# Hippocrates Meets the Yellow Emperor

**On the Reception of Chinese and Japanese Medicine in Early Modern Europe**

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Utrecht, 2009

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ABSTRACT: This thesis discusses the topic of Chinese and Japanese medicine – i.e. moxibustion, acupuncture, and pulse-taking – in the Dutch Republic and neighbouring countries, in order to answer the question how processes of appropriation and reception occurred, with which an insight is gained in scholarly discussions on new and old approaches to nature.

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# Introduction

Once his mission in the trading post of Batavia on Java on orders of the the Dutch East India Company (*Vereenigde Oost-Indische Compagnie*, VOC) had commenced, reverend Herman Busschof (c. 1620–1674) began to feel burning pains in his foot. Similarly to his grandfather years earlier, he suffered from gout, a disorder also known as podagra, one of the oldest diseases discussed in medical literature. It was known as the incurable 'gout of the foot', especially localised in the the big toe but could also affect joints in knees and fingers (from Greek *pod-* 'foot' and *agra* 'seizure'). In the Middle Ages, this disease was thought to be caused by drops of viscous humours seeping from the blood into the joints, which in fact did not differ much from how medical researchers look at the disease today, namely as defective metabolism of uric acid causing arthritis especially in the smaller bones of the feet. In any case, people who suffered from gout had to deal with swellings in the joints and episodes of acute pain, because conventional treatments, such as bloodletting, purging, and vomiting, appeared to have no effect in an attempt to cure the disease. Via their trading post Batavia in the East Indies in the seventeenth century, however, the Dutch came to learn about a new cure for gout.

In early seventeenth-century, the VOC established a rendezvous near the channel between the islands of Java and Sumatra, called the Sunda Strait which connected the Indian Ocean to the China Sea. From this strategic location, Dutch merchants co-ordinated their commercial activities with Chinese traders from Fujian in Southern China. Batavia became one of the main trade posts in Monsoon Asia, parallel to Canton, Guangzhou, and Macao in China, and Nagasaki in Japan. In this web of interconnectedness, Chinese merchants formed a large community, as well in Batavia. When gout had assaulted the reverend's big toe, Mrs. Busschof persuaded him to let an "Indian doctress" look at his foot. The woman, who came from *Guǎngnán* 廣南 in south-western China, was employed by Busschof's wife a few times before to cure slaves from various disorders and their only daughter from a breathing difficulty. Although Herman Busschof initially hesitated upon hearing that the woman wanted to apply a fire therapy, the moment the pain became unbearable he overcame his fear and let the doctor return. Having already anticipated Busschof's change of heart, the Doctress smiled and started the treatment of moxibustion, as he recounted:

> Having demanded a lighted candle, and solicitously search'd for that part of the place affected where the greatest pain was: And thereupon she burned with her *Moxa* (of which hereafter) on my feet and knees, (to my best remembrance) about twenty little Escars, which looked like little gray specks, without raising any blisters, or causing any after-pain; whereupon also all the pain of the Gout vanish'd. […] most heartily thanking God Almighty for his goodness to me, and duly acknowledging the operation of this


Figure 1. Title page of Jacobus Bontius' *De Medicina Indorum*, 1642.

The tropical medicine is held up by a local and presented to Bontius.

> Indian woman, admiring withal the powerfulness of this remedy against so contumacious an evil, as is the Gout.[1]

Once recovered from gout by this miraculous treatment of moxa, Busschof wondered whether physicians had a clear perception of what this gout disease really was and thus he took it upon himself to write down his experiences on paper and let people in Europe know about the Chinese cure of moxa. The fact that Busschof learned about moxibustion from a Chinese woman must not have surprised physician Jacobus Bontius, who himself had already proclaimed that "every Malayan woman practices medicine and midwifery with facility; so (I confess that it is the case) I would prefer to submit myself to such hands than to a half-taught doctor or arrogant surgeon, whose shadow of education was acquired in schools, being inflated with presumption while having no real experience."[2] Similar sentiment and critique on the medical profession in Europe was reflected in literature and theatre plays, of which Molière's "The Imaginary Invalid" (*Le malade imaginaire*, 1673) is an example. In any event, when Busschof had finished his manuscript, he sent it to his son back in the Low Countries where it was published in 1675.[3] English and German translations done "by careful hand" appeared in the succeeding years.[4]

This account of Herman Busschof demonstrated that a commercially focussed enterprise like the Dutch East India Company also allowed for medical knowledge to be communicated between individuals of different cultural backgrounds, specifically the European and Chinese cultures. Though in the seventeenth century we can see the name of ancient Greek physician Hippocrates (c. 460–377 BCE) recurring in medical texts as an authoritative figure or referenced to as if he were a contemporary colleague (doxography), multiple scholars in Europe started to question the all-overarching dominance of the ancient texts and began to believe in more modern concepts of observation, experiment, and progress. During the 'Scientific Revolution,' this quarrel between Ancients and Moderns also showed susceptibility to another element, namely various Chinese and Japanese medical practices, which were simultaneously new to Europe yet based on ancient knowledge and centuries of experience. In Chinese legend, medicine was connected to the earliest ruler *Huángdì* 黄帝, also known as the Yellow Emperor. Already from the Spring and Autumn period of Chinese civilisation (ca. 770–476 BCE), records were found of people discussing and developing the practice of acupuncture.[5] Observations and studies of this treatment were written down by members of the Jesuit Society and employees of the Dutch East India Company in seventeenth- and eighteenth-century reports and sent to Europe. This fascinating phenomenon that disseminated medical ideas between individuals around the world deserves further study. With this thesis, therefore, I want to investigate how moxibustion (the Chinese therapy of burning moxa on the skin) as described by Herman Busschof, but also accounts on acupuncture and the Chinese way of pulse-taking, were transmitted to Europe and received by various intellectuals and physicians alike.

## The reception of foreign goods

When we consider how Chinese and Japanese medicine could appear of in the Low Countries and how these treatments and practices were obtained and transported, the central question of this study concerns the role and impact of Chinese and


Figure 2. Frontispiece portrait of Hippocrates in *The Aphorismes of Hippocrates, Prince of Physicians*, 1655.

Japanese treatments and diagnostics in the development of medicine in early-modern Europe. How was Chinese medicine received and what did it bring about? In an attempt to answer this question, this study looks into the works of those authors who studied or experienced these foreign medicines from roughly the 1650s to 1750s. From the sources three case studies have presented themselves: first the Chinese cauterisation practice known as moxibustion, which involved the burning of herbs on the patient's skin; second, the surgical treatment known as acupuncture, where small needles were pricked into the skin to alleviate pain and to treat certain physical, mental, or emotional conditions; and lastly, the Chinese diagnosis method of taking the pulse, which was said to reveal the patient's state of inner organs. We can see that in late seventeenth century, these Chinese and Japanese medical practices, in particular moxibustion, met with a widespread attention and application around northern Europe; yet, in the early eighteenth century scepticism increased and enthusiasm for Asian treatments soon diminished. As it will be made clear, the success of these foreign medical practices in a longstanding medical tradition was dependent on pragmatism, familiarity, and theoretical comparability. Despite the unorthodox treatments of moxibustion and acupuncture in comparison to the more conventional treatments like bloodletting and laxatives, this thesis will argue that the introduction of Chinese and Japanese medicines played a modest yet essential role in the search for a gout remedy.

Although this thesis will not go into the complicated history of ancient writings later assigned to a single genius, such as in the case of Hippocrates, a short discussion who exactly these Greek and Chinese ancients were, especially because they did play a central role as authoritative symbol and legitimacy, would be in place. In European medical traditions, Greek physician Hippocrates was also known as the 'father of medicine.' The collection of writings under his name dealt with anatomy, clinical subjects, diseases of women and children, prognosis, treatment, surgery, and medical ethics. A Chinese counterpart can be found in the Yellow Emperor who was the legendary figure in Chinese mythology, supposedly born in 2704 BCE. He was remembered for inventing wooden houses, the bow and arrow, writing, and medicine. Although the Yellow Emperor's book on medicine first mentioned distinctive Chinese medical practices, one should keep in mind that this work was copied and edited throughout the centuries by various scholars and doctors. Most importantly, it is not about how these medical traditions developed separately, rather it is the interaction between them. Originating in Greece or China, these traditions on their own were far from homogeneous traditions, yet in contrast to each other two clear sets of medical systems can be identified. In the seventeenth century, physicians who placed themselves in a Hippocratic tradition or regarded the ancient Greek as a colleague in a doxographic manner, for the first time they came face to face with an entirely foreign approach to medicine: one that was centred around the Yellow Emperor. After studying it and bringing it back to Europe, Hippocratic traditions reacted in different ways to the Chinese 'father of medicine.'

For example in the case of *Of the Gout*, Busschof had given his fellow countrymen a detailed theoretical framework to explain the causes and effects of the disease and how it could be cured by penetrating heat of moxibustion. In order to convince his reader that it would indeed work, he wrote rhetorically and with an intellectually impressive language: first, as we have already discussed, Busschof


Figure 3. Chen Jiamo (Ming Dynasty), *Portraits and names of famous doctors through history*, 1573-1620.

Woodcut of *Huángdì* 黃帝 the Yellow Emperor, attributed to Gan Bozong (Tang Dynasty).

started the book with his own miraculous recovery and also ended with three more accounts of people who were cured by moxa. Second, Busschof dared to transgress ancient medical authorities and claimed he was able to cure gout instantly; and lastly, Busschof provided his reader with a detailed explanation of the workings of the disease, for which he combined Galenic medicine with the Chinese theory of the Six Excesses, and he gave a theoretical mechanism behind the cure.

Busschof attempted to explain the appearance of gout by pointing at "indispositions arising from Cold Damps and Humors."[6] Since ancient times and the Middle Ages, it was generally thought that four body fluids determined a person's physical and mental qualities. Greek physician Claudius Galenus (129–199 CE) had already hypothesised about four of these cardinal humours (blood, phlegm, choler or yellow bile, and melancholy or black bile), which ordinarily would be be in proportioned combination. Whenever one of the humours would be dominant in relation to the others, this would affect the person's personality in his or her emotions. For example, a person with much choler or yellow bile would have strong inclinations to be proud and ambitious but also easily angered. Contemporary to Busschof, German-Dutch medical professor François dele Boë Sylvius (1614–1672) proposed that chemical imbalances consisted out of an excess of either acids or alkalis in the blood causing the acidic salt to fall upon "the sensible parts about the joynts," followed by excruciating pains.[7]

At first sight, Herman Busschof's description that gout was caused by cold damps and humours confined to the joints appeared to be in line with Galen's physiological theory; however, at closer look we might assume that Busschof was rather inspired by theories of *qì* 氣 'air' in traditional Chinese medicine in addition to Galenic medicine. A basic concept in Chinese medicine was the *Six Excesses*, a collective term for six exogenous factors which can cause disease, including wind, cold, summer-heat, dampness, dryness and heat (fire).[8] Depending on the season and the region, Chinese scholars explained that pathogenic wind, cold and dampness could invade the body and affect the skin and muscles (myo-cutaneous) at the junctions. In *Plain Questions*, it was said that the mixture of wind, cold and dampness may lead to *bìzhèng* 痹證 arthralgia syndrome (i.e. pain in the joints), in which predomination of wind may lead to *xíng bì* 行痺 wandering arthralgia, predomination of cold to *tòng bì* 痛痺 painful arthralgia, and predomination of damp or moisture may lead to *zhuó bì* 著痺 fixed arthralgia.[9] Clearly Herman Busschof's explanation of cold damps and humours showed significant similarities to these theories of exogenous pathogenic factors. And the most applied treatment for gout was "Tis Moxa, best known amongst those of China and Japan; so celebrated, valued, and commented there, that no other remedies are to be compared there with upon the account of its excellent performances; considering that there are few pains in the body, for which they do not use it with great benefit."[10]

Not all physicians in Europe welcomed Chinese medicine, either as a practice or in theory, so eagerly as Herman Busschof had done. To be expected, when Busschof's book was published in the Dutch Republic the reactions were mixed; nevertheless, whether they were positive or negative, in either case an international discussion on the subject arose. Who were those in favour of the newly introduced medical treatment and who were critical about it? What arguments were involved and how were they expressed? As will be shown in this study, the late-seventeenth

and early-eighteenth-century Europe saw the rise of a lively debate on Chinese medicine as a cure for gout, starting with observations of VOC employees in Asia and soon taken up by English, French and German scholars. As will be revealed from this debate, not so much the issue of adopting Chinese medicine was at stake, but rather the criteria for the validity of claims of knowledge. Could Busschof's account be trusted as a reliable source of information, which in itself was based on observation and personal experience? Or should more be required for the messenger to be credible and the knowledge to be valid? Though ultimately Chinese medicine would be rejected in the early eighteenth century, the scholarly engagement with the topic served as a means to establish practical conditions for knowledge-appropriation.

## New approaches to nature

We should be aware of the intellectual context in which Japanese acupuncture and Chinese moxibustion and pulse-taking were introduced. In late seventeenth-century France at the Académie française, a quarrel arose between, on the one hand, the 'Ancients' who were convinced of classic philosophy as humankind's greatest achievement, while on the other hand, the 'Moderns' praised knowledge based on the practice of experiment and observation, and believed in progress. Francis Bacon (1561–1626) based true knowledge on experience rather than on citations of ancient authorities. Also centred around the question of authority, René Descartes (1596–1650) grew sceptical about knowledge that was based on ancient texts and instead produced a new philosophical system for modern learning that was based on rationalism when concerning the mind, whereas concerning matter was based on empiricism and mechanism. In the words of Descartes, "what the ancients taught about [human passions] is so little, and for the most part so little believable, that I cannot hope to approach the truth unless I forsake the paths they followed."[11] Sir William Temple, on the other hand, asserted the superiority of the ancients, arguing that we are merely dwarfs on shoulders of giants (the ancients). Though the dwarfs may have an advantageous position and presumably a better view of nature, instead they see less than the giant because of their naturally shorter-sight, being less observant, and can be dazzled by height.[12] Temple also opposed the idea of progress, arguing that the ancients might have had their own ancients, with a period of intellectual stagnation in between comparable to the Middle Ages. The arts and sciences, according to Temple, originated from India and possibly from China. To be expected, Temple's essay brought about a series of responses.

One of these responses, however, was neither in favour or opposed, but rather incorporated best of both. In England, in the middle of this 'battle of the books', Sir John Floyer published a book introducing the Chinese way of feeling the pulse.[13] Based on translations by members of the Jesuit Society as well as the VOC, detailed information on feeling the pulse had become available to Floyer. Though we will discuss Floyer's work in further detail in chapter three, for now it is sufficient to say that he was able to theoretically combine Galenic and Chinese diagnostic ideas and to add a practical design for a physician's stop-watch. The ancient Galenic knowledge, in combination with Chinese diagnostics, which were based on centuries of experience yet new to Europeans, had together harmonised and produced a

modern pulse-watch with which to empirically and mechanistically retrieve medical knowledge.

A means with which to criticise these undertakings like Floyer's is to doubt its sources. Floyer blindly trusted the translation on Chinese pulse-taking, but could be assessed on credibility so easily when there was no reference point to familiar works, not even among the ancient Greeks? References to other ancients such as a Yellow Emperor for the sake of authority, might, in a time where one's own ancients were confronted by heavy criticism, be even further from reaching believability. Nevertheless there was a strong curiosity and perhaps even susceptibility to new knowledge, even though it was foreign. The increasing commercial interactions with China and other Asian cultures had already ignited scholarly interest in 'Oriental' learning.[14] A means to effectively incorporate foreign knowledge in one's own, would be by appealing to the new approaches to nature, namely those of rationalism and empiricism. As will be shown in the following chapters on the appropriation and reception of moxibustion, acupuncture and pulse-taking, their success in Europe depended upon the individuals who came in touch with foreign learning and the way that they made it their own.

Recent publications have investigated the central role of intercultural communications and relations, specifically between individuals from Europe and Asia, in the history of the sciences and humanities. A number of historians have already discussed the appearance of Asian medicine in Europe in the early modern period.[15] In this thesis, however, we raise the question of transmission from Asia to Europe, looking at the way knowledge about Chinese and Japanese medical practices was observed and appropriated, which together were essential in the analysis and reception of the newly acquired knowledge. The approach used in this study involved that analysis of publications by, on the one hand, employees of the Dutch East India Company, who were in a position to directly observe and/or experience the Asian medical practices, and on the other hand by specialists in the Dutch Republic and neighbouring countries, specifically England and the German lands, who read about these reports on acupuncture and moxibustion and wrote about it from their own perspective. This study therefore does not pretend to be an all-inclusive reception history attempting to demonstrate how, for example moxibustion, was used and experienced by members of all social strata in the Dutch Republic. Instead, we will focus on those European individuals involved in the medical and intellectual examination of Chinese and Japanese treatments and diagnostics.

Although this thesis has taken a thematic structure, we follow the story within those themes largely chronologically. The analysis will take place along two phases. First, this study will analyse the formation of investigating an unfamiliar set of medical practices by means of collecting texts, information, and instruments, and finally how the knowledge was transformed into a book published for an European audience. How medicine and science could prosper specifically in a context of commerce was argued by historian Harold J. Cook, who also took the Dutch East India Company and its trade in Asia as an example.[16] Cook analysed the communication of medicine between the Dutch and Japanese according to the involvement of *matters of fact*. Brought about by people's curiosity to enquire into the wonders of the world in the sixteenth century, the concept of *fact* not only referred to an act or feat in a context of law, but came to adopt the meaning of the truth or

reality.[17] *Matters of fact* were that which belonged to the sphere of actuality as distinct from opinion or conjecture. Although facts would be unable to provide absolute certainty, they could certainly reach a high level of probability. This obviously was of particular necessity in human activities such as commerce and medicine: factual knowledge on financial transactions or particular medical care was beneficial to all people and therefore highly valued and searched after. While this thesis will look into the lives and works of VOC employees, such as Willem ten Rhijne and Engelbert Kaempfer, it can quickly be recognised that serious problems arose during this appropriation process, for example concerning the limited time and space available for them to do their research and the difficulty of translating Japanese sources into Dutch. Furthermore, although factual information could be transmitted from one culture to another, nevertheless, the extent to which traditional Japanese medicine was actually understood would have a serious impact on the knowledge transfer, and accordingly, the reception.

The second phase in this transmission process occurs with the publication on Chinese and Japanese medicine, of which the significant works were not only Herman Busschof's *Het Podagra* on the gout and moxa, but also impressive works like Michael Boym's *Specimen Medicinae Sinicae* (edited by Andreas Cleyer), Willem ten Rhijne's *De Acupunctura,* which was published under the auspices of the Royal Society in London, and Engelbert Kaempfer's *The History of Japan* (edited by John Gaspar Scheuchzer), which received multiple editions and translations. How was the content of these works on Chinese and Japanese medicine received and reviewed by medical specialists and practitioners in the Low Countries, England and the German lands? By looking at the contributions of these VOC employees we will be able to gain an insight into the role and impact of these works. Were there indications present that could serve as proof for the application of various Asian medical practices in the Low Countries of the seventeenth century, or were these practices rejected after critical examination? Following this history and impact, also the role of the 'periphery,' in this case Batavia and other VOC trading posts throughout Asia, in the development of seventeenth-century science can be examined, as it can give an insight into the functioning of and communication between individuals and scientific communities.[18]

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[1] "To the Reader" in Herman Busschof and Hendrick Roonhuyse, *Two Treatises, the One Medical, of the Gout, and Its Nature More Narrowly Search'd into Than Hitherto; Together with a New Way of Discharging the Same | by Herman Busschof Senior, of Utrecht, Residing at Batavia in the East-Indies, in the Service of the Dutch East-India Company. The Other Partly Chirurgical, Partly Medical ... By Henry Van Roonhuyse* (London: H.C., 1676). In this thesis, I will refer to contemporary English translation as much as possible in order for direct access to reliable and quaint citations. Whenever there was none, translations are made by myself.

[2] Jacobus Bontius, *Iac. Bontii in Indijs Archiatri De Medicina Indorum Lib. Iv. 1. Notae in Garçiam Ab Orta. 2. De Diaeta Sanorum. 3. Meth. Medendi Indica. 4. Observationes E Cadaveribus* (Lugduni Batavorum: Franciscus Hackius, 1642).

[3] Herman Busschof, *Het Podagra, Nader Als Oyt Nagevorst En Uytgevonden, Mitgaders Des Selfs Sekere Genesingh of Ontlastened Hulpmiddel. Hermanus Buschof De Oude Van Utrecht, Predikant Op Batavia in Ostindien.* (Amsterdam: Jacobus de Jonge, 1675).

[4] Herman Busschof and Hendrick Roonhuyse, *Two Treatises, the One Medical, of the Gout, and Its Nature More Narrowly Search'd into Than Hitherto; Together with a New Way of Discharging the Same / by Herman Busschof Senior, of Utrecht, Residing at Batavia in the East-Indies, in the Service of the Dutch East-India Company. The Other Partly Chirurgical, Partly Medical; Containing Some Observations and Practices Relating Both to Some Extraordinary Cases of Women in Travel; and to Some Other Uncommon Cases of Diseases in Both Sexes. / by Henry Van Roonhuyse, Physitian in Ordinary at Amsterdam. ; Englished out of Dutch by a Careful Hand* (London: H.C., 1676). And, Herman Busschof, *Das Genau Untersuchte Und Auserfundene Podagra, Vermittes Selbst Sicher Eigenen Genäsung Und Erlösenden Hülfs-Mittels / Herrmann Busschoof, Den Älteren Von Utrecht / Zu Neu-Batavien in Ost-Indien Wohnhasst : Niederländisch Erstlich Beschrieben, Ins Deutsche Übers. Von Einem Aus Dem Collegio Naturae Curiosorum, Mit Anm. Von Johann. Christoph. Etnern* (Breszlau, 1693).

[5] Dèng Yìnkē 邓荫柯, *Zhōngguó Gǔ Dài Fāmíng* 中国古代发明 *Ancient Chinese Inventions, Cultural China Series* (Beijing: China Intercontinental Press, 2005), 86-87.

[6] Busschof and Roonhuyse, *Of the Gout, and Its Nature More Narrowly Search'd into Than Hitherto*, 75.

[7] As quoted in Harold John Cook, *Trials of an Ordinary Doctor: Joannes Groenevelt in Seventeenth-Century London* (London: The John Hopkins University Press, 1994), 18.

[8] Chén Yán 陳言, *Sānyīn Jí Yī Bìngzhèng Fāng Lùn* 三因極一病證方論 *Treatise on the Three Categories of Pathogenic Factors and Prescriptions* (1174). Chén's theory of the three types of disease causes involved external causes (i.e. Six Excesses), internal causes (i.e. Seven Emotions), and non-endo-no-exogenous causes (concerning imbalanced diet and/or livestyle). Although this book dates from the Song dynasty, it is still used today in traditional Chinese medicine.

[9] Huángdì 黄帝 et al., eds., *Sùwèn* 素問 *Plain Questions* (1053). This book was the first part in the *Yellow Emperor's Canon of Medicine*, believed to be compiled in the Warring States period (475-221 BCE) and/or Han dynasty (206 BCE-25 CE).

[10] Busschof and Roonhuyse, *Of the Gout, and Its Nature More Narrowly Search'd into Than Hitherto*, 72.

[11] René Descartes, *The Passions of the Soul*, trans. Stephen H. Voss, *Hpc Classics Series* (Indianapolis, Indiana: Hackett Publishing, 1989), 19.

[12] William Temple, "An Essay Upon Ancient and Modern Learning," in *Miscellanea* (London: Ri. Simpson, at the Three Trouts, and Ra. Simpson at the Harp in St. Paul's Church-Yard, 1696).

[13] Sir John Floyer, *The Physician's Pulse-Watch, or, an Essay to Explain the Old Art of Feeling the Pulse, and to Improve It by the Help of a Pulse Watch*, vol. I (London: Sam Smith and Benj. Walford, 1707).

[14] See, for example, Nicolas Dew, *Orientalism in Louis Xiv's France, Oxford Historical Monographs* (Oxford: Oxford University Press, 2009).

[15] For example, specifically on the VOC and Japan, see Wolfgang Michel, "Far Eastern Medicine in Seventeenth and Early Eighteenth Century Germany," *Studies in Languages and Cultures* Faculty of Languages and Cultures, Kyushu University, no. 20 (2004). For a general overview of Asian influences in Europe, see Donald F. Lach and Edwin J. Van Kley, *Asia in the Making of Europe: A Century of Advance*, vol. III (Chicago & London: University of Chicago Press, 1993)., and Linda L. Barnes, *Needles, Herbs, Gods, and Ghosts: China, Healing, and the West to 1848* (Harvard: Harvard University Press, 2005).

[16] Harold John Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age* (New Haven: Yale University Press, 2007).

[17] Ibid., 17.

[18] Parallel study on the role of India in the development of science in England, see Kapil Raj, *Relocating Modern Science: Circulation and the Construction of Knowledge in South Asia and Europe, 1650-1900* (Basingstoke, Hampshire: Palgrave Macmillan, 2007).

# 1. Moxibustion

Figure 4. Part of frontispiece of Herman Busschof's *Of the Gout*, 1676.

The 'Indian Doctress' applied moxibustion on Busschof's foot.

In early seventeenth century, the Dutch East India Company or *Vereenigde Oost-Indische Compagnie* (VOC) was founded and its employees like Jacques de Bondt, Andreas Cleyer, and Willem ten Rhijne started to publish treatises on "Indian" medicine in the Dutch Republic and around Europe. Why did Asian medical knowledge appear for the first time in this century? Naturally, in the wake of the Portuguese in the sixteenth century, the Dutch shipped out to made contact with various Asian cultures without which no direct opportunity for a rich exchange of information could ever be established. However, the Gentlemen Seventeen, who were the governors of the VOC safely residing back in the Dutch Republic, had not made it official policy to explore cultural exchanges, as their primary mission was the trade of commercial products, i.e. spices. Not discouraged by the governors either, it was mostly individual curiosity and interests of various ship practitioners that had brought about a reception and exchange of medical knowledge and expertise between Europeans and Asians. How exactly were these individuals able to obtain medical know-how from other parts of the world and transport it back to Europe? The first contact and communication occurred between people with an affinity with the same practice, for example medical. Take Jacques de Bonth (1592–1631), who studied at Leiden University and obtained his PhD degree in 1614. Although he practised medicine in his hometown at first, in 1626 he started working for the VOC and became responsible for all things medical at the trading post in Batavia (present-day Jakarta in Indonesia). Here, he spent four years and with the help of locals was able to study Asian medicaments and herbs. Like De Bondt, many employees of the VOC wrote many important works on natural history and medicine from Asia, Africa, and the New World in the early modern period. Under the name Jacobus Bontius, he left a legacy of fascinating readings on Asian medicine and plants with the publication of *De medicina Indorum*.[1] These works were characterised by both the information that locals had to offer and the kind of information European colleagues would be expecting, therefore had a particular focus on description and use.

The first place where Europeans encountered Chinese medicine was at the Dutch port of Batavia, a principal centre for commerce that provided Europe with a wide variety of products originating from regional cultures in Monsoon Asia.[2] This settlement on Java expanded into an enormous town and harbour with warehouses and wharves. In the rectangular city behind Batavia Castle at the coast, there lived Dutch merchants and VOC officials, Asian Christians for military assistance, Chinese residents involved in industry, and servants from the Indonesian Archipelago.[3] Institutions found in the Low Countries at the time were also built in Batavia, including town halls, churches, hospitals and pharmacies, courts of justice, and almshouses. Similar institutions existed for the Chinese community in Batavia, e.g. a building for Chinese officials and a hospital. With its commercial objectives and multicultural society, Batavia did not look much different from the Republic. In this

place where people with various European and Asian cultural backgrounds met, a Dutch minister came in direct contact with the Asian medical practices known as moxibustion, or the burning of moxa. This first chapter will follow the story of moxa, quickly disseminating from the United Provinces to England and the German Holy Roman Empire, and how scholars and physicians alike responded to the new treatment from China. As will be shown, moxa was particularly able to be adopted since it landed in the already ongoing discussion on the disease of gout.

## 1.1 Prove all things, hold fast that which is good

This phrase from 1 Thessalonians 5:21 (King James Bible) beautifully reflected the mindset of those who undertook the enterprise to research unfamiliar medical practices and adopted those things that they thought were useful. Though the story of Herman Busschof, Willem ten Rhijne, and Engelbert Kaempfer can include their travels, intercultural encounters, and duties as ship's surgeon, in this part we will focus on their initiative to investigate Chinese and Japanese activities they recognised as being medical and the following appropriation of its working and function. This burning of moxa was first described by Busschof in Batavia, later by Ten Rhijne and Kaempfer on Deshima, Japan. How did this appropriation process take place? What kind of criteria did they apply to decide whether certain information was worth mentioning or not? When they examined everything, how did they hold fast to that which was good? As will be shown from the works of these three doctors, out of curiosity to unknown medical practises and out of compassion of those suffering from gout, three VOC surgeons investigated moxibustion with practical application and theoretical explanation in mind.

The one who started the study of Chinese medicine and who can be considered responsible for opening a widespread discussion about moxibustion across Europe was Reformed minister Herman Busschof. As discussed in the introduction, an "Indian doctress" had treated him with the Chinese therapy when he could no longer endure the pain from gout of the foot, the disease that caused painful swellings in the joints of his toes and knees. After a rapid recovery, Busschof was immediately impressed by this moxibustion treatment and wanted to tell his countrymen back in the Dutch Republic about his experiences and observations with the burning of these dried leaves. Busschof had set out to devote the first part of his book *Of the Gout* on the disease itself, and the second part would discuss the moxa treatment originating from China. He had written the entire work as a dialogue between Theophilus, *liefhebber der waerheydt* or "someone who had a sincere and discriminating love of things that indicated inner virtue,"[4] and Theodidactus, *Leeraer of Doctor in de Heylige Schrift* or Teacher in the Holy Scriptures; the first doubted every statement, observation or experience, after which the other could reply and ultimately reach at something indubitable. Though Busschof was not specialised in medicine himself, these continuous series of methodological scepticism may be inspired by Descartes' *Meditations on First Philosophy* (1641) and as such be an appropriate writing style to explore the foreign treatment to its smallest detail and to reach a strong foundation for propositions.

In case of the gout, the burning of moxa involved the benefit that it was "freeing the Body from all lurking winds and cold humors."[5] By observation and enquiry, Busschof studied how the substance of moxa was made, how one was

supposed to use it, and in what quantity it had to be applied. He also looked into the theoretical argumentation behind the disease and cure, especially when asked, "what remedy it must be, that shall free a man from this disease?" It had to be a remedy that would remove the disease's cause, namely the "the cold and crasse vapors lurking under the membranes."[6] In this part, Busschof showed how the burning of moxa could not only relieve a patient of the symptoms of gout, but also how it could eliminate "the Evil" and prevent it from returning as "it must strengthen the innate heat." Naturally the cure for gout by burning moxa had not yet been described by the fathers of medicine in Europe, Hippocrates nor Galen. Detailed knowledge of a disease, which according to Busschof was falling short in the case of gout, was no guarantee that a cure could be found. It therefore turned out that, despite suggestions of European practices like 'letting of blood', nothing was able to cure gout as well as moxa did. In comparison to the authorities on medicine, Busschof dialogued:

> Q. Will it succour nature with most speed, and free her of the evil that encumbers and torments her?
>
> A. It will; whereas *Hippocrates l.* 6 *Aph.* 49. *faith, that the Gout requires 40 days to cure it*; which Galen seconds, viz. *if the Physitian understand his work, and the Patient do his part in observing carefully what is prescribed*. But this our Moxa, by means of Burning described, draws this Wolf with speed out of his den, and delivers the Patient instantly from his pains and anguish.[7]

Three accounts of miraculous recoveries thanks to the burning of moxa, titled as "About the Removal of the Faling-Sickness by our way of Burning with *Moxa*," "Concerning the Cure of a Mad Female-Slave, by the Burning with *Moxa*," and "Touching a Strange Catalepsis or Stiffness cured by the *Moxa*" were not only incorporated in Busschof's book, but also featured in the first Dutch medical journal *Collectanea Medico-Physica*, edited by renowned Amsterdam physician Steven Blankaart (1650–1704).[8] These three remarkable observations followed the same pattern: a patient suffering from gout in either feet or knees was, as observed by Busschof himself, treated with moxa and rapidly recovered. Though these were merely a small number of case studies, they covered both sexes and were personally observed, making them first-hand descriptions. In the medical journal, from the accounts was a general outline on moxa and its use derived. We can therefore detect an empiricist approach to a foreign practice: close observation and sense-experience of moxibustion as the basis for knowledge and understanding. In 1690, these three case histories and a summary appeared for a third time in the German translation of Blankaart's journal, which further disseminated the acquired Chinese knowledge of moxibustion throughout Europe.[9]

In the United Provinces, Blankaart's journal dedicated many entries to the heavily debated issue on finding a remedy to gout. A large number of case studies featured in the *Collectanea Medico-Physica* proposed a variety of practices to treat a gout-suffering patient.[10] These observations, published between the years 1680 and 1682, were presented as individual incidents with the argument that it worked in that one particular instance, therefore could possibly work for others but not necessarily. These entries were therefore not in a confronting and heated discussion, but rather in a conversation led by pragmatism and experimentation. Exactly because Blankaart's

Figure 5. Steven Blankaart, engraved portrait from *Anatomia reformata*, 1687.

journal was not led by an all-overarching and thought-through methodology, Busschof's moxa accounts entered seamlessly as additional experiences and observations in the wider enterprise to unravel the mysteries of human diseases and search for cures. Furthermore, out of widespread occurrence of the gout, the search for a cure as discussed in *Collectanea Medico-Physica* was particularly open-minded towards all kinds of treatments. Its last volume featured a letter from surgeon Guilliames de Dous to Blankaart, asking whether he would be so kind to further elaborate on the Chinese treatment.[11] Busschof's descriptions of moxibustion did not appear all that unfamiliar in comparison to other proposed treatments, its theoretical basis could be placed within Galenic medicine, and, most importantly, Busschof's claim could easily be assessed in terms of the success of moxa's practical application.

To convince the application of moxibustion as cure for gout, the actual pulverised and aged artemisia had to be made available to the public. The original manuscript that was sent from Batavia to Busschof's son in Utrecht was accompanied with samples of moxa. At the end of *Het Podagra*, an advertisement read that lawyer and director of the Utrecht Latin school Johan Busschof, brother of Herman Busschof, could provide expert advice on moxa and at his address the moxa was also made available. In the English translation *Of the Gout*, the advertisement read that one could obtain the moxa at bookseller Moses Pitt, at the Angel in St. Paul's Churchyard, "with a paper to instruct those that are desirous to learn the way of Burning with Moxa." Although it is impossible within the scope of this thesis to gain a thorough picture regarding the quantity and quality of moxa treatments on patients in the Low Countries and England in the late seventeenth century, we nevertheless find multiple entries concerning moxa experimentation in the first Dutch medical journal. For example, is has been attempted to apply moxibustion to cure a patient from toothache: "a certain Sir I.V.T. narrated me that he had cured toothache by the burning of moxa, merely three or four pellets put on the temple on either side of the forehead."[12] Another observation by Physician I.B. Pinket from Gent – obviously Steven Blankaart was like a spider in a web of physicians, ministers and surgeons from all over the United Provinces, Europe, and East Indies to provide him with fascinating entries for his journal – accounted that after a woman with toothache was treated with moxa, her pain left at first, but returned and hurting much worse.[13] In addition, the journal told the story of a certain Sir S.B. whose wrist was strangled, but cured by the burning of moxa.[14] This anonymity regarding the identity of patients who had made use of moxibustion may imply not so much the hiding of a person's legal identity, but rather the revealing of applicability in curing a disorder regardless of the person in question.

Steven Blankaart not only provided Busschof with a platform for discussion, he also gave Willem ten Rhijne the opportunity to make observations about moxibustion known to the world. In 1684, Blankaart's book *Verhandelinge van het Podagra en Vliegende Jicht* ('Treatise on Podagra and the Gout') was brought out, a work that not only discussed the disease extensively, its cause and treatment of gout of the foot, but also included a contribution by Willem ten Rhijne at the end.[15] Blankaart was pleased to have obtained a work from the "distinguished and thorough researcher" (*deftigen en nauw-door-snuffelenden*) Dr. ten Rhijne M.D. "on the burning of Moxa and on pricking with the Golden Needle, techniques the Chinese

and Japanese happily apply for all diseases and with which new treatments were discovered, a work which I added as a curiosity (*rariteit*) behind my own work."[16]

Before turning to Ten Rhijne's discussion of moxa, Blankaart himself already referred to the Chinese and Japanese culture and medicine in a couple of instances in *Het Podagra*. For example, on the question why the Chinese appeared to suffer less from gout than the Europeans, Blankaart speculated that the main difference had to lie in the drinking of tea. Tea cultivation and consumption was, of course, native to China and had spread to Java and Europe by the Dutch East India Company. Willem ten Rhijne had conducted botanical studies of Japanese plants in general and a coloured drawing of a tea plant in particular, which were included in Jacobus Breynius' *Exoticarum plantarum centuria prima.*[17] One of the substances in tea was the herb alkali which neutralised acids, also hot water would promote circulation through the body, and "thirdly there is nothing better than to use water to bring all salt and acid particles through the *sweet-pypen en pis-wegen* [sweat glands and urine pipes] out of the body."[18] Conversely, the drinking of milk, which had various healthy and nourishing qualities and was widely consumed by the Dutch, the Japanese were "disgusted by the drinking of milk, thinking it was made out of blood," thus rather continued drinking their tea.[19] Dutch physician Cornelis Bontekoe (1647–1685), also referred to as "our tea-Pantagruelian," was a heavy tea consumer and through his works was a strong proponent of tea consumption, especially for those suffering from a fever.[20]

Blankaart summarised the possible treatments to cure patients suffering from gout, namely by sweating, dribbling of blood, and burning.[21] As far as the burning of moxa to successfully treat gout was concerned, Blankaart completely trusted the *Tractaat* written by Hermann Busschof. Although it is unclear whether Blankaart actually experimented with the practice himself, he nevertheless made an attempt to explain how the treatment worked medically, concluding that the essential element lay in the heat caused by the soft burning: "because of the heat, the thickened and coagulated moisture will become liquid […] causing the paroxysm to cease and sometimes completely disappear."[22] In agreement with conclusions by Anthoni van Leeuwenhoek, which will be discussed later, Blankaart did not conceive of the moxa to have any additional purpose in the treatment of gout, and he therefore suggested Artemisia and other herbs as being just as effective as moxa, with the only condition that it would have the characteristic of burning softly.

'Unconventional' medical practice of moxa-burning was not the only treatment discussed and supported by Steven Blankaart, but should be seen as one of many products of his open-minded and unprejudiced disposition as a physician. This should be recognised as a great departure from the doxographic reliance on the ancients and authority-based knowledge. Blankaart had also subscribed to, for example, Sir Kenelm Digby's argument that wounds and ulcers could be cured from a distance with a 'pulvis sympatheticus,' as described in his *Discours sur la poudre de sympathie* ('Discourse on the powder of sympathy,' 1657).[23] Also the propagation for tea, coffee, hot chocolate and pipe tobacco by physician and Cartesian, Cornelis Bontekoe, were acknowledged by Blankaart. The sympathetic powder of Digby had received direct opposition, however: Antonius Deusing argued that the powder's effect rested entirely on superstition and delusion, therefore demoted it as a fraud. We could therefore question whether Blankaart was not as much open-minded as he


Figure 6. Frontispiece of Steven Blankaart's *Verhandelinge van het Podagra en de Vliegende Jigt*, 1684.

was naive and gullible. I would argue against that. True, he approved of medical treatments today's medical profession would regard as unorthodox, however, so was the widely accepted blood-letting. Many physicians at the time were in strong disagreement about various medicines. Blankaart, on the other hand, primarily emphasised an open discussion of all possible treatments and experiences, from Europe and around the world; a discussion for which his journal functioned as platform. On the gout, for example, his journal featured dozens of different possible cures as reported by physicians, intellectuals, and former-patients alike.

Bloodletting in the seventeenth century was a widely applied and ordinary surgical operation for therapeutic purposes. In Japan, however, there was a strong opposition towards this medical treatment, because "they say that people loose so much life if people take blood, and that both the healthy and the unhealthy blood would be removed."[24] Also the in contemporary eyes rather controversial physician Cornelis Bontekoe argued that bloodletting and purgation should be applied as little as possible. Instead of bloodletting, the Japanese had two other serious medical practices, specifically moxibustion and acupuncture, as described by Willem ten Rhijne at the end of Blankaart's book.

On arrival in Batavia, Herman Busschof had sought contact with doctor Ten Rhijne and requested of him to investigate the Chinese treatment in further detail and to send his results to Batavia. In a letter dated Nagasaki, 19 October 1674, Willem ten Rhijne told Busschof that one of the chief interpreters was unable to walk because of gout of the foot. However, the next day he walked as if nothing had happened.[25] Through conversation with Japanese moxibustion practitioners, Ten Rhijne was able to extract information about the gathering of herbs and the preparation of the leaves, about various rules and regulations concerning the proper time when to conduct the burning, about the locations on the body where it should be done and in what cases it would not be allowed, for example, when the patient is pregnant or has a cold. Did that mean that the burning of moxa was no cure for a cold? Ten Rhijne pointed out that in Japan, moxibustion was applied approximately every six months on all people, even though they had no symptoms or signs, because the treatment was seen as a preventive measure.[26] As Ten Rhijne might have understood from the Japanese saying, *korobanu saki no tsue* 転ばぬ先の杖 or 'have a cane ready before stumbling,' but could be better understood as 'an ounce of prevention is worth a pound of cure.' The result of this was that many Japanese had to live with scars on their skin all over their body because of the softly burning moxa. Certainly people in Europe felt uncomfortable with engaging in such preventive measures, especially of those which remained unclear about their relevance, but which left behind burns for a fact. According to Ten Rhijne, however, the Japanese considered these scars as not having any influence on one's beauty. In order to impress the reader with miraculous restorations of health, Ten Rhijne accounts:

> A certain woman having a little nodule in her neck since childhood, something Japanese medicine could not cure, showed it to a an elder woman, who in the centre of the woman's foot burned moxa, and the nodule immediately disappeared, meaning that much relies on choosing the correct location. These examples occur there [in Japan] a lot.[27]

Steven Blankaart appeared to have neglected the possibility of applying moxibustion in a completely different location than that part of the body where the patient was suffering from a disorder. Besides the possibility that he might have regarded it as too mysterious or witchcraft practice, this disregard might also be explained by the fact that Blankaart had taken the perspective of the disease, its symptoms and treatments, whereas Ten Rhijne took the Japanese treatment as point of reference and discussed multiple disorders it could cure. Nevertheless, one can wonder to what extent Blankaart understood Chinese and Japanese medicine and whether he was in a position to generalise the type of herb to multiple kinds as long as they would burn softly. Ten Rhijne recounted to actually have undergone the treatment of moxibustion after having suffered from fever for over three months which completely exhausted him. After the burning of moxa on various locations around the umbilicus, the doctor immediately felt some relief (*lichtenis*).[28] This was another case history in which the locations of disorder and treatment, although leading to the recovery of the patient, did not at all correspond in an anatomical sense.

The study of anatomy (from Greek *ana-* 'up' and *tomia* 'cutting'), often defined as 'the science of the structure of organised bodies,' had received authority since Flemish physician Andreas Vesalius applied his methods of observation and fact. In the history of Chinese civilisation, quite a number of *jiěpōu* 解剖 'dissections' of human bodies had taken place for medical purposes, yet not in the kind Vesalius would be satisfied with. He was concerned to have a more extensive and accurate description of the human body, whereas the results gained from dissections during the Song Dynasty (960-1279) remained strongly "blended with the ideas of Daoist physiological alchemy."[29] Willen ten Rhijne's remark that the Chinese lacked any knowledge of anatomy was therefore not surprising. Interestingly enough, however, Ten Rhijne's praised the Chinese for their ancient knowledge of the circulation of blood through the human body.[30] In fact, however, the Chinese never had this knowledge in his time. The misconception must have been derived from two observations: the fact that Chinese medicine centred around the ancient theory of the *qì* 氣 'air' or 'breath,' the circulating life force; and from the elaborate pulse examination to derive the possible syndrome a patient was suffering from. Naturally it must have appeared contradictory to see that the Chinese had extensive knowledge of blood and blood vessels but so little of the internal organs. Nevertheless, one should keep in mind that the Chinese were simply not inclined to look on the inside of the body, but rather studied the exterior: the smelling of the body, observation of the eyelids and tongue, and examination of the pulse and other parts of the body all fell under the diagnostic practice of palpation, which will be discussed in chapter three.

Interesting was precisely that which was not discussed by Willen ten Rhijne, namely the theories of the *qi*, *yin yang*, and the Five Elements – the theories that formed the central philosophical foundation for traditional Chinese medicine. However, these theories were not only unnecessary for the practical application of moxa, they were also not part of the sphere of fact as distinct from philosophy or conjecture. Willem ten Rhijne was only interested in the factual content of Japanese medicine rather than its theoretical, sometimes poetical, expression. For the reason that the philosophical theories behind Chinese and Japanese medicine were difficult

to translate and understand, filtering out its "matters of fact," only those elements that could be observed and experienced, allowed for transmission to Europe and being discussed among scholars with a different framework, namely one of Hippocratic/Galenic medicine. Therefore, though Willem ten Rhijne's discussion of the moxa proved of an open mindset, it was about the visible experiment rather than the invisible theory.

Engelbert Kaempfer, a VOC physician who had worked in Deshima for two years and had travelled to the capital Edo, became one of the last to provide a detailed eye-witness study on the matter. In the early eighteenth century multiple works like Kaempfer's were published on the history and society of various 'Oriental' cultures and on their medical practices in particular instances. In *The History of Japan,* Kaempfer described moxa in great detail, saying that it was produced of "the dry leaves of the *Artemisia vulgaris latifolia,* or common mugwort with broad leaves," and he went on to speak about the gathering of these plants and what the preparations involved.[31] Though Kaempfer's medical investigation was part of a larger project to portray a historical and societal overview of Japan, his discussion of the moxa was also proved of a serious attempt to systematically study the moxa treatment.

Engelbert Kaempfer moved away from the discussion on the gout solely, and described that moxibustion in Japan was mostly applied as a preventive measure against disorders: "The intent of burning with the *Moxa* is either to prevent or to cure diseases […] Hence it is, that in these extremities of the East, all persons, who have any regard for their health, cause themselves to be burnt once every six months."[32] Enquiring when exactly it was considered good and acceptable to conduct the moxibustion, the locals answered "that it is proper in all those distempers, where an occult vapour, and which lies, as it were, imprison'd within the body, occasions a dissolution of the solids, and a sense of pain, and hinders the affected part from duly performing its functions."[33] Kaempfer described this custom remarkably objectively, without even mentioning his personal opinion about it afterwards. The preventive aspect and "good effect" of the application of moxibustion was not only intended for the possible appearance of gout, but against any "arthritick, gouty, and rheumatick distempers [as] the Dutch in the Indies have lately experienced."[34]

Answering the question why moxa was less widespread in Europe than in Asia, Kaempfer speculated that it was because of the climate: "although in the hot Asiatick Countries the use of this Caustick hath been found upon experience very successful in the above-mention'd distempers, yet the like success cannot be reasonably expected from its application in our colder European climates. In hot Countries the perspiration is stronger, the fluids thinner, the pores widet, the muscles and membranes more relaxed."[35] Though this statement was unsupported by any firm evidence and therefore can be considered not in accordance to systematic investigation, the question was clearly inspired by his motivation to describe and explain Japan's social and cultural phenomena. Interestingly enough, however, what was based on enquiry and observation led to another conclusion than Busschof's. Kaempfer accounted that moxibustion was considered an analgesic treatment, that it would relieve the pain temporarily. As such, the disorder could return and lead for the Japanese people to take the treatment before any symptoms arose. All these

things considered, therefore, Kaempfer concluded with a correction to the Batavian minister who had understood moxibustion as a cure rather than as an anaesthetic:

> Buschofius, a Minister of the Gospel at Batavia in the Indies, went too far, when he recommended the *Moxa* to his Countrymen in Europe, as an infallible remedy for the gout. I have reason to apprehend, that many a patient in Germany found himself disappointed in his expectation: This is what the learned Dr. Valentini, a German Physician, and Member of the Academy of Sciences founded by the late Emperor Leopold, complain'd of, and not without reason, in a printed letter of his to Dr. Cleyer, to whom it was deliver'd in my presence.[36]

## 1.2 A network of communication

Having discussed three main authors who had travelled to Asia, observed the medical treatments by their own eyes, and published their findings in the Dutch Republic and neighbouring countries, we now turn to those physicians and scholars who read them and commented about them. In the same period, travel accounts and literary works narrating stories to distant places were very popular. The journey to Japan as told by VOC chief factor François Caron was hugely popular as his 'A True Description of the Mighty Kindoms of Japan and Siam' (*Beschrijvinghe van het Machtigh Coninckryck Japan und Siam,* 1636) saw multiple editions and was translated to German, English, and French in the course of the seventeenth century. The publications by Busschof and Ten Rhijne were of a different calibre, however. Though Caron's work was enjoyable and ignited curiosity about Asian cultures, Busschof had made claims of a foreign cure against gout unknown to Europe. Medical knowledge was presented unknown by either the ancients or the moderns. Many would therefore not blindly adopt the new medical know-how as true, but felt inclined to thoroughly investigate its truthfulness. This section will therefore discuss the question how late seventeenth-century Europeans could establish whether the knowledge on moxa as transmitted in books was reliable. How could the reader, based on the works by Busschof, Ten Rhijne, and Kaempfer, be sure of any claims made about moxa's effectiveness? As will be shown, members of the European learned community attempted to answer these questions by means of experimentation.

Herman Busschof had ended his treatise with an advice from Nicolaus Tulpius (1593–1674), who said "You Chirurgions, take good notice of the wholesome Use of Causticks, it shall turn to your Credit, and to the Benefit of your Patients."[37] And it did, at least to the English ambassador in The Hague, Sir William Temple (1628–1699), known for formulating England's favourable foreign policy towards the Dutch Republic and arranging the marriage between William of Orange and Princess Mary of England. In February 1676, however, he suffered from the gout just at a time when he was expected to travel to Nijmegen in the East of the Low Countries to assist in peace negotiations with France. While in bed expecting visitors, diplomat and poet Sir Constantijn Huygens de Zulichem (1596–1687), advisor to stadholder William of Orange, recommended Temple the use of moxibustion. Huygens had received *Het Podagra* as gift from brother Jonas Busschof. After having acquainted himself with the treatment by reading Busschof's treatise, Temple decided to give it a try: he dispatched his physician, doctor Theodore Coledy, to Busschof junior residing

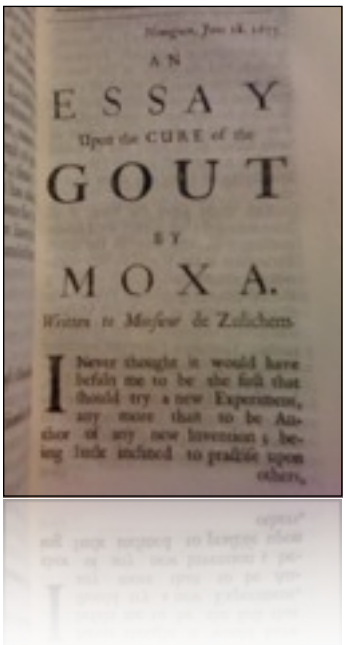
AN
ESSAY
Upon the CURE of the
GOUT
BY
MOXA.
Written to Monsieur de Zulichem.
I Never thought it would have befeln me to be the firſt that ſhould try a new Experiment, any more than to be Author of any new Invention; being leſs inclined to practiſe upon others,

Figure 7. Title page of Sir William Temple's "An Essay Upon the Cure of the Gout by Moxa."

in Utrecht to familiarise himself with the treatment and bring back the moxa. In the meantime Temple's foot had swollen enormously and he could not move his toes, while being forced to endure excruciating pains. On Coledy's return, the doctor placed the moss on Temple's foot and lit it with matches. Immediately the burning had drastic effects on the skin of Temple's foot, and after the third burning he was able to walk without any pain! The blister that remained was treated with garlic and diapalma, a drying plaster; after two weeks, the blister was gone, and the complete swelling after four more weeks.

On request of Constantijn Huygens, William Temple wrote an essay on his remarkable recovery by the use of moxa featured in his work of collected essays, the *Miscellanea*.[38] In this work, after a few words on motivation for writing this essay, namely to satisfy Huygens "who proposed the [moxa] in kindness to me, and desired the Relation of it, in kindness to other men," Temple first elaborated on the social problem gout was responsible for.[39] Recognising that quite a number of Temple's acquaintances and other middle-aged men in the same social class were plagued by gout of the foot, it made Temple hypothesise that gout was stimulated by the luxurious and lazy lifestyle of noble and rich families. If this were true, that would imply that many people in high positions would often be out of office and thus unable to work or attend important political matters. As far as moxibustion was concerned, Temple gained confidence to attempt the experimental treatment by first reflecting upon civilisations around the world he was familiar with that had exercised the use of fire in medical treatments, e.g. the ancient Egyptians, the Moors in Africa, and the Incas in Peru.[40] Logically, William Temple's profession as British statesman, and his unfamiliarity of detailed medical matters, let him to make socio-cultural and comparative contemplations before attempting the Asian medicine:

> Whatever the reasoning were which yet seemed ingenious enough; the experiments alledged with so much confidence, and to be so general in those Parts and told by an Author that writ like a plain Man, *and one whose Profession was to tell truth*, helped me to resolve upon making the trial."[41]

This clearly showed how Temple dealt with the question how to asses whether information was reliable or not. He ultimately decided to engage in a "trial" to asses the performance of moxa, because he trusted Busschof for telling "truth" about his "experiments" based on his profession and methodology. Also more seventeen-century scholars conducted these credibility considerations by investigating a person's background, personal connections, and education details, as an indication of the trustworthiness of an author's work and claim.

William Temple's successful recovery with moxa appeared to have come to many people's notice, as "the talk of the Cure run about the *Hague*, and made the Conversation in other places."[42] It motivated Constantijn Huygens to tell the news around to other men suffering from gout, such as Monsieur Serinchamps, an envoy of the Duke of Lorrains. Once he heard about Temple's quick recovery, Serinchamps immediately sent for moxa and doctor Coledy applied it, after which "the Pain went away upon it, and returned no more to the same place."[43] William Temple also accounted the story of his maid, who recovered from toothache by burning moxa, "and the Man who sold [moxa] at *Utrecht* had assured Coleby he had seen many Cures by it in that kind."[44] Knowledge about moxibustion further dispersed as

Huygens narrated the happening to friends at the "Gresham-Colledge," one of who "had already given order for translating into *English* the little *Batavian* Treatise," which appeared in 1676.[45] Sir William Temple's own account would play a role in the dissemination process as well, as *Miscellanea* was published twice in the end of the seventeenth century, and also editions of the French and Dutch translation were published.[46] As these sources clearly point to, the positive disposition towards moxa by renown individuals like Temple and Huygens allowed for rapid communication of the treatment amongst a network of people in the Low Countries and England.

It must be noted, however, that Temple did not blindly take the burning of moxa as *the* solution to gout. Not only had he to repeat the moxibustion practice twice because the gout in his foot had returned, he discussed a variety of treatments against gout which were practised in Europe as well – of which the most exceptional was the method of Prince Maurice of Nassau, involving putting one's legs in heated horse dung. "But this Cure," Temple theorised, "cannot pretend to deal with inveterate *Gouts*, grown habitual by long and frequent returns, by dispositions of the Stomach to convert even the best Nourishment into those Humours, and the Vessels to receive them."[47] Nevertheless, when it concerned an acute yet temporary appearance of the gout, "I have known so many great Examples of this Cure [moxa]," from which we may derive that a substantial number of people connected to an ambassador's widespread network of friends and colleagues made use of moxibustion since Herman Busschof's *Het Podagra*.[48]

Though Sir William Temple had carefully considered all aspects of the person Busschof and his work, a more experimental way to establish truth or untruth was presented by Dutch naturalist and microscopist Anthoni van Leeuwenhoek (1632–1723). Already well-known for the development of lenses and the accurate description of tiny objects such as muscle fibres and blood corpuscles, Van Leeuwenhoek was given some of the moxa herbs by Constantijn Huygens and he started to investigate the exotic plant "out of curiosity only." His findings were published in the *Philosophical Transactions* by the Royal Society of London.[49] After having burned moxa on his hand, he observed:

> I have more than once examined this *Moxa* by my Miscroscope, and do not find it to be such a curious preparation of an excellent dryed herb; but that 'tis only some lanuginous expiration or protrusion of a fruit, such as it the *lanugo* seen upon a Peach, Quince, or the like; and I was of opinion, that I might have gather'd very near the like substance from some herbs; but that I have hitherto failed of.[50]

Van Leeuwenhoek's observations through the lenses of his microscope had not revealed anything particularly special or different about the moxa in comparison to the structure of ordinary dried herbs. The connection with lanugo (fine, soft hair) and the soft, white fibrous substance of cotton was therefore quickly made. In order to examine how the burning of moxa might differ in results from the burning of cotton, Van Leeuwenhoek designed a small experiment, burning moxa and cotton on post-paper, making observations of the process and result, and he observed that "The burnings caused on the paper by both, were very near alike." Van Leeuwenhoek "concluded thereupon, that if the burning had any effect in the gout, it proceeded not from any peculiar quality in the *Moxa* but only from the burning it self, and that if the

burning were made with *Cotton*, it would produce as good effects as if made with *Moxa*."[51]

Van Leeuwenhoek performed another experiment, this time burning moxa, cotton, and the inside of a chestnut, in order to examine the quantity of oily substance left behind. Moxa left behind the most, a result which, according to Van Leeuwenhoek, could be explained by the fact that moxa was thinner, as such greater in density and therefore containing more oil. He inferred: "Whence it appears, that Mr. *Busschoff* had not so good reason to extol the *Moxa* and its preparation above *Cotton* or other the like substances." The main problem with Van Leeuwenhoek's experiments was, however, that he did not perform the burning of the herbs on patients suffering from gout. Questions concerning the actual substance of the oily matter released by burning moxa and the effect this oil might have on the human body, in particularly one suffering from gout of the foot, remained unanswered. Nevertheless, most interesting is the difference as to how Van Leeuwenhoek and Temple approached moxibustion. Whereas Temple considered Busschof's personal and professional background important for his reliability as source of information, this did not at all play a role for Van Leeuwenhoek. For the latter, all that mattered was to determine moxa's qualities in comparison to other substances in a systematic, comparative procedure.

Constantijn Huygens' recommendation of moxa to William Temple as well as Antoni van Leeuwenhoek's report to the Royal Society has been indicated by historian Lisa Jardine as an eloquent example of "enthusiastic exchanges" of medical knowledge between Dutch and English physicians.[52] Though in agreement that there indeed was an eager interest, and in some cases, intense approval of the application of moxa from Asia, Jardine's analysis remains confined to the exchanges of knowledge between the Dutch Republic and England. Moxa also received a significant reception amongst German scholars, who contributed themselves to the discussion of gout and the promising treatment.

Similarly to Anthoni van Leeuwenhoek's research, a number of German scholars did experiments with the moxa and they reported their findings in the first German journal dedicated to medical and natural sciences. In 1652, physician Johann Lorenz Bausch (1605–1665) founded the Academia Naturae Curiosorum 'College of Those Inquisitive of Nature' in the city of Schweinfurt, in the German Holy Roman Empire. The academy was focussed on "the art of healing and the benefit resulting from this for our fellow men."[53] In 1670, the society began to publish the journal *Miscellanea Curiosa Medico-Physica sive Ephemeridum Medico-Physicarum Germanicarum Curiosorum*.[54] Even before the German translation of Herman Busschof's *Het Podagra* was published, this institution gave serious attention to the therapy of moxibustion. The first member of the Academia Naturae Curiosorum who started examining the *Ost-Indische Wolle* or 'east Indian wool' and debated its therapeutical effects was Erich Moritz (1631–1691).[55] Also the physician of the Elector of Brandenburg, Sigmund Elsholz (1623–1688), published his observations of the use of moxa in the German journal.[56] After having experimented with the moxa ordered from Busschof's brother in the Dutch Republic, the question remained whether the moxa from Asia had special effects when burned or whether *Moxa Germanica* could just as well be used.

Figure 8. Chapter page of Michael Bernhard Valentini's "Von der Moxa" in *Museum Museorum*, 1704.

Two hands apply burning of moxa on head and knee.

In 1679, the *Miscellanea Curiosa* included a report with details of moxa written by VOC employed physician Andreas Cleyer (1634–ca. 1698), who ran two pharmacies in Batavia and was member of the German Academy. Born in the German lands, Cleyer married Catherina van Rensen from Middelburg in Zeeland and she had given him three children. Appointed as chief (*opperhoofd*) of the Deshima factory in Japan from 1682 to 1683, Cleyer conducted further research on the body of remedial substances used in Japan and sent his results, as well as illustrations and Japanese water paintings back to Europe. In 1678 Cleyer was offered membership to the *Academia Naturae Curiosorum* and between 1683 and 1700, more than forty of Cleyer's letters on the flora of Japan were published in college's journal *Miscellanea Curiosa*.[57] Taken from a 1679 letter to Dr. Sebastiaan Scheffer, Cleyer reported in a 1686 edition of the journal that the Japanese moss was in fact dry and hackle mugwort, a plant of the daisy family with aromatic divided leaves that are dark green above and whitish below, and that the preparation of the plant for medical treatment was essential.[58]

Michael Bernard Valentini (1657–1729) was born in Giessen, and once he was physician he travelled to France, England and the Dutch Republic. He returned to Giessen where he became professor in physics and medicine and in 1686 became member of Leopold's Academy as well. A very small treatise titled *Historiae Moxae* by Valentini reacted to the newly available information on moxa and its potential to cure gout of the foot as publicised by Herman Busschof and Andreas Cleyer, the latter with whom Valentini upheld direct correspondence.[59] In this small treatise, Valentini recommended moxibustion as new treatment against gout. He dedicated the work to Cleyer. Real fame did Valentini receive with the publication of *Museum Museorum* in 1704, an elaborate work on the *materia medica*, the body of remedial substances used in the practice of medicine.[60] Interesting about this work were also the letters and reports from East India included in the text, such as letters from Rumphius to Willem ten Rhijne in the years 1683 and 1687 on botanical subjects.

It was clear that, by means of institutionalised platforms for research and discussion, embodied in the Leopold's society and journal, moxibustion received much attention amongst German scholars and scientists in the seventeenth century. Though some were positively and others negatively inclined towards the Chinese and Japanese therapy, it nevertheless brought about a significant discussion on its workings as a cure and on the nature of gout as a disease. As far as England and the United Provinces were concerned, the discussion on moxa did not revolve around comparable institutions as much as in Germany was the case. Nevertheless, the influential person Constantijn Huygens, though himself never publishing about moxa, played an essential role in the successful dissemination of moxa amongst individuals like William Temple, Antoni van Leeuwenhoek, and many others. And all would unlikely have happened were it not for the generosity of Steven Blankaart to provide VOC employees Herman Busschof and Willem ten Rhijne with publication possibilities.

## 1.3 Doubt, misuse, and rejection

Steven Blankaart's work on the gout, including Willem ten Rhijne's contribution as an appendix, was reprinted a few times, also in German, furthering the dissemination of knowledge on moxa.[61] In Germany, after the initial positive

reactions to moxa as discussed before, soon criticism arose because of multiple examples of ineffective moxa treatments. Also in England, where a medical discussion took place on the nature of gout and the variety of treatments against it, moxa did not receive such a warm welcome like the initial reactions gave. English physician Thomas Sydenham (ca. 1624–1689), known for his detailed observations and the accuracy of his works, did not particularly have complimentary words to say about moxibustion for the gout.[62]

London saw the publication of quite a number of books on the disease of gout and possible remedies for it, for which moxa was considered as one. The works were characterised by their individual interpretations of Hippocratic/Galenic medicine to explain causes of gout and how to treat it. Around the same time as Busschof's book was translated into English, Thomas Sherley published his translation of a French book by physician Théodore Turquet de Mayerne, titled *A Treatise of the Gout*.[63] In this work, Turquet de Mayerne considered the works of Hippocrates and Galen, yet dismissed the idea of the four Humours being the cause of gout and instead explained that gout was one of the "Tartarous diseases," caused by salts. He provided dietary suggestions to prevent the production of too much "Tartarous salts," physical exercise to promote sweating, and vomiting to purge the body. He noted that, once a patient was already suffering from gout, that "*Issues* made (by burning) in the *Arms* or *Leggs*, do intercept those humors which flow to the *joynts*, and bring them forth another way, and are a great comfort and relief."[64] Clearly the element of heat was present in Turquet de Mayerne's treatment of gout. However, his tartar as explanation would not receive much acclamation in England. Walter Harris had dedicated a chapter "Of the *Causes* and *Cure* of the *Gout*" in his *Remedies*, giving a number of practical remarks rather than providing a detailed study of its cause, signs and cure.[65] Ascribing gout to weak nerves, he therefore discussed widespread treatments such as repellents, astringents, narcotics, and then disapproved of them. More useful, in Harris' view, were cathartics (purgative drug) and emetics (causing vomiting). Both authors referenced to Hippocrates and Galen multiple times, yet in finding a remedy it appeared that most simply considered the question: what works?

Thomas Sydenham's work on the gout was remarkably systematic and thorough: not only did he provide concise descriptions of the disease's appearance, progress, causes, and symptoms, he also discussed the social group in society most likely to get gout, the period when the disease would arise and how it ordinarily progressed; a discussion Sir William Temple's experience and observations were in line with. In later editions, the writings and observations of other physicians were added as elaborate footnotes.[66] As far as a cure was concerned, "there are about three Ways proposed, whereby we may eject the containing Cause of the Gout, *viz.* Bleeding, Purging, and Sweating: And none of these Methods will ever perform the Business."[67] Sydenham judged these treatments as "prejudicial," in many cases more harmful than helpful to the recovery of the patient. Instead, he proposed various medicines and diets in order to prevent the appearance of gout altogether: by strengthening the stomach, to purify the blood, and optimise digestion. Sydenham favoured abstinence from much wine consumptions, it to be replaced by a milk diet or decoctions of certain roots.

Near the end of Sydenham's treatise, he mentioned "external Remedies […] of the *Indian* Moss, called *Moxa*, much esteemed of late for the Cure of the Gout," but

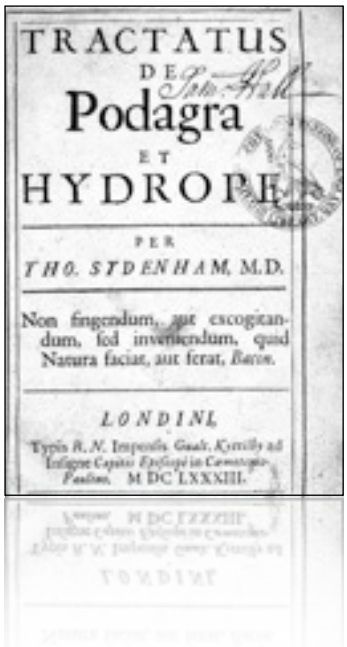
TRACTATUS
DE
Podagra
ET
HYDROPE
PER
THO. SYDENHAM, M.D.
Non fingendum, aut excogitandum, sed inveniendum, quid Natura faciat, aut ferat, Baco.
LONDINI,
Typis R. N. Impensis Gualt. Kettilby ad Insignia Capitis Episcopi in Coemiterio Paulino. M DC LXXXIII.

Figure 9. Frontispiece of Thomas Sydenham's *Tractatus de Podagra et Hydrope*, 1683.

which he regarded as of little service.[68] First, Sydenham immediately attempted to convince the reader that the practice of moxibustion was not "wholly unknown to the Europeans" before it was "received from the Oriental *Indians*."[69] He cited Hippocrates' *Treatise of Diseases* in which it was said that when medical options are exhausted, crude flax can be burned. Flax was a blue-flowered herbaceous plant, cultivated for its seeds that were used to make linseed oil and grown for its stalks to make textile fibres. "Now," Sydenham concluded, "I suppose, none will think that there is any specifick Difference betwixt the Flame of Flax and of this *Indian* Moss."[70] Probably having read Van Leeuwenhoek's review in the *Philosophical Transactions*, Sydenham did not recognise any specific characteristic of moxa different from the burning of flax, cotton, or any other plant with a similar structure, and he did not see any use of this burning except for mitigating the pain. Sydenham's results concerning moxa were summarised in the *Philosophical Transactions* as follows:

> He does not much commend the *paracentesis* or the *acupunctura*, they being as likely to cause a *gangrene* as *blisters* themselves; by the way, he takes notice of the burning with *moxa*, which he will not allow to have a specific quality in its flame, any more than another actual fire; and although we owe this medicine to the *Indians*, yet it was not unknown to the *ancients*, for Hippocrates directs cauterizing with raw flax in the very case of the *gout*.[71]

Argumentation against the use of moxibustion was therefore two-fold: one the one hand, moxa was unable to improve digestion, which was considered to be the place where gout was caused; and on the other hand, in the case gout would turn inwards and would cause symptoms such as "Sickness, Gripes, and a great many other Symptoms of this kind [rather] than with Pain, I suppose no sober Man will think that Fire is to be used."[72] Even though his arguments sounded valid, one might be dissatisfied with Sydenham's inability to provide for a specific cure for the gout, only doubting all other treatment.

From this point onwards, nevertheless, the discussion on gout in England would continue without the consideration of moxa. Joannes Groenevelt went into the cause of gout, which he defined as "a violent pain of the parts about the joynts, caused by a serous and sharp humor, suddenly coming out of the Vessels."[73] Similarly to Turquet de Mayerne, he ascribed it to salt: "And this salt," according to Groenevelt, "is lodged in the *serum*, which that it is acid."[74] Evacuation of the "sharp humor" would be the best solution, quickly pointing at emetics, diuretics (drug causing increased passing of urine) and sudorifics (causing sweating). In the 1690s, William Atkins, self-proclaimed "Gout-Doctor," particularly emphasised the use of his "Gout-Balsam,"[75] and John Peachi introduced in letter yet another cure against gout from the Indies, namely Calumback Wood.[76] Referring to William Temple who told the world that "whoever proposeth a way of Curing and Preventing it, would do great Service to States and Kingdoms, as well as to private Persons," Peachi felt inclined to account a number of experiences, à la the observations in Blankaart's medical journal, about how various individuals were cured by the "Tincture drawn out of this Wood."[77] The multitude of studies on the gout, and the wide variety of possible remedies they presented, allowed for the Chinese moxa to be discussed as well, taken seriously, but ultimately being renounced.

In the Dutch Republic, moxa was received more enthusiastically at first. However, criticism was soon expressed by physician Nicolaes Heinsius (1656–1718), who wrote a number of medical works. Herman Busschof had already suspected that European physicians would react to his introduction of the moxa with much scepticism: "But many Doctors and Chirurgions are like to condemn this remedy as new and unknown, and so render it suspected among their Patients?" to which Busschof answered, "the Effect will soon silence you, and convince you of envy and ignorance."[78] Another aspect that was completely unrelated to the fact whether the burning of moxa could cure gout or not was the pride of Europeans and the unwillingness to adopt something from others:

> "Q. But pray tell me, Sir, what's the reason, that this Burning hath been so many years hid from us *Europeans*, whereas it hath been experienced for so vast a time in those *Indian* Kingdoms, where it is so common, and is used for the most part with great benefit?
> A. This is to be imputed to the carelesness and conceitedness of the *Europeans*, because having so good an opinion of themselves, they are ashamed to learn any good thing from those Pagans; as if they alone were possessed of all knowledg [sic], and those Nations had no share at all in it: Without which conceit and negligence, this excellent remedy might have been long before communicated to these parts of the World."[79]

And indeed, Busschof was not speculating when Nicolaas Heinsius explicitly expressed his cultural bigotry against possible medical treatment from Asia: "Not much merciful are those physicians, who are such as barbaric as the barbarians who invented it themselves and let their patients burn those suffering parts with moxa."[80] Though Sydenham's scepticism about moxa was based on observation and argumentation in context of the gout specifically, judging other treatments more constructive in recovery. Heinsius, on the other hand, had no faith in medical knowledge from 'Barbarians.' Though the Chinese culture was anything but uncivilised, for some the country in the east remained a mysterious entity. Though this may lead to wonderful literature, some people's ignorance reflected in their judgement.

In the German lands, miraculous anecdotes about the efficacy of moxa continued. Its great success, however, would also cause its downfall. On a night in the beginning of march 1692, German surgeon Matthias Gottfried Purmann (1648–1721) was "assaulted with a violent and continual pain" in his left hip that all the earnest and utmost endeavours of neither Dr. Preuss nor Dr. Paulus could ease his suffering. After two weeks of agony, Gottfried proposed the method of moxibustion and, with the consent of his doctors, surgeon Dietrich Meyer burned the dried herbs on the joints and as soon as the moxa burned to the skin, a "burning pungent Pain, which shot like Lightning into the Joint [...] till is was quite burned to Ashes, at which instant the Pain left" and completely disappeared.[81] After his great recovery, Purmann felt obliged to write about moxa's positive effects in his book on surgery, translated into English and published by 1706. On the virtues of moxa, Purmann noted that "for the most violent *Head-aches* the *Moxa* applied in the same place, is much more prevalent and beneficial; of which see Mr. Buschoff's curious Tracts."[82] In a chapter on "Pterygio *or* Panaritio, *vulgarly called a* Whitlaw, *its Cause and Cure,*" a tumour and inflammation in the joints, thought to be caused by corrosive acid,

Purmann summated a number of possible cures, mentioning Dutch physicians Steven Blankaart and Cornelis Bontekoe, also mentioning that "Monsieur *Rivet* the *French* King's Chirurgeon, says he has cured more than a Hundred, by applying *Moxa* to the End of the Finger."[83]

In Chapter XVIII "Some Remarks concerning Cauterizing, and the use of the *Moxa* for that purpose," Purmann described the Chinese treatment in further detail and social development contributing to the decline of people's trust in moxibustion. He started with an overview of the moxa discussion in the German lands, from the translation of Busschof's treateise to Dr. Gahema and Ericus Mauritius' letter to Dr. Scheffer which was published in the Leopoldian Academy's journal, to Dr. Eltzholtz, and lastly Andreas Cleyer. Unfortunately, however, Purmann explained how the burning of moxa came into abuse or misuse by "Confident and Ignorant" surgeons, who did not apply the herbs appropriately, making people think about it as good for nothing. Disemployed by untrained practitioners or not, all cases together were interpreted as proof of moxa's ineffectiveness. Moxa was then soon bought to an end.

## 1.4 Conclusion

Herman Busschof's treatise on moxibustion, based on his own experiences with gout and investigations into the disease and cure, was published in the Republic and soon became widely known in England and the German lands. Gout was a common disorder and any new cure to treat it was welcomed warmheartedly. People told their friends and acquaintances about moxa which made its existence widely known: Constantijn Huygens suggested moxa to many men suffering from gout in his network noble families in the Low Countries and England, physicians and ministers in Steven Blankaart's widespread network reported their experiences with the new cure in his journal, and prestigious scientific societies in England and the German lands had Busschof's work translated into vernacular and made their own efforts to further investigate about moxibustion. This process of dissemination did not take place amongst one particular group of medical professionals, but was rather based on strong and weak ties between various people, merchants, journey-men, diplomats and doctors alike, who had a significant "geographical mobility" in common.[84] In this time when people travelled long distances for the purpose of trade, study, or other, new situations and encounters were experienced, which not only proved important for the circulation of moxibustion but also for the development of early modern science in general.

Besides the social element of individuals, their networks and linkage to institutions, the scholarly discussion on the gout and the continuing search for successful remedies allowed for moxa to be thoroughly studied. Potential cures against gout as presented by physicians throughout the European countries included the more conventional treatments of purging the body, but also more unorthodox practices like horse-dung and treatments from the Indies. This discussion and the absence of a successful cure allowed for various treatments to be discussed, amongst which was moxa. Experience with it led to the appropriation of the technique by Busschof in Batavia from an "Indian doctress," the translation to English and German vernaculars led to an international discussion, and the availability of the dried herbs in Utrecht allowed for actual application on patients who dared to try it and for experimentation by scientists. As Purmann accounted that as moxa grew

common and declined in prise, it resulted in an improper application of the cauterisation by inexperienced surgeons, that soon its esteem declined.

Though this process of transmission was a fascinating phenomenon, in itself a number of equally interesting developments occurred as well, namely the discussion on criteria for acceptable knowledge. In a time when scepticism grew about authority based on the ancients and there was a growing appreciation for more modern methods of gaining knowledge, the evaluation of moxa occurred along the same lines. Recognising that the ancients had not discussed all that was, VOC employees in Asia appealed to other means of gaining knowledge that could be tested and accepted by European readers. These means included, first of all, eye-witness observation: Busschof, Ten Rhijne, and Kaempfer had closely observed local patients and local practitioners. They were in a position to provide for first-hand descriptions of exactly that which they saw. Secondly, personal enquiry about those things they saw followed. They learned about all things concerned with moxibustion, but only wrote down what belonged to the sphere of fact. Unemotional and very practical, they talked about aspects they could observe and check for themselves, such as preparation and recovery, therefore leaving out invisible aspects such as its theoretical and ideological context. Lastly, in the case of Busschof, the fact that he was treated with moxa himself resulted in the strongest argument that his information was valid as knowledge because it was derived from sense-experience. In short, the VOC employees applied multiple methods to refrain from ignorant practice of quackery, but instead claimed medical knowledge based on observation.

Back in Europe, the reception process showed similar developments. First, the quarrel between ancients and moderns allowed for the introduction of new knowledge. Within this prevalent susceptibility, moxa was welcomed and given a serious chance amongst physicians and scholars by the ingratiating efforts by Huygens and Blankaart. After close examination by Temple, he was persuaded to attempt a clinical 'trial' of himself. Accordingly, he was able to write a first-hand description himself. Also Van Leeuwenhoek and Sydenham applied the method of experimentation and comparison in order to establish truth from untruth. Though his conclusion was not in particular favour of moxa, the methodology itself was objective as it demonstrated a fact, not an opinion or interpretation. In the German lands, an institutional process enabled for a more consistent flow of medical and botanical information from Asia to Europe by means of letters. Also within the Leopold Academy, the topic was widespread and its journal allowed for multiple publications by various authors.

One of the last authorities announcing his opinion on the Chinese and Japanese medical treatment of moxibustion was the well-known Lorenz Heister. Fellow of the Royal Society in London and the Royal Academy in Paris, Heister was widely respected in the field of anatomy and surgery. Unhappy with the available teaching material for surgery students, Heister wrote his own comprehensive work, discussing everything from wounds, to surgical incisions, and binding materials. This massive work, originally written in Latin but translated to many European languages and republished during the eighteenth century, contained a short chapter on the burning of moxa. In two pages, Heister observed that "this Process [of moxibustion] may have been cried up by many of the *Europeans*, [however] it is at present quite in Disuse." It was not without reason that its application had

practically diminished, "for, besides the acute Pain which it causes, it is frequently found to have little or no Effect."[85]

Acceptance of moxibustion amongst Europeans can be ascribed to the success of practical application rather than its theoretical compatibility within Galenic medicine. Although Heister's main argument against the use of moxa concerned it often having "no Effect," the same applied for more conventional treatments like bloodletting and laxatives. An additional disadvantage for moxibustion was its foreign quality and its strong dependence on the patient's curiosity and willingness to try it. The Chinese treatment was never institutionalised or systematically made part of a surgeon's or physician's education, or incorporated as an official VOC import product for that matter, and thus left to popular interest and demand. When this declined, the use of moxibustion soon ended.

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[1] Bontius, *Iac. Bontii in Indijs Archiatri De Medicina Indorum Lib. Iv. 1. Notae in Garçiam Ab Orta. 2. De Diaeta Sanorum. 3. Meth. Medendi Indica. 4. Observationes E Cadaveribus*. This work was reprinted in Bontius' *De medicina Aegyptorum* (Paris: 1645; and Leiden: 1719), also revisited with Jacobus Bontius, "Iacobi Bontii ... Historiæ Naturalis Et Medicæ Indiae Orientalis Libri Sex ..." in *Gulielmi Pisonis Medici Amstelædamensis De Indiæ Utriusque Re Naturali Et Medica Libri Qvatvordecim ...* ed. Willem Piso (Amstelaedami: Ludovicum et Danielem Elzevirios, 1658).
[2] Leonard Blussé, *Visible Cities: Canton, Nagasaki, and Batavia and the Coming of the Americans*, *The Edwin O. Reischauer Lectures* (Cambridge, Massachusetts: Harvard University Press, 2008), 5.
[3] Ibid., 38.
[4] Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age*, 72.
[5] Busschof and Roonhuyse, *Of the Gout, and Its Nature More Narrowly Search'd into Than Hitherto*, 75.
[6] Ibid., 93-94.
[7] Ibid., 84.
[8] Steven Blankaart, ed., *Collectanea Medico-Physica, Oft Hollands Jaar-Register Der Genees- En Natuur-Kundige Aanmerkingen Van Gantsch Europa &C. Tweede En Derde Deel Des Jaars Mdclxxxi. En Lxxxii / Door Eigen Ondervinding En Gemeen-Making Van Verscheide Heeren En Liefhebbers. By Een Versamelt Door Steph. Blankaart, Med. Doct. En Praktizyn Tot Amsterdam* (Amsterdam: Johan ten Hoorn, 1683), 14-20.
[9] Steven Blankaart, ed., *Collectanea Medico-Physica, Oder Holländisch Jahr-Register, Sonderbahrer Anmerckungen, Die So Wol in Der Artzney-Kunst, Als Wissenschaft Der Natur in Gantz Europa Vorgefallen / Zusammen Getragen Durch Steph. Blankart.; Aus Dem Holl. In Das Hoch-Teutsche Übers. Durch T.P.M.C.G.L* (Leipzig: 1690).
[10] Steven Blankaart, ed., *Collectanea Medico-Physica, Oft Hollands Jaar-Register Der Genees- En Natuur-Kundige Aanmerkingen Van Gantsch Europa &C. Beginnende Met Het Jaar Mdclxxx / Door Eigen Ondervinding En Gemeen-Making Van Verscheide Heeren En Liefhebbers. By Een Versamelt Door Steph. Blankaart, Med. Doct. En Praktizyn Tot Amsterdam* (Amsterdam: Johan ten Hoorn, 1680). Entries on gout in Part I, Observation LXII "Deftige pleister tegen het Podagra," and in Part II, Obs. XLI "Verscheidene middelen tegen 't Podagra, of Jigt, aan den Collecteur deses Boeks gecommuniceert," Obs. XLII "Deftige middelen voor koude Jigt," Obs. XLIII "Tegen de Tophi in 't Podagra," Obs. XLVII "Voor Jigt, verkoude en verkrompe leden."
[11] Steven Blankaart, ed., *Collectanea Medico-Physica, Oft Hollands Jaar-Register Der Genees- En Natuur-Kundige Aanmerkingen Van Gantsch Europa &C. Laatste Deel: Eindigende Met Het Jaar Mdclxxxviii / Door Eigen Ondervinding En Gemeen-Making Van Verscheide Heeren En Liefhebbers. By Een Versamelt Door Steph. Blankaart, Med. Doct. En Praktizyn Tot Amsterdam* (Amsterdam: Johan ten Hoorn, 1688), 41-42.
[12] Part V, Obs. LX "Tand-pijn door Moxa genesen, item van een Bast die de Tandpijn geneest" in Blankaart, ed., *Collectanea Medico-Physica, Tweede En Derde Deel*, 64.
[13] Ibid., 176. Part 6, Obs. XLII "Middel tegen de Tand-pijn."
[14] Ibid., 69. Obs. LXIX "Verdraying ofte verrekking der pezen door Moxa herstelt."

[15] Steven Blankaart, Willem ten Rhijne, and Philippus Jacobus Sachs von Lewenheimb, *Verhandelinge Van Het Podagra En Vliegende Jicht, Waar in Des Zelfs Ware Oorzaak En Zekere Genezingen Werden Voorgestelt : Als Ook Een Korte Beschrijvinge Van De Krachten Des Melks, Toonende Dat Des Zelfs Voedsel, Zoo Voor Gesonde Als Ongesonde (Voornamelijk in Het Podagra) Zeer Dienstig Is / Door Stephanus Blankaart. : Item, De Chineese En Japanse Wijse Om Door Het Branden Van Moxa En Het Steken Met Een Gouden Naald Alle Ziekten En Voornamelijk Het Podagra Te Genesen / Door Wilhelmus Ten Rhyne* (Amsterdam: Jan ten Hoorn, 1684).
[16] Ibid., 5. Translation by author.
[17] "Wilhelmi ten Rhijne, excerpta ex observationibus Japonicis, physicis etc de Fructice Thee" in Jacobus Breynius and Willem ten Rhijne, *Jacobi Breynii Gedanensis Exoticarum Aliarumque Minus Cognitarum Plantarum Centuria Prima, Cum Figuris Aeneis Summo Studio Elaboratis* (Gedani [Dantzig]: typis, sumptibus & in aedibus autoris, imprimebat David-Fridericus Rhetius, 1678), 112.
[18] Blankaart, Rhijne, and Lewenheimb, *Verhandelinge Van Het Podagra En Vliegende Jicht*, 61.
[19] Ibid., 219.
[20] Frank Huisman, *Stadsbelang En Standsbesef: Gezondheidszorg En Medisch Beroep in Groningen 1500-1730* (Rotterdam: Erasmus Publishing, 1992), 196.
[21] Blankaart, Rhijne, and Lewenheimb, *Verhandelinge Van Het Podagra En Vliegende Jicht*, 96.
[22] Ibid., 98.
[23] Huisman, *Stadsbelang En Standsbesef: Gezondheidszorg En Medisch Beroep in Groningen 1500-1730*, 195.
[24] Blankaart, Rhijne, and Lewenheimb, *Verhandelinge Van Het Podagra En Vliegende Jicht*, 281.
[25] "Extract uit een brief, geschreven An den Eerwaerden Heer Hermannus Bushof, Bedienaer des Goddelyken Woorts tot Batavia" in Willem ten Rhijne, *Dissertatio De Arthritide: Mantissa Schematica, De Acupunctura, & Orationes Tres. I. De Chymiae Ac Botaniae Antiquitate & Dignitate. Ii. De Physiognomia. Iii. De Monstris Singula Ipsius Autorio Notio Illustrata* (London: Impensis R. Chiswell, 1683).
[26] Blankaart, Rhijne, and Lewenheimb, *Verhandelinge Van Het Podagra En Vliegende Jicht*, 279.
[27] Ibid., 281.
[28] Ibid., 284-85.
[29] Joseph Needham and Lu-Gwei-Djen, *Science and Civilisation in China*, vol. V. Chemistry and chemical technology. Pt. 5. Spagyrical discovery and invention: physiological alchemy (Cambridge: Cambridge University Press, 1983), 111.
[30] Blankaart, Rhijne, and Lewenheimb, *Verhandelinge Van Het Podagra En Vliegende Jicht*, 285.
[31] Engelbert Kaempfer, "Iv. An Account of the Moxa, an Excellent Caustic of the Chinese and Japanese, with a Scheme Schewing What Parts of the Human Body Are to Be Burnt with That Plant in Several Distempers," in *The History of Japan*, ed. John Gaspar Scheuchzer (London: 1727), 37.
[32] Ibid., 38.
[33] Ibid.
[34] Ibid., 39.
[35] Ibid.
[36] Ibid., 40.
[37] Busschof and Roonhuyse, *Of the Gout, and Its Nature More Narrowly Search'd into Than Hitherto*, 136.
[38] William Temple, "An Essay Upon the Cure of the Gout by Moxa, Written to Monsieur De Zulichem," in *Miscellanea* (London: Jacob Tonson, 1680, 1693). The essay is dated june 18, 1677.
[39] Ibid., 186-89.
[40] Ibid., 204-06.
[41] Ibid., 208. Italics added by author.
[42] Ibid., 212.
[43] Ibid., 214.
[44] Ibid. After the first mentioning of Coledy, the name is spelled 'Coleby.'
[45] Ibid., 215. Busschof and Roonhuyse, *Of the Gout, and Its Nature More Narrowly Search'd into Than Hitherto*.

[46] First, William Temple, "Een Onderzoek over De Genezing Van Het Podagra, Door De Moxa, Geschreven Aan De Heer Van Zuylichem, Uit Nimwegen, 1677," in *Miscellanea of Verscheidene Tractaten Zoo Politique Als Andere* (Utrecht: Anthony Schouten, 1693). Second, William Temple, "Essai Du Moxa Contre La Goutte," in *Les Oeuvres Mêlées De Monsieur Le Chevalier Temple.* (Utrecht: Antoine Schouten, 1694). And lastly, William Temple, "Een Onderzoek over De Genezing Van Het Podagra, Door De Moxa, Geschreven Aan De Heer Van Zuylichem, Uit Nimwegen, 1677," in *Miscellanea, of Verscheidene Tractaten Zoo Staatkundige Als Andere* (Utrecht: Anthony Schouten, 1695).
[47] Temple, "An Essay Upon the Cure of the Gout by Moxa, Written to Monsieur De Zulichem," 223-24.
[48] Ibid., 224-25.
[49] Antoni van Leeuwenhoek, "Mr. Leewenhoecks Letter Written to the Publisher from Delff the 14th of May 1677, Concerning the Observations by Him Made of the Carneous Fibres of a Muscle, and the Cortical and Medullar Part of the Brain; as Also of Moxa and Cotton," *Philosophical transactions* 12 (1677-1678).
[50] Ibid.: 898. 'Lanugo' can be defined as fine, soft hair, especially that which covered the human body and limbs; from late 17th century, from Latin, 'down,' from *lana 'wool.'*
[51] Ibid.: 898-95. Page numbering in this article contained errors; page 898 was followed by page 895.
[52] Lisa Jardine, *Going Dutch: How England Plundered Holland's Glory* (London, New York, Toronto, Sydney and New Delhi: Harper Perennial, 2009), 341.
[53] As quoted in Michel, "Far Eastern Medicine in Seventeenth and Early Eighteenth Century Germany," 70.
[54] The *Miscellanea Curiosa Medico-Physica* was dedicated to Emperor Leopold I and was published in Latin. Despite several name changes and interruptions of publication, the journal continues to this day.
[55] Erich Moritz, "Observatio D. Erici Mauritii. De Novo Contra Podagram Remedio," *Miscellanea Curiosa sive Ephemeridum Medico-Physicarum Germanicarum Academiae Naturae Curiosorum* I, no. VI & VII (1676).
[56] Sigmund Elsholz, "Observatio D. Johann Sigismundi Elsholtii De Moxa Sinensi, Antipodagrica," *Miscellanea Curiosa sive Ephemeridum Medico-Physicarum Germanicarum Academiae Naturae Curiosorum* I, no. VI (1676).
[57] Michel, "Far Eastern Medicine in Seventeenth and Early Eighteenth Century Germany," 72.
[58] Andreas Cleyer, "De Moxa," *Miscellanea Curiosa sive Ephemeridum Medico-Physicarum Germanicarum Academiae Naturae Curiosorum* II, no. IV (1686).
[59] Michael Bernhard Valentini, *Historia Moxæ Cum Adjunctis in Sine Meditationibus De Podagra Ad Eminentissimum Virum Dn. Andream Cleyerym M.D. Indiæ Orientalis Proto-Medicum, Bataviae Nova Consulem, Atque S.R.I. Acad. Nat. Curiosorum Collegam Meritißimum Perscripta* (Lugduni Batavorum [Leiden]: Prostat apud Petrum van der Aa, 1686).
[60] Michael Bernhard Valentini, *Museum Museorum, Oder Vollständige Schaubühne Aller Materialien Und Specereyen, Nebst Deren Natürlichen Beschreibung, Election, Nutzen Und Gebrauch ... Aus Andern Material-, Kunst- Und Naturalien-Kammern, Oost- Und West-Indischen Reise-Beschreibungen ... Also Verfasset Und Mit ... Kupfferstücken Unter Augen Gelegt / Von D. Michael Bernhard Valentini* (Frankfurt am Mayn: J.D Zunner's sel. Erben und J.A. Jungen, 1704). This work was republished in Latin and German various times.
[61] Steven Blankaart, Willem ten Rhijne, and Philippus Jacobus Sachs von Lewenheimb, *Accurate Abhandlung Von Dem Podagra Und Der Lauffenden Gicht, Worinnen Deren Wahre Ursachen Und Gewisse Cur Gründlich Vorgestellet, Auch Die Herrlichen Kräfften Der Milch ... / Durch Steph. Blancard, Ph. & Med. Doct. Und Weitberühmten Practicum Zu Amsterdam; Anietzo Aber Wegen Seiner Nutzbarkeit, Nebst Des Herrn Wilhelm Ten Rhyne, Med. Doct. Und Pract. Auf Batavien in Ost-Indien, Curieuser Beschreibung, Wie Die Chinesen Und Japaner Vermittelst Des Moxa-Brennens Und Guldenen Nadel-Stechens Alle Kranckheiten, Insonderheit Aber Das Podagra Gewiss Curiren. Aus Der Niederteutschen in Die Hochteutsche Sprache Übersetzet* (Leipzig: Johann Gleditsch, 1692). And, Steven Blankaart, Willem ten Rhijne, and Philippus Jacobus Sachs von Lewenheimb, *Eigentliche Abhandlung Von Dem Podagra Und Der Lauffenden Gicht, Worinnen Auch Die Herrlichen Kräffte Der Milch, Ordentlich Beschrieben Werden / Durch Stephan Blancard, Doct. Und Practicum Zu Amsterdam; Nebst Des Herrn Wilhelm Ten Rhyne, Beschreibung, Wie Die Chinesen Vermittelst Des Moxa-Brennens Und Güldenen Nadel-Stechens Alle Kranckheiten, Insonderheit Aber Das Podagra Curiren* (Leipzig: Thomas Fritschen, 1697).

[62] Original work in Latin is Thomas Sydenham, *Tractus De Podagra Et Hydrope* (Londini: 1683). The first English translation was already published in 1674, however, this study will quote from the 1734 English edition.
[63] Théodore Turquet de Mayerne, *A Treatise of the Gout Written Originally in the French Tongue, by Theodor Turquet, De Mayerne, Knight, Baron of Aubonne, Councellor, and Chief Physitian to the Late King and Queen of England. Englished for the General Benefit, by Thomas Sherley, M.D. Physitian in Ordinary to His Present Majesty Charles the Ii. Whereunto Is Added, Advice About Hypochondriacal-Fits, by the Same Author* (London: printed for D. Newman, at the King's Arms in the Poultrey, 1676).
[64] Ibid., 52.
[65] Walter Harris, *Pharmacologia Anti-Empirica, or, a Rational Discourse of Remedies Both Chymical and Galenical Wherein Chymistry Is Impartially Represented, the Goodness of Natural Remedies Vindicated, and the Most Celebrated Preparation of Art Proved Uncapable of Curing Diseases without a Judicious and Methodical Administration: Together with Some Remarks on the Causes and Cure of the Gout, the Universal Use of the Cortex, or Jesuits Powder, and the Most Notorious Impostures of Divers Empiricks and Mountebanks / by Walter Harris ...* (London: Printed for Richard Chiswell at the Rose and Crown in St. Pauls Church-yard, 1683), 214-80.
[66] For annotations see Thomas Sydenham, "A Treatise of the Gout and Dropsy," in *The Works of Thomas Sydenham, M.D. On Acute and Chronic Diseases ... / to Which Are Subjoined Notes, Corrective and Explanatory, from the Most Eminent Medical Writers ... With a Variety of Annotations by George Wallis*, ed. George Wallis (London: G.G.J. and J. Robinson, W. Otridge, S. Hayes, and E. Newbery, 1788).
[67] Thomas Sydenham, "A Treatise of the Gout and Dropsy," in *The Whole Works of That Excellent Practical Physician, Dr. Thomas Sydenham: Wherein Not Only the History and Cures of Acute Diseases Are Treated of, after a New and Accurate Method; but Also the Shortest and Safest Way of Curing Most Chronical Diseases*, ed. John Pechey (London: W. Feales, R. Wellington, J. Wellington, A. Bettesworth and F. Clay, B. Wellington, 1734), 351.
[68] Ibid., 379.
[69] Ibid., 380.
[70] Ibid.
[71] As quoted by Robert Gordon Latham, "A Life of the Author," in *The Works of Thomas Sydenham, M.D.* (London: The Sydenham Society, 1848), xl.
[72] Sydenham, "A Treatise of the Gout and Dropsy," 380.
[73] Joannes Groenevelt, *Arthritology: Or, a Discourse of the Gout Written by John Groenevelt* (London: Printed for the Author, 1691), 16.
[74] Ibid., 3.
[75] William Atkins, *A Discourse Shewing the Nature of the Gout with Directions to Such Remedies as Will Immediately Take Away the Pain ... : And Also Helps for Palsies, Plurisies, Cholick, Convulsions in Limbs ... : With Receipts and Directions for the Cure of the King's Evil and Other Diseases / by W. Atkins* (London: Printed for Tho. Fabian, 1694).
[76] John Peachi, *Some Observations Made Upon the Calumba Wood, Otherwise Called Calumback: Imported from the Indies Shewing Its Admirable Virtues in Curing the Gout, and Easing All Sorts of Rhumatical Pains. Written by a Doctor of Physick in the Countrey, to the President of the Colledge of Physicians at London* (London: [s.n], 1694).
[77] Ibid., 5-7.
[78] Busschof and Roonhuyse, *Of the Gout, and Its Nature More Narrowly Search'd into Than Hitherto*, 96-97.
[79] Ibid., 108.
[80] Nicolaas Heinsius and Heinrich Elias Hundertmarck, *Nicolai Heinsii Nic. Fil. Übel-Vexirter Und Wohl-Soulagirter Podagrist, Oder Curiöser Tractat Vom Podagra Und Allgemeinen Jicht Worinnen Dieser Schmerßlichen Krankheiten Natur Und Tur Mit Vielen Bewährten Recepten ... Wird / Aus Dem Holländischen Übersezt Von Heinrich Elias Hundertmarck* (Franckfurt: Verlegts Christoph Hülße, 1701), 89.
[81] Matthias Gottfried Purmann, *Chirurgia Curiosa: Or, the Newest and Most Curious Observations and Operations in the Whole Art of Chirurgery ... Written Originally in High-Dutch, By ... Matthæus Gothofredus Purmannus, ... To Which Is Added Natura Morborum Medicatrix: ... By Conrade Joachim Sprengell, ...* (London: printed for D. Browne, R. Smith, and T. Browne, 1706), 307.
[82] Ibid., 12.
[83] Ibid., 196.
[84] David S. Lux and Harold John Cook, "Closed Circles or Open Networks?: Communicating at a Distance During the Scientific Revolution," *History of Science* XXXVI (1998): 184.

[85] Lorenz Heister, *A General System of Surgery. In Three Parts. Containing the Doctrine and Management: I. Of Wounds ... Ii. Of the Several Operations ... Iii. Of the Several Bandages ... Translated into English from the Latin of Dr. Laurence Heister, Professor of Physic and Surgery in the University of Helmstadt, Fellow of the Royal-Society, London, and of the Royal Academy at Paris, &C.*, 2nd ed. (London: printed for W. Innys in Pater-noster Row; C. Davis in Holborn; J. Clarke under the Royal-Exchange; R. Manby and H.S. Cox on Ludgate-Hill; and J. Whiston in Fleet-street, 1743), 320.

# 2. Acupuncture

Figure 10. Willem ten Rhijne, *Dissertatio de arthritite: Mantissa schematica: de Acupunctura*, 1683.

Chart of Japanese figure with meridians and sites for acupuncture and moxa

From mid-seventeenth century onwards in the bay of Nagasaki, VOC ships manoeuvred around a large number of small isles to finally dock at Tsukishima, better known as Deshima, an artificial island with the shape of a fan. After the Portuguese traders were banished from Japan in 1639, the Dutch were also restricted in their freedom to travel around the country, as their recently renovated factory at Hirado had to be demolished and the VOC merchants were relocated to the 600 by 120 feet Deshima, entirely circumscribed by palisades.[1] This facility could only be accessed through the *waterpoort* 'watergate,' used to load and unload cargo, and through a gateway to the bridge that connected the island with the shore. The left side of Deshima, a two-story house was reserved for the *Oranda Kapitan* or Dutch factory chief, gardens grew flowers, vegetables and herbs; a large house was reserved for the interpreters; and storage and lodging houses took up most of the right side of the island.[2] Once a year, the captain, a secretary and the surgeon were allowed ashore to travel up north to Edo and pay tribute to the shogun. Two physicians assigned to Deshima, Willem ten Rhijne and Engelbert Kaempfer, took this *hofreis* as an opportunity to learn more about the country and reported about it back in the Dutch Republic.

One of the new cultural observations made by these two VOC physicians was the Japanese medical practice of acupuncture. This ancient technique involved the insertion of the skin with needles functioning as an anaesthetic, invented in China at least 2000 years ago. The term 'acupuncture' was coined in 1684 as "pricking with a needle" based on the Latin *acus* 'needle' and English *to puncture*. Over time, the Chinese developed a theory of precise points (acu-points) along twelve meridians or pathways in the human body though which the *qì* 氣 or vital life force was believed to flow. Needles were pricked in those acu-points to stimulate the *qì* and restore the *yīnyáng* 陰陽 balance and treat diseases and syndromes caused by an imbalance in *yīnyáng*. This chapter will ask the question how acupuncture was appropriated by two VOC physicians in Deshima and how it was received amongst an European audience, i.e. in a context where humour medicine prevailed and a similar theory on the circulation of blood had only recently been publicised. Stimulated by the commencing discussion on moxibustion initiated by Herman Busschof, the Royal Society of London decided to published Ten Rhijne's *De Acupunctura* (1683). Despite the fact that illustrations showing acupuncture points and tracts on the human body were received with much fascination, the pricking of needles in one's body gave people such horrific ideas that acupuncture as experimental medical practice did not lead to an active application of it nor to a wide-spread discussion. As will be shown in this chapter, a combination of the theory of acupuncture within Hippocratic/Galenic medicine was a contradiction in terms. Furthermore, acupuncture was in comparison to moxa more complicated to do clinical experiments with or apply in practice, and would therefore never meet with such a widespread reception.

Most scholars in early-modern Europe did not distinguish between Chinese and Japanese medicine. Although basic ideas were similar, there were differences between the two. Already within China proper there were differences in medical practices, specifically concerning the kind of diseases that occurred among the population in different environmental circumstances. To a certain extent this study will specify these differences, but since their distinction was largely absent in the discussion, we will sometimes apply the term 'Asian medicine' to mean both Chinese and Japanese medicine. Also in Europe itself, although Hippocratic and Galenic traditions were not homogeneous bodies of knowledge, many practitioners would still place themselves in this line of a fixed set of scriptures and institutions.

## 2.1 Exchanging matters of fact

In trade, merchants give one thing and receive another, an act which ultimately will be profitable. A similar exchange occurred in the seventeenth century between Europeans and Asians. Though in medicine, the works of Cleyer, Ten Rhijne, and Kaempfer were not in direct correspondence with the monetary profit they made, but certainly investigating them will proof insightful for us. Especially in the case of Ten Rhijne and Kaempfer, their activities of medical exchanges add an element not discussed in the former chapter: not only the one-sided appropriation of medical know-how from one culture to another, but rather the reciprocal activities leading to a true, though limited, mutual enrichment of medical and surgical knowledge.

Visualisations of acupuncture points and pathways first appeared in 1682 with the publication of Andreas Cleyer's *Specimen Medicinæ Sinicæ* 'or Medical Treatises according to the Spirit of the Chinese,' based on translations of original Chinese medicine works done by Michael Boym.[3] This Polish missionary had left for India and China in 1643 and, with a temporarily stay in Europe from 1652 to 1656, died in China in 1659. During his stay, he studied Chinese medicine but his manuscripts were lost. When German-born Andreas Cleyer , employed as a VOC soldier, arrived in Batavia in 1665, he was soon promoted and held various medical positions, ultimately becoming 'Doctor of the Castle' (*Doctor van het Casteel*) and 'Head of the Medicine Store' (*Hoofd van den Medicinalen Winckel*) by 1667. In the 1680s, Cleyer visited Deshima twice and he was able to have thousands of Japanese plants collected, transported to Batavia, and then composed in his *Flora Japonica,* a manuscript that remained unpublished. In Batavia, Cleyer was able to gather the lost manuscripts of Michael Boym which he published in the German lands, naming only himself as editor.

A more detailed discussion of Cleyer/Boym's *Specimen Medicinæ Sinicæ* will follow in chapter three on the Chinese diagnostics of pulse-taking, because the majority of the work described this technique. However, a few parts described acupuncture, namely a short account on the practice and the inclusion of illustrations showing, what Cleyer/Boym called, a conduit system of *viis* 'paths' or 'ways.'[4] Through these conduits flowed a *spiritus* which referred to the Chinese concept of *qi*. Although the translation from *qi* to *spiritus* would seem appropriate, especially considering the unfamiliarity with the philosophy among European readers, Cleyer/Boym had not gained a deep understanding of the Chinese theory as the accompanying acupuncture charts were mistakenly labelled 'anatomical,' causing much confusion among European readers. Nevertheless, Cleyer/Boym's work

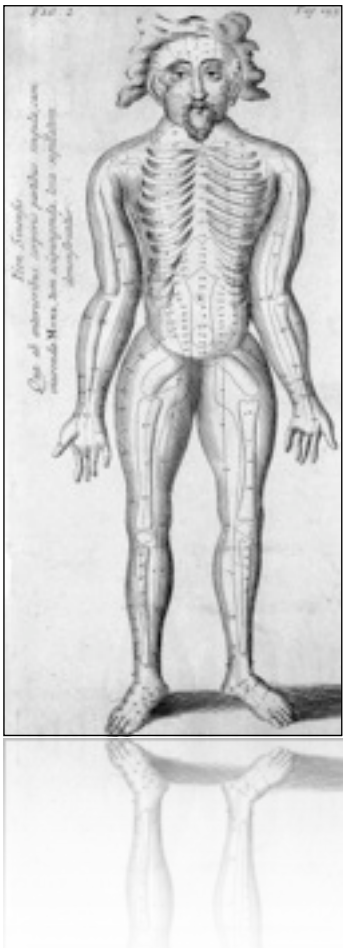

Figure 11. Willem ten Rhijne, *Dissertatio de arthritite: Mantissa schematica: de Acupunctura*, 1683.

Chart of a Chinese figure with sites for the application of acupuncture and moxa with yang meridians.

proved once again the open-minded approach towards foreign theories and philosophies. Curiosity about the other was of such an extent that much time and energy was put into the translation of these Chinese medical texts.

A year after the publication of *Specimen Medicinæ Sinicæ,* a work on Japanese acupuncture was published by Andreas Cleyer's colleague, Willem ten Rhijne. His study on acupuncture proved to be more systematic and better understandable to European readers than the sample and illustration present in Cleyer's edition, not only because it had filtered out most of the Chinese philosophical theories.

The Dutch doctor Willem ten Rhijne (1649–1700), born in Deventer, went to study medicine and botany in Leiden under his "elder Patron" François dele Boë Sylvius.[5] In the works Ten Rhijne would later publish, he proved himself a follower of Sylvius' chemical interpretation of the humoral medicine, proposing that excessive acids or alkalis caused chemical imbalances in the body. Because of financial reasons, Ten Rhijne did not finish his studies at Leiden, but instead received his *Medicinae Doctor* degree at Angers in France in 1670. On his return he wrote a number of dissertations, and in April 1673 was employed by the Dutch East India Company. After a stop in Cape of Good Hope and Batavia, he departed for Japan on a specific request from the *Bogyou* 奉行 (ぶぎょう) 'magistrate' of Nagasaki in Japan for "a good physician who knows medical plants well," rather than a naval surgeon, though able to treat wounds and small disorders, yet not as learned as a physician.[6] Every VOC ship was equipped with at least one marine surgeon as part of the crew. Involved in rather rudimentary work, this surgeon was confronted with long voyages, demanding workload, and living conditions with high potential of a detrimental effect on one's health. Ordinary health problems on board were scurvy, wounds and bruises, and infectious diseases such as syphilis and typhus. A university-educated physician would not soon be employed to work on a trading ship, until the Japanese appealed for one. The Gentlemen Seventeen, governors of the VOC, indeed replied to this request by hiring Willem ten Rhijne, whom that was asked to "be experienced and learned in the art and science of blowing glass, to such an extent, which he might need to do his chemistry."[7] The Japanese sought a good Dutch physician, and the VOC sent them one.

Ten Rhijne arrived at the Dutch factory of Deshima in July 1674 and resided there for over two years. During Japan's two centuries of self-imposed isolation from foreigners (1641–1858), *sakoku* 鎖国 'locked country,' the VOC trading station Deshima remained the sole channel for the exchange of medical and scientific ideas between Europe and Japan. Officially all VOC employees were restricted to this island, but Ten Rhijne was able to travel to Edo (today's Tokyo) twice, was able to treat both Dutch and Japanese patients, and provided answers to long lists of medical questions despite language difficulties. Furthermore, Ten Rhijne "made every effort to meet a Japanese physician" to study the Asian medical techniques of acupuncture and moxibustion, and he published a treatise on them for an European audience.[8] He explained how the disease of gout, in which defective metabolism of uric acid causes arthritis especially in the smaller bones of the feet, could be treated with moxa, the burning of herbs near the skin, and he added charts indicating locations on the human body where the practice of acupuncture should be located.[9] Patients were to be treated by skilled practitioners with good knowledge of the intricacies in order to avoid inflicting injury on the patient.

A language barrier between Willem ten Rhijne and the Japanese interpreters concerned the terminology of his medical knowledge: many words of medical concepts or objects had of course no Japanese counterpart. The communication of knowledge, especially of theories, was therefore met with grave difficulties. Medical objects or remedies, however, were more successful in crossing the language barrier, since they belonged to the sphere of fact, so-called *matters of fact*, as distinct from opinion or conjecture.[10] For example, the Japanese word for a surgeon's scalpel *mesu* メス originates from the Dutch word *mes*. Other examples of terms that were phonetically adopted from Dutch into Japanese included *supoito* スポイト *spuit*, which means syringe in English, *keteeteru* カテーテル *kateter* (cathether), and *yodo* ヨード *jodium* (iodine), although the latter may also have come from the Portuguese *iodo*.[11] Interestingly enough, this semantic and phonetic appropriation of words from a foreign language also occurred the other way around: the term *moxa* originated from the late seventeenth-century Japanese *mogusa* 艾 (もぐさ), which literally meant burning herb, referring to mugwort or cotton wool burned on skin during moxibustion. The Dutch appropriation of Japanese words remained limited, however, most likely because the Dutch were officially forbidden to learn the Japanese language.

It was custom for the surgeon assigned to Deshima to accompany the chief for the annual *hofreis* or trip to the Shogun's court in Edo, approximately 1,000 kilometres from Nagasaki. And so, Willem ten Rhijne was given a special and fruitful opportunity to leave the island of Deshima and see Japan. On arrival in Edo, many physicians, court-physicians and even high-ranking Samurai (Japanese military men) approached Willem ten Rhijne to receive answers to various medical questions. The communication of medical knowledge also occurred by written work, as Ten Rhijne gave the *Bugyou* a book on anatomy and physiology of the human body; branches of medical knowledge which were never pursued by the Japanese before the Dutch arrival.[12] Furthermore, Ten Rhijne attempted to learn from the Japanese as well. While residing in Japan for over two years, he built relationships with interpreters and physicians alike, which enabled him to gain more freedom of movement than was initially allowed to the Dutch merchants.[13] The Japanese explained him their medical practices of which the European physicians had never heard before. Complete with drawings of acupuncture tracts, Ten Rhijne was the first to write a detailed account on acupuncture for an European audience: *Dissertatio de Arthritide: Mantissa Schematica de Acupunctura*, published in London, The Hague, and Leipzig in 1683.[14] A Dutch translation soon appeared in Steven Blankaart's work on gout. In over three hundred pages, Ten Rhijne first discussed the gout and the treatment of moxibustion as Herman Busschof had done before; then he gave a detailed account on acupuncture and four Japanese diagrams to show the points to which the needles were to be placed on the body.[15]

What did Willem ten Rhijne's treatise on acupuncture exactly entail? He first described the complicated and detailed technicalities a practitioner of acupuncture and moxibustion should be familiar with in order to avoid harming the patient. "He must also know that there is a risk involved, especially when visible articulation with its sinewy structure warns the acupuncturist to avoid a tender area, just as a ship's captain avoids a rock."[16] Ten Rhijne gave a description of the needles, which were made out of silver or gold; of the technique, that the needles were applied sometimes

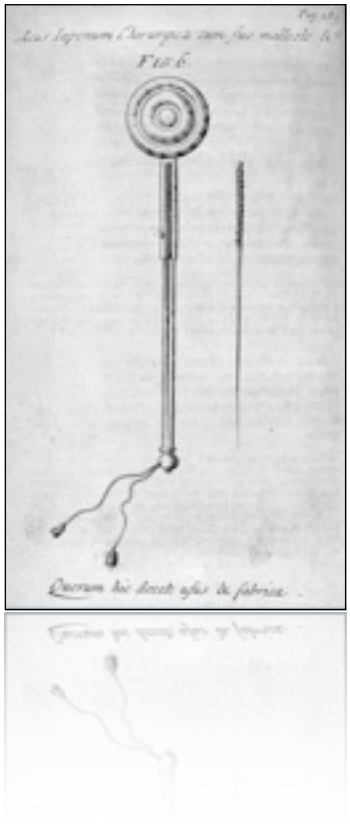

Figure 12. Willem ten Rhijne, *Dissertatio de arthritite: Mantissa schematica: de Acupunctura*, 1683.

Acupuncture tools: a needle and hammer.

hot and sometimes cold; and he gave a summation of the diseases for which the treatment could be used.[17] Ten Rhijne continued with the comparison between the European practice of phlebotomy, the procedure of letting blood, with the Chinese treatment of moxibustion, described as the alternative to rid unhealthy blood. As far as his recommendation for the acupuncture treatment to Europeans was concerned, he applied a comparative approach once more, saying that a similar technique was already in use in Greek and European surgery. Moreover, in favour of this medical technique, Ten Rhijne had witnessed a miraculous anecdote about a soldier who suffered from stomach aches because he had drunk cold water when he himself was hot:

> he tried to drink hot Japanese wine mixed with ginger, but he since he did not recover, he let himself be treated with the needle to release the confined wind, *which he did in my presence*; he lay on his back, and pricked the needle above the Pylorus at four different points (holding the top of the Needle with his four fingers very carefully) pricked this Needle with a little hammer, holding up his breath; when it was pricked in for one thumb wide, it was turned around, he kept his fingers at the acu-points, and while he pulled out the Needle, there followed no blood, and it was almost impossible to see it had ever been pricked: and this is how he recovered from his ailment.[18]

Willem ten Rhijne's account on the Asian medical practices included both a general justification of the foreign medical practice and simultaneously a critical disproval of certain elements containing it. Ten Rhijne praised the "effort over many centuries to learning and teaching with a very great care the circulation of the blood," while noting that the Asian physicians were "ignorant in anatomy."[19] The most explicit objection was made against the behaviour of certain Japanese physicians who would earlier blame themselves for a mistake rather than doubting the all accepted authority of the classics: "I disapprove equally the haughty superstition of the Chinese and the rash desire to contradict as displayed by others."[20] With this remark, Ten Rhijne touched upon the crux of the matter. Though the historical and philosophical foundation of acupuncture had been its strength as it persuaded people to believe in it, it was also its weakness. The theories of *qi*, *yin* and *yan,* and the Five Element had determined for generations how people looked at the world. People in Japan and China were predisposed to believe that successes achieved with acupuncture were proof of these theories, while failures were interpreted as anecdotal instances of the lack of understanding of the theory and therefore wrong application of the treatment. To rationalise the other way around was unthinkable, as it would not merely argue against acupuncture, as might be the intent, but would mean the undermining of people's entire world view.

As far as the actual practices of acupuncture and moxibustion were concerned, Ten Rhijne especially appreciated the element of accuracy and precision that was achieved while finding the locations on the skin to be burned or pricked, and judged that "acupuncture and burning are external remedies. If these are joined with internal remedies, an enemy ailment is not likely to persist."[21] Ultimately Ten Rhijne concluded that, although the acu-points and meridians would be incompatible with European anatomy and although Japanese physicians kept their forerunners in too high an esteem, moxibustion and acupuncture were medical

treatments that could not be dismissed, because they were based on long-term experience and often successful in healing the patient. And should not the recovery of a patient be the ultimate criterion for a medical treatment?

Clearly, Ten Rhijne's *De Acupunctura* did not simply involve an extensive outline of the Chinese medical practice and the theories behind it. In fact, Ten Rhijne practically neglected the Chinese theories of *qì, yīnyáng,* and the Five Phases which were used to identify the patient's syndrome and to differentiate the treatment accordingly. In Ten Rhijne's work, he attempted find a link between the theory of *yīnyáng* and the European Galenic medicine by translating *yīn* as *humidum radicale* or 'radical moisture' and *yáng* as *calidum innatum* or 'innate heat.' Although this translation would approach the principle in Daoist philosophical, exactly how these were to be understood and then connected to medical practices would remain unclear. Only the practical elements which one can see by eye were discussed: the expertise of pricking the needles in the skin and the burning of herbs on the skin. The invisible element, that is to say, the ancient philosophical theories and the belief in the power of the medical practice, "the haughty superstition," were completely absent.[22] As pointed out by medical historian Harold Cook, it were *matters of fact,* belonging to the sphere of actuality, which could more easily transmit from one knowledge tradition to the other.[23] After his two-year assignment to Japan, Willem ten Rhijne returned to Batavia on Java, where he enjoyed the rest of his life engaged in botanical studies and medical work.

Close colleague of Ten Rhijne's was the German scholar-physician Engelbert Kaempfer (1651–1716), son of a Lutheran pastor, who arrived in Japan in 1690 as a VOC chief surgeon and stayed in Japan until October 1692. During this time, Kaempfer was quite occupied with treating Japanese patients and discussing medical questions with Japanese physicians. In addition, with the help of the distinguished interpreter Imamura Gen'emon, Kaempfer performed a detailed study on the history, culture, and politics of Japanese society. On his return to the United Provinces, Engelbert Kaempfer submitted his doctoral dissertation, *Disputation medica inauguralis* 'exhibiting ten exotic observations' to Leiden University in 1694.[24] Kaempfer's essays on moxa and acupuncture were republished in his 'Exotic Delights' (*Amoenitates Exoticae*) published in 1712.[25] This book was translated into English and edited by J.G. Scheuchzer and added as an appendix in *The History of Japan* in 1727.[26] It was through this latter comprehensive work that European readers received their first systematic overview of all the diverse aspects of Japanese culture: religion, customs and manners, trade and products, flora and fauna (it excluded the arts, literature, and mathematics).[27] The French translation published in The Hague in 1729 saw multiple editions and is said to have had the most influence throughout Europe, because most people could read French.[28]

Kaempfer discussed the practice of acupuncture in association with the 'violent' disease of *senki* 疝気 colic, i.e. a sudden, severe, and often fluctuating pain in the belly. He started with a description of the disease, its cause and the Japanese method and theory to treat the disease. On the cause of the disease, and directly related the method of cure, Kaempfer said the following:

> As to the cause of it [colick], the natives [Japanese] are of opinion, that it is not at all a morbific matter lodged in the cavity of the guts, which, they say, would occasion but a very slight pain, but that the seat of it is in the membranous

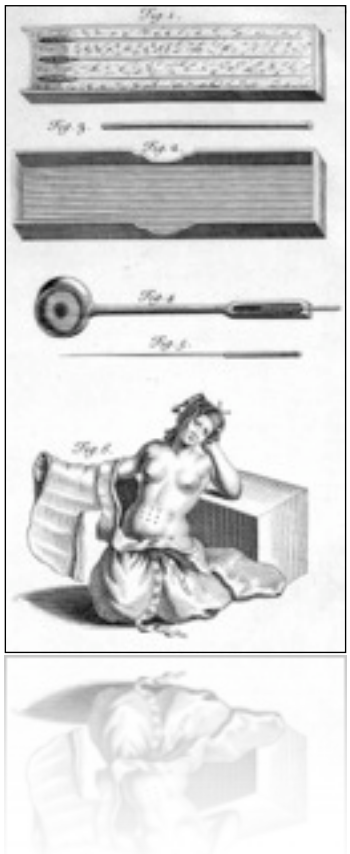

Figure 13. Engelbert Kaempfer, *The history of Japan*, 1727.

On top, acupuncture equipment: a wooden carriage box, a hammar and set of needles. On the bottom,a figure with acupuncture points shown on the belly.

> substance of some other part of the abdomen, as for instance of the muscles, the peritonseum, the omentum, the mesentery, or the guts, and that by stagnating there it turns into a vapour, or rather into a very sharp sower *spirit*, as they express themselves, which distends, cuts and corrodes the membranes wherein it is lodged.[29]

Concerning the symptoms or manifestations of colic, intestinal inflammation (enteritis) may arise, which "often puts the pahtient under an apprehension of being suffocated," as well as intestinal tumours "and swellings arising in several parts of the body, and attended with dangerous consequences, that particularly in men it will occasion a swelling in either of the testicles, which often suppurates and turns to an abscess, in women tubercula, or pustules in the anus and on the pudenda, commonly attended with the falling of the hair."[30] Treatment of this disease, today aimed at symptom relief by means of a muscle relaxant, could be done by the art of acupuncture. In theory, the needles would enable the 'spirit' to be "let out of the narrow prison in hath been confined to, and set at liberty" and the pain would disappear.

Introducing the Japanese practice of acupuncture, Kaempfer first compared the "barbarous apparatus of our European surgery" with the Japanese "operations of surgery, which are the very noblest of all […] gold and silver, of which they have needles made in a particular manner, which are finely polished, and exceedingly proper to perform the puncture in human bodies."[31] It was amazing to realise that acupuncture by many Europeans was regarded as 'horrific,' whereas Kaempfer here presented it as a sophisticated art in sharp contrast to the drastic incisions of European surgery. The art, yet a "peculiar art," was naturally positioned within a social context of practitioners specialised in handling the needles, "the masters of which are called *Tensasi* […] Those who manage the needle, either pursuant to their own notions, or in compliance with the patients desire, have the particular name of *Faritatte* given them, which signifies Needle Prickers."[32] Kaempfer was captivated by the art of acupuncture and he had researched it by means of observation and enquiry, and, different from Ten Rhijne, had also discussed its practitioners and their education.

Kaempfer had provided very detailed and comprehensive descriptions of the Japanese acupuncture needles: what they were made of, how they were fabricated, that they were kept in a wooden case, and how they were pricked into the body, either with a hammer or through a pipe. The needles themselves were described as "exceeding small […] so pure and fine […] and ductile," of there existed multiple kinds. First, the "*Uutsbarri* [打針], that is, turning or twisting needles" and the "*Fineribarri* [撚針], which signifies the very same thing." Then there was also the "*Fudabarri* [管針 (くだばり)], that is channel'd needles."[33] Furthermore, he provided for five acupuncture-related illustrations in addition to the detailed account (see illustration 13). Naturally, during the operation it was imperative that one was familiar with the specific manner of holding the needles and how to prick them into the skin, since there were different kinds of needles for different purposes and other parts of the body. Kaempfer therefore described precisely the high level of expertise required of a physician to perform an acupuncture operation.

Returning to the treatment of colic, Kaempfer specified the location where the acupuncture treatment should be performed: "the Japanese perform this operation in

the belly, in the region of the liver, making nine holes in three rows, disposed after the manner of a Parallelogram, at about half an inches distance from each other in grown persons" (see the figure in illustration 13). In order to establish truth, "*I have been myself several times an eye-witness*, that upon these three rows of holes, made according to the rules of art, and to a reasonable depth, the colick Senki pains, as they call them, ceased almost in an instant, as if they had been charmed away."[34] After discussing this almost miraculous therapy though based on close observation, Kaempfer evaluated acupuncture as a better and more successful treatment of colic than with moxibustion, as was indicated by trial and error. We can wonder, however, why Kaempfer decided to only discuss acupuncture as a treatment for colic. Willem ten Rhijne, on the other hand, had given a list of diseases, from grey star and epilepsy to rheumatism and colic, for which needle-pricking were said to help. Did Kaempfer already suspect, recognising the rise and fall of attention for moxa in the gout-debate whereas moxa was used for various syndromes in China and Japan, that the introduction of acupuncture in Europe could also be best organised when it was presented as especially helpful for one particular disease? Probably not, as colic as a disease was not at all as widespread among Europeans as gout was. Furthermore, we should remember that Kaempfer had observed and written his accounts during the early 1690s, when both recommending as well as sceptical accounts were published on the effectiveness of moxa.

As far as the methodology of Ten Rhijne and Kaempfer was concerned, to sum up, both based their information on close observation or eyewitness accounts. Though there was no proof that either one of them attempted an acupuncture treatment themselves, they did see a number of Japanese patients being pricked with the needle and recover. Though neither went into an elaborate discussion of Chinese philosophy used for acupuncture, they did achieve a detailed description of the various objects and medical training involved. As we will look into now, this approach achieved publication in Europe while the authors were absent, though it would not lead to an active application or experimentation.

## 2.2 Credibility and reception

An interesting feature regarding the publication of the books on acupuncture was that none of the author's were actively present in the process. Andreas Cleyer was in Batavia when his book was published by the Leopoldian Academy. Willem ten Rhijne had sent his work to the Royal Society in London, also while residing in Batavia. And lastly, Engelbert Kaempfer's manuscripts were not even sent, but purchased by Sir Hans Sloane in England after Kaempfer's passing in 1716. These observation give rise to interesting questions: What kind of criteria did seventeenth-century scholars apply in order to ascertain whether a manuscript from afar was worth publishing? Once criteria were established, what kind of actions were undertaken in order to achieve insight into the quality of the work and the credibility of the author?

Willem ten Rhijne's work on Japanese medical practices of moxibustion and acupuncture was not as easily published in Europe as might have been suggested in the former section. With Ten Rhijne residing in Batavia, he heavily relied on a global network of colleagues and old friends for his 'About acupuncture' (*De Acupunctura*) to be published in Europe. As early as 1681, Willem ten Rhijne sent a letter to Henry

Figure 14. Willem ten Rhijne, *Dissertatio de arthritite: Mantissa schematica: de Acupunctura*, 1683.

Frontispiece: portrait of Willem ten Rhijne.

Oldenburg, secretary of the Royal Society of London, telling him that he had written a manuscript about Japanese medicine and requesting whether the prestigious society would want to consider this work for publication.[35] Since the British 'virtuosi' were aware of the movement around moxibustion that Herman Busschof had caused and had involved Constantijn Huygens, Sir William Temple, and Thomas Sydenham among others, they were seriously interested in a discussion on Asian medicine that Ten Rhijne had to offer. This was certainly true for Oldenburg, who, in a letter to M. Peron and M. del Boe had requested answers to many questions regarding Japan, its exact location and geographical characteristics, but also its medical practices. As rumours had already circulated, Oldenburg was eager to learn "whether it be true, wt's mentioned of their Physitians, that they passes through ye skin of some of their patients in severall parts fine thin gold-bodkins, + thereby often cure them of violent feavours."[36]

Assigning someone the task of arranging the necessary preparations, representatives of the Society approached an ordinary Dutch doctor living in London, Joannes Groenevelt, who was an old boyhood friend of Ten Rhijne.[37] This process of getting *De Acupunctura* published was one of evaluating "matters of credibility."[38] In early modern Europe, multiple characteristics were investigated to determine a person's reliability, based on education and reputation, important for a book's accuracy. In the case of Ten Rhijne, who had signed his letter to the Royal Society with his credentials M.D. and member of the Council of Justice in Batavia, Groenevelt was asked about his status as a physician and the Society found out that he had studied under the outstanding teacher François dele Boë Sylvius. Based on references and personal connections, the Society could trust Willem ten Rhijne's work and requested of Groenevelt to see it realised. Through various letter back and forth Ten Rhijne's contact persons in the Dutch Republic, Groenevelt was able to receive the manuscript and an engraved frontispiece for publication. In 1683, the impressive and detailed work finally appeared and Groenevelt had added the following dictum:

> The living portrait of my absent friend stirs me,
> though it does not show the depth of his high mind.
> If you wish to know the learning, genius, and pithy sharpness of his mind,
> this book itself will bring it to light.[39]

Because Ten Rhijne's book was brought out under the auspices of the Royal Society, the first review also appeared in the society's journal, *Philosophical Transactions*. The illustrations in the book received particular attention: the four diagrams that showed the acu-tracts and the loci appropriate for the application of moxibustion and acupuncture treatments, and the reference to bronze models visualising acu-points and acu-tracts were taken up by Willem ten Rhijne's anonymous reviewer, who wrote that "the Chirurgions keep by them Images whereon all the places in the Body proper for the Needle are designed by Markes."[40] The very next year, Steven Blankaart incorporated an extract of Ten Rhijne's work in Dutch in his book on the gout, which we already discussed in the first chapter. Although the discussion on acupuncture was limited in this extract, the multiple republications of Blankaart's *Podagra* also publicised Ten Rhijne's name and his detailed study on Asian medical practices. This collaboration between Steven Blankaart and Willem ten Rhijne extended over this one work on gout as also in

other works, Blankaart used extracts from Ten Rhijne's letters and reports. For example, in Blankaart's book on children's diseases, our VOC physician had contributed a text which was edited and published as "Historie der Japanse Campher."[41] In this account it was told that Willem ten Rhijne had sent a branch and fruit of a camphor tree from Japan to Blankaart in the Dutch Republic as early as 1674, the year that Ten Rhijne arrived in Japan. Furthermore, Blankaart's treatise on smallpox, published in the same year, included a Dutch translation of Ten Rhijne's observations concerning the consumption, use, and preparation of tea and its potential influence on those who drank it.[42] Steven Blankaart was a prominent physician in the Low Countries and his multiple republications of his books must also have given Willen ten Rhijne a modest renown. Herman Nicolaas Grimm, for example, dedicated his work to Ten Rhijne, among others, in his *Compendium Medico-Chimicum* (1679), Van Reede tot Drakestein referred positively to Ten Rhijne in his *Hortus Indicus Malabaricus* (1693), and Engelbert Kaempfer's *History of Japan* featured a full bibliography of Ten Rhijne's works on Japanese botany and medicine.[43]

Despite the positive outcome of his personal connections with the Royal Society, Willem ten Rhijne had less luck in the case of the German Academia Naturae Curiosorum, as his credibility as a physician and researcher of Asian medicine was particularly undermined by close colleague Andreas Cleyer. As mentioned, Cleyer had become 'Head of the Medicine Store' in Batavia in 1667, which gave him rich opportunities considering that all VOC medical supplies were distributed from this department. Since Cleyer also held the office 'Doctor of the Castle,' he alone was in control of the entire medical service and supplies; not to mention received quite a salary for holding multiple VOC offices.[44] After Willem ten Rhijne's return from Japan to Batavia, there was a possibility that he would replace Cleyer, seeing that he had achieved higher medical credentials than Cleyer. Ten Rhijne thus became a rival to Cleyer. However, Cleyer was able to maintain his positions and the Batavian government offered Ten Rhijne the position as 'Regent of the Leprosy house' in 1677 and membership to the Court of Justice in 1679.

Through a correspondence with Sebestian Scheffer, who was affiliated to the Academia Naturae Curiosorum, Andreas Cleyer attempted to do injustice to Ten Rhijne's credibility as a scientist. In a letter dated 20 December 1683, Cleyer wrote that "a certain Medicus all here in East Indiën," referring to Willem ten Rhijne, "about this cauterisation [i.e. moxibustion] also something has published [i.e. Ten Rhijne's *De Arthritide*], which he has taken from my letters I sent him." Cleyer thus accused Ten Rhijne that he had taken Cleyer's work and published it as his own. Not only was this impossible, seeing that Cleyer only visited Japan from 1682 to 1683 while Ten Rhijne had already requested the Royal Society in 1681 to publish his work, it was also hypocritical, as Cleyer published Boym's work without mentioning him. Arguments that Cleyer presented were flawed as well: he asked the rhetorical question "What should one be able to produce for *Observationes* on the Japanese journey where all are treated like prisoners, and not dares to go out of the house?"[45] Again, not only was this not the entire truth, as Cleyer knew that Deshima's physician attended the annual *hofreis* journey to Edo across Japan that lasted a few months, it was also contradictory, as Cleyer himself had attained botanical information from somewhere as well. Clearly, Cleyer attempted to ruin Willem ten

Rhijne's trustworthiness as a scholar and the credibility of his work at the Academia Naturae Curiosorum.

Motivations for Cleyer's deceitful statements may be found in a letter by Michael Bernard Valentini, associated with the German Academia, who wrote that Willem ten Rhijne and his associates in Amsterdam had prevented Cleyer's work to be published in the Low Countries. In turn, why would Ten Rhijne do something like this? We can speculate that he knew that Cleyer was in fact publishing Michael Boym's work rather than his own. Furthermore there were indications that Ten Rhijne had helped editing the text, making commentaries and such, but that Cleyer would not bother to mention his contribution. Although this cannot be proved or disproved at this point, the fact remained that Cleyer's communications to the German lands were incomplete and inadequate, resolving in a neglect or disapproval of Ten Rhijne's *De Arthritide*. For example, Valentini's work would never mention Ten Rhijne on Chinese and Japanese plants and medicine, neither in text nor in footnote. In Valentini's critically acclaimed *Museum Museorum*, Ten Rhijne was merely mentioned as an "aemulo" or follower of Cleyer. Of those scholars whose view of Ten Rhijne was based on what they knew via Valentini, in turn relying on Cleyer, was therefore most likely to be negative rather than positive. On acupuncture, quite a negative reaction came from German chemist and physician Georg Ernst Stahl (1659–1734), who had become chair of medicine at Hall in 1694. During a lecture given in 1707 titled *Collegium Practicum,* Stahl disapproved of Ten Rhijne's treatise on acupuncture, saying that "This shows what fantasy leads to." Nevertheless, Stahl remained indifferent about the actual application when he said "Whoever likes it, may apply it. Everybody may feel free to try it."[46]

As this controversy between Ten Rhijne and Cleyer clearly showed, the means available to determine an author's credibility proved not to be without flaws. Over such long distances, whenever all other options were exhausted, people rather chose to favour the person they had warm contact with rather than cold. Though Andreas Cleyer was unable to publish his work in the Low Countries, his recurrent correspondece with Sebestian Scheffer allowed for his work to be published in Frankfurt in 1682. A similar process applied to Willem ten Rhijne when he sent his work to Henry Oldenburg, whose associate Joannes Groenevelt was the key to determine that *De Acupunctura* was book worthy. These processes were not as uncommon, however. French physician François Bernier (ca. 1625–1688) had travelled to northern India and had written a popular yet matter-of-fact travel account. Despite the fact that many travel accounts in this period served to develop navigation techniques, Bernier's credibility was based on the argument that the travel itself could be used as form of experience which allowed knowledge of nature to be discovered and exchanged.[47] Close contact André de Monceaux had sent the French book to the same Oldenburg, who had translated the work to English himself and published it.[48] Lastly, the unpublished works of the widely respected Engelbert Kaempfer were purchased by the English Sir Hans Sloane for his library. He gave J. G. Scheuchzer the task to translate the rich source "Heutiges Japan" ('Today's Japan') into English and edit it, ultimately becoming the hugely successful *The History of Japan*.

Many authors would refer to Engelbert Kaempfer for his knowledge and the history, culture, and society of Japan rather than his essay on acupuncture. A last

reaction, nevertheless, came from an authority in surgery, Lorenz Heister, who mentioned acupuncture as described by Willem ten Rhijne and Engelbert Kaempfer in his most influential work, *De Chirurgie*.[49] This work was first published in 1718, was translated into several European languages and received multiple editions, and became required reading for all medicine students at North-European universities. In a short chapter on the acupuncture treatment, Heister referred to Ten Rhijne and Kaempfer for those students who wanted to know more about this Chinese and Japanese medicine. However, Heister himself was unable to appreciate the Asian practices when he stated that "as the Process is so much abhorred, we shall not here give a prolix account thereof,"[50] and "one wonders how such clever nations [i.e. China and Japan] can esteem these remedies to highly."[51] Despite his abhorrence, Heister did include an illustration of a Japanese acupuncture needle and hammer in a depiction of surgical instruments.

## 2.3 Conclusion

In this part we have investigated three VOC physicians, the first Andreas Cleyer, who had sent the first acupuncture illustrations to Europe; the second Willem ten Rhijne, who provided Europe with a treatise with further information on moxibustion but also the first detailed description of Japanese acupuncture; and the last Engelbert Kaempfer, a German physician who became fascinated by the practice of 'needlepricking' as well and presented it as a successful treatment for colic, or spams of the belly. Although these publications on acupuncture did not initiate such a lively debate as Herman Busschof's *Podagra* had done for moxibustion, more attention can be paid to the manner with which these physicians were able to collect information from the Japanese, appropriate knowledge, and ultimately publish their work in Europe.

Unique circumstances gave rise to a possibilities which were taken by these seventeenth-century individuals, not to be repeated for a century. Despite Japan's isolation policy, a little island was continued to be tolerated as a place for trade with foreigners, i.e. via the Dutch East India Company. Although Japan had only agreed to let Dutch people in, the VOC's international character was therefore hidden and individuals like Cleyer and Kaempfer had to present themselves as Dutch. Furthermore, the yearly trip to Edo was a window of opportunity to see country of Japan. As these physicians were not the VOC ship's surgeons who were ordinarily assigned to Deshima, it was up to them tell Europe about their experiences and observations in written form. And this set of circumstances that made appropriation of acupuncture possible was dependent upon the extent to which the Japanese gave space. The moment they were no longer interested in actively learning surgery from Dutch physicians, the VOC employed surgeons who apparently were not as inclined to write about Japan, its culture generally or medicine specifically. This partly effected the way acupuncture was received in Europe: since the appropriation process was not institutionalised or had any form of stable continuation, people in Europe were no longer challenged to investigate the workings of it either.

To continue with the question why moxa received much attention in a lively debate on the gout while acupuncture did not, we should also look at its appearance, the strong contrast between the theory of acupuncture and Galenic medicine, and lastly to the lack of attention to Ten Rhijne medical works in general. Moxibustion

was the burning of herbs and was easily to be categorised as a cauterisation, the burning of skin or flesh with a heated instrument or caustic substance to stop bleeding or prevent a wound from becoming infected. Cauterisation was a familiar treatment in Europe and moxa was, as practice, not as foreign. Acupuncture, on the other hand, involved pricking the skin with needles to alleviate pain, whereas from its first appearance would only cause pain. More importantly, however, was the sharp contrast in the theory behind acupuncture and Galenic medical framework. Acupuncture assumed the existence of twelve meridians or pathways in the body along which there were precise points for a needle to be inserted into the skin. The life force that circulated in these pathways would then be stimulated. In Galenic medicine, however, the bodily structure of humans was fundamental. Although Galen's findings on human anatomy, based on animal experiments, were often in error, by the seventeenth century, much progress had been made since, specifically by Flemish physician Andreas Vesalius (1514–1564) who dissected corpses himself and extensively and more accurately than Galen had described the human body in *Seven Books on the Structure of the Human Body*.[52] At first, these Chinese pathways were identified with the circulation of blood as discovered by English physician William Harvey (1578–1657), as described in the *Anatomical Exercise on the Motion of the Heart and Blood in Animals*,[53] and the life force *qi* was understood as blood. However, blood-letting would be more efficient than pricking tiny needles in the skin. Ultimately it proved impossible to explain the twelve pathways anatomically and see acupuncture practised in Europe. This would not happen until the early nineteenth century, when acupuncture and acupressure were widely experimented with in France.

Another aspect that should be considered was Willem ten Rhijne himself and the content and methodology of his works. As a physician, he had written a number of books, but which all met with little attention. Ten Rhijne was taught by François dele Boë Sylvius and he still adhered to his teacher's ideas of a chemical interpretation to Humorism. The next generation, however, did not adopt this idea and instead followed the new authority in Leiden, Boerhaave. The latter university professor opposed Sylvius' ideas and founded a system of teaching where medical students were at the patient's bedside. Working in Batavia, Ten Rhijne's scientific framework, remaining present in his publications, was no longer standard amongst university trained physicians and scientists. Of course the medical community in the Low Countries also consisted out of surgeons, travelling doctors, midwives, etc. However, seeing that Ten Rhijne wrote and published in Latin would refrain his works to be read by an audience other than scholars and scientists. Lastly, as far as the specific content of his studies was concerned, Willem ten Rhijne observed and investigated the kind of diseases that were present in the East Indies and Japan, but which were not as common diseases in Europe. His work on leprosy, although a disease that had a long history in Europe as well, was at the time not so much an issue as it was in Batavia. The fact that his work did not contribute to a current issue or discussion did not diminish, but certainly also did not contribute to stature as a physician.

Relations between individuals, networks and institutions, all participated in the initial interest in Chinese medicine in Europe. In the question of transmission, therefore, Herman Busschof's strong relationships with family enabled for appropriation and publication of moxibustion in Utrecht, whereas an enormous

network of weak relations gave rise to the reception of the treatment among prominent figures like Huygens and Temple, among prestigious scientific societies such as the Royal Society and the Academia Naturae Curiosorum, and lastly among ordinary people who took a chance, bought the herbs from Busschof's son, and used it to feel relief from pain. Also the appropriation of acupuncture "involved famous and anonymous people," from VOC physicians, merchants, and other employees, to Japanese interpreters, the shogun, intellectuals and patients. "Similar networks were also deeply involved in interpreting the results of these apparent matters of fact and deciding on how much they could be trusted and used." Credibility considerations, primarily based on personal relationships, were employed at scientific societies and other institutions. "*Human agency* was at work on the part of all the of participants." [54]

Willem ten Rhijne was able to see his work on acupuncture published at the Royal Society in London, yet, Andreas Cleyer was instrumental in preventing a rise of any stature for Ten Rhijne at the Leopoldian Academy. Despite the fact that various European institutions were concerned with credibility, especially with external authors, ultimately people also took personal connections very seriously. And as this incident between two VOC physicians at Batavia showed, sole reliance on personal connections risked the potential of false and inaccurate information, either unintentional or deliberately deceiving. As far as Andreas Cleyer was concerned, he was an intelligent man who knew how to manipulate, was able to build quite a fortune for himself and a scientific reputation at the Leopoldian Academy. Willem ten Rhijne was not able to build a fortune yet as a perceptive scientist and physician, left an impressive work on acupuncture and other medical books.

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[1] Blussé, *Visible Cities: Canton, Nagasaki, and Batavia and the Coming of the Americans*, 45.
[2] Ibid., 46.
[3] Andreas Cleyer, *Specimen Medicinae Sinicae, Sive Opuscula Medica Ad Mentem Sinensium* (Francofurti: Sumptibus Joannis Petri Zubrodt, 1682).
[4] Paul U. Unschuld, *Medicine in China. A History of Ideas* (Berkeley: University of California Press, 1985).
[5] Willem ten Rhijne, *Verhandelinge Van De Asiatise Melaatsheid, Na Een Naaukeuriger Ondersoek, Ten Dienste Van Het Gemeen / Opgesteld Door Wilhem Ten Rhyne, M.D. Op Batavia* (t'Amsterdam: by Abraham van Someren in de Kalver-straat, in Perkins, 1687).
[6] As quoted in Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age*, 349.
[7] Dr. G.F. Pop, "De Geneeskunde bij het Nederlandsche Zeewezen" (1869) as quoted by J.M.H. van Dorssen, "Willem Ten Rhijne," *Geneeskundig tijdschrift voor Nederlandsch-Indië: uitgegeven door de vereeniging tot bevordering der geneeskundige wetenschappen in Nederl.-Indië* LI (1911): 143.
[8] Willem ten Rhijne, *De Acupunctura*, as translated by Robert W. Carruba and John Z. Bowers, "The Western World's First Detailed Treatise on Acupuncture: Willem Ten Rhijne's De Acupuctura," *Journal of the History of Medicine and Allied Sciences* XXIX (1974): 376.
[9] The substance that is used for moxa is obtained from the dried leaves of the plant *Crossostephium artemisioides*, family Compositae, related to mugwort.
[10] Harold John Cook, "Medical Communication in the First Global Age: Willem Ten Rhijne in Japan, 1674-1676," *Disquisitions on the Past and Present*, no. 11 (2004): 7.
[11] Frits Vos, "Dutch Influences on the Japanese Language," *Lingua* Vol. 12 (1963): 364-70.
[12] Cook, "Medical Communication in the First Global Age: Willem Ten Rhijne in Japan, 1674-1676," 9.
[13] Ibid.: 10.

[14] Rhijne, *Dissertatio De Arthritide: Mantissa Schematica, De Acupunctura, & Orationes Tres. I. De Chymiae Ac Botaniae Antiquitate & Dignitate. Ii. De Physiognomia. Iii. De Monstris Singula Ipsius Autorio Notio Illustrata*.
[15] Cook, "Medical Communication in the First Global Age: Willem Ten Rhijne in Japan, 1674-1676," 12.
[16] As translated by Carruba and Bowers, "The Western World's First Detailed Treatise on Acupuncture: Willem Ten Rhijne's De Acupuctura," 375.
[17] Blankaart, Rhijne, and Lewenheimb, *Verhandelinge Van Het Podagra En Vliegende Jicht*, 287-90.
[18] Ibid., 290-91. Italics added by author.
[19] Carruba and Bowers, "The Western World's First Detailed Treatise on Acupuncture: Willem Ten Rhijne's De Acupuctura," 375.
[20] Ibid.: 377.
[21] Ibid.: 376, 79.
[22] Ibid.
[23] Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age*.
[24] Engelbert Kaempfer, *Disputatio Medica Inauguralis Exhibens Decadem Observationum Exoticarum, a Carolo Drelincourt Pro Grado Doctorali. Publico Examini Subiecit Engelbert Kempfer.* (Lugduni Batavorum: Abrahanum Elzevier, Academiae Typographum, 1694).
[25] "Fasciculus III, Observatio 11: Curatio Colicae per Acupuncturam, Japonibus usitata" in Engelbert Kaempfer, *Amoenitatum Exoticarum Politico-Physico-Medicarum Fasciculi V, Quibus Continentur Variae Relationes, Observationes & Descriptiones Rerum Persicarum & Ulterioris Asiae, Multâ Attentione, in Peregrinationibus Per Universum Orientum, Collecta, Ab Auctore Engelberto Kaempfero.* (Lemgoviae: Typis & impensis H.W. Meyeri, 1712), 582-89.
[26] Engelbert Kaempfer, *The History of Japan: Giving an Account of the Ancient and Present State and Government of That Empire; of Its Temples, Palaces, Castles and Other Buildings; of Its Metals, Minerals, Trees, Plants, Animals, Birds and Fishes; of the Chronology and Succession of the Emperors, Ecclesiastical and Secular; of the Original Descent, Religions, Customs, and Manufactures of the Natives; and of Their Commerce with the Dutch and Chinese; Together with a Description of the Kingdom of Siam*, ed. John Gaspar Scheuchzer, 2 vols. (London: Printed for the Translator, 1727), 29-34.
[27] D. Haberland, *Engelbert Kaempfer (1651-1716): A Biography* (London: The British Library, 1996), 68.
[28] Peter Kapitza, "Engelbert Kaempfer Und Die Europäische Aufklärung. Zur Wirkungsgeschichte Seines Japanwerks Im 18. Jahrhundert.," in *Engelbert Kaempfers Geschichte Und Beschreibung Von Japan. Beiträge Und Kommentar*, ed. Deutsche Gesellschaft für Natur- und Völkerkunde Ostasiens (Berlin: Springer, 1980).
[29] Engelbert Kaempfer, "Iii. Of the Cure of the Colick by the Acupunctura, or Needlepricking, as It Is Us'd by the Japanese," in *The History of Japan*, ed. John Gaspar Scheuchzer (London: 1727), 29.
[30] Ibid.
[31] Ibid., 30.
[32] Ibid., 31.
[33] Ibid.
[34] Ibid., 33. Italics added by author.
[35] Cook, *Trials of an Ordinary Doctor: Joannes Groenevelt in Seventeenth-Century London*, 125-26.
[36] Henry Oldenburg, "Some Directions and Enquiryes Concerning Japan Recommended to M. Peron and M. Del Boe by Henry Oldenburg S.R. Secret," (London: Royal Society, 14 August 1671).
[37] Cook, *Trials of an Ordinary Doctor: Joannes Groenevelt in Seventeenth-Century London*, 126.
[38] Lux and Cook, "Closed Circles or Open Networks?: Communicating at a Distance During the Scientific Revolution," 186.
[39] Cook, *Trials of an Ordinary Doctor: Joannes Groenevelt in Seventeenth-Century London*, 127.
[40] As quoted in Joseph Needham and Lu-Gwei-Djen, *Celestial Lancets: A History and Rationale of Acupuncture and Moxa* (Cambridge: Cambridge University Press, 1980), 276.
[41] Steven Blankaart, *Verhandelinge Van De Opvoedinge En Ziekten Der Kinderen. Vertoonende Op War Wyse De Kinderen Gezond Konnen Blyven, En Ziek Zijndem Bequamelyk Konnen Herstelt Werden* (t'Amsterdam: Hieronymus Sweerts, 1684), 323-32.
[42] Steven Blankaart, *Venus Belegert En Ontset. Oft Verhandelinge Van De Pokken, En Des Selfs Toevallen, Met Een Grondige En Zekere Genesinge.* (t'Amsterdam: Timotheus ten Hoorn, 1684), 246-58.
[43] Kaempfer, *The History of Japan*, xlvj.
[44] Dorssen, "Willem Ten Rhijne," 161-63.
[45] Ibid. Translated by author.

[46] As quoted in Michel, "Far Eastern Medicine in Seventeenth and Early Eighteenth Century Germany," 76.
[47] Dew, *Orientalism in Louis Xiv's France*, 83.
[48] François Bernier, *The History of the Late Revolution of the Empire of the Great Mongol: Together with the Most Considerable Passages for 5 Years Following in That Empire: To Which Is Added a Letter to the Lord Colbert Touching the Extent of Indostan, the Circulation of the Gold and Silver of the World ... As Also the Riches, Forces, and Jutice of the Same, and the Principal Cause of the Decay of the States of Asia*, trans. Henry Oldenburg (London: Printed and sold by Moses Pitt ... Simon Miller ... and John Starkey, 1671).
[49] Lorenz Heister, *Chirurgie, in Welcher Alles Was Zur Wund-Artzney Gehöret Deutlich Vorgestellt Werden* (Nürnberg: 1724).
[50] Heister, *A General System of Surgery. In Three Parts. Containing the Doctrine and Management: I. Of Wounds ... Ii. Of the Several Operations ... Iii. Of the Several Bandages ... Translated into English from the Latin of Dr. Laurence Heister, Professor of Physic and Surgery in the University of Helmstadt, Fellow of the Royal-Society, London, and of the Royal Academy at Paris, &C.*, 314.
[51] George Rosen, "Lorenz Heister on Acupuncture: An Eighteenth Century View," *Journal of the History of Medicine and Allied Sciences* 30 (1975): 387.
[52] Andreas Vesalius, *De Humani Corporis Fabrica Libri Septem* (Basileae: Ex officina Joannis Oporini, 1543).
[53] William Harvey, *Exercitatio Anatomica De Motu Cordis Et Sanguinis in Animalibus* (Francofurti: 1628).
[54] Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age*, 376. Italics added.

# 3. Pulse Feeling

Figure 15. Andreas Cleyer, *Specimen medicinae sinicae,* 1682.

Feeling the pulse.

A history episode dedicated to philosophical reflections reached high tensions between the 'Ancients' and the 'Moderns' in "la querelle des anciens et des modernes," in English perhaps better known as "the battle of the books." In this ongoing quarrel between the Moderns who believed in progress and the Ancients who believed in the authority of the ancients, the inventive Sir John Floyer proved that the works of ancient Greeks as well as ancient Chinese could play a part in the advancement of medicine, science and technology. For this he used the example of diagnosis by the pulse.

In Europe already existed a long tradition on pulse diagnosis, as for example Greek physician Galen had devoted sixteen essays on the topic. In his *De Pulsibus,* he wrote of the differences of the pulse, knowledge about it and how the distinction is made, the causes of different pulses, and lastly of the prognosis of the pulse. Galen described five characteristics, namely velocity, size, strength, quality, and degree of filling of the artery. Each of these characteristics would appear in various conditions and combinations, all important for the diagnosis. By means of an elaborate system of different pulses, and assuming that there was a unique type of pulse for every organ and every disease, Galen was able to make a prognosis.[1] Research on the pulse in the centuries since Galen remained events of individual ingenuity and lacking any permanent foundation for the use of the pulse in medical diagnoses. Even though Galen had not discovered the relation between the pulse at the wrist and the cardiac systole, the contraction of the heart, he remained the most influential figure in pulse diagnostics.

In China, on the other hand, pulse diagnosis was a central part of medicine for ages. In the palpation procedure, Chinese doctors performed a diagnosis by touching and pressing various parts of a patient's body with their hands. Body parts that could be examined included the skin, the hands and feet, chest and abdomen among other parts of the body; however, feeling a patient's pulsation with the physician's fingers was the most important part to understand the disease condition and to differentiate syndrome patterns. This importance of taking the pulse was based on the principle that the *qì* 氣 and blood circulated through the entire human body: the pulse could therefore reflect the general conditions of the *zàngfǔ* 臟腑 'inner organs.'[2] Over time the Chinese developed multiple positions on the body and multiple methods to take the pulse of the patient. The oldest method was recorded in *Plain Questions* and known as the 'three regions and nine locations': involving feeling two hands and one foot, each classified into three locations of *tiān* 天 'heaven,' *dì* 地 'earth,' and *rén* 人 'people.'[3] This method allowed for measuring the condition of the organs in the entire body. A more detailed categorisation of the pulse-locations was introduced by Zhang Zhongjing in the Eastern Han dynasty (25-220 CE): his three region pulse diagnosis referred to the *renying* pulse (pulsation of the large carotid arteries near the Adam's apple), the *cun-kou* pulse (wrist pulse), and the *fu-yang* pulse

(artery at the instep of the foot).[4] The *cun-kou* wrist pulse was the most important of the three, because it would give direct access to the condition of the *qì* and the twelve pathways in the body along which this vital energy was said to flow.

Rather than attempting to revive Galen's ideas about the pulse or claims of the ancient Greeks and Romans in general, the moderns were interested in new knowledge based on observation and experimentation. New discoveries supported this view. Andreas Vesalius (1514–1564) dissected many corpses in order to learn about human's anatomy. However, in comparing his findings to ancients texts, Galen was quickly questioned. With his *Structure of the Human Body* (1543), Vesalius published the most accurate description of the human body ever.[5] In the seventeenth century, English physician William Harvey (1578–1657) even advanced the work of Vesalius by elucidating the circulation of blood, based on numerous animal dissections, autopsies, and clinical observations. In his *Motion of the Heart and Blood* (1628), he clarified anatomical observations of heart valves and valves in veins, showing that blood was pumped from the atria into the ventricles and the rest of the circulatory system.[6] Central spokesman to emphasise the significance of this inductive method was Francis Bacon. One should no longer look for truth in texts, like the Scholastics and the Humanists had done, because "reverence for antiquity" and "the authority of men accounted great in philosophy" were misplaced assumptions. Instead, philosophers should produce knowledge and bring about a revolution in natural philosophy and apply it to enhance the general welfare of society.[7] Bacon also stressed that the discovery of the New World was an intelligent effort to obtain new knowledge and improve upon the ancients. Did this also include Chinese knowledge on pulse diagnostics?

Knowledge about the Chinese way of feeling the pulse reached Europe when Michael Boym collected many medical books in China and translated them to Latin. These works and additional commentaries were collected by VOC physician Andreas Cleyer in Batavia and published as *Specimen Medicæ Sinicæ* (1682). This work contained much philosophical theories behind the practice, causing its European readers to be as intrigued and as sceptic about its factuality: What were these Five Elements and their relation to the inner organs? Could the pulse at the wrist really inform the doctor about the patient's disease? This latter question was taken up by English physician Sir John Floyer. He studied the writings about Chinese pulse-taking, combined it with Galenic medicine, and produced a pulse-watch with which a physician could measure the pulse for exactly one minute. As this chapter will argue, ancient teachings were combined to produce new modern learning and as such had quite an impact on the quarrel between the ancients and moderns.

## 3.1 A new ancient?

Though knowledge obtained from the voyages by European explorers and traders was to be appreciated, how about Chinese pulse diagnostics? First signs of feeling the pulse were observed by VOC employee François Caron (1600–1673), who was stationed at Hirado in Japan (the island before the Dutch were forced to move to Deshima). This was a travel account, however. As such, general readers were more fascinated by Japanese social and religious customs, of which *seppuku*, a ritual of committing suicide by cutting one's own belly, attracted most attention and disgust. Officials were more interested in its navigational and geographical information it

contained. More specifically on medicine and feeling the pulse in particular was the work by Michael Boym and Andreas Cleyer, which provided Europeans with direct access to Chinese medical texts, based on centuries of experience and referring all the way back to a Chinese ancient, the Yellow Emperor. How could the knowledge contained in these foreign texts be categorised as simultaneously modern and ancient? Were Europeans keen to accept a new ancient authority, while they were criticising their own?

One of the earliest mention about the diagnostic expertise of Asian practitioners was in the account *Right Description of the powerful Kingdom Japan*, by Huguenot and VOC merchant François Caron, who wrote in the 1630s on the culture and society of the Japanese, published as early as 1645.[8] In the discussion on Japanese commodities, the text recounted "that Japanese doctors were competent diagnosticians, especially by means of feeling the pulse. They also have good medicaments."[9] Curious about the Japanese culture, François Caron recognised something that was familiar to Europe as well. Indeed, Japanese medicine, based on traditional Chinese medicine, had developed an extensive methodology for diagnostics, namely a system which relied on four methods based on the senses: listening and smelling, enquiring, observing, and pulse-taking. Chinese doctors started the diagnosis with listening to the patient's voice, the breathing and coughing, and with smelling bodily odour and excretions. While the patient would be asked to tell about his/her case history and life-style, the doctor observed the patient's mental state, facial expression, complexion, fingers and nails. The colour of the tongue would be observed and the doctor would feel the pulse at both the left and right wrist with three fingers. Technique of pulse-feeling was developed and improved over the hundreds of years. By means of these diagnostic procedures, the patient's condition would be analysed, differentiated to a specific syndrome, and corresponding medications would be prescribed.

François Caron's book was sent by Christiaan Huygens, son of Constantijn Huygens who we met in the story on moxa, to Frenchman Nicolas Thévenot. A number of volumes with travel accounts were collected and published in French by Thévenot in the 1660s and 1670s, simultaneous to the founding of the French East India Company (*Companie des Indes orientales*). Probably facilitated by the relation Huygens had with Thévenot, the experienced and skilled François Caron moved to Paris and, after having worked for the Dutch East India Company for three decades, was employed by the French *Companie* in 1665.[10] As shown in the first two chapters, Caron can function as another example of international networks of people in the seventeenth century.

Susceptibility to new knowledge, even though foreign or even weird, was another characteristic which can often be found in this early modern period. Michael Piotr Boym, S.J. (1612–1659) from Polish origin had travelled throughout China during which time he was better known as *Bǔ Mígé* 卜彌格. He had learned he Chinese language and undertook the translation of various medical texts to Latin. The collection of works mainly dealt with numerous varieties of the pulse and tongue in health and disease, and on the correlation between the pulse and meridians and channels throughout the body according to Chinese anatomy. Flemish colleague Philippe Couplet sent the manuscript to Batavia, where, after being lost, it came into the hands of VOC employed Andreas Cleyer, surgeon and head of the


SPECIMEN
MEDICINÆ SINICÆ
OPUSCULA MEDICA
SINENSIUM.
FRANCOFURTI

Figure 16. Title page of Andreas Cleyer, *Specimen Medicinae Sinicae*, 1682.

pharmacy. Cleyer had the work published as *Specimen Medicinæ Sinicæ* in Frankfurt (1682) with Boym's name omitted.[11] Andreas Cleyer is therefore known as the first author to extensively publish on Chinese medicine. However, as soon as Philippe Couplet was able, being the organisational talent he was, he republished the work under the title 'Medical keys to Chinese doctrine about the pulse' (*Clavis Medica Ad Chinarum Doctrinam De Pulsibus*), this time accrediting its author Michael Boym and referring to Andreas Cleyer as the collector of the works.[12] Further obscurity existed around the exact authorship of this work, since Willem ten Rhijne also claimed to be editor and author of commentary notes on the Chinese pulse diagnostics which were omitted in the 1682 edition, but appeared in 1686.[13] Ten Rhijne, however, was not mentioned as contributor of any kind in either work. Furthermore, immediately after Boym/Cleyer's work was published, Joannes Groenevelt in London received a letter by Willem ten Rhijne, saying that he "had written an essay on the Chinese doctrine of touching the pulse much superior to Cleyer's."[14] He wanted to send his essay to the Royal Society for publication, but its members did not reply to Ten Rhijne's request, probably feeling that *De Acupunctura* proved sufficient on the topic of Chinese and Japanese medicine. Clearly, Willem ten Rhijne and Andreas Cleyer had their disagreements, of which I suspect only a part was revealed in these letters.

Despite this discords, the *Specimen of Chinese Medicine* was an impressive collection of works that not only contained curious philosophies about the human body and medicine, but actively challenged conventional ideas about pulse feeling. A multifaceted approach included both translations of authoritative texts in Chinese medicine, and edited texts, letters, table of pharmaceutical substances, large number of illustrations, and an account on tongue diagnostics. The letters were written by Philippe Couplet, who had sent them from Canton in China to Batavia.[15] He had made anatomical tables to show the circulation of *yin* and *yang* and the corresponding characteristics of the pulse. The part on tongue diagnosis was accompanied by diagrams to indicate the appearance of the tongue and its relation to syndrome differentiation.[16] Its coating was thought to be able to show convincing visual indicators whether the physician had made a correct diagnosis: the meridians going through all 'internal organs' came together in the tongue. Chinese physicians would especially pay attention to the body of the tongue, its spirit, shape, and colour, as well as the layer of moss over the tongue's surface, thought to be produced by the *qi* of the stomach. Diagnosis via the pulse occurred in similar vein, but was discussed by Boym/Cleyer much more extensively and proved to be, at least in England, the most influential.

The *Specimen* started with a translation of four book by a certain Vám Xó Hó, who was an ancient Chinese physician we probably know better as Wáng Shūhé 王叔和, author of the *Mài Jīng* 脈經 *Classics of Pulsology*.[17] Living in the Western Jin Dynasty (265–316 CE), Wang sought ancient teachings and extensively learned from all kinds of medical classics. In his work on the pulse, he included the first recordings of how and when the pulse diagnosis at the wrist was to be conducted, as found in the *Yellow Emperor's Canon of Medicine* and in the *Classic of Medical Problems*. Physicians put their index finger, middle finger, and third finger on the wrist of their patient and felt the pulse in order to ascertain the symptoms and signs of the disorder according to the conditions of the pulse, i.e. frequency, rhythm, fullness,


Figure 17. Andreas Cleyer, *Specimen Medicinae Sinicae,* 1682. p. 110

Sketch map of the three primal loci

evenness, and amplitude. In chapter seventeen on the essential and fundamentals of diagnostic palpation,

> The Yellow Emperor asked: "What is the diagnostic method in pulse palpation?" [Minister] Qibo answered: "The palpation of pulse should be carried on in early morning, when the *Yang*-energy has not yet stirred, the *Yin*-energy has not yet been dispersed thoroughly, the food and drink of man have not yet been taken, the channel-energy then is not in hyperactivity, the energies of the collateral branches of the large channels are in harmony and the energy and blood have not yet been disturbed. In this situation can the pulse condition be diagnosed effectively.
>
> At the same time of diagnosing the dynamic and static variations of the patient's pulse, his pupils and complexion should be inspected, so as to distinguish whether his energies of the five viscera are abundant or not, his six hollow organs are strong or not, his physique and energy are prosperous or not. When these aspects are considered comprehensively, one can judge the date of the death or survival of the patient.[18]

As the second part of this citation indicated, taking the pulse was not conducted solely but was always done in combination with other methods of diagnostics, such as inspecting the pupils of the eyes, the complexion of the face, and the coating of the tongue. As experiences further accumulated over the centuries, pulse-taking had reached a high level of expertise by the time European visitors, Portuguese traders and Jesuit missionaries in particular, came with it in first contact.

In the section "Treatise on Pulses collected by a learned European," most likely referring to the omitted Michael Boym,[19] the three points of feeling the pulse at the wrist, named the *cun-kou* area, were explained and drawn out in a diagram (see illustration 17). Pulse-taking at this location was preferred, because it was believed that the lung meridian had its primary point in this area, that it could provide information on the general *qi* of the body and internal organs, and lastly that it was easily accessible because of the thin skin. As shown in the diagram, each hand was classified into three regions: the *cùn* 寸 "primus locus" which corresponded with the condition of the *qi* of the heart and lungs; the *guān* 關 "secundus locus" which informed the physician about the liver and gall bladder, stomach and spleen; and lastly the *chǐ* 尺 "tertius locus" which correlated with the kidneys, bladder, and middle abdomen.[20] Describing the relationships between these three regions and with the *zàngfǔ* 臟腑 'inner organs,' Michael Boym had made use of the *Yellow Emperor's Canon of Medicine.*

Besides detailed information about feeling the pulse, Boym/Cleyer also included "Medicinal simples, which are possessed by the Chinese for use in medicine," a list of 289 entries shortly describing the various features and uses of medicines.[21] Practical were they not, because the list of names was given in Portuguese orthography and only occasionally mentioned the European name. Further study could investigate more extensively the Chinese *materia medica*, followed by their role in European medicine. For example, the VOC obtained a substance called camphor from China, Japan, and around the Indonesian archipelago used in incense and as a medicinal. The Dutch sold this white, waxy solid throughout Europe, where it was used as salve to relieve hot and inflamed sores or aching limbs. As discussed in chapter two, Willem ten Rhijne sent a camphor branch

Figure 18. Figure in Andreas Cleyer, *Specimen Medicinæ Sinincæ*, 1682.

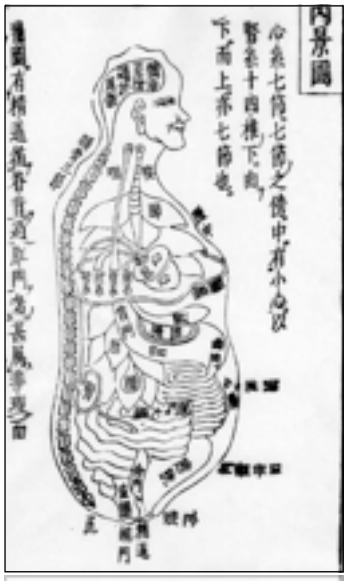


Figure 19. *Nèi jǐng tú* 內景圖 'inside structure diagram' in the *Lèi Jīng* 類經 'Classic Arranged According to Topics,' 1624.

to Steven Blankaart, who gave a detailed description of the plant in his study on children's diseases. French physician Théodore Turguet de Mayerne proposed camphor as of "excellent use in easing of pain, for it *opens*, *penetrates attinuates, digests,* and promotes *insensible transpirations*.[22] Also, Dutch surgeon/physician Ionannes Groenevelt used camphor in an experimental remedy against gout, stone, and gravel.[23]

Lastly, thirty remarkable illustrations were included, which were taken from *Lèi Jīng* 類經 'Classic Arranged According to Topics' (1624) written by Zhāng Jièbīn 張介賓 (1563-1640), also known as Zhāng Jǐngyuè 張景岳. These illustrations provided just as detailed information about how the Chinese looked at the human body as the texts and tables had done in the chapters before. An example that Boym was successful in 'translating' Chinese pictures too was this first figure of a dissected head and torso (see illustrations 18 and 19).[24] Though vertically mirrored, one can clearly recognise the close similarities between the pictures. In the neck behind the mouth, there were four roundish lobes representing the place where where the passages to the nose and mouth connect with the throat and the hollow muscular organ forming an air passage to the feather-like lungs. From these lobes descend a windpipe reinforced by rings of cartilage, and the second the oesophagus connecting the throat to the stomach. At the top of the cone-shaped *xīn* 心 'heart' start three channels: the first led to a bean-shaped *shèn* 腎 'kidney,' after which it continued to the *pángguāng* 膀胱 'urinary bladder' and lower end of the *fù* 腹 'abdomen,' while the second connected to the *gān* 肝 'liver,' which looked like a collection of long leaves, and the third to the *pí* 脾 'spleen.' Below the stomach were the small and large intestines, represented as elaborate convolutions, terminating at a curved rectum, close to the lowest vertebra of the spinal column. Through this backbone passed a narrow canal ending in the anus and beginning in the upper portion of the head, with a leaf-shaped body behind the forehead. This organ represented most likely the brain; empty in the *Specimen*, filled in the *Lei Jing*.

The fruitful labours by members of the Society of Jesus as well as by VOC employees led to the impressive collection of elaborate texts, clear diagrams, and rich illustrations on Chinese pulse diagnostics. A number of European authors referenced to the *Specimen*. For example, Dutch scholar Isaacus Vossius (1618–1689) investigated the Chinese learning and especially venerated its expertise in pulse-taking.[25] To what extent Boym/Cleyer took all this knowledge as truth remains unclear, though it appears that they regarded it mostly as of oriental interest. Works of Confucius and other classics, from China but also from other Asian cultures, were collected and discussed as commercial contacts with the 'Orient' increased. Interesting here is the role that *Specimen* was to play in Europe, especially regarding the quarrel between ancients and moderns. In the seventeenth century, scholars approached oriental texts with the intention to incorporate it in the imagined universal library. A significant change of interpretation and world view can be already be detected between Bossuet's *Discourse on world history* (1681), which based history on the Bible, and Voltaire's *Essay on the Manners and Mind of Nations* (1756), where the will of man stood central and which had incorporated Chinese and Indian civilisations in his world history.[26] In the case of *Specimen*, various authors discussed the work, judging the work either as proof that these Chinese classics were to be appreciated in similar

vein as the Greeks, while others were of the opinion that this work was no more than a particularly dry and tired text.

## 3.2 Modern criticism

"By this time, I am afraid," English critic William Wotton (1666–1727) assumed, "I shall be thought as tedious as an *Irish Tale-teller,* for nothing but to lull my Reader asleep: But there is nut one Stage more left; […] For *China*, we are told, is a charming Country, and therefore most proper to be thought upon at the End of a tedious Discourse."[27] With this apologetic statement, the English scholar turned to Chinese learning in his *Reflections on Ancient and Modern Learning*, a book that commented on a quarrel that tore the Académie française in two. According to Nicolas Boileau-Despréaux (1636–1711), writers could do nothing except merely imitate the eminence of the ancient authors. This meant that writers like Jean Racine (1629–1699) wrote tragedies strictly following the rules inherent to the classical literature genres. Charles Perrault challenged this standpoint, however, and proclaimed that "Learned Antiquity, through all its extent, was never enlightened to equal our times."[28]

In England, the discussion between the ancients and moderns took less despicable shapes than in France. Nevertheless, Sir William Temple, indeed the one who was cured from the gout of the foot by the Chinese medical treatment of moxibustion, argued for the authority of classical antiquity and argued that "*Thales, Pythagoras, Democritus, Hippocrates, Plato, Aristotle, Epicurus,* were the first mighty Conquerors of Ignorance in our World, and made greater progresses in the several Empires of Science, than any of their Successors have been since able to reach. These have hardly ever pretended more, than to learn what the others taught, to remember what they invented, and not able to compass that it self."[29] William Temple held the Indian and Chinese civilisations in high esteem, especially concerning their contributions to the Greeks when he stated that "from these Famous *Indians*, it seems to me most probable, that *Pythagoras* learn'd, and transported into *Greece* and *Italy*, the greatest Part of his Natural and Moral Philosophy," and put more generally, "for whoever observes the Account already given of the Ancient *Indian,* and *Chinese* Learning and Opinions, will easily find among them the Seeds of all these *Grecian* Productions and Institutions."[30] Specifically concerning Chinese medicine, "physicians excel in the knowledge of the pulse […] as they pretend not only to tell by it, how many hours or days a sick man can last, but how many years a man in perfect seeming health may live, in case of no accident or violence."[31] Though based on expanding knowledge of the 'Orient,' we should remember that Temple was particularly convinced of Chinese medicine because he had personally tried and experienced moxibustion. Just as Francis Bacon had referenced ancients Greeks to consolidate his argument for empiricism, clearly the line dividing ancients and moderns from each other was loose rather than strict from the very beginning.

One of those who responded to Temple's commendation of the "Chinese Phyick" was critic William Wotton: "The most considerable Specimen of *Chinese* Learning that we have, is in the Writings of *Confucius"* yet saying sarcastically that "Sir *William Temple* would have been one of the first that would have called *those Rules and Instructions discoursed of with great Compass of Knowledge, Excellence of Sense, Reach of Wit, illustrated with Elegance of Stile, and Aptness of Similitudes and Examples*."[32] Wotton addressed the Chinese pulse-taking expertise by referring to the publication

by Andreas Cleyer, "but because few will in all Probability have Patience to go through with them, since they are not very pleasant to read, I shall give a short Specimen of them, by which one may judge of the rest."[33] With this, although making William Wotton the first author to provide an English translation to a part of the *Specimen Medicinae Sinicæ* on the the Chinese philosophy of the Five Elements, it was not done so with great esteem.

In Chinese philosophy, the *Wǔxíng* 五行 Five Elements included wood, fire, metal, earth, water. It is said that the concept of the five elements originated from the concept of 'five directions,' as developed by the *Yin* and *Shāng* 商 dynasties (1600–1046 BCE). The Jin people named the realm of the Shang as 'middle Shang,' and divided the rest up as 'east earth,' 'south earth,' west earth,' and 'north earth.' As much later the philosophical theory of the five elements was abstracted from the five material objects, all kinds of objects and phenomena such as herbs and plants could be classified in this theory according to analogy. For example, the sun rises up in the east, "out of the Eastern Region arises the Wind, out of the Wind Wood, or Plants, out of Wood Acidity." Wood therefore represented anything that grows and flourishes. The sun is most hot at its highest, "out of the Southern Region arises Heat, out of Heat Fire"; the sun sets down in the west, "out of the Western Region arises Drought: Thence come Metals" and "out of the Northern Region arises Cold, out of Cold comes Water." Naturally, everything flourished where there was fertile ground, namely in the centre, "out of the middle Region ariseth Moisture, out of that Earth."[34]

Classification of all object according to the five elements occurred by means of deduction. For example, since blood pertained to fire, and blood was related to the heart, governing the tongue, manifested in the colour red and the sound of laughing, all adding up to the deduction that blood, the heart, tongue, red, and laughing pertained to the element of fire.[35]

Following the account on the Chinese five elements, William Wotton considered it worthwhile to translate an extract on "the *Chinese* Notions, of the Nature and Difference of Pulses." Although these notions would not correspond to European ideas of the pulse, "one may judge of their Worth by the following Specimen."[36]

> The *Chineses* divide the Body into Three Regions: The First is from the Head to the Diaphragm: The Second from thence to the Navel, containing Stomach, Spleen, Liver and Gall, and the Third to the Feet, containing the Bladder, Ureters, Reins and Guts. To these Three Regions, they assign Three sorts of Pulses in each Hand. The uppermost Pulse is governed by the radical Heat, and is therefore in its own Nature overflowing and great. The lowermost is governed by the radical Moisture, which lies deeper than the rest, and is like a Root to the rest of the Branches: the middlemost lies between them both, partakes equally of radical Heat and Moisture, and answers to the Middle Region of the Body, as the uppermost and lowermost do to the other Two. By these Three Sorts of Pulses, they pretend to examine all Sorts of Diseases, and these also are examined Three several Ways: Diseases in the Left-Side are shewn by the Pulses of the Left-Hand, and Diseases in the Right-Side by the Pulses of the Right.[37]

Fascinating it must have been to see the pictures and read the rich writings of the Chinese on their perception of the body, the diagnostics by pulse and tongue, and underlying thoughts. The modern William Wotton, however, was a believer in social


THE
*Physician's Pulse-Watch;*
OR, AN
ESSAY
To Explain the Old Art of FEELING the PULSE, and to Improve it by the help of a PULSE-WATCH.
In Three PARTS.
I. The Old *Galenic* Art of Feeling the Pulse is describ'd, and many of its Errors corrected: The true Use of the Pulses, and their Causes, Differences and Prognostications by them, are fully explain'd, and Directions given for Feeling the Pulse by the Pulse-Watch, or Minute-Glass.
II. A New Mechanical Method is propos'd for preserving Health, and prolonging Life, and for curing Diseases by the help of the Pulse-Watch, which shows the Pulses when they exceed or are deficient from the natural.
III. The *Chinese* Art of Feeling the Pulse is describ'd; and the Imitation of their Practice of Physick, which is grounded on the Observation of the Pulse, is recommended.
To which is added,
An Extract out of *Andrew Cleyer*, concerning the *Chinese* Art of Feeling the Pulse.
By Sir JOHN FLOYER, Knight.
*LONDON*, Printed for Jam. Smith and Benj. Walford, at the Prince's Arms in St. Paul's Church-Yard, 1707.

Figure 20. Title page of Sir John Floyer, *The Physician's Pulse-Watch*, 1707.

In Three Parts:
1. The Old *Galenic* Art of Feeling the Pulse
2. A New Mechanical Method
3. The *Chinese* Art of Feeling the Pulse

and scientific progress rather than an appreciator of old theories by ancient Greeks, Chinese, Egyptians, etc. In his argument in favour of 'Real Knowledge,' Wotton appreciated the "great Labour" and "First Notions of any part of Learning" of the Egyptians and Greeks, however, concluded that there was "no Reason" for their "Pre-eminence in point of Knowledge above all Mankind."[38] Wotton was in favour of chemistry and its use in medicine when he argued that it were the Moderns who applied "inward Use of Antimonial, Vitriolick, and Mercurial Preparations in Physick," and therefore can be "looked upon as the first Inventors of Chymical Medicine." Discoveries and inventions such as these "may justly be esteemed as one of the chiefest Instruments whereby *Real Knowledge* has been advanced."[39]

No doubt unanticipated by Wotton, this time-honoured yet "tedious" and "ridiculous" text and accompanied by "whimsical" images from the ancient tradition of the Yellow Emperor was published in Frankfurt via Boym and Cleyer did in fact become an inspiration for further medical development.

## 3.3 The Pulse-watch

As a student at Queen's College in Oxford, Sir John Floyer (1649–1734) studied the works by Hippocrates and Galen, since they were still considered authoritative medical men in the seventeenth century. Floyer graduated as Master of Arts and as Doctor of Physic by the end of the 1670s and soon gained a fascination for Chinese medicine and diagnostics, possibly by the university's library reception of Chinese works and the visit of Chinese scholar Michael Shěn Fúzōng 沈福宗, a convert who had become Procurator of the China Jesuits in Rome.[40] In 1681, Shen Fuzong had left China from Macao together with his companion Philippe Couplet. A layover at Batavia enabled Couplet to meet Andreas Cleyer after having had an exchange of letters on Chinese medicine as early as 1669. The two Jesuits soon left for home and at arrival in Mechelen, Couplet and Shen Fuzong were welcomed triumphantly. On Shen Fuzong's tour around Europe in the direction of Rome, he paid a visit to England where he catalogued the Chinese books in the Bodleian library and taught Dr. Thomas Hyde some Chinese. This complicated network of connections of people and books would become beneficial to John Floyer study of Chinese diagnostics. Directly elaborating on Floyer's interest in Chinese medicine was antiquarian Charles Hatton who had loaned him a copy of Cleyer's book. Once Floyer's studies had paid off in the form of a book, he would thank Hatton in a letter:

> Sir, I am very much pleas'd with Andrew Cleyer's book, which I lately borrow'd of you, and I made the following extract out of it, which I am obliged to present you; not only as an acknowledgment of the favour you did me; but that I might procure some respect to my design (of explaining the obscure account of the Chinese art) by the great esteem the publick has for your learning and judgment.[41]

This statement of John Floyer's indebtedness to Charles Hatton was printed as an appendix at the end of his pioneering work, *The Physician's Pulse-Watch*, in which he proposed that the pulse could equip a physician with an exact diagnosis of a patient's illness and thus with a better treatment. Floyer developed a special glass watch to count the number of beats and argued that there was a correlation between the number of beats per minute and the physical condition of the body. Having done experiments with the pulse-watch himself, Floyer incorporated passages from the

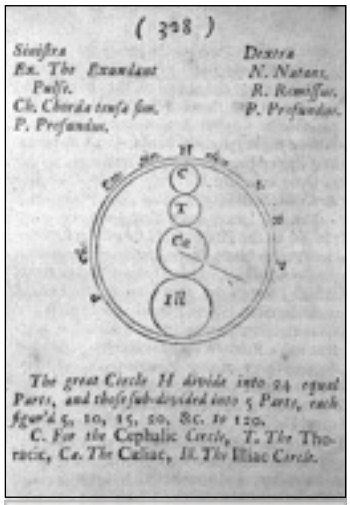


Figure 21. Sir John Floyer, *The Physician's Pulse-Watch*, 1707.

The pulse watch.

*Specimen Medicinæ Sinicæ* and published his findings in 1707 and 1710, after which a few republications and an Italian translation were published as well.

In Galenic medicine, which remained authoritative up to the eighteenth century, a central part of the physical examination involved the qualitative variations of the pulse. Not surprisingly, Floyer discussed the Greek physician concerning the ancient theoretical basis and experience behind pulse-taking. Floyer placed Galen in direct comparison to the Yellow Emperor as far as pulse-taking was concerned, and corrected Galen's "errors" according to research with his own pulse-watch and with Chinese expertise on palpation in mind. In the preface, Floyer expressed his perspective on the contributions of the Greeks and the Chinese to his own essay on the pulse and its value as a diagnostic and prognostic method in search for *true* knowledge:

> Tho' neither the *Greeks* nor the *Chinese* knew the true Fabrick of the Organs of the Pulse, nor their true action and uses, nor the Circulation of the Humours, and the causes of it; yet the *Greeks* discovered the Pulses of all Diseases and Humours, and Passions: And the *Chinese* founded their Art of Physic on the Pulse and its differences; when more quick, great, frequent, was obvious to, the touch; and this produces the hot Diseases, and the contrary Pulses were evident which produced the Cold. The Cacochymias were the causes of all Diseases with the Greeks, but because those cannot explain all Diseases, and they are sometimes very obscure, or much mixed with one another: I shall endeavour to adjust the Cocachymia to several numbers of the Pulse, by which they may be known, and will prefer the Chinese Practice to that of the Greeks as most obvious and certain, and short, and assert that upon that we may build all the Practice of Physick.[42]

After having established the virtues of ancient Greek and Chinese studies, Floyer first discussed Galenic doctrines about the human heartbeat, about characteristics of the pulse, such as its nature, uses, and causes, about its alteration and the difference in pulses according to temperament, sex, age, time, and behaviour, external causes, and of course diseases.[43] The comprehensive approach applied by Floyer therefore involved all aspects of the pulse and how a prognosis could be made accordingly. Once the theoretical basis was laid, Floyer proposed a new mechanical method for preserving one's health and prolonging one's live, namely his pulse-watch.[44] He presented tables indicating a series of ages, pulses, and the habit of body accordingly. Directly linking a patient's pulse to the disease, Floyer constructed a "Method of Physic, is both Mechanical and Philosophical; tho' I believe the Mechanical is most easie and certain."[45] In sum, Floyer discussed ancient learning by looking into Galen's teachings on the pulse and modern learning by experimenting with his pulse-watch.

In the chapter "Concerning the *Chinese* Art of feeling the Pulse, and their Practice of Physick grounded on the Knowledge of the Pulse,"[46] Floyer stated that he felt "oblig'd" to talk about the Chinese pulse-taking, not only because of their great knowledge and experience with this practice, but because they "have found out the real Art of feeling the Pulse."[47] Floyer attempted to prove the latter statement by presenting observations written down by various Asia travellers, such as Samedo the Portuguese, who said that "the good and learn'd Physicians seldom fail," Father le Counte, who said "That a *Chinese* Emperor writ about the Pulse 4292 Years ago [i.e.

the Yellow Emperor], since which the *Chinese* have been Famous for Pulses," and also quoted a VOC embassy report stating that "as to Physick and Chyrurgery they are Expert therein, and their Rules of Art differ not much from those of the *European* Physicians."[48]

John Floyer believed that the Chinese spoke of an organ, e.g. the liver, rather than the humour bile it produced. Instead he spoke of various kinds of pulses reflecting the state of organs in the body. "'Tis ridiculous to believe that the pulse can depend in its Alterations on the solid Parts of any *Viscera*, but it does evidently alter by the Fluids," concluding that "'tis obvious that the *Chinese* respect the Fluids, which are secreted by those Parts in feeling of the Pulse; and if this be a fair Conjecture, I have probably accommodated the *Chinese* and *Grecian* Art of feeling the Pulse. Mr. *Wotton* quotes this from *Cleyer.*"[49] In short, Floyer had extrapolated the Chinese inner organs to the fluids they produced and in this way theoretically combined them with Galen's humours.

In retrospect, Szcesniak criticised Floyer for his "blind credulity in accepting the primitive prescriptions of ancient China," while Bivins appreciated him for "his receptivity to innovations from both East and West."[50] Indeed, Floyer's cultural openness had its limitations when he stated that "the *Asiatics* have a gay luxurious Imagination, but the *Europeans* excel in Reasoning and Judgment, and clearness of Expression."[51] Nevertheless, this had mainly to do with the terminology applied by the Chinese, which tended to be "fitter for Poetry and Oratory, than Phylosophy," which, from an European perspective would indeed appear so. Ultimately, however, Floyer was dependent upon these Chinese "obscure, sublime way of Expression" to legitimise his pulse-watch diagnostics, and so throughout the entire work he placed Chinese medicine into a more neutral and systematic language, combined it with Galenic medicine, and put his own innovative mechanical device under experimentation and placed his observations in a set of tables.

Arguing in favour of the practical application of Chinese and Galenic medicines combined, Floyer proposed "an English Cabinet of Medicines" with all medicines arranged "by their Tastes"; and he did not confine himself "to *English* Simples, but chose those which are most easily procur'd among us; and it must be observ'd, that the *Chinese* have their *Gensem* from *Tartary*; and since we have *Coffee* and *Thea*, and *Chocolate*, which are part of our Diet from *India*, why shall we not have our Medicines thence, if they exceed ours in Virtue?"[52] The complete Cabinet for European physicians was divided into drawers with several simples and specimens.[53] This was the first attempts to institutionalise Chinese medical practices in Europe, an proposal not suggested by anyone before. Furthermore, although "'Tis certain, their Experience of this Practice for 4000 Years is much to be valu'd, because they are an Ingenious Nation," Floyer advocated for more translations of Chinese medical works, preferably by a physician with knowledge of the Chinese language, because "we have at present an obscure Account of it from the *Missionaries*, who know nothing of this Art; neither can they dexterously distinguish and separate the *Chinese* Notions from Matters of Fact, and the real *Phenomena*, to which all Hypotheses are adapted, tho' they be very absurd."[54] Evidently, Floyer was aware that his pulse diagnosis would not be able to persevere amonst European practitioners, if not further studies were conducted into Chinese sources, further

experiments would be done with the technology, and a certain form of institutionalisation would take place.

Floyer's critical annotations to the Chinese way of pulse-taking as he had learned from Boym/Cleyer's book were expressed most directly in the letter to Hatton as featured in the appendix. A central problem concerned the contrast of Chinese pulse-feeling with progressive developments in anatomical studies, because there existed no visible correlation between the three locations at the wrist and a division of the human body in head, torso, and arms and legs.[55] Another criticism was expressed in the direction of pulse diagnostics in combination with the theory of the Five Elements, which in Floyer's abundance of examples must point to his judgement of the theory as too contrived and unconvincing. This also applied to the Chinese holistic idea of a connection between the circulation of blood in the human body on the one hand and astronomical observations of "Circumvolution of the Heavens" on the other, which Floyer based on the simple argument that the former circulated "once in three or four minutes" whereas the latter did so "more thro' fifty Hours."[56] Floyer therefore emphasised the advantage of modern learning when he stated that "the *Chinese* distinguish the Pulses by comparing them to something that feels like them; and they who will know their Meaning, must discern the same by long Experience in feeling the Pulses; for they do not consider the Pulse as Geometricians do by its Dimensions."[57] And that dimension was exactly Sir John Floyer provided for with his *Physician's Pulse-Watch.*

## 3.4 Conclusion

As far as the reception to Floyer's ideas was concerned, he first of all continued to present feeling of the pulse as an important means for any physician in the diagnosis process. For example, he repeated his statement that the pulse could reveal one's physical condition in a number of his books, of which the first one was the second volume of *The Physician's Pulse-Watch.*[58] But also in *A Comment on Forty Two Histories described by Hippocrates* and throughout the entire work *The Art of Preserving Old Men's Healths* did Floyer elaborate on the usefulness of pulse diagnostics.[59] However, European physicians would not immediately adopt the more objective determination of rate and rhythm of the arterial pulse, and instead continued to use their intuition and their practice of feeling in their clinical examinations. Recognition for *The Physicians Pulse-Watch* by contemporary physicians was therefore absent in publications. It was only until the middle of the nineteenth century when measuring the pulse with a watch became standard.

Nevertheless, a number of instances occurred that deserve mention here. Chinese physician Thebitia, who lived in Batavia, accompanied Joan van Hoorn, who was struggling with his health, to the Dutch Republic in 1709. Thebitia was invited by doctor Nicolaas Witsen to explain his knowledge of feeling the pulse the Chinese way. Nicolaas Witsen made a drawing of this and recorded the event as "the account of the pulse-feeling on this paper has been told and explained to me by Chinese physician Thebisea."[60] And in France, John Floyer may have inspired Jean Baptiste du Halde to include four chapters on Chinese medicine and pulse-taking in his massive work *Description géographique, historique, chronologique, politique de l'empire de la Chine* (1735).[61] It also included a French translation by Father Hervieu of Wang-

sho-ho's "Secret of the Pulse" in three parts.[62] Clearly Floyer was not the only one enthusiastic about learning more about the Chinese way of feeling the pulse.

The *Specimen Medicinæ Sinicæ* (1682) and its second edition *Clavis Medicæ* (1686) – made possible by the works of Michael Boym and Philippe Couplet and by VOC physicians Andreas Cleyer and perhaps Willem ten Rhijne – were the first books specifically dedicated to elaborate on the practices and theories of Chinese pulse-taking. Through translations, commentaries and illustrations, Boym and Cleyer not only presented the effects and expertise involved, but also attempted to comprehend the philosophical background behind traditional Chinese medicine as it existed in the seventeenth century. Furthermore, "for all its difficulties, the *Specimen* became one of the foundational texts through which Europeans glimpsed Chinese medical practices, becoming an inspiration for John Floyer's studies of the pulse."[63] Despite the fact that the author had their disagreements, they shared a fascination for medical practices not originating from Europe, a quality of being able to think, learn, and write different ideas from different people – a high degree of susceptibility not common to other times.

Looking back at the quarrel between the ancients and moderns in England, not much remained of the unquestioned authority of the ancient Greeks. Exactly because scholars debated about the level of authority of the classics, they were open to new knowledge for which criteria were debated to judge it as 'real' or 'true.' Nevertheless, the classics persisted. The ancients adhered to figures like Galen, though let him meet with a new ancient Chinese authority, and in some cases even provided essential assumptions and tools for further developments. According to Floyer, "Since *Galen*'s time, till [William] *Harvey*, this Art of feeling the Pulse, as to its false Notions in it continu'd the same; but since the Circulation of Blood has been discover'd, *Harvey, Lower, Borellus, Bellinus,* and *Malpighius* have explain'd the Instruments and Causes of the Pulse, better than the *Galenists* had done; but we are still oblig'd to *Galen* for all his useful Observations about the Pulse."[64] Clearly Floyer did not attempt to diminish Galen's authority. On the contrary, Floyer honoured Galen's work and simply wanted to increase usefulness in contemporary studies, specifically on the knowledge of the pulse in relation to diseases. Therefore, Galen continued to play an important role, despite Harvey's description of blood circulation, of which the best example was Floyer's search for the relation between pulses and diseases.

As both a scientist and a historian, Sir John Floyer based his *Physician's Pulse-Watch* on the wisdom of ancient Greek and Chinese authors as well as modern sources of his time. Although sharply divided moderns would be of the opinion that "the Chinese are Ignorant in Philosophy and Anatomy, and therefore their Pretence to the Knowledge of the Pulse is Cheat and Imposture," Floyer successfully showed that this was led by prejudice and ignorance. John Locke (1632–1704) had rejected the rationalist view that a philosopher could work out the truth about the universe by reason alone, arguing instead that knowledge of the world could only be gained by experience. And pulse-taking in Chinese medicine, although dedicating a large part to reason, based its knowledge and expertise on experience for already more than thousands of years. Ultimately, however, all that John Floyer requested of William Wotton and other modern readers was that they would read Galen's *Tracts* and the Yellow Emperor's *Nei Jing* 'Canon of Medicine,' and recognise similarities and find a

common ground between them, already done for the production of the pulse-watch. Chinese texts of the Yellow Emperor, as found in Boym/Cleyer's *Specimen*, had therefore indirectly contributed to new developments in medicine.

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[1] Claudius Galenus, "Synopsis Librorum Suorum, Sexdecim, De Pulsibus," in *The Writings of Hippocrates and Galen*, ed. John Redman Coxe (Philadelphia: Lindsay and Blakiston, 1846).
[2] The five *zàng* organs (i.e. heart, lungs, spleen, liver, and kidney) maintained the normal pulse conditions; the circulation of the blood and *qì* also went through the six *fǔ* organs (i.e. large and small intestine, triple warmer, stomach, gallbladder and urinary bladder).
[3] 黃帝 et al., eds., *Sùwèn* 素問 *Plain Questions*.
[4] Zhāng Zhōngjǐng 張仲景, *Shāng Hán Lún* 傷寒論 *Treatise on Exogenous Febrile Diseases* (c. 200).
[5] Vesalius, *De Humani Corporis Fabrica Libri Septem*.
[6] William Harvey, *Exercitatio Anatomica De Motu Cordis Et Sanguinis in Animalibus / Guilielmi Harvei Angli* (Francofurti: sumpt. Guilielmi Fitzeri, 1628).
[7] Anthony T. Grafton, April Shelford, and Nancy G. Siraisi, *New Worlds, Ancient Texts: The Power of Tradition and the Shock of Discovery* (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1992), 197-204.
[8] François Caron, *Beschrijvinghe Van Het Machtigh Conincrijcke Japan*, ed. Hendrik Hagenaer (t'Amsterdam: voor Joost Hartgers, 1648).
[9] Peter Rietbergen, *Japan Verwoord: Nihon Door Nederlandse Ogen, 1600-1799* (Amsterdam: Hotei Publishing, 2003), 149. Translation by author.
[10] Dew, *Orientalism in Louis Xiv's France*, 103.
[11] Cleyer, *Specimen Medicinae Sinicae*.
[12] Michael Boym, Andreas Cleyer, and Philippe Couplet, *Clavis Medica Ad Chinarum Doctrinam De Pulsibus, Autore R. P. Michaele Boymo, E Soc, Jesu, Et in China Missionario. Hujus Operis Ultra Vigenti Annos Jam Sepulti Fragmenta, Hinc Inde Dispersa, Collegit Et in Gratiam Medicae Facultatis in Lucem Europaeam Produxit Cl. Dn. Andreas Cleyerus, M. D. Et Societatis Batavo-Orentalis Protomedicus. A Quo Nunc Demum Mittitur Totius Operis Exemplar, E China Recens Allatum, Et a Mendis Purgatum, Procuratore R. P. Philippo Copletio, Belga, E Soc. Jesu, Chinensis Messionis Romam Misso* (Norimbergae: 1686).
[13] For details concerning Willem ten Rhijne's involvement, see Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age*, 368-69.
[14] Cook, *Trials of an Ordinary Doctor: Joannes Groenevelt in Seventeenth-Century London*, 128.
[15] "Excerpta literis eruditi Europaei in China" in Cleyer, *Specimen Medicinae Sinicae*, 180-214.
[16] "De indiciis morborum ex linguæ coloribus & affectionibus" in Ibid., 244-58.
[17] "De pulsibus libros quatuor e Sinico translatos" in Ibid., 4-105. Pagination was restarted three times. This study will apply continued counting of the pages.
[18] Nelson Liansheng Wu and Andrew Qi Wu, eds., *Yellow Emperor's Canon of Internal Medicine: Bing Wang Edition* (Beijing: China Sciene & Technology Press, 1999), 86.
[19] "Tractatus de Pulsibus, Quo declaratur Doctrina Sinarum Philosophica ex principiis ac placitis Philosophiæ ipsorum Medicæ, quæ continetur Codice vetustissimo *Nuy kim* dicto, qui constat capitibus 162" in Cleyer, *Specimen Medicinae Sinicae*, 106-21.
[20] Boym/Cleyer had romanised the three points as *cún, quoan,* and *chě,* however, pinyin is applied here.
[21] "Medicamenta Simplicia, Quæ à Chinensibus ad usum Medicum adhibentur" in Ibid., 76-105. Translation of title by Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age*.
[22] Mayerne, *A Treatise of the Gout*, 55-56.
[23] Cook, *Trials of an Ordinary Doctor: Joannes Groenevelt in Seventeenth-Century London*, 19-21.
[24] As extensively described in Ludwig Choulant et al., *History and Bibliography of Anatomic Illustration in Its Relation to Anatomic Science and the Graphic Arts* (Chicago: The University of Chicago Press, 1852), 362-64.
[25] Chapter XIV "De Artibus et Scientiis Sinarum" in Isaacus Vossius, *Isaaci Vossii Variarum Observationum Liber* (Londini: prostant apud Robertum Scott, 1685), 69-85.
[26] Jacques Bénigne Bossuet, *Discours Sur L'histoire Universelle a Monseigneur Le Dauphin: Pour Expliquer La Suite De La Region & Les Changemens Des Empires* (Paris: chez Sebastien, &c, 1681). Voltaire, *Essay Sur L'histoire Générale Sur Les Moeurs Et L'esprit Des Nations, Depuis Charlemagne Jusqu'à Nos Jours* (a Paris: 1756).

[27] William Wotton, "Of the Learning of the Chineses," in *Reflections Upon Ancient and Modern Learning* (London: J. Leake for Peter Buck, 1694), 144.
[28] "La docte Antiquité dans toute sa durée. A l'égal de nos jours ne fut point éclairée" in François de Callières, *Histoire Poëtique, De La Guerre Nouvellement Déclarée Entre Les Anciens Et Les Modernes* (A Amsterdam: chez Pierre Savouret, 1688).
[29] Temple, "An Essay Upon Ancient and Modern Learning," 28.
[30] Ibid., 18-22.
[31] William Temple and Jonathan Swift, "Of Heroic Virtue," in *The Works of Sir William Temple* (London: J. Clarke, T. Wotton, D. Brown, H. Lintot [etc.], 1757), 325. Temple's essay "Of Heroic Virtue" was first published in 1692.
[32] Wotton, "Of the Learning of the Chineses," 145.
[33] Ibid., 147.
[34] Ibid., 148-50. English translation by William Wotton.
[35] Ibid., 148-49.
[36] Ibid., 151.
[37] Ibid., 151-52.
[38] William Wotton, *Reflections Upon Ancient and Modern Learning* (London: J. Leake for Peter Buck, 1694), 133-34.
[39] Chapter XVI 'Of ancient and modern chemistry' in Ibid. Italics added by author.
[40] Story of Philippe Couplet and Michael Shen Fuzong in David E. Mungello, *Curious Land: Jesuit Accommodation and the Origins of Sinology* (Honolulu: University of Hawaii Press, 1989), 254-55.
[41] Floyer, *The Physician's Pulse-Watch, or, an Essay to Explain the Old Art of Feeling the Pulse, and to Improve It by the Help of a Pulse Watch*, 339-40.
[42] Ibid., Preface, 3-4. In medicine, *cocachymia* referred to the abundance of ill humours (Latin *humor* meaning *'moisture'*) that were thought to cause diseases.
[43] Part I, "The Old *Galenic* Art of Feeling the Pulse is describ'd, and many of its Errors corrected: The true Use of the Pulses, and their Causes, Differences and Prognostications by them, are fully explain'd, and Directions given for Feeling the Pulse by the Pulse-Watch, or Minute-Glass," 1-165.
[44] Part II, "A New Mechanical Method is propos'd for preserving Health, and prolonging Life, and for curing Diseases by the help of the Pulse-Watch, which shews the Pulses when they exceed or are deficient from the natural," 167-226
[45] Ibid., 204-05.
[46] Part III, "The *Chinese* Art of Feeling the Pulse is describ'd; and the Imitation of their Practice of Physick, which is grounded on the Observation of the Pulse, is recommended," 227-338; Appendix, 339-440.
[47] Ibid., 227-28.
[48] Ibid., 228-29.
[49] Ibid., 231.
[50] Boleslaw Szczesniak, "John Floyer and Chinese Medicine," *The History of Science Society* 11 (1954): 140. And, Roberta Bivins, "Expectations and Expertise: Early British Responses to Chinese Medicine," *History of Science* XXXVII (1999): 13.
[51] Floyer, *The Physician's Pulse-Watch, or, an Essay to Explain the Old Art of Feeling the Pulse, and to Improve It by the Help of a Pulse Watch*, 232.
[52] Ibid., 252-53.
[53] Ibid., 329-35.
[54] Ibid., 336.
[55] Ibid., 350-51.
[56] Ibid., 353-54.
[57] Ibid., 368.
[58] Sir John Floyer, *The Physician's Pulse-Watch, or, an Essay to Discover the Causes of Diseases, and a Rational Method of Curing Them by Feeling of the Pulse*, vol. II (London: Sam Smith and Benj. Walford, 1710).
[59] Sir John Floyer, *A Comment on Forty Two Histories Discribed by Hippocrates in the First and Third Books of His Epidemics. In the First Part Hippocrates's Pathology Is Explained, and Defended; ... In the Second Part Are Fourteen Histories of the First Book ... In the Third Part Are Twenty Eight Histories of the Third Book ... The General Method of Curing an Epidemical Fever* (London: printer for and sold by J. Isted, 1726). And, Sir John Floyer, *Medicina Gerocomica: Or, the Galenic Art of Preserving Old Men's Healths, Explain'd: In Twenty Chapters. To Which Is Added an Appendix, Concerning the Use of Oyls and Unction* (London: printed for J. Isted, 1724).

[60] "De aenwijsinge der polstasting op dit papier vertoont, is mij van den geleerden sineschen medicus Thebisea also bekent gemaekt en overhantrijkt." in Leonard Blussé and Floris-Jan van Luyn, *China En De Nederlanders: Geschiedenis Van De Nederlands-Chinese Betrekkingen, 1600-2008* (Zutphen: Walburg Pers, 2008), 104.
[61] Quickly translated into English and published as "Of the Skill of the *Chinese* in the Art of Medicine" in J.-B. du Halde, *The General History of China. Containing a Geographical, Historical, Chronological, Political and Physical Description of the Empire of China, Chinese-Tartary, Corea and Thibet. ... Adorn'd with Curious Maps, And ... Copper-Plates. Done from the French of P. Du Halde.*, 4 vols., vol. 3 (London: printed by and for John Watts, 1736), 356-65.
[62] Ibid., 366-496.
[63] Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age*, 368.
[64] Floyer, *The Physician's Pulse-Watch, or, an Essay to Explain the Old Art of Feeling the Pulse, and to Improve It by the Help of a Pulse Watch*, 13.

# Conclusion

> It is not in the least to be wonder'd at, that so many nations, and these so widely differing in their religion, customs, language, and the very nature of the climate, which they inhabit, should have also different principles of the healing art, different remedies, different precepts and methods of cure.[1]

What *is* to be wondered at, was people's openness to discuss new and foreign ideas and knowledge in seventeenth-century Europe. Though we have seen that some appreciated while others rejected Chinese medicine, most important was the fact that all seriously examined these unknown treatments and phrased their arguments on the basis of empirical studies and rationalistic considerations.

People living in the seventeenth and eighteenth centuries expressed a set of insights and convictions, representing a kind of world view and culture not often seen before. Economic developments reached capitalistic characteristics with the founding of the Dutch East India Company in 1602 on a mission to set up commercial ties with cultures in Asia. Colonialism, if interpreted as the policy of acquiring full political control over a dependent area or people, occupying it with settlers, and exploiting it economically, was not an issue at this time. Besides Batavia and a number of coastal strongholds, Dutch dominance extended over what today is recognised as Indonesia's boundaries did not occur until early twentieth century. Naturally power relations were not absent in the exchange of medicine in the seventeenth century, but they should be studied on their own terms.

Especially in the case of the VOC post on Deshima, all social and commercial activities were under the strict control of the Tokugawa shogunate, which refused all other foreigners entrance since 1639. Because of fear for the rising influence of Roman Catholicism in feudal Japan, Portuguese traders and Jesuits were now denied any admission on penalty of death. VOC representatives, however, had shown assistance to the Japanese and were allowed entrance because their presence in Japan was solely based on the wish to trade, not to convert. Other European countries would soon criticise the Dutch for prioritising profit over faith: it was said that the Dutch were willing to deny their religious loyalty merely to the benefit of trade. This criticism, not in the least independent from feeling of jealousy, was opposed by Dutch philosopher Benedict de Spinoza (1632–1677) who said, "concerning Christian ceremonies," such as baptism and holidays, "they were instituted only as external signs of a universal church and not as things that contribute to happiness or have any sanctity in them. Consequently, a man living alone is not bound by them, and anyone who lives under a government where the Christian religion is forbidden is obliged to do without them."[2] The willingness and curiosity of the Japanese, and the absence of a strong ideological inclination of the Dutch had enabled for products and medical knowledge to transmit across borders and cultures. While migrants from Scandinavia, the German lands, and France moved to the Dutch Republic motivated

by both religious tolerance and economic prosperity, the focus on trade furthermore enabled VOC physicians Willem ten Rhijne and Engelbert Kaempfer to enrich their knowledge of moxibustion and acupuncture.

This intentional invisibility of religious beliefs coincided with an appreciation for factual information, both in trade as well as in medicine. While the VOC required accurate reports on the goods shipped between Europe and Asia, their employees obtained fact-based information on Chinese and Japanese medicine by means of enquiry, observation, and first-hand experience. Through this empiricist approach, aimed at application and practice, transformed culturally-coloured element to a more universal level. Embodied in the quarrel between the ancients and moderns, between those who revered classical learning and those who advocated a departure from it, a renewal of science took place in an attempt to find criteria for the validity of claims made, independent of subject-matter. Whether is were astronomical observations or Chinese medical practices, scholars struggled to find ways with which claims of knowledge could reach truth not only on a local level, but on a universal one.

Despite these efforts, ultimately moxibustion and acupuncture were rejected. This can be explained by pointing at exactly this development in search for universal claims: as failures of Chinese treatments could no longer fall back on a theoretical ideology to ensure the belief in the plausibility of the theory and the interpretation of inadequate application, they were regarded as proof of their inconsistency and therefore not real, true knowledge. In China and Japan, the holistic theories of *qi, yin yang,* and the Five Elements predisposed people to the effectiveness of moxa and acupuncture treatments. While therapeutic successes validated these theories in China, in Europe they grew to be considered as merely of anecdotal value.

Although Chinese and Japanese medicines might have had a modest influence on the development of medicine in the seventeenth century, it will be clear that history of Chinese medicine in early modern Europe can provide an important insight into the operations and methodologies of medicine. More specifically, by looking at the practices of moxibustion, acupuncture, and pulse-taking, we have observed a process of transmission, namely the adoption of foreign knowledge according to *matters of fact*, the reception of this new information by procedures of credibility, and followed by notions such as practical familiarity as well as theoretical compatibility. When these were not met, it seriously diminished the chance of successful appropriation.

Everything considered, then, we have to return to consider medicine mainly as an instrument with the aim of addressing diseases and preventing early death. Cultures around the world equip themselves with this instrument in one way or another, yet apply their own meaning and usefulness to it. In the exchange of medicine from one culture to another, it may loose its effective properties because of a different theoretical and ideological context. Besides the aspect that moxibustion was recognised as a cauterisation and experiments could be done with it, its theoretical basis of the Five Elements theory was replaced by a certain level of Galenic interpretation on its functioning. Seventeenth- and eighteenth-century curiosity proved skilled to exchange and receive goods and objects from afar, yet was not of such flexibility to acknowledge theoretical and ideological approaches as plausible.

Despite the fact that the influential Engelbert Kaempfer evaluated "acupunctura is esteem'd a very good remedy for those distempers which are cured by burning with the Moxa, and the needle is to be applied nearly on the same places, and with the same cautions, as that Caustick,"[3] it would not last. In the case of Herman Busschof's discussion on the gout and the cure by moxibustion, "more and more Busschof's report, which initially had caused such an excitement, looked like an exaggerated adulation by a lucky but naive Dutch clergyman."[4] Nevertheless, as far as scholarly discussions were concerned, Chinese pulse-taking in Europe clearly demonstrated that self-proclaimed ancients were often curious about things modern, while simultaneously moderns relied on the classics more than they would care to admit. A modern project such as Sir John Floyer's was rather an "attempt to give birth (re-naissance) to the Ancient Projects, not to reject them."[5] With this we can conclude that textual authority was still useful to canalise the interpretation and analysis of data, while the data no longer originated in texts.

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[1] Kaempfer, "Iv. An Account of the Moxa, an Excellent Caustic of the Chinese and Japanese, with a Scheme Schewing What Parts of the Human Body Are to Be Burnt with That Plant in Several Distempers," 34.

[2] Benedict De Spinoza, *Theological-Political Treatise*, ed. Jonathan Israel, *Cambridge Texts in the History of Philosophy* (Cambridge: Cambridge University Press, 2007), 75.

[3] Kaempfer, "Iii. Of the Cure of the Colick by the Acupunctura, or Needlepricking, as It Is Us'd by the Japanese," 32.

[4] Michel, "Far Eastern Medicine in Seventeenth and Early Eighteenth Century Germany," 77.

[5] Andrew Cunningham, *The Anatomical Renaissance: The Resurrection of the Anatomical Projects of the Amcients* (Aldershot: Scolar Press, 1997), 7. And, Grafton, Shelford, and Siraisi, *New Worlds, Ancient Texts: The Power of Tradition and the Shock of Discovery*, 217.

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