possible to provide a detailed picture of the 'context' into which Western knowledge was introduced and applied, and the geographical 'locales', and social 'networks' that supported these activities. Through its practical applications, *rangaku* may be seen as something far more meaningful and creative than the muddled absorption of, often inaccurate, facts.

This thesis is also a 'receptive' history in the sense that it has tried to explore the introduction of Western medicine in places other than the large cities or the schools of famous scholars. By the late nineteenth century, Western medical knowledge, in the form of *rangaku* scholarship, was beginning to permeate the countryside all over Japan. This knowledge, brought to communities by local *ranpō* physicians, touched the lives of ordinary people in the areas that mattered most: health, sustenance, and the education of their children. This was the ultimate achievement of the reception of *ranpō* medicine: its domestication into the context of everyday Japanese life.

By taking a social, rather than political approach to the history of *rangaku,* it

has been possible to examine the history of one of its central figures, Takano Chōei, in a new light. There was far more to Chōei's scholarship than his famous criticism of the 'shell and repel' edict in *The Tale of a Dream* in 1838. He himself appears to have found it difficult to reconcile himself to the idea that a paper so divorced from his true interests caused him so much strife. His early reputation was built on his medical scholarship, and the lectures and works on famine relief and epidemic disease discussed in this thesis help to present an image of Chōei as a socially conscious physician of medicine, rather than as a political activist.

A social approach to the history of medicine also helps to provide an alternative to a straightforward narrative of 'progress' and the history of discovery. Instead, I have tried to present a picture of the way medical practitioners lived, trained and worked in the Edo period, how they identified themselves as members of various intellectual groups, and how they struggled to find a place for themselves within the social hierarchy.

Chōei was supported in his medical endeavours by a group of rural patrons. It was his relationship with these physicians that brought him to the province of Kōzuke during the 1830s. This special relationship, and the geographical and social features of the Nakanojō 'locale' that helped to foster it, were discussed in Chapter Three. The increasing prosperity of medicine in rural areas of Japan, particularly from the nineteenth century, developed against a background of social and economic change. Improved communications and increased travel and tourism in the latter part of the Edo period assisted the spread of information and culture, as well as the circulation of commodities such as drugs. Cheap, commercial medical preparations came to be peddled all over the countryside, further increasing the interest of the general populace in medicine. Improvements in communications naturally also facilitated scholarly and cultural exchanges, supported by particular 'locales' and their 'networks'. Nakanojōmachi in Kōzuke, with mountain herbs and thermal springs close at hand, as well as good access to drugs and commodities through its role as a market town and post-station, was a particularly suitable venue for medical practice and exchange.

In 1833, Chōei presented a lecture series in Nakanojōmachi, which he based on material from his recently published book on Western medicine. Not only were the country physicians interested enough to come along and listen to highly

specialised and innovative theoretical lectures on Western medicine, but the notes Takahashi Keisaku took at the lectures had a history of their own. They were later copied by his teacher, Itō Chūtai, in Shinano. Chūtai in turn, had an extensive book-lending network, so the ripples made by Chōei's visit continued to undulate long after his departure. This gives an important example of the speed and effectiveness with which new ideas could be spread. Chōei's visit of 1833 was followed by many exchanges with the Kōzuke physicians by letter, and finally, in 1836, by the two collaborative works, *Treatise on Two Things For the Relief of Famine,* and *Methods of Avoiding Epidemic Diseases.*

These two documents provide an example of the way in which Western knowledge was adapted to the Japanese local context. It is also helpful to regard this process in terms of traditional concept of *jitsugaku* (practical learning). Scholars such as Takano Chōei selected, translated, and interpreted from Dutch source material in the way that was most practically useful to the social community for whom they wrote. In these particular examples, they used knowledge of Western crops and treatments of disease to devise solutions to local problems of hunger and epidemic disease. In other words, they adapted European knowledge to the Japanese context, and used it in conjunction with what they already knew. Furthermore, in the area of medicine, it has been shown in the example of ideas about 'miasma', that there was a remarkable similarity in certain concepts of the body and therapeutics in both Chinese and Western medicine at the time Chōei was writing. This factor surely facilitated the way in which he assimilated and creatively transformed the new knowledge into something that was meaningful to his readers.

In contrast to ideas put forward in previous studies of *rangaku* that it was never a 'grassroots' movement, the reception and domestication of important elements of *rangaku* in the countryside came about largely through the efforts of wealthy commoner (*gōnō*) doctors such as Chōei's friends in Kōzuke. Many of these doctors trained in the cities and returned to their villages to engage in medical practice and impart their knowledge to others in the locality. Doctors were in demand not only for their healing skills, but also for their ability to teach others. Some villages made special efforts, through supplying subsidised housing, for example, to attract ordinary doctors to their communities to treat their ailments and teach their children. This reflects the growing awareness among commoners, even in

rural areas, of the value of literacy. In Kōzuke, Takahashi Keisaku took students of poetry, calligraphy and medicine in addition to teaching basic literacy skills. His most prominent medical student, Seki Gōsai, went on to play a leading role as a doctor in the local community.

The kinds of changes going on in nineteenth-century rural Japanese society are reflected in the diary of Takahashi Keisaku, which provides a fascinating glimpse of the daily life of a country doctor in the late Edo period. For Keisaku, at least, and presumably for other village doctors with multiple roles, medicine was not a full time occupation. Far more than simply a medical man, he was also a farmer, poet, local official and intellectual. Although he did receive some remuneration for his medical activities, farming was nevertheless the basis of his livelihood. Because there was no system of licensing, he competed in an open medical market with other doctors ranging from highly trained men like himself, to religious healers and quacks. Despite the competition, however, he was discriminating about his patients and when he chose to make calls. He was in a position to refuse or reschedule his visits to suit his own convenience.

Unlike their contemporaries in Europe, Japanese local doctors appear to have maintained good relations with each other, without any significant territorial animosity. For example, Keisaku gave his blessing to his apprentice Gōsai when he set up an independent practice in the very next village, without any apparent fear that it would encroach on his own work. Perhaps this was because he was not reliant on medical practice as his only source of income. Such a sense of camaraderie naturally assisted the exchange of knowledge and helped to break down traditional barriers of secrecy maintained between different schools of medicine. In addition to sharing some patients, local doctors met and exchanged books socially. Study groups, such as the one that supported Chōei's visit to Nakanojō, appear to have been a significant influence in creating a local interest in *rangaku.* This influence manifested itself in activities such as the translation of Dutch books, and the cultivation of medicinal plants. In his medical practice, Keisaku mixed Chinese and Western medicines, sometimes even in the same prescription.

These men, in their various roles as doctors, officials, and village intellectuals, enjoyed an important position in the community as upholders of cultural life. Central to their role was, of course, the ability to read and write. In

addition to his work as a doctor and village official, for example, Takahashi Keisaku corrected poems, painted calligraphy artwork, copied books, made personal seals, and wrote monument inscriptions for other villagers. In the early Meiji period, he was actively involved in setting up the first village school. Many parallels may be drawn between the community services engaged in by Keisaku, and attempts made by provincial doctors in England to appeal to the community for their status. Keisaku's standing in the local community helped to make him popular as a doctor, and his medical and intellectual successes no doubt expanded his authority. He seems to typify a new kind of country doctor that emerged from the level of the local elite towards the end of the Edo period.

Perhaps it was because they already fulfilled a role as protectors of the community, that rural doctors also saw it as part of their work to oversee public health. As members of the rural elite, the relationships they made through their official work provided them with superior information networks. Indeed, the spread of doctors into the countryside helped to create an increasing dependence among ordinary people on official medical knowledge, rather than traditional medical practices. Health campaigns, publications such as *Treatise on Two Things For the Relief of Famine,* and *Methods of Avoiding Epidemic Diseases,* and vaccination combined well with the pre-existing responsibilities of village officials and members of the local elite. In addition to the philanthropic aims of these activities, they no doubt contributed to the status of their authors, and of *rangaku* scholarship as a whole.

The success of smallpox vaccinations was a very important factor in gaining recognition for *ranpō* medicine from the mid-nineteenth century. In many cases, vaccinations were introduced on the initiative of local *ranpō* doctors. Keisaku, for example, appears to have played a role in obtaining vaccine and immunising his local community against smallpox. This provides another example of the way *rangaku* was beginning to touch the lives of, and be accepted by, even the most ordinary of people.

Thus, against the background of improved transport and communications, economic development, and a rising class of rural entrepreneurs, *rangaku* and *ranpō* medicine were received in rural Japan through a system of social networks, supported by specific geographical locales. By adapting the knowledge obtained

through Western scholarship to the local context and the perceived practical needs of ordinary communities, physicians such as Chōei and his country friends did much to assist the domestication of Western medicine in rural Japan. As medicine began to permeate the countryside, physicians appear to have played an increasingly important role in their communities as intellectuals, educators, and protectors of public health.

The application of this research has implications not only for our understanding of the way in which Western knowledge came to reach Japan and gradually infiltrated the countryside, but also for a more general conception of the way ideas were transferred from one place to another. Accounts of 'Westernisation', 'progress', and histories of great men have dominated history writing not only in Japan, but also in many other parts of the non-European world. As an alternative to the Grand Narrative of European domination, 'receptive history', as outlined in this social history of medicine, has much to offer.

APPENDIX A
TREATISE ON TWO THINGS FOR THE RELIEF OF FAMINE

Epigraph

Perhaps there is no greater disaster for the people than a year of poor harvest. Yet the reasons given for crop failure rarely go beyond the two of drought or flood. Our country's soil and paddies are fertile and crossed in all directions by rivers and marshes, so the people do not often suffer from drought. However, problems of flooding are extremely severe. It is of great concern that in recent years this has been occurring frequently.

In all probability, the people of our country take their sustenance exclusively from rice, wheat and barley. However, it takes a long time for these crops to mature. And in addition, in the temperate zones at the time of the equinox, there are frequent violent storms which uproot trees and blow down roofs. In such cases, the damage is not only to paddies and soil, but directly to the people. If such storms should occur at a time when it has been damp and cold for months, and the rice, barley and wheat have not matured, what could one do to avoid starvation?

Ah, how the farmers give their energies to farming! Although showered with rain and combed by the wind, irritated by sweat and the oil on their skins all dried up, they work untiringly and look forward to the harvest, only to meet with such disaster and have their efforts evaporate all at once. How can one not feel sorry for them? Accordingly, such a great calamity is not just that of the farmers, but of society at large. Even though these are prosperous times now and there are few who starve to death, if the price of rice jumps, then a day's work is not enough to buy a day's food. With regard to this matter, in desolate villages and cold hamlets, it comes to scraping the bark from trees or washing the muddy earth to eat. By doing so people are able to ward off starvation for a time, but because such foods are unusual, within one or two, or perhaps three or four months, there are many who fall ill and die. This is the reason why there is much sickness after a poor harvest. I am always worried by this.

Consider this. Although the countries near the North Pole are intensely, bitingly cold, and there are only one or two months a year in which the ice melts, why do the people there not starve? It is because they plant things to eat that do not fear wind, cold, heat or damp. I have always thought it a pity that we did not have the seeds of those plants. This year [1836] the rain and damp has continued from the third month to the eighth month, with very few fine days in between. It is colder than 1833. In each province there has been flooding, the price of rice has gradually become more expensive, and people, in their concern, cannot still their beating hearts.

In the middle of the eighth month of this year, I met Fukuda Sōtei of Sawatari in Jōmō. The Sōtei's have for generations been surgeons by profession, and are very skilled in their art. Also, Sōtei reads Dutch books in order to study the subject further. I have enjoyed a warm relationship with him from the beginning, and one evening, just when our conversation was getting to be in full swing, he pulled out a scoop of buckwheat and showed it to me, saying,

"In general, the reason why people die in a bad year is because they do not have enough to eat. And the reason why there is not enough food is because there are not any crops which can be harvested several times a year. This buckwheat should mature three times a year. Do you not think that it would be a great treasure for the poor people?"

I was very surprised and grateful, and replied,

"When people in the countries near the North Pole choose their crops, they choose ones that grow quickly. If these crops were grown in a warm area, they would mature several times a year. The reason why I have wanted these plants was to grow them here, and increase the yield and prevent starvation. In the past I have looked for them in far away places and suddenly now I find them so near! Although given to me by you, in truth it is a gift from heaven!"

I took [the buckwheat] gladly. Later I was given a type of tuber by a man called Yanagida Teizō, from Isemachi in the same province. Upon examination, it was shaped like a yam and also like a *hodoimo*.[1] According to local custom it is

[1] *Apios fortunei.* A plant of the pulse family which grows in the mountainous areas of Japan.

called a Jagatara [Jakarta] potato. That is, in Holland what is known as an *aardappel*. It is baked and eaten. In the simplicity of its flavour it is like the *yamaimo*[2] and in its sweetness is like the *satsumaimo*.[3] Also, it has a delicious and nourishing stickiness, and has no poison, so it can be used for daily meals. There are areas in Holland where the people live only on this. However, it is not like the *satsumaimo* which is sensitive to cold. Regardless of whether [it is planted in] a cold or a hot country, or whether in unfertile soil, one root will produce several clods.

I could not control my happiness at being given these two seeds. There could be nothing better in order to save the people from starvation and prevent them from becoming ill. I wanted to distribute [the seeds] in all directions, so I secretly consulted with my colleagues. They thought well of the idea and said,

"Trying to save the people by erecting storehouses can help only one village or one commercial town. This is a fine and virtuous plan which should reach the whole land for all time. We should not delay."

Accordingly, I had the things I had heard previously about cultivating and eating these crops written down and added to it selections from the explanations written in Dutch books to make a small pamphlet. I called it *Treatise on Two Things* and together with the seeds, made it public.

Accordingly, incompetent man such as I am, bathing in the boundless good of the state, and enjoying my meals between bad years, I make this report for the unlikely event of an emergency, so that I may continue happily to avoid starvation.

Written by Takano Yuzuru on the night of the Chrysanthemum Festival[4] at the Daikandō, Kaizaka, Kōjimachi, Edo.

Thoughts About Two Things to Encourage Farming and Protect Against Poor Harvest

By Zuikō[5] Takano Sensei

[2] *Dioscorea japonica*. A type of yam which is usually grated and used as a thickening agent.
[3] *Ipomoea batatus*. A sweet potato of the *convolvulus* family.
[4] Ninth of the ninth month.

Transcribed by Uchida (Kyō) Shikei[6]

Edited by Fukuda (Sen) Sōtei and Yanagida (Shin) Teizō

Rapidly Maturing Buckwheat

(Japanese names *hayasoba,*[7] *sandosoba,*[8] *Sōtei soba).*[9]

It is not clear where the first seeds of this buckwheat came from. In recent years, it has spread among the people and has been grown here and there. There is nothing in the stems and leaves to distinguish it from regular buckwheat, except that the grain is slightly bigger and it matures more quickly. For this reason, it ripens three times a year. Its Chinese name is not yet known. As a temporary name it is called *hayasoba*, or *sandosoba.*

Cultivation

Like regular buckwheat, this buckwheat can be grown on infertile land. After waiting for the spring cold to subside and the land to thaw, at a time when there is no more frost to be seen, the soil should be ploughed and the seeds sown in the same manner as regular buckwheat. The eighty-eighth day after the onset of spring[10] is usually designated as the time for sowing, although in the eastern and northern provinces the spring cold is usually slower to ease and the frost more frequent, so it is better to plant the seeds a little later than this. Also, since buckwheat is very sensitive to cold, it can be killed by one overnight frost. Although this buckwheat can endure the cold a little more than other types, because it cannot survive the frost, it is important to observe the weather carefully when sowing the seeds. If the seedlings should be destroyed by frost, the soil should immediately be turned over, the seedlings buried in the earth to fertilize it, and new seeds planted. Usually the

[5] Zuikō was one of Chōei's pen names.
[6] Uchida Yatarō (1805-86). Uchida was one of Chōei's students of *rangaku.* See Chapter Two. Uchida also appends his own postscript to this work.
[7] 'Quick buckwheat'.
[8] 'Three-times buckwheat'.
[9] Named after Fukuda Sōtei.
[10] A festival day.

plants mature about fifty days after planting. (In cold areas, the time of maturation is a little later, but there is not a great difference). Thereupon, the crop should be harvested and used for seeds. The soil should be turned over again and seeds planted. These will again mature in about fifty days. However, this crop will be soft and difficult to use for seeds. Therefore, the first crop should be stored and used for seeds. After waiting for the next crop to mature, the soil should be turned over again and planted. Compared to the first two crops, it will be a little slower to mature, but nevertheless it will do so in no more than sixty days. In this way, generally within the space of a total of a hundred and fifty or sixty days, three crops of buckwheat can be produced.

In our country, even in the lands to the north and east, there is nowhere where the ice does not thaw for five months of the year, so this buckwheat will always mature three times in the year. However, if the weather is unusual, and the spring cold is slow to finish and the autumn cold comes early, and one wants to be sure of it maturing three times, when the second round of seedlings are growing well, the space between the ridges should be lightly turned over and planted. When the time comes for harvesting, the third round of seedlings should be about two or three *sun*[11] tall, and should be harvested early.

In this way, if the farmers grow this [buckwheat] and mix it with other things for their everyday meals, in one year they will have a surplus of two years' supply of grain, after two years they will have four years' supply and after three years they will have six years' supply of grain. Is this not a large reserve for times when the harvest is poor? Similarly, if there is flooding in a particular year and the rice, wheat and barley crops do not grow at all, and everywhere people are starving, there are at least one or two months in a year when the weather is normal. Therefore, even in times of terrible famine, this [buckwheat] can be grown and used as a food supply for the year. This is, after all, the reason why I think it is a great treasure for the whole land.

[11] One *sun* was about three centimetres.

Storage

When the buckwheat is completely matured, it should be harvested and bleached in the sun to remove all moisture. Then it should be wrapped in a straw wrapper such as for rice or barley, or placed in a bucket and stored.

Preparation

The husk is removed in a hand-mill and then the grain is steamed and eaten. Alternatively it is pounded to a fine flour and made into noodles or rice cakes. There are many other ways of eating buckwheat. It can also be made into *sake*. The method is described below.

Brewing of *sake*

The Dutch use this grain to make beer. (This is the name of an alcoholic drink. It is slightly bitter). However, it is rarely made with this [grain] alone. Usually, another malt is added. To make it, the grain from which the husk has been removed is taken and steamed. When it is cooked, it is put into a bowl and boiling water poured over. Barley malt and unrefined sake are added and stirred, after which it is covered tightly and placed in a warm place to ferment. When it bubbles and becomes alcoholic, the clear layer is poured off and used.

Character

Buckwheat has quite a lot of moisture compared to rice, barley and wheat. For this reason, it is not a warming food by nature. However, it is not lacking in nutrition. In addition, it is easy to digest. Anyone can eat it and have no ill effects. However, people who have a weak stomach should add to it something flavoursome and warming. Nevertheless, if one has no other grain it will do no harm to eat it on its own. In Friesland, one of the provinces of Holland, there is a place called Seehenouen[12] where it is very mountainous and the cold extremely severe. The

[12] Rendered from Chōei's *katakana*. I have been unable to confirm the place name.

mountain paths are very steep and transportation is very inconvenient. The soil is sandy and stony, and nothing grows there except buckwheat, which the people use for food. This is proof [of the value of this grain].

Variations

The land to the north of Ezo[13] is generally called Siberia. This country is extremely cold so there can be no question of [growing] rice. Even wheat and barley cannot mature there, and only buckwheat is grown. The stems and leaves are no different to the usual type, but the seed has jagged edges. It is said that the people there live entirely on this. This buckwheat must be able to withstand the frost. If [the grain] were imported to our country and grown here, it would mature four times a year. It is a great shame that we do not have the seeds. Nevertheless, it is not impossible to imagine[14] that the seeds could be growing of their own accord in the east and north of our country, so I include this as a guide for finding them.

Other

There is something similar to buckwheat which is known in Holland as *suwarute uindo*.[15] Linnaeus, (a great botanist of the West) calls it *polygonum holees kaldachom*[16] in his book. It grows naturally by the roadsides and fences. Its stem is hard and can withstand the cold well. It is shaped like buckwheat and bears grain shaped like a prism, although quite small. It is probably similar to the wild buckwheat that grows here. The Dutch are also still unsure of its characteristics, so it is not yet used as a food. I would like to procure these seeds, as yet to no avail. If it has no poison and can be used like buckwheat, I think it would be of great benefit to the country. I write this here and wait only for someone who knows to enlighten me.

[13] An old name for the northern island of Hokkaidō.
[14] Chōei has 'it is impossible to imagine', but the words that follow do not allow this interpretation.
[15] *Zwarte winde* (black bindweed).
[16] *Polygonum foliis cordatis.*

Potato

(Japanese names *jagataraimo*,[17] *kōshūimo*,[18] *chichibuimo*,[19] *appura*,[20] *seidayuimo*,[21] *hasshōimo*[22] *katsunenimo*[23] *jumyōimo*[24] *teizōimo*[25]).

Dutch name *aardappel.*

The origin of this tuber is also unclear. It is said that it was imported to Kai and Shinano and grown from early times. When one considers that it is called *jagataraimo* or *appura* (which is a dialect of the hinterland and probably a corruption of *aardappel*) it would seem that it was brought by the Dutch. According to Dutch books, this potato grew originally in the West Indies, after which it was grown by the French and the English. After this it was introduced to the Dutch region. Also it is very common in America, where it seems the people who have emigrated there from Europe make this tuber the staple of their diet. That is, originally, this tuber came from the West Indies and America. It was grown for the first time in Holland about one-thousand-six-hundred years after the beginning of the era (this is about two hundred years before the present year of 1836) and people still use it as their staple. Linnaeus (mentioned above), in his book writes about the three virtues of the potato. One, that it will flourish in areas with sandy and stony soil where other grains will not grow. Two, it will not be damaged by strong winds, heavy rain or long frosts. Thirdly, it is easy to grow and does not require a lot of labour. Also, an inch of land will give the yield of a foot of land, so it is also called a *hasshōimo*.[26] It certainly may be said to be a good crop for a bad year.

[17] Literally, 'Jakarta tuber'.
[18] Kōshū is the old name for what is now Yamanashi prefecture.
[19] Saitama prefecture.
[20] A corruption of the Dutch.
[21] Seidayu refers to Nakai Seidayu, *daikan* of Kai, who was active in promoting the cultivation of potatoes. See Murakami Nao, "Kikin to daikan," in *Edo jidai no kikin*, ed. Tomohiko Harada, Tatsusaburo Hayashiya, and Kota Kodama (Tokyo: Yuzankaku, 1982) 134-6, p. 135.
[22] Eight-*shō*-tuber. One shō was about 1.8 litres. Eight was regarded as a lucky number.
[23] Uncertain.
[24] Literally, 'lifespan' tuber.
[25] Named after Yanagida Teizō.
[26] See note 22.

Cultivation

The potato should be sown around the eighty-eighth day after the beginning of spring. The earth should be ploughed and the clods broken into little pieces. After that, two or three potatoes should be planted in one place and lightly covered with earth. The rest should also be planted in this way. The method is the same as for *satsumaimo*. Also, this potato is not particular about the type of soil in which it grows, and will grow along the ridges of paddy fields, along the edge of roads, and in a mixture of sandy or stony soil, so it should be cultivated somewhere that it will not interfere with other crops. Also, it will endure the cold and can be grown in mountainous fields. Usually it will begin to sprout after about thirty days, then grow a stem and tendrils. When the tendril is about two feet, leaving the end as is, the centre part should be lightly covered with earth. From this place a new root and tendril will sprout. As the leaves and stems gradually increase in this way, one root will produce several clumps of potato. However, a new root will not produce as many clumps, and they will be small and watery. From the smaller root of the main root, there will sprout several tens of clods, lined-up like prayer beads. These will be fat and flavoursome, and are considered the best. Also, these ones should be used as the seeds for the next year. In Holland, one root will yield a hundred or a hundred and forty or fifty potatoes. However, in our country, the most one can get is usually from forty to seventy potatoes. The leaves and stems gradually become taller and thicker, and the plant flowers in the autumn. After that, one waits until the plant dies off, and in cold areas the potatoes should be dug up and stored, while in warm areas the potatoes can be left in the ground and dug up when they are needed. In Holland, there are several methods for growing potatoes, of which two in particular are preferred. Therefore, I will summarize these below for reference.

The first method is in spring, to wait until the cold has completely gone and the ground has thawed, and then to plough the earth, carefully breaking up the clumps and levelling the soil. Using a hoe, a ditch of about four *sun* in depth should be dug and the potatoes planted in groups of two or three, leaving a space of one *shaku*[27] between each group. However, big roots may be cut into two or three pieces.

[27] About thirty centimetres.

After that, the potatoes should be lightly covered with earth and smoothed over. Each row should be planted in this way. After they sprout leaves and stems, and flower in the autumn, the stems should be cut about four or five *sun* from the root, to prevent it from growing still more roots, and left to continue to grow. The stems should be used to feed horses and cattle, and after that, the roots dug up and stored.

The other method is to plant the potatoes as above, and when there are five or six sprouts coming out from each clump, after waiting for them to reach a length of about three *sun*, the sprouts should be lightly dug up by hand, and the thin root connecting it and the main root cut. In this way, each sprout should be taken, transferred to a new place and grown. After that, the main root should be taken out and turned over, and allowed to continue to grow. When the sprouts have once again grown to three *sun* in length, the new sprouts should be cut as in the beginning, and planted separately, leaving only one behind to be the main root. This method is extremely tedious, but if one wants several hundred potatoes from one root, then there is no better way than this. Otherwise, it does not differ from the above method. If one wishes to grow other kinds of vegetable or beans or barley at the same time, one should prepare the field in advance, leaving three *shaku* between each furrow, and plant the other crops in between. Fertilisation should be done as for *satsumaimo*. It is also possible to fertilise at the time of planting. Also, it will do no harm if fertiliser is not used at all.

Storage

A hole two or three *shaku* deep should be dug in the earth, and the bottom laid with rice or barley straw, then the potatoes put in, and covered with another layer of straw and some earth, so as to prevent the cold from penetrating them. An opening should be made on one side and plugged with straw. When the potatoes are required, they may be taken out through this opening. This is the method for storing them for the winter months in extremely cold climates. In warm areas, they may be kept in a corner of the garden or stable, and covered with a straw cover. If one wants to store them for several years, they should be peeled and sliced thinly, and left in the sun until completely dry, then wrapped in straw bags and stored.

Preparation

Fresh potatoes should be immediately boiled or steamed and used. If they are pungent, they should be soaked in lye until the acridity is removed. Dried potatoes should be soaked in warm water until soft and then boiled or steamed. The potatoes may be eaten alone, or mixed with rice, or made into hot soup or used instead of green vegetables. There are a great many other ways of eating them according to one's taste. Also, there are methods of making the potatoes into flour or into an alcoholic spirit. The methods are as follows. (According to one account, the potato may also be used to make *konnyaku*.[28] The method is the same as for the *konnyaku* root).

Making Flour

The method for making potato flour is the same as for making arrowroot or bracken-starch flour. The potatoes should be steeped in water for about twelve hours, taken out and the skin removed. Then they should be steeped for another two to four hours, and sliced thinly. The sliced potatoes are pounded in a mortar as if making rice cakes, then water is added to dilute it, before being filtered through a fine cloth. Put aside the milky water and pound the dregs in the mortar again, before adding water, stirring and filtering again, squeezing out the white liquid. The process should be repeated until the water is no longer cloudy. The liquid should be stood until the particles of potato settle on the bottom, then poured off. Water is again added, mixed, and allowed to stand, then tipped off. The process should be repeated until the liquid is colourless and tasteless. The liquid should be poured off and [the remainder] allowed to dry in the sun, or over a flame. This method is the same as for making arrowroot flour and bracken-starch flour, but the potato flour is said to be much better.

[28] A kind of jelly made from the starch of the *konnyaku* (devil's tongue) plant.

Brewing

Potatoes may also be made into *sake* in the same way as *satsumaimo*. However, they cannot be made into unrefined *sake*. They should be distilled and made into hard liquor. Nevertheless, the character of this liquor is strong and aromatic and it makes a fine spirit not unequal to millet brandy.[29] In Western books there are many ways to make this liquor. One method is to parboil the potatoes before taking them out and pounding them in a mortar until [the consistency of] a sticky rice cake. After that, they are diluted with boiling water until they look like a thin gruel. They are put in a bucket and left until the bubbling has stopped, the pure liquid has risen to the top and the dregs fallen to the bottom, before putting it in a distilling apparatus and making a distilled liquor. Another method is to peel the potatoes, and steam them until cooked. After that they are taken and pounded completely to a paste. Then the paste is diluted by pouring boiling water over, and millet or similar malt, and unrefined *sake* are added and mixed well. While still warm, the mixture is placed in a bucket, tightly sealed, and left in a warm place to ferment. Every day, the lid is opened and the mixture is stirred once, before sealing it again. When it has developed a dry flavour, it is distilled and made into a hard liquor. Due to the pressures of work, I have not yet tested these methods carefully, and do not know which is the best. One day, after having tested it at home, I hope to expand on these details. The reason for my mentioning it in this book is merely to demonstrate that making distilled liquor from potatoes is another way to decrease the consumption of grains [for this purpose].

Types

There are three types of potato. One is white, one is red, and one is yellow. The red one grows big, but it is quite moist and the flavour is bland. The yellow one is a little acrid, so the white one is said to be better. In Holland, the white one in particular is grown and eaten. However, according to the nature of the soil, the red one might not grow big, and the white one might grow big instead, while the yellow

[29] *Awamorishu,* written with the characters for 'Ryūkyū'.

one sometimes is not acrid, so it is difficult to say anything definite. After growing the potatoes in a particular soil, the nature of the soil should be clear, so one should at one's own discretion choose the type of potato most suitable.

Nature

All three types [of potato] are nutritious and have no poison. Therefore, they should be used for daily meals. In addition, they will not become too sweet and acidify like *satsumaimo*. Because they have the advantage of greatly nourishing the stomach for a long time, and allowing people to forget hunger, people in the West reserve their praise not for the *satsumaimo* but only for the potato. It is commonly said that because the potato is inimical to ink, those in the literary profession should not eat it, but this is wrong. A long time ago when pumpkins and *satsumaimo* were first grown, people thought that they were incompatible with fish or meat, or that they would prevent people from writing with ink, and people everywhere were afraid and did not eat them very much. Now, people eat a great deal of them, even with fish and meat, and only then do they learn of the untruth of such sayings. Potatoes are another case of this. Previously, in the West, there was a time in Bolgonie [Boulogne] (a place in France), when it was said that potatoes caused scabies, and growing them was banned. However, since then people have eaten a great deal of them and there has been no record of any ill effects, which is proof of this. Ah, although all countries differ in their climate and customs, perhaps it is not only human sentiment that is the same!

The End

Postscript

A guest read this essay on potatoes and laughed, saying,

"There was once an official who had a far-sighted plan. He knew the benefits of this tuber and decreed laws everywhere that it should be cultivated. However, his plan was never carried out, and the seeds [that were to be planted] scarcely remain. Now, though one may tout the benefits [of potatoes] again as much as one likes, in the end, probably nothing will change."

I, Uchida Yatarō,[30] answered him,

"Probably, since our country's soil is fertile and hundreds of grains flourish here, the people have enough to eat without growing other crops. In addition, in a usual year, if the people have a good crop then they forget all about bad harvests and do not even store any of their good crops, let alone give any thought to other types. Although at the present time it is not clear why they do not plant these crops, perhaps this is where the reason lies. In addition, people do not know how to cook them, and there are various rumours about them being poisonous. Ah, what a shame it is! However, in recent years, we have suffered frequently from drought and flood, and now crop failure is severe. Among the people, there are many who are pale with hunger and have no time to give thought to the quality of their food. In addition, they regret the scarcity of their food stores. This autumn, it will be very easy for the people to adopt methods in order to have a sufficient supply of food and to improve agriculture. This book explains in detail, from the way to cultivate and store [these foods] to their character and how to eat them. Also, it makes clear how to make flour and spirits and so on. Thus, even in an average year, people who grow these crops will reap many benefits. Even if one merely leaves them in infertile and abandoned soil, they will flourish of their own accord, and may be harvested and eaten in a bad year. Indeed, there is no need for anyone in the country to starve to death. The nutritional advantages of these crops are incomparable to yams, flowering fern and bracken. Once the people know of their benefits, surely they will rapidly turn to them like a rushing river."

The guest said only,

"You should not worry about it so much," and left.

In the hours after that, I wrote this down as a postscript.

Uchida Yatarō

Scribe

[30] See note 6.

APPENDIX B:
METHODS OF AVOIDING EPIDEMIC DISEASES

Preface

Famine and epidemic diseases are the most terrible of natural calamities, and they frequently occur at the same time. In this period of peace and prosperity, the administrators have a policy of charitable alms, and the people are thereby saved from starvation. Doctors have books about healing epidemic diseases, thus the people need not die prematurely. Nevertheless, a method of avoiding these diseases has been previously unheard of. Before I got ill, I wrote a book called *Treatise on Contagious Diseases*, to which I attached an appendix on preventing epidemic diseases, but the editing was not yet finished. This winter, there had been signs of epidemic disease, so first of all I extracted the essential points [from the book], and had my student Takahashi Keisaku edit them, calling it *Methods of Avoiding Epidemic Diseases.* The reason I used exclusively the native script was so that people could easily be given a thorough understanding. Although this is too insignificant and trifling a composition to be given an audience, if people are thereby able to escape such suffering, surely this project may be of some benefit to society. A detailed account is contained in *Treatise on Contagious Diseases,* so people who wish to refer to this may do so.

Written by Zuikō Takano Yuzuru Chōei, two days after the shortest day of winter, 1836, at Daikandō, Kaizaka, Kōjimachi, Edo.

An Outline of Methods of Avoiding Epidemic Diseases

At the times when epidemic fevers circulate, it is the same in both country and city; both noble and humble people are afraid of being infected and keep away from the sick, thinking that this is the way to avoid pestilence. This is not without reason, but essentially at times when epidemic fevers are rampant, they occur because there is a different kind of miasma in the land, so that sometimes even if one is not infected immediately as a result of visiting someone sick, one can unintentionally be exposed to this atmosphere and spontaneously develop the disease. Most importantly, therefore, people should take care of their health in order not to

catch the disease.

There are very many methods of preventative medicine: using an emetic medicine, or using a medicine to tone the stomach, bleeding, or using a purgative medicine. All of these are effective. However, using a purgative to clean the bowels and remove stagnation is the best method of avoiding an epidemic disease. For this medicine, take two *monme*[1] of Chinese rhubarb[2], one *monme* of *haōen*[3] (explained below) and one *monme* of white soap (explained below). First, make a powder from the rhubarb and *haōen*, mix in the soap, and use starch to make into balls. Five *fun*[4] in weight should be used in one day, to effect about two bowel movements per day. The preparation should be used for three or four days in a row. If, for example, in rural areas these medicines cannot be purchased, then out of necessity, two *monme* of rhubarb, and one *monme* of saltpetre should be made into a powder and mixed with starch to form balls of medicine. It can also be used in a powdered form. Alternatively, *sankōgan*[5] *or kyūkōsan*[6] may be used. Depending on the constitution of the patient, use five or six *fun.*

By using this method, as long as there are no other unhealthy conditions, in most cases, one will not succumb to an epidemic fever. Even if one does happen to be infected, the symptoms will be slight and the disease will not lead to death. The likely reason for the prevalence of epidemic fevers after a famine is that the poor quality of food causes dirt to stagnate in the belly and the stomach to weaken, so that what begins as a slight cold may finally develop into an epidemic disease. There is a very reasonable explanation for this, which I treat in detail in my book *Treatise on Contagious Disease,* but this is not something that the average person needs to know,

[1] A *monme* was equivalent to 3.75 grams.
[2] *Rheum officinale.* Used as a general eliminant and tonic for the digestive system. Recommended for women's diseases and fevers. See F. Porter Smith, *Chinese Materia Medica*, Second revised ed. (Taipei: Ku T'ing Book House, 1969) p. 375.
[3] This term could not be translated. Literally, the characters mean 'hegemon salt'. Judging from the procedure Chōei describes, it was probably some kind of inert ash. He may well have discovered it simply in the process of his own experimentation. In any case, the soap and Chinese rhubarb with which he mixed it for this purgative medicine were sufficiently potent for a powerful purge (Nathan Sivin, personal communication, May 2000).
[4] One tenth of a *monme,* 0.375 grams.
[5] A mixture of skullcap (*scutellaria macrantha),* Chinese rhubarb (*Rheum officinale)*, and goldthread (*coptis teeta*) mixed with honey. Used as a tonic (Smith, *Chinese Materia Medica,* p. 330).
[6] Probably a mixture of powdered *conioselinum univittatum,* and Chinese rhubarb.

so I will omit this. In any case, one should make the cleaning of the digestive system one's first priority. For all that, having too many bowel movements is also damaging to the stomach and intestines, so after having purged the bowels one or two times in the month, one should take two or three doses of the following infusion to tone the digestive organs. To make it, take two large scoops of giant hyssop,[7] a small scoop each of rose banksia and longan[8], and a large scoop of Chinese peony,[9] steep them in water and use.

Also, because epidemic diseases occur in places where the atmosphere is gloomy, one should take care to keep the inside of one's house clean and free of dust. The reason why there are many epidemic fevers in rural areas is because the front of the courtyard and so on is not cleaned properly and the inside of the rooms is gloomy, so that even if there were no poisonous fever there in the first place, it spontaneously develops. It is due to the presence of a gloomy atmosphere that there are always epidemic fevers in places such as in the servants' quarters, *osukuigoya*[10] or in prison, even at times when there are no such diseases in general circulation. Also in places like large trading houses, where several people eat and sleep lined up like fish scales in a narrow space, or in back street houses with only one entrance, there is a great deal of epidemic fever, whereas in spacious residences there is little epidemic fever. This depends on whether or not there is a gloomy atmosphere. Therefore, one should take special care to have a window in bedrooms and in living rooms in order to create good ventilation. According to the customs of our country, not only with regard to epidemic fevers, but also in general, when we have a feverish illness we use heavy bedclothes and shut the windows tight, or we place a screen around in order to keep out any draught. However, to think it is good to do nothing but sweat is a terrible mistake. This can turn a slight illness into a serious one. Please understand

[7] *Lophanthus rugosis.* The branches and leaves are used in medicine. It is said to relieve flatulence and aid digestion. Used in the treatment of cholera, as a mouthwash, and for morning sickness (Smith, *Chinese Materia Medica,* p. 247).

[8] *Nephelium longana.* A plant related to the lichee. The fruits are supposed to increase the mental faculties, and act upon the spleen. They are also used as a worm-treatment and as a counter-poison. The seeds are used for excessive perspiration (Smith, *Chinese Materia Medica,* p. 282).

[9] *Paeonia albiflora.* Used widely in Chinese medicine as a general tonic. It is said to relieve pain, flatulence and work as a diuretic. Works on the spleen, stomach and intestines, and helps with haemorrhage. Also recommended for diseases of pregnancy (Smith, *Chinese Materia Medica,* p. 300).

[10] *Osukuigoya* were relief stations set up by authorities during times of famine or disaster. They provided food and medicines for the needy.

this point well, and be sure to provide good ventilation so as to remove stale dirty air and bring in fresh clean air from outside.

A good method of changing the air is: in winter, to close the windows and doors of the patient's bedroom, and place a large brazier in which a fire has been lit [inside the room] to make it warm. Then the doors and windows should suddenly be opened, and in so doing the stale air will go outside, and the fresh air from outside will come in, allowing an exchange of old for new. After that, the brazier should be removed and the door closed. Usually for a feverish illness, this procedure should be carried out three or four times a day. In the summer time, it is not necessary to use a fire. One should make sure that a little breeze is able to enter the room, and that it is slightly cool. In addition, it is not advisable for many people to crowd into the room to care for the patient, as it causes the atmosphere to become bad. Unnecessary people should not be allowed to enter the room. However, if for some unavoidable reason, there are many people in the room, one should carry out the above method several times to change the air. Even so, it is not advisable for the room to be so draughty as to make the patient feel cold. One should use one's discretion and keep the temperature comfortable.

It goes without saying that epidemic fever may infect the caregiver and even sometimes spread to the surrounding area. Thus it has been a custom since old times in our country for a caregiver to put camphor, musk, or something with an aromatic, sharp smell in the nose, and to burn aloes or *okera*[11] in the next room. Near the patient, *okera,* dried orange peel, and juniper tree are burned as a matter of course; even things like dried cuttlefish are used in order to avoid the poisonous air. It seems to me that these are not good methods. They have no benefit, and do a great deal of damage, so they should not be employed. There are several good methods of using inhalations to avoid disease. One method is to moisten the end of a straw broom with vinegar and sweep it about, sprinkling the walls and doors. In an earthen bowl place some Borneo camphor vinegar (described below) and heat it over a low heat, filling the room with the steam. One should sniff it every now and then. Another method is

[11] *Atractylis ovata.* A plant which grows in dry, mountainous areas. The young shoots may be eaten as a food. The dried stems are used as a tonic for the stomach and bladder. It is said to have the power to drive away evil spirits.

to place a pot over the hearth and fill it with ashes and sand, then take a clay jar and bury it half way in the sand mixture. Fill the jar with sea salt. When the ashes, sand and salt are warm, pour sulphuric acid (explained below) over the salt, causing smoke to arise and fill the room. Usually, for a room the size of forty *tatami* mats, seventy-eight *monme* of sea salt and sixty-five *monme* of sulphuric acid are sufficient. Please adjust the amounts in this proportion according to the size of the room. Although both methods are good for controlling the epidemic poison and preventing infection, there are some who dislike the vinegary atmosphere, or some who hate the camphorous air, making it difficult to use these methods. Some people choke or start coughing as soon as they are exposed to the smoke, and damage their lungs, so although this may be carried out in places such as a bedroom where someone has died from epidemic fever, or in an empty room where no one has lived for a long time, it cannot be used in rooms and bedrooms where people are. For these reasons, the following method is best. Take some fine sand and place it in an earthen pot over the hearth, until the moisture is removed. Then take a small pottery *sake* cup, and bury it half way in the sand. Fill it with about four *monme* of powdered saltpetre and warm it a little. Close the windows and doors, take about four *monme* of sulphuric acid and pour it over the saltpetre. Stir it frequently with glass tongs (do not use metal tongs) and allow the smoke to rise. This vapour has a remarkable ability to control epidemic poison, and does not harm the breathing. It also has the advantage of cooling fever, so everywhere one thinks poisonous air might be stagnating, this bowl should be placed, and the mixture vaporised. In a bad case of epidemic fever, one should use this method to vaporise the bedroom two or three times a day. If in the countryside, due to the shortage of materials one is unable to carry out this procedure, one should, if necessary, burn a touch of saltpetre over a fire, or burn sparklers and fill the room with the smoke.

Information for caregivers or those visiting people with epidemic fevers

One, saliva has a propensity to be easily contaminated with poison, so when near the patient, one should be careful not to swallow it, but to spit it out. Two, one should not care for the patient when very hungry, but after one has eaten. In cases where it cannot be helped, then one should at least drink a little *sake*. Three, one

should apply Borneo camphor vinegar to the inside of the nose. Orpiment[12] should not be used. Four, if the patient is sweating profusely and the room smells sweaty, the door should be opened and a fresh breeze allowed in. Five, the patient's clothes should sometimes be changed, washed, and clean ones put on. The bedclothes should also be shaken out and the room cleaned several times a day. Six, be careful to avoid extreme temperatures in the patient's room. Seven, do not allow a lot of people into the room, especially if the room is small. Eight, caregivers and visitors should take a bath or wash every day, and change into clean clothes. Utensils used by the patient should be carefully rinsed. For making medicinal tea, a pottery bowl is preferable. Nine, epidemic fevers are frightening, but one should not be too frightened. Excessive fear can make one more susceptible to the disease, or make it worse once infected. Ten, do not sleep in the same bed as the patient.

If these ten rules are followed, and the medicines and methods explained above are used, then in many cases infection will not occur. Therefore, do not be afraid to care for or visit those you love. In country areas, there are times when even family and close friends stop visiting those with epidemic diseases and they simply sit back and watch the patient die. This is a sad thing, and the reason why it happens is because people do not know how to prevent the disease.

What to do after people have recovered from epidemic diseases or after they have died

When a patient dies from an epidemic fever, the body should be quickly prepared and buried. However, people who die from epidemic fever sometimes come back to life when they are exposed to the vapours of the earth, so be well aware of this and continue to watch out even after burial. The chopsticks and clothes used by the sick person should be washed without delay to remove the poison, and worn after permeating with incense. After recovery or death, the patient's room should be well cleaned. During the day, the windows and doors should be opened to change the air. A vase may be filled with water and flowers and placed in a sunny position in the

[12] A mineral form of arsenic trisulphide.

room to fill the air with their fresh atmosphere. Alternatively, the smoke arising from a mixture of sea salt and sulphuric acid, as described above, may be used.

A good method of protecting against epidemic diseases and stopping their spread

In a certain far away country, at a time when epidemic disease was rampant, not only kings and noblemen as a matter of course, but wealthy farmers, merchants, and other powerful persons too, supplied the funds to build a new hospital. Whenever someone came down with an epidemic fever, they were quickly transferred there, a doctor was called, and nursing staff supplied to care for the patient, so that the disease was stopped from spreading to others. Probably, it is due to the isolation of smallpox victims that there are some places in our country where there is now no smallpox. This method is extremely important for preventing epidemic disease. Epidemic fevers are far more damaging to people than famine. The healing of epidemic fevers with medicine is only secondary. What I hope to do is to treat the cause, and this is, in short, the reason why I am writing of this method of avoiding epidemics.

How to make *haōen*[13]

Take equal quantities of sulphur and saltpetre, and pound them to a powder, mixing well. Light a flame in a pottery bowl and add the powder little by little with a spoon. After doing so, and after the flame has extinguished, take the burnt remains and put them in an earthen bowl, add water, and gently simmer. When the dregs have all dissolved into the water and a skin has formed on the surface, remove from the heat and strain through a fine cloth. Leave to cool. Take the salt which hardens and congeals on the bottom of the dish and around the edges, and use. This is namely *haōen.*

[13] See note 3.

About soap

Soap is called *shabon* in Japanese. There are three types: two types of white soap and one amber-coloured product. One type of white soap comes from Holland and the other comes from China. The latter is inferior and cannot be used for internal medicine. The former one, from Holland, is said to be white in colour and square in shape. It should be used internally. If this is not available, then the amber-coloured soap should be used. This, too, comes from Holland. It is also made in Japan, although the quality is inferior. It may be used to remove dirt, but cannot be used internally.

How to make refined Borneo camphor vinegar

Take two *gō*[14] of strong vinegar and four *monme* of Borneo camphor. First, pound the Borneo camphor into a fine powder. Gradually add the vinegar and mix well. Next, put it into a distiller as pictured below, and treat as if making a hard spirit. Catch the distilled liquid in a glass bottle. Usually about five *shaku*[15] will be collected. When the flavour becomes weak, take the bottle away and plug it with beeswax or a seal made from hardened hair oil so that its potency cannot escape, and store.

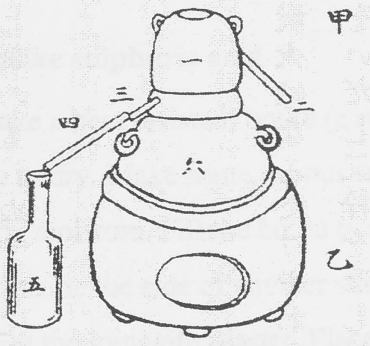

Figure 5

[14] A *gō* equals 0.18 litres.
[15] One *shaku* is one-tenth of a *gō*, 0.018 litres.

Explanation of the diagram

甲 is a picture of the whole still. It is best to use one from pottery. 乙 is the bath. The coals should be as soft as possible. 一 is where one puts the water, and when it is hot, the plug, 二 should be removed and the water let out. Replace the plug and fill with cold water. This process should be repeated several times. 二 is the place where the water is drained away. Be sure to plug it. 三 is where the droplets of distilled liquid emerge. 四 is a bamboo pipe. 五 is a glass bottle. 六 is the base of the distiller, and is where the Borneo camphor should be placed.

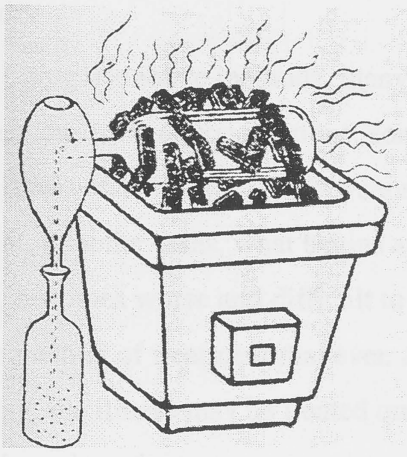

Figure 6

How to make sulphuric acid

Take a heat resistant bottle (a rustic *sake* bottle is good), paint it with plaster and allow to dry. Make some ferrous sulphate into a rough powder, and roast it to remove the moisture. Fill the bottle to about seven parts with this. Place the mouth of the bottle inside the side of another small *sake* bottle into which a hole has been made. Paint the join with plaster. Place the bottle at a slight angle as in the picture, over a small portable clay stove, pile up the coals all over it, and cook over a strong heat. Drops of liquid will come out of the mouth of the small bottle. At first they will be pale in colour and have no taste. They should be thrown away as they come out. Usually, after about two hours, the matter that comes out will be like smoke. People will cough when they are exposed to it, and it is acidic and sour in taste. At this point, a Dutch glass bottle should be placed over the mouth of the small bottle (Japanese

bottles are difficult to use) and the join painted with plaster, so that the gas cannot escape and falls in drops into the bottle. Coals should be added throughout so that the fire does not lose its intensity. If the large bottle should break and smoke should escape, it should be mended with plaster. Usually on a spring day, it should be baked from morning until evening. When no more smoke comes out of the mouth of the bottle, remove the glass bottle and seal with beeswax or a plug made from hair oil to ensure that its potency will not escape, and store. However, this method is extremely abbreviated. Please see the book called *Nibutsukō*[16] for a detailed explanation.

Appendix

Using the above methods, many people are able to avoid epidemic fevers. However, due to their constitutions, some people are unable to escape them, and in remote rural areas, where there is a shortage of doctors, they knowingly neglect their treatment. In some cases, what begins as a minor case, which would have been easily curable, becomes worse and difficult to heal. For this reason, I will now outline below a method of treatment that even a lay person is able to use, so that from the beginning, the illness may be treated quickly and without error. If I were to make a comparison, in order to remove grasses and trees, one must pull them out before the roots grow deep and the branches and leaves flourish. In the same way, illness should be treated before it gathers in strength. However, it is difficult for a lay person to know whether the disease is an epidemic fever or not. Thus, if there is epidemic fever in the vicinity, and the patient complains of heavy limbs, headache, feels a terrible chill, and breaks out in a sweat, then it should be thought of as an epidemic fever and the following medicine administered promptly.

An outline for treating the epidemic fevers which occur after famine

Epidemic fevers differ slightly according to the year and the season in which they occur. In addition, even though exposed to the same poison, people's symptoms

[16] The text has *Nabutsukō*. I have taken this title to be *Nibutsukō,* Chōei's pamphlet on famine relief. The extant version of this pamphlet, however, does not contain a detailed explanation of distillation.

will vary according to their constitutions. Therefore, it is difficult to prescribe a definite treatment. However, many of the epidemic diseases which are prevalent after famine have their origin in impurities in the stomach and intestine, and have similar symptoms, so here I will outline their treatment.

First of all, before the patient has lost too much strength, the impurities should be removed from the stomach. An emetic is good for this. Among emetic medicines ipecacuanha (from Holland) is especially good. The dosage for an adult is about three *fun* and three *rin*[17] at a time. Also for ipecacuanha wine (the same as above), from two to four *rin* may be used. Gourd stems cause severe dizziness and should not be used. In general, after the patient takes the emetic and becomes nauseous, three or four glasses of lukewarm salty water should be given to induce vomiting. Patients who have fur on the tongue should use an emetic as quickly as possible. If this medicine is hard to obtain, then the patient should drink several glasses of lukewarm salty water and put the end of a chicken wing in the throat to cause vomiting. After vomiting, the purgative medicine mentioned above should be used and the bowels emptied two or three times. After that, dissolve one *fun* of saffron in warm water and drink all at once. Usually if the impurities are removed from the stomach and intestines in this way, a mild case will be cured by this alone, and even in severe cases there will be few that end in death.

However, if the symptoms are not relieved, fill a tub or large bucket with water than is hotter than usual, add one *gō* of powdered mustard and stir well. The patient should wear thick clothes, and, rolling up his trousers, place both legs in this hot water, bathing half the body up to below the groin. The water should be hotter than usual, and the bath should be finished after about thirty minutes when there is sweat over the entire body. Wipe the legs, put the patient to bed, and cover with thick bedclothes. Use ten *monme* of elderflowers[18] in three *gō* of water, boil it down to one *gō* and use this all at once to induce sweat. Do not use a medicine made with *katsura*[19] bark to induce sweating. Usually, this method should be used twice a day.

[17] One tenth of a *fun*.
[18] *Sambucus racemosa*. An emetic, which must be used carefully. The juice is used for broken bones, sprains, colds, and tooth decay. The bark is used for dropsy, fevers, and a delayed afterbirth. The leaves are used for ague (Smith, *Chinese Materia Medica*, p. 393).
[19] *Cercidiphyllum japonicum*.

If the patient is very thirsty, squeeze a bitter orange or a lemon, add sugar and mix with hot water. This may be given several times a day. If the patient does not sweat, take about five *monme* each of honey and rice vinegar, mix together and decoct. Stir occasionally, and stop when it has boiled down to about six or seven *monme*. This should be given two or three times a day. This medicine is also excellent for coughing and laryngitis.

For severe headache place about five or six leeches on the temple to suck the blood. Alternatively, scarify the area with a needle and draw blood by cupping. If this does not alleviate the pain, add some vinegar to warm water, then add three *monme* of saltpetre. Soak a hand towel in the bath, wring, and place it on the temples and forehead to warm the head with the steam. Or, take three *rin* of camphor and five *bu* of saltpetre and make into a fine powder. Add wheat flour to make a starchy ball. This [medicine] may be used twice. If the patient cannot sweat, dissolve three *fun* of powdered borax in four *monme* of strong vinegar, and administer all at once. In most cases, the patient will sweat. If the patient does not begin to sweat after one administration, it may be given two or three times.

For insomnia, dissolve one *fun* of saffron in warm water and give the liquid a little at a time. Also, epidemic fevers which are caused by impurities in the stomach and intestines weaken the stomach itself, so after using emetic and purgative medicines, continue to give the following infusion once a day. Take two large scoops of giant hyssop, a small scoop of rose banksia, a small scoop of gentian,[20] and a large scoop of barley. Mix together and infuse briefly in water.

Pains in the stomach and nausea in many cases come from intestinal worms. If these symptoms are present, take two large scoops of Corsican weed,[21] a medium scoop of Chinese rhubarb, a small scoop of anise,[22] and a large scoop of barley. Mix together, boil in water, and administer. If the chest is constricted and painful, take

[20] Refers to several species of *gentiana*. Prescribed for fevers, rheumatism, noxious odours, abnormal discharges, and feebleness in general. Used locally for skin diseases and ulcers. Recommended as a worm treatment, for nocturnal sweating, eye diseases, and for blood in the urine (Smith, *Chinese Materia Medica,* pp. 186-7).

[21] *Diginea simplex*. A kind of seaweed.

[22] *Pimpinella anisum*. A warming medicine, prescribed for flatulence (Smith, *Chinese Materia Medica,* p. 331).

seven *monme* of hollyhock roots,[23] five *monme* of winter chrysanthemum,[24] six *monme* of elderflowers, put in a large bag and place in seven *gō* of water. Boil it down to five *gō,* then add five *shaku* of vinegar. Close tightly, and use it to warm the chest and stomach with the steam.

If care is taken from the beginning to treat illness promptly, using the above methods, most cases will be cured. However, these are the simplest methods of treating the diseases that are prevalent after eating a poor diet in famine years, and are only medicines which can be used by lay persons without harm. They will not cure all epidemic diseases. Nevertheless, these methods, if used in the early stages of any epidemic fever, have a helpful effect, so whatever the disease, do not be afraid to use them promptly. It should be possible to cure slight cases immediately and completely. It is not my urgent business now to write about the treatment for other epidemic fevers, and it is not possible to write in detail in this small book, so I will omit this here and leave it for another book. Please do not condemn me, dear readers, for the deficiencies.

Edited by pupil Takahashi Keisaku, of Jōmō

Each time there is a great disaster, it is followed by epidemic disease. In the spring following the disaster of Tenmei 6 [1786], it is said that ten times more people died from epidemic disease than of starvation. This year, the famine has been much the same as it was in Tenmei 6, and epidemic diseases have been increasing steadily. Takano-ō[25] laments this, and has written this little book in which he gives details of how to avoid and heal these diseases. Epidemics circulate, and are avoided, and if unavoidable, are healed. In the midst of disaster, the book has a wide-ranging power to relieve suffering, like a boat to rely on when the bridge is broken. On the joyful occasion of its printing, five days after the winter solstice of 1836, Hagura[26]

[23] *Althea rosea.* According to Smith, the parts of the plant used are the shoots, which are used for their regulative and stomachic properties, and in fevers, labour, and dysentery, and the rootstock and seeds, which are used as a diuretic and applied to ulcers (Smith, *Chinese Materia Medica,* p. 33).
[24] *Chrysanthemum indicum.* Commonly used in the treatment of blood circulation, colds, headaches, inflamed eyes, and for general vitality (Smith, *Chinese Materia Medica,* p. 107).
[25] A term of respect.
[26] This Hagura was probably the Confucian scholar and educator, Hagura Geki, (1790-1862). He is believed to have associated with Watanabe Kazan, and was employed for a time as the *bakufu*

wrote [the following postscript].

Uchida Kyō, scribe.

In this year of 1836, there has been a bad harvest, and in every province, there is famine. Once, a wise person said that perhaps it is in the nature of things that diseases follow immediately after a famine. For this reason, Takano-ō humbly wrote *Treatise on Two Things For The Relief Of Famine,* and *Treatise on Contagious Diseases,* which are urgently-needed and erudite books. When saving lives is urgent, one does not wait in the morning until the evening, so he wrote about the methods of avoiding epidemic diseases, as the first step in this process. It is indeed praiseworthy to hope to save the common people from sinking into early death. With sighs of admiration, I write this brief afterword.

Read three days after the beginning of the second severest cold, 1836, by a student of medicine.[27]

The End.

Books by Takano Zuikō Sensei[28]

Fundamentals of Medicine, Volume One (five books, special edition)

Fundamentals of Medicine, Volume Two (seven books, soon to be published)

Zuikō's Hackneyed Work (ten books, soon to be published)

A Brief History of Holland (seven volumes, soon to be published)

Western Magazine (fifteen books, soon to be published)

A Compilation of Strange Utensils (ten volumes, soon to be published)

Treatise on Contagious Diseases, including Methods of Avoiding Epidemic Diseases (two books, special edition)

intendant of government territory in Kōzuke, among other provinces (Satō, *Yōgakushi kenkyū josetsu*, p. 197).

[27] Around the 8th January of the following year, by the Western calendar.

[28] This appears to be an advertisement for the Izumiya Kichibei bookstore, which was located, as indicated, opposite the Shiba Shinmei shrine. The bookstore was a member of the *minami* group of booksellers, that consisted of Edo-based, rather than Kyoto-based businesses. The store may be found on a register of this group from 1809. See Konta Yōzō, *Edo no honyasan* (Tokyo: NHK Books, 1977) p. 89.

Treatise on Two Things (one volume, carving completed)

The Steward, Daikandō[29]

Izumiya Kichibei Bookstore, opposite Shiba Shinmei, Edo.

[29] Daikandō was the name of Chōei's school.

BIBLIOGRAPHY

Works in Japanese

Amano Hiroshi. *Kusuri bunka ōrai* [薬文化往来]. Tokyo: Seiabō, 1992.

Amino Yoshihiko. *Zoku nihon no rekishi o yominaosu* [続日本の歴史を読み直す]. Tokyo: Chikuma Shobō, 1996.

Aoki Michio, and Yamada Tadao, eds. *Tempōki no seiji to shakai* [天保期の政治と社会]. Tokyo: Yūhaikaku, 1981.

Aoki Toshiyuki. "Itō Chūtai hisshya 'Takano shi sōbyōron'." [伊藤忠岱筆写「高野氏　総病論」] In *Jitsugakushi kenkyū* [実学史研究], edited by Jitsugakushiryō Kenkyūkai, Vol. 9, 253-268. Kyoto: Shibunkaku, 1993.

_____. "Sōmō no rangaku." [草莽の蘭学] In *Nihon no kinsei14: bunka no taishūka* [日本の近１４世文化の大衆化], edited by Takeuchi Makoto, 219-268. Tokyo: Chūō Kōronsha, 1993.

_____. *Zaison rangaku no kenkyū* [在村蘭学の研究]. Kyoto: Shibunkaku, 1998.

Arai Shinji. "Takano Chōei to Fukuda Sōtei."[高野長英と福田宗禎] *Jōmō shigaku* [上毛史学] 7 (1956): 1-5.

Arakawa Hidetoshi. *Saigai no rekishi* [災害の歴史]. Tokyo: Nihon Rekishi Shinsho, 1967.

Fujikawa Yū. *Isha no Fūzoku, Meishin* [医者の風俗・迷信]. Edited by Fujikawa Eirō. Vol. 3, *Fujikawa Yū Chosaku Shū*. Kyoto: Shibunkaku, 1975.

Gunma ken Agatsuma kyōikukai, ed. *Gunma ken Agatsuma gun shi* [群馬県吾妻郡誌]. Nakanojōmachi: Gunma ken Agatsuma kyōikukai, 1929.

Gunma ken shi hensan iinkai, ed. *Gunma ken shi* [群馬県史]. Vol. Tsūshihen 6. Maebashi: Gunma ken, 1992.

Harada Tomohiko, Hayashiya Tatsusaburō, and Kodama Kōta, eds. *Edo jidai no kikin* [江戸時代の飢饉]. Tokyo: Yūzankaku, 1982.

Hattori Toshirō. *Edo jidai igakushi no kenkyū* [江戸時代医学史の研究]. Tokyo: Yoshikawa Kōbunkan, 1978.

Ichimura Yūichi, and Ōishi Shinzaburō. *Sakoku:yuruyaka na jōhō kakumei* [鎖国＝ゆるやかな情報革命]. Vol. 1260, *Kōdansha Gendai Shinsho*. Tokyo: Kōdansha, 1995.

Isei hyakunenshi [医制百年史]: Kōseisho Imukyoku, 1967.

Jitsugakushiryō kenkyūkai, ed. *Jitsugakushi kenkyū*. Vol. 9. Kyoto: Shibunkaku, 1993.

Kanai Kōsaku. "Fukuda Kōsai no rangaku no michi to Agatsuma rangaku." [福田浩斎の蘭学の道と吾妻蘭学] *Gunma Bunka* 203 (1985): 29-46.

_____. *Takahashi Keisaku nikki* [高橋景作日記]. Nakanojōmachi: Takahashi Keisaku nikki kankōkai, 1995.

_____. *Takano Chōei to Agatsuma* [高野長英と吾妻]. Nakanojōmachi: Kanai Kōsaku, 1992.

_____, ed. *Yanagida Teizō no Tempō kiji* [柳田鼎蔵の天保紀事]. Gunma: Jōmō Shinbunsha, 1980.

_____. "Rangaku to waga Nakanojōmachi." [蘭学とわが中之条町] In *Nakanojōmachi shi* [中之条町誌], edited by Nakanojōmachi shi hensan iinkai, 1104-1158. Nakanojōmachi: 1976.

_____. "Takano Chōei monka Nakanojōmachi Mochizuki Shunsai no hizō monjo o haiken shite." [高野長英門下中之条町望月俊斎の秘蔵文書を拝見して] *Gunma Bunka* [群馬文化] 247 (1996): 19-32.

Karasawa Sadaichi. *Agatsuma Shichō* [吾妻史帖]. Vol. 9, *Shichō Series*. Maebashi: Miyama Bunko, 1998.

Kikuchi Isao. *Kinsei no kikin* [近世の飢饉]. Tokyo: Yoshikawa Kōbunkan, 1997.

Koike, Iichi. *Zusetsu nihon no 'i' no rekishi* [図説日本の「医」の歴史]. Tokyo: Daikūsha, 1993.

Koike Zenkichi. *Edo jidai no Nakanojōmachi-machizukuri: jinkō: nōgyō* [江戸時代の中之条町—町づくり・人口・農業], 1963.

Kokushi daijiten [国史大辞典]. 14 vols. Tokyo: Yoshikawa Kōbunkan, 1979-1993.

Konta, Yōzō. *Edo no honyasan* [江戸の本屋さん]. Tokyo: NHK Books, 1977.

Kuriyama Shigehisa, and Yamada Keiji, eds. *Rekishi no naka no yamai to igaku* [歴史の中の病と医学]. Kyoto: Kokusai Nihon Bunka Kenkyū Sentaa, 1997.

Makino Tomitarō. *Shin nihon shokubutsu zukan* [新日本植物図鑑]. Tokyo: Hokuryūkan, 1962.

Maruyama Kiyoyasu. *Gunma no ishi* [群馬の医史]. Maebashi: Gunma ken ishi kai, 1958.

Maruyama Yasunari. "Kinsei jōhōka shakai no keisei." [近世情報化社会の形成] In *Nihon no kinsei 6 jōhō to kōtsū* [日本の近世６情報と交通], edited by Maruyama Yasunari, 9-56. Tokyo: Chūō Kōronsha, 1992.

_____, ed. *Nihon no kinsei 6 jōhō to kōtsu*. Tokyo: Chūō Kōronsha, 1992.

Matsuoka Hideo. "Kikin to sabetsu." [ききんと差別] In *Edo jidai no kikin*, edited by Harada Tomohiko, Hayashiya Tatsusaburō and Kodama Kōta, 131-134. Tokyo: Yūzankaku, 1982.

Miyachi Masato. *Bakumatsu ishinki no bunka to jōhō* [幕末維新期の文化と情報]. Tokyo: Rekishigaku Sōsho, 1994.

Murakami Nao. "Edo jidai no kyūkōsho." [江戸時代の救荒書] In *Edo jidai no kikin*, edited by Harada Tomohiko, Hayashiya Tatsusaburō and Kodama Kōta, 116. Tokyo:Yūzankaku, 1982.

_____. "Kikin to daikan." [ききんと代官] In *Edo jidai no kikin*, edited by Harada Tomohiko, Hayashiya Tatsusaburō and Kodama Kōta, 134-136. Tokyo: Yūzankaku, 1982.

Nakahara Magokichi. "Kikin to nōgyō gijutsu." [飢饉と農業技術] In *Edo jidai no kikin*, edited by Harada Tomohiko, Hayashiya Tatsusaburō and Kodama Kōta, 41-49. Tokyo:Yūzankaku, 1982.

Nakajima Yōichirō. *Kikin nihonshi* [飢饉日本史]. Tokyo: Yūzankaku, 1976.

_____. *Byōki Nihonshi* [病気日本史]. Vol. 11, *Yūzankaku Books*. Tokyo: Yūzankaku Shuppan, 1995.

Nakanojōmachi shi hensan iinkai, ed. *Nakanojōmachishi* [中之条町誌]. Nakanojōmachi: Nakanojōmachi Yakuba, 1976.

_____, ed. *Nakanojōmachishi shiryōhen* [中之条町誌資料編]. Nakanojōmachi: Nakanojōmachi Yakuba, 1983.

Nakayama Shigeru, ed. *Bakumatsu no yōgaku* [幕末の洋学]. Kyoto: Minerva Shobō, 1984.

Nichiran Gakkai, ed. *Yōgaku kankei kenkyū bunken yōran* [洋学関係研究文献要覧]. Tokyo: Nichigai Associates, 1984

_____, ed. *Yōgakushi jiten* [洋学史事典]. Tokyo: Yūshōdo Shuppan, 1984.

Nihon chimei daijiten [日本地名大辞典]. Tokyo: Kadokawa, 1984.

Nihonshi daijiten [日本史大事典]. 7 vols. Tokyo: Heibonsha, 1992.

Nishida Tomomi. *'Chi' no shisō* [「血」の思想]. Tokyo: Kenseisha, 1995.

Ogawa Teizō. *Igaku no rekishi* [医学の歴史], *Chūō Shinsho 39*. Tokyo: Chūō Kōronsha, 1964.

Ōishi Manabu. *Yoshimune to Kyōho no kaikaku* [吉宗と享保の改革]. Tokyo: Tōkyōdō Shuppan, 1995.

Ono Sanataka. *Edo no machiisha* [江戸の町医者]. Tokyo: Shinchōsha, 1997.

Ōtsuki Fumihiko. "Takano Chōei Gyōjō Itsuwa." [高野長英行状逸話] In *Fukken Zassan* [復軒雑纂], 386-398. Tokyo: Kōbundō Shoten, 1902.

Satō Shōsuke. *Takano Chōei* [高野長英]. Vol. 512, *Iwanami shinsho shin akaban*. Tokyo: Iwanami Shoten, 1997.

_____. *Watanabe Kazan* [渡辺崋山]. Tokyo: Yoshikawa Kōbunkan, 1986.

_____, ed. *Watanabe Kazan, Takano Chōei* [渡辺崋山高野長英]. Vol. 25, *Nihon no meicho*. Tokyo: Chūō Kōronsha, 1972.

_____. *Yōgakushi kenkyū josetsu* [洋学史研究序説]. Tokyo: Iwanami Shoten, 1964.

_____. *Yōgakushi no kenkyū* [洋学史の研究]. Tokyo: Chūō Kōronsha, 1980.

_____. *Yōgakushi ronkō* [洋学史論考]. Kyoto: Shibunkaku Shuppan, 1993.

Sōda Hajime. *Zusetsu nihon iryō bunkashi* [図説日本医療文化史]. Kyoto: Shibunkaku Shuppan, 1989.

Shirasugi Etsuo. "Nihon ni okeru kyūkōsho no seiritsu to sono engen." [日本における救荒書の成立とその淵源] In *Higashi ajia no honzō to hakubutsugaku no sekai* [東アジアの本草と博物学の世界], edited by Yamada Keiji, 138-173. Kyoto: Shibunkaku Shuppan, 1995.

_____. "Senki to Edo jidai no hitobito no shintai keiken." [疝気と江戸時代のひとびとの身体経験] In *Rekishi no naka no yamai to igaku* [歴史の中の病と医学], edited by Kuriyama Shigehisa and Yamada Keiji, 63-92. Kyoto: Kokusai Nihon Bunka Kenkyū Sentaa, 1997.

Sugi Hitoshi. "Kaseiki no shakai to bunka." [化政期の社会と文化] In *Tempōki no seiji to shakai* [天保期の政治と社会], edited by Aoki Michio and Yamada Tadao, 17-70. Tokyo: Yūhaikaku, 1981.

Sugiura Minpei. *Kazan to Chōei* [崋山と長英]. Tokyo: Daisan Bunmeisha, 1977.

Sugiyama Shigeru. *Kusuri no shakaishi* [薬の社会史]. Tokyo: Kindaibungeisha, 1999.

Tabata Tsutomu. "Bakumatsu ni okeru ichi chihō ran'i no kiseki ni tsuite."[幕末における一地方蘭医の軌跡について] *Chihōshi kenkyū* [地方史研究]191, October (1984): 45-58.

Takahashi Satoshi. *Kinsei sonraku seikatsu bunkashi josetsu* [近世村落生活文化史序説]. Tokyo: Miraisha, 1990.

Takano Chōei. "Wasuregatami." [わすれがたみ] In *Nihon shisō taikei 55* [日本思想大系], edited by Satō Shōsuke, 171-184. Tokyo: Iwanami Shoten, 1971.

Takano Chōei Kinenkan, ed. *Takano Chōei no tegami* [高野長英の手紙]. Mizusawa: Takano Chōei Kinenkan, 1993.

Takano Chōei Zenshū Kankō Kai, ed. *Takano Chōei Zenshū* [高野長英全集]. 2nd ed. 6 vols. Tokyo: Daiichi Shobō, 1978.

Takano Chōun. *Takano Chōei den* [高野長英伝]. 2nd ed. Tokyo: Iwanami Shoten, 1943.

Takayanagi Kaneyoshi. *Edo jidai hinin no seikatsu* [江戸時代非人の生活]. Tokyo: Yūzankaku Shuppan, 1981.

Taketa Katsuzō. *Furo to yu no koborebanashi* [風呂と湯のこぼれ話]. Tokyo: Muramatsu Shokan, 1977.

Takeuchi, Makoto, ed. *Nihon no kinsei 14: bunka no taishūka* [日本の近世１４文化の大衆化]. Tokyo: Chūō kōronsha, 1993.

_____. "Shomin bunka no naka no Edo." [庶民文化のなかの江戸] In *Nihon no kinsei 14: bunka no taishūka,* edited by Takeuchi Makoto, 7-54. Tokyo: Chūō Kōronsha, 1993.

Tanaka Yūko. *Edo no sōzōryoku* [江戸の想像力]. Tokyo: Chikuma Shobō, 1986.

_____. *Edo wa nettowaaku* [江戸はネットワーク]. Tokyo: Heibonsha, 1993.

Tanida Etsuji, and Koike Mitsue. *Nihon Fukushokushi* [日本服飾史]. Tokyo: Kōseikan, 1989.

Tasaki Tetsurō. *Chihō chishikijin no keisei* [地方知識人の形成]. Tokyo: Meicho Shuppan, 1990.

_____. "Yōgaku no denban, fukyū." [洋学の伝播・普及] In *Bakumatsu no yōgaku* [幕末の洋学], edited by Nakayama Shigeru, 51-65. Kyoto: Minerva Shobō, 1984.

_____. *Zaison no rangaku* [在村の蘭学]. Tokyo: Meicho Shuppan, 1985.

_____, ed. *Zaison rangaku no tenkai* [在村蘭学の展開]. Kyoto: Shibunkaku, 1992.

Tatsukawa Shōji. *Edo yamai sōshi* [江戸病草紙]. Tokyo: Chikuma Shobō, 1998.

Tsukamoto Manabu, ed. *Nihon no kinsei 8: mura no seikatsu bunka*. Tokyo: Chūō Kōronsha, 1992.

_____. *Tokai to inaka* [都会と田舎]. Tokyo: Heibonsha, 1991.

_____. "Toshi bunka to no kōryū." [都市文化との交流] In *Nihon no kinsei 8: mura no seikatsu bunka* [日本の近世８村の生活文化], edited by Tsukamoto Manabu, 333-382. Tokyo: Chūō Kōronsha, 1992.

Tsurumi Shunsuke. *Takano Chōei* [高野長英]. Vol. 276, *Asahi sensho*. Tokyo: Asahi Shinbunsha, 1985.

Uesugi Mitsuhiko. "Tempō no kikin to bakuhan taisei no hōkai." [天保の飢饉と幕藩体制の崩壊] In *Edo jidai no kikin*, edited by Harada Tomohiko, Hayashiya Tatsusaburō and Kodama Kōta, 105-115. Tokyo: Rekishi Kōron Books, 1982.

Watanabe Shinichirō. *Edo no onnatachi no yuami* [江戸の女たちの湯浴み]. Tokyo: Shinchōsha, 1996.

Yamada Keiji, ed. *Higashi ajia no honzō to hakubutsugaku no sekai*. [東アジアの本草と博物学の世界] Kyoto: Shibunkaku, 1995.

Yanai Kenji, ed. *Nagasaki Dejima no shokubunka* [長崎出島の食文化]. Nagasaki: Shinwa Bunko, 1993.

Yashiro Shūji. *Takano Chōei to Gunma* [高野長英と群馬]. Takasaki: Asaosha, 1977.

Yoshioka Shin. *Edo no kigusuriya* [江戸の生薬屋]. Tokyo: Seiabō, 1994.

Works in English

Abiko, Bonnie. "Watanabe Kazan: The Man and His Times." PhD thesis, Princeton University, 1982.

Ariyoshi, Sawako. *The doctor's wife*. Translated by Wakako Hironaka and Ann Siller Kostant. Tokyo: Kodansha International, 1978.

Bailey, L.H. *The Standard Cyclopedia of Horticulture*. 3 vols. New York: Macmillan, 1930.

Bartholomew, James. *The Formation of Science in Japan*. New Haven: Yale University Press, 1989.

Beasley, W.G. *Great Britain and the Opening of Japan 1834-1858*. London: Luzac, 1951.

Benedict, Carol. *Bubonic Plague in Nineteenth-Century China*. Stanford: Stanford University Press, 1996.

Beukers, Harm. "The Fight Against Smallpox in Japan. The Value of Western Medicine Proved." In *Red-Hair Medicine Dutch-Japanese medical relations*, edited by Harm Beukers, A.M. Luyendijk-Elshout, M.E. van Opstall and F. Vos, 59-77. Amsterdam: Rodopi, 1991.

_____. *The mission of Hippocrates in Japan*. Amsterdam: Four Centuries of Netherlands-Japan Relations, 1998.

Beukers, Harmen, Luyendijk-Elshout A.M., van Opstall M.E., and Vos F., eds. *Red-Hair Medicine Dutch-Japanese medical relations*. Amsterdam: Rodopi, 1991.

Bolitho, Harold. "The Tempō Crisis." In *The Cambridge History of Japan*, edited by Marius Jansen, 116-167. Cambridge: Cambridge University Press, 1989.

Bourke, Austin. *'The visitation of God'? The potato and the great Irish famine*. Dublin: The Lilliput Press, 1993.

Bowers, John. *Western Medical Pioneers in Feudal Japan*. Baltimore: John Hopkins Press, 1970.

_____. *When the Twain Meet*. Baltimore: John Hopkins University Press, 1980.

Burke, Peter. *The European Renaissance*. Oxford: Blackwell, 1998.

Casal, U.A. "Acupuncture, Cautery and Massage in Japan." *Folklore Studies* 21 (1962): 221-235.

Coleman, James, Katz Elihu, and Menzel Herbert. "The Diffusion of an Innovation among Physicians." In *Social Networks A Developing Paradigm*, edited by Samuel Leinhardt, 107-124. New York: Academic Press Inc, 1977.

Conrad, Lawrence, Neve Michael, Nutton Vivian, Porter Roy, and Wear Andrew, eds. *The Western Medical Tradition 800BC to AD 1800*. Cambridge: Cambridge University Press, 1995.

Cuncliffe, Barry. *The City of Bath*. Gloucester: Allan Sutton, 1986.

de Bary, Wm. Theodore. "Introduction." In *Principle and Practicality*, edited by Wm. Theodore de Bary and Irene Bloom, 1-36. New York: Columbia University Press, 1979.

_____, and Bloom Irene, eds. *Principle and Practicality*. New York: Columbia University Press, 1979.

De Candolle, Alphonse. *Origin of Cultivated Plants*. Reprint of 2nd ed. New York: Hafner Publishing Co., 1959.

Digby, Anne. *Making a medical living : doctors and patients in the English market for medicine, 1720-1911*. Cambridge: Cambridge University Press, 1994.

Dobson, Mary. *Contours of death and disease in early modern England*. Cambridge: Cambridge University Press, 1997.

Gluck, Carol. "The Invention of Edo." In *Mirror of Modernity: Invented Traditions of Modern Japan*, edited by Stephen Vlastos, 262-284. Berkeley, Los Angeles: University of California Press, 1998.

Goodman, Grant. *Japan: The Dutch Experience*. London: The Athlone Press, 1986.

Greene, David C. "Life of Takano Nagahide." *Transactions of the Asiatic Society of Japan* 41, First series (1913): 390-492.

Grilli, Peter, and Levy Dana. *Pleasures of the Japanese Bath*. New York: Weatherhill, 1992.

Grist, Norman, et.al. *Diseases of Infection An Illustrated Textbook*. Oxford: Oxford University Press, 1987.

Hall, J.W., ed. *The Cambridge History of Japan Vol.4 Early Modern Japan*. Cambridge: Cambridge University Press, 1991.

Hamlin, Christopher. "Predisposing Causes and Public Health in Early Nineteenth-Century Medical Thought." *Social History of Medicine* 5, no. 1 (1992): 43-70.

Haneveld, G.T. "The Introduction of Acupuncture into Western Medicine: the Influence of Japanese and Dutch physicians." In *Red-Hair Medicine Dutch-Japanese Medical Relations*, edited by H. Beukers, A.M. Luyendijk-Elshout, M.E. van Opstall and F. Vos, 51-8. Amsterdam: Rodopi, 1991.

Hanley, Susan. *Everyday Things In Premodern Japan*. Berkeley: University of California Press, 1997.

_____. "Tokugawa society: material culture, standard of living, and life-styles." In *The Cambridge History of Japan Vol.4 Early Modern Japan*, edited by J.W. Hall, 660-705. Cambridge: Cambridge University Press, 1991.

Hanley, Susan, and Yamamura Kozo. *Economic and Demographic Change in Preindustrial Japan 1600-1868*. Princeton: Princeton University Press, 1977.

Harootunian, H.D. "Late Tokugawa culture and thought." In *The Cambridge History of Japan*, edited by Marius Jansen, 168-258. Cambridge: Cambridge University Press, 1989.

Howell, David. "Social Disorder and Moral Reform in Late Tokugawa Japan." Paper presented at the Japanese Studies Association of Australia Biennial Conference, Central Queensland University, Rockhampton 1999.

Hyams, Edward. *Plants in the Service of Man*. London: J.M. Dent and Sons, 1971.

Inkster, Ian. "Marginal Men: Aspects of the Social Role of the Medical Community in Sheffield 1790-1850." In *Health Care and Popular Medicine in Nineteenth Century England*, edited by John Woodward and David Richards, 128-63. London: Croom Helm, 1977.

Jannetta, Ann Bowman. *Epidemics and Mortality in Early Modern Japan*. Princeton: Princeton University Press, 1987.

_____. "Famine Mortality in Nineteenth-Century Japan: The Evidence from a Temple Death Register." *Population Studies* 46 (1992): 427-443.

_____. "The Introduction of Jennerian Vaccination in Nineteenth- Century Japan." *Japan Foundation Newsletter* XXIII, no. 2 (1995): 6-9.

Jansen, Marius, ed. *The Cambridge History of Japan, Vol.5*. Cambridge: Cambridge University Press, 1989.

_____. "Japan in the early nineteenth century." In *The Cambridge History of Japan, Vol.5*, edited by Marius Jansen, 50-115. Cambridge: Cambridge University Press, 1989.

Jauss, Hans Robert. *Toward an aesthetic of reception*. Translated by Timothy Bahti. Minneapolis: University of Minnesota Press, 1982.

Johnston. *The Modern Epidemic*. Cambridge, Massachusetts: Harvard University Press, 1995.

Kaempfer, Engelbert. *Kaempfer's Japan Tokugawa Culture Observed*. Translated by Beatrice Bodart-Bailey. Honolulu: University of Hawaii Press, 1999.

Kato, Shuichi. *A History of Japanese Literature*. Translated by Don Sanderson. Vol. 2. Tokyo: Kodansha International, 1983.

Katsu, Kokichi. *Musui's Story*. Translated by Teruko Craig. Tucson: University of Arizona Press, 1995.

Keene, Donald. *The Japanese Discovery of Europe, 1720-1830*. Stanford: Stanford University Press, 1969.

Klegon, Douglas. "The Sociology of Professions An Emerging Perspective." *Sociology of Work and Professions* 5, no. 3 (1978): 259-283.

Kodansha Encyclopedia of Japan. 8 vols. Tokyo: Kodansha Ltd., 1983.

Kornicki, Peter. *The Book in Japan*. Leiden: Brill, 1998.

Koschmann, Victor. *The Mito Ideology*. Berkeley: University of California Press, 1987.

Kuriyama, Shigehisa. "Interpreting the History of Bloodletting." *Journal of the History of Medicine and Allied Sciences* 50, no. 1 (1995): 11-46.

Leslie, Charles, ed. *Asian Medical Systems: A Comparative Study*. Berkeley: University of California Press, 1976.

Lock, Margaret M. *East Asian Medicine in Urban Japan, Comparative Studies of Health Systems and Medical Care*. Berkeley: University of California Press, 1980.

Macfarlane, Alan. *The Savage Wars of Peace*. Oxford: Blackwell, 1997.

Miyashita, Saburo. "A bibliography of the Dutch medical books translated into Japanese." *Archives Internationales D'Histoire Des Sciences* 25 (1975): 8-72.

Moriya, Katsuhisa. "Urban Networks and Information Networks." In *Tokugawa Japan*, edited by Chie Nakane and Shinzaburo Oishi, 97-123. Tokyo: University of Tokyo Press, 1990.

Morris-Suzuki, Tessa. *Reinventing Japan*. Armonk: M.E. Sharpe, 1998.

_____. "Sericulture and the Origins of Japanese Industrialization." *Technology and Culture* 33, no. 1 (1992): 101-121.

_____. *The Technological Transformation of Japan*. Cambridge: Cambridge University Press, 1994.

Nagayo, Takeo. *History of Japanese Medicine in the Edo Era*. Nagoya: University of Nagoya Press, 1991.

Nakamura, Ellen Gardner. "A Portrait of Takano Chōei." *International Christian University Asian Cultural Studies* 24, March (1998): 19-29.

Nakane, Chie, and Oishi Shinzaburo, eds. *Tokugawa Japan*. Tokyo: University of Tokyo Press, 1990.

Nakayama, Shigeru. "Ways of Thinking of Japanese Physicians." Paper presented at the International Symposia on the Comparative History of Medicine-East and West, 3-19, Shizuoka, Japan 1976-7.

Outlines Of Agriculture. Tokyo: Agricultural Bureau, Department of Agriculture and Commerce, 1910.

Otsuka, Yasuo. "Chinese Traditional Medicine in Japan." In *Asian Medical Systems: A Comparative Study*, edited by Charles Leslie, 322-340. Berkeley: University of California Press, 1976.

Ozaki, Norman Takeshi. "Conceptual Changes in Japanese Medicine During the Tokugawa Period." PhD thesis, University of California, 1979.

Pearl, J.L. "The Role of Personal Correspondence in the Exchange of Scientific Information in Early Modern France." *Renaissance and Reformation* 8, no. 2 (1984): 106-113.

Pensabene, T.S. *The Rise of the Medical Practioner in Victoria*. Canberra: Australian National University Press, 1980.

Peterson, M.J. *The Medical Profession in Mid-Victorian London*. Berkeley: University of California Press, 1978.

Plath, David. *Long Engagements*. Stanford: Stanford University Press, 1980.

Porter, Dorothy, and Porter Roy. *Patient's Progress*. Oxford: Polity Press, 1989.

Porter, Roy, ed. *The Cambridge Illustrated History of Medicine*. Cambridge: Cambridge University Press, 1996.

Pratt, Edward. *Japan's Protoindustrial Elite*. Cambridge, Massachusetts: Harvard University Asia Center, 1999.

Riley, James C. *The Eighteenth-Century Campaign To Avoid Disease*. Basingstoke: Macmillan, 1987.

Robertson, Jennifer. "Sexy Rice Plant Gender, Farm Manuals, and Grass-Roots Nativism." *Monumenta Nipponica* 39, no. 3 (1984): 233-260.

Rosenberg, Charles. "Florence Nightingale on Contagion: The Hospital as Moral Universe." In *Healing and History*, edited by Charles Rosenberg, 116-136. New York: Dawson, 1979.

_____. "The Therapeutic Revolution: Medicine, Meaning, and Social Change in Nineteenth-Century America." *Perspectives in Biology and Medicine* 20, no. 4 (1977): 485-506.

Rubinger, Richard. *Private Academies of Tokugawa Japan*. Princeton: Princeton University Press, 1982.

Sansom, George. *The Western World and Japan*. London: Cresset, 1950.

Shils, Edward. "Center and Periphery." In *The Constitution of Society*, edited by Edward Shils, 93-109. Chicago: University of Chicago Press, 1982.

_____, ed. *The Constitution of Society*. Chicago: University of Chicago Press, 1982.

Simmonds, N.W., ed. *Evolution of Crop Plants*. London: Longman, 1976.

Sippel, Patricia. "Aoki Konyō (1698-1769) and the Beginnings of *Rangaku*." *Japanese Studies in the History of Science* 11 (1972): 127-162.

Smith, F. Porter. *Chinese Materia Medica*. 2nd revised ed. Taipei: Ku T'ing Book House, 1969.

Smith, Thomas. *The Agrarian Origins of Modern Japan*. Stanford: Stanford University Press, 1959.

Standlee, Mary W. *The Great Pulse: Japanese Midwifery and Obstetrics through the Ages*. Rutland: Tuttle, 1959.

Steele, M. William, and Caiger John G. "On Ignorant Whalers and Japan's "Shell and Repel" Edict of 1825." *International Journal of Maritime History* V, no. 2 (1993): 31-56.

Steger, Brigitte. "From Impurity to Hygiene: The Role of Midwives in the Modernisation of Japan." *Japan Forum* 6, no. 2 (1994): 175-187.

Sugimoto, Masayoshi, and Swain David. *Science and Culture in Traditional Japan A.D.600-1854*. Cambridge, Massachusetts: The MIT Press, 1978.

Toby, Ronald. *State and Diplomacy in Early Modern Japan*. Princeton: Princeton University Press, 1984.

Totman, Conrad. *Early Modern Japan*. Berkeley: University of California Press, 1993.

_____. "Tokugawa Peasants: Win, Lose, or Draw." *Monumenta Nipponica* 41, no. 4 (1986): 457-476.

Vaporis, Constantine. *Breaking Barriers*. Cambridge, Massachusetts: Harvard University Press, 1994.

_____. "Caveat Viator Advice to Travelers in the Edo Period." *Monumenta Nipponica* 44, no. 4 (1989): 461-483.

Vlastos, Stephen, ed. *Mirror of Modernity*. Berkeley: University of California Press, 1998.

Waddington, Ivan. "General Practitioners and Consultants in Early Nineteenth Century England: The Sociology of an Intra-Professional Conflict." In *Health Care and Popular Medicine in Nineteenth Century England*, edited by John Woodward and David Richards, 164-188. London: Croom Helm, 1977.

Wakabayashi, Bob Tadashi. *Anti-Foreignism and Western Learning in Early Modern Japan*. Massachusetts: Harvard University Press, 1986.

Walker, Brett. "The Early Modern Japanese State and Ainu Vaccinations: Redefining the Body Politic 1799-1868." *Past and Present* 163 (1999): 121-160.

Walter, John, and Schofield Roger, eds. *Famine, disease and the social order in early modern society*. Cambridge: Cambridge University Press, 1989.

Walthall, Anne. "The Family Ideology of the Rural Entrepreneurs in Nineteenth Century Japan." *Journal of Social History* 23, no. 3 (1990): 463-484.

_____. "Peripheries Rural Culture in Tokugawa Japan." *Monumenta Nipponica* 39, no. 4 (1984): 371-392.

_____. "Village Networks Sōdai and the Sale of Edo Nightsoil." *Monumenta Nipponica* 43, no. 3 (1988): 279-303.

White, James. "State Growth and Popular Protest in Tokugawa Japan." *Journal of Japanese Studies* 14, no. 1 (1988): 1-25.

Willis, Evan. *Medical Dominance*. Sydney: George Allen and Unwin, 1983.

Wittermans, Elizabeth P., and Bowers John Z., eds. *Doctor on Desima Selected Chapters From Jhr J.L.C. Pompe van Meerdervoort's Vijf Jaren in Japan*. Tokyo: Sophia University, 1970.

Woodward, John, and Richards, David, eds. *Health Care and Popular Medicine in Nineteenth Century England*. London: Croom Helm, 1977.