

Beyond the Borders of Europe Engelbert Kaempfer's Medical Research and Treatments

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"A doctor must be a traveller ... Knowledge is experience."

Paracelsus

The bust of Paracelsus still today adorns the Renaissance façade of the pharmacy in the market square of Lemgo, Westphalia, just as it did when Engelbert Kaempfer (1651-1716) passed in its shadow on his way to school some three hundred and fifty years ago. Like Paracelsus (1493-1541)—the Swiss alchemist and physician credited with revolutionizing medicine like Luther did religion—Kaempfer spent a large part of his life travelling, and like him he condemned empty superstitions in his own country while being open to alternate forms of healing and folk medicine practiced by cultures considered inferior in Europe at the time. Yet unlike Paracelsus, who eventually became recognized for his medical discoveries, Kaempfer earned fame less for his medical writings than for his

detailed description of Japan and Japanese culture. As a result, his role as a doctor has received relatively little attention. His doctoral thesis in medicine, submitted to the University of Leiden on his return from the East, has been translated into German, and medical essays included in his first great work, *Amoenitates exoticae* have appeared in English. Also the fragmentary notes on medicine Kaempfer made in Japan have been examined.¹ Yet no writing exists on Kaempfer's actual practice of medicine, or how he viewed his position as doctor. The following is an attempt to fill this gap.²

EARLY LIFE AND STUDIES

Like many prominent scholars of his age, Kaempfer was born the son of a Protestant clergyman, in an environment where there was great stimulus to pursue learning, but never quite the finances to do so at leisure. Unlike those from well-to-do families who made up the greater part of the student population, the sons of the clergy usually did not have the leisure to engage in the frivolities of university life. If they wanted to compete with their more privileged fellow students for positions that brought adequate financial rewards and some social standing at the end of their

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studies, they had to strive for excellence. The sober, puritan values that shaped Kaempfer's life are reflected in the words his father wrote in his autograph book at their last meeting:

"Study as if living forever; live as if dying today. Seek clear conscience rather than high reputation; reputation can be based on rumour, conscience never. Christ wore a crown of thorns: thus seek not pleasure. Follow the way of Christ to earn your own crown."³

Kaempfer's father himself had obtained a degree at the University of Rostock before accepting an appointment as cantor and lector at the Latin school of his native Lemgo. Dissatisfied with these qualifications, however, he returned to the University of Rostock to obtain a Master's degree and not long afterwards was appointed deputy vicar at the large central church that still dominates the skyline of Lemgo today. Having married the chief vicar's daughter, he inherited this position on the death of his father-in-law two years later, aged only thirty-four. He continued teaching at the local Latin school, perhaps to supplement his income or to obtain free schooling for his sons. There were six of these, from two marriages, for his first wife, Kaempfer's mother, died early. Five sons obtained university degrees and occupied prominent positions in the society of their day: one was a Hebrew scholar, one a physician at Stavanger, Norway, and one a mayor of Kaempfer's native town of Lemgo.⁴

Young Engelbert attended the local Latin school and, according to his own testimony, was already as a schoolboy instructed in the surgeon's craft by a *pharmacopôla* or drug seller, so that he might better succeed in the study of medicine later in life.⁵ As will be explained in more detail later, in Kaempfer's age the surgeon stood below the doctor, performing practical tasks under the latter's instructions. At the age of sixteen Kaempfer left home to seek tuition at various schools in other cities as was the custom of the day. He graduated at age twenty-one from the gymnasium of present-day Gdansk in Poland, which at the time lay in Prussian territory and was known as Danzig, where German was the dominant language. His graduation thesis argued for benevolent autocracy—not surprising considering that his native Lemgo was famous for the witch hunt conducted by powerful citizens of the city.

His autograph book provides a record of his movements during his studies and information about

his teachers. From Gdansk at the mouth of the Vistula river (German: Weichsel), he went south upstream to study at present-day Torun, then known under the German name of Thorn, famous as the birthplace of the astronomer Nicolaus Copernicus (1473-1543). Here a professor of physics and medicine by the name of Georgius Severus later remembered Kaempfer as his student.⁶ His next destination was still further south along the Vistula, namely the city of Krakow, with its famous Jagiellonian University established in 1364, the second oldest in central Europe, which was drawing scientists, artists, and scholars from across the continent. In March 1676 the rector of the university testified in Kaempfer's autograph book that he had studied medicine and philosophy there for two years with great diligence, conducting himself well. In May of that year, a professor of theology and law warned that not those who know a lot, but those with fruitful knowledge, are to be termed wise. Perhaps Kaempfer showed all too great an enthusiasm for theoretical knowledge for the taste of this scholar. Such zeal, however, was appreciated in the faculty of medicine, where professors praised the twenty-five-year old as an "extremely conscientious" and "exceptionally hard-working" student.⁷

In the late spring of 1676, Kaempfer travelled downstream, visiting his teachers at Torun and Gdansk, and then apparently proceeded to Königsberg, now known as Kaliningrad. Here the German Albertus-Universität, founded in 1544 by Albert, the first duke of Prussia, attracted students from all over the German-speaking world. Just over seventy years later, a student named Immanuel Kant would enter this same university, and eventually use Kaempfer's writings on Japan for his lectures on geography, though posterity knows him better for his philosophical works.

Autographs were mostly requested on departure, and from those in Kaempfer's book we know that he completed his studies at Kaliningrad in the summer of 1681. Here, once again, Kaempfer is praised as "famous for the dedication with which he devoted himself to the study of medicine."⁸

In the introduction to his description of Japan, Kaempfer states that he "had never been used to receiving large sums of money from home." In Krakow he would attempt to still the pangs of hunger by boiling hemp seed—which, he later explained, had none of the intoxicating effects generally attributed to this

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plant—while in Kaliningrad he earned his living as a tutor.⁹ Yet despite these financial difficulties, Kaempfer continued his medical studies for nine years. There is no mention in this period of any practical application of his medical knowledge, and we must assume that he spent nearly a decade on theoretical studies.

THE RATIONAL AND LEARNED DOCTOR

The qualifications of Kaempfer's professors are listed as "Philosophiae et Medicinae Doctor et Professor." The two thousand-year-old saying *philosophia et medicina duae sorores sunt* (medicine and philosophy are sisters), attributed to Aristotle, was still valid at the universities Kaempfer attended.¹⁰ In the classical tradition of tertiary medical studies, the doctor was first of all a man with great theoretical knowledge, the *rationalis et peritus Medicus* (the rational and learned doctor).¹¹ By his great store of theoretical knowledge, he distinguished himself from those who had acquired mainly practical medical expertise, the surgeons and barbers, who were skilled at letting blood, lancing abscesses and other practical surgical operations. Surgeons followed the directions of university-trained doctors who were responsible for diagnosing illnesses and prescribing treatment.¹² This hierarchical difference between physician and surgeon is an important one with regard to Kaempfer's practice of medicine, for all too often he was charged with performing the duties of the latter. Hence we need to examine in greater detail what distinguished him from a surgeon.

The physician had to master Latin and Greek, for the writings of the ancient philosophers were of importance. Most fundamental among these were Aristotle's writings on natural philosophy, establishing a system of inquiry into the structure of nature and the interactions between its constituents. The very term "physician" (Latin *physicus* based on Greek *physikos*) refers to the person skilled in natural philosophy.¹³ Aristotelian logic, in turn, provided the terms of inquiry into nature, and was fundamental to the "discourse" that was to become one of the hallmarks of the university-educated doctor.¹⁴

With Thomas Aquinas' (1224/25-1274) interpretation of Aristotle's natural philosophy, these early Greek writings became acceptable to the church and more or less fundamental to all Western university education. Sanctioned by the church, they could guide

the doctor on how to deal with the difficult question of God's role in the physical working of the human body and the function and nature of the soul. Church and medicine came to be mutually supportive of each other, inasmuch as they understood their complementary function in caring for the mental and physical health of people, and doctors were often also members of the clergy.¹⁵ Kaempfer also studied under a professor of theology. Naturally the church took care to keep the upper hand in this partnership, and an entry in Kaempfer's autograph book asserting that "...just as the soul is more important than the body, so the physician of the soul is more important than that of the body" makes this point clear.¹⁶

The physician's most fundamental textbooks were the writings attributed to the man even Kaempfer, the pastor's son, refers to as the Divine Elder (*Divinus Senex*), the Greek scholar Hippocrates (c. 460BC-377BC), as well as those of his later defender, the Greek doctor, philosopher and prolific writer Galen of Pergamum (129-c. 216), physician to Marcus Aurelius in Rome. Kaempfer displays his detailed knowledge of this extensive literature by frequently quoting it.¹⁷

In line with the scant anatomical knowledge of the times, Hippocrates based his diagnosis on outwardly observable conditions of the body as well as the examination of its various excretions, such as urine, faeces and phlegm. For the prevention, diagnosis and treatment of disease, he considered the correct environment of major importance, a topic treated in his work *Airs, Water, Places*. Galen, in an early effort to distinguish the learned doctor from the many practitioners with only practical medical knowledge, laid great stress on the writings attributed to Hippocrates, and further developed the early Greek theory of humours. Humoral theory maintained that the human body, like all nature, was composed of the four elements: earth, air, fire and water, each of which was associated with a pair of qualities: dry-cold, hot-wet, dry-hot, and cold-wet. Disease was seen as an internal imbalance of these elements, and the task of the physician was to restore it.¹⁸

By the time Kaempfer began his medical studies in the late 17th century, the validity and continued usefulness of these early Greek writings had been challenged. One of the most famous challengers was Paracelsus (1493-1541), often considered to be the founder of chemical medicine since he discovered the

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use of minerals as well as homeopathic amounts of other poisons in the treatment of illness. Paracelsus publicly burned the works of Hippocrates and Galen, declaring that medical knowledge could only be attained by practice, and not by theoretical study.¹⁹ The writings of Galen were further discredited by Andreas Vesalius (1514-1564) who claimed that Galen had cheated, since his anatomical teachings were not based on dissection of the human body, but merely on that of animals. Impressive woodcuts illustrating his work *De humani corporis fabrica* revolutionized the teaching of anatomy. But to discredit Galen, Vesalius still had to use Galen's system of analysis, and although Galen's mistakes were noted, there was also anger at the disrespect shown towards the much-revered early doctor.²⁰ The new discoveries became part of the study of medicine, through the addition of subjects such as the preparation of medicines and practical anatomical skills, but Hippocrates and Galen were not dropped from the curriculum. One reason was that the study of these early Greek texts distinguished the university-trained physician from those who attempted to practice medicine without the lengthy and expensive theoretical training at higher institutions.

In Japan, Kaempfer taught not just medicine, but also astronomy and mathematics. These two subjects were also part of the physician's curriculum. Hippocrates had argued that astronomy was important for medicine, for the movement of the stars and with it the seasons "changed diseases."²¹ Mathematics was considered essential to quantify excretions and analyze the workings of the organs. Thus William Harvey's (1578-1657) discovery of the circulation of the blood and the function of the heart as a pump was the result of attempts to calculate the amounts of blood emerging from the heart during a certain time span and to match this with the frequency of the heartbeat.²² Descartes (1596-1650) challenged the Englishman's calculations of the heartbeat, but similarly saw the body in mathematical terms. For both, however, the importance of such medical investigation was theological, namely to prove "the hand of God in the world."²³

The wide scope of Kaempfer's university studies was based neither on the spurts of curiosity of an undisciplined mind, nor on the ideal of the *uomo universale*, the Renaissance man. It was, and had been for centuries, the standard fare of a tertiary-educated medical man. With his long theoretical training as

physician, Kaempfer distinguished himself from his later colleagues in the Dutch East India Company where only surgeons were required. The university-trained physician was more than a doctor; as scholar he frequently performed administrative and diplomatic duties for the nobility, and even William Harvey had acted as ambassador for his king.²⁴

After completing his studies at Kaliningrad, Kaempfer visited one of the most famous physicians of his age at Uppsala University, the Swedish scholar Olof Rudbeck (1630-1702), well known for the wide range of his scholarly activities. But Kaempfer did not stay long, for he was soon given the chance to travel beyond Europe.

THE BEGINNING OF THE LONG JOURNEY

Already one year before Kaempfer's birth, as a twenty-one-year-old student, Olof Rudbeck (Olaus Rudbeckius) had discovered the function of the lymph nodes, and with this discovery confirmed Harvey's theory of the circulation of the blood. By the time Kaempfer had completed his studies at Kaliningrad, Rudbeck had become well known throughout Europe for his anatomical research, and had already been teaching generations of students at the famous anatomical theatre, built to his personal specifications, which still exists at the Gustavium Uppsala University today.²⁵ Human dissections, traditionally performed by assistants pointing out organs while the professor simply read the relevant text, were considered by Rudbeck to be an essential skill of any physician, and he made them part of the medical curriculum. Surgery was no longer to be left in the hands of the barber-surgeons. Did Kaempfer go to Uppsala to improve his surgical skills? If he did, he might well have realized then that this branch of medicine held no fascination for him, for later he referred to the surgeon's knife in rather negative terms. In his publication of 1712, the *Amoenitates exoticae*, he contrasted the needle used for acupuncture with the surgeon's "sharp point of deadly steel dripping with blood" and continued: "Occidental surgery with its grim attitude towards human beings prescribes the savage employment of such instruments against men. This approach is an abomination for those whose hearts are guided by human kindness and compassion."²⁶ Kaempfer's approach to medicine was traditional, and his obvious dislike for surgical procedures predisposed

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him towards a sympathetic reception of Eastern medicine, which shunned anatomical investigation.

Rudbeck, however, not only insisted that the physician must master the skills of the surgeon, but also that he must not leave the preparation of medicines, still mainly herbal based, to the apothecary. He established Sweden's first botanical garden, still in existence today, though carrying the name of the botanist Carolus Linnaeus (1707-1778) who, half a century later, researched his famous system of plant classification here. Rudbeck's illustrated herbals, such as his *Catalogus plantarum* describing nearly two thousand plants, gained fame. For Kaempfer, the encounter with Rudbeck might well have been inspirational, later serving as a model for his own publication on Japanese plants, the *Flora japonica*. In the preface of his *Amoenitates exoticae*, which contained the *Flora japonica*, Kaempfer announced a further volume on plants titled *Herbarii trans-Gangetici specimen* (Examples of Plants from Beyond the River Ganges), with five hundred illustrations. But just like his *Planta Persica* (Persian plants), for which he had already designed the title page in Isfahan in 1685, this work was never published.²⁷ With only twenty-eight illustrations, the *Flora japonica* was minor in comparison with Rudbeck's works. Yet it was frequently cited and reproduced in various publications, being considered more reliable than the works of others who had reported on Japanese plants earlier, such as the gardener Georg Meister (1653-1713) and the doctor Andreas Cleyer (1634-1698). It also earned him praise from Linnaeus, who called him the man "with the greatest intellectual curiosity among all the travellers."²⁸

Aside from his medical research, Rudbeck was perhaps even more famous for his three-volume work *Atlantica*, which claimed that Sweden was the lost Atlantis and the cradle of Western civilization. Later, in his writings on Japan, Kaempfer would similarly speculate about the origin of the Japanese. Such scholarship concerned the human condition, and hence was part of the vast store of knowledge the university-trained doctor considered himself proficient to investigate. The rector of Uppsala University well

defined the ideal of the gentleman-doctor by the virtues he singled out for praise and the order he assigned to them, when he described Kaempfer as "a young gentleman remarkable on account of his noble character, great erudition, and excellent knowledge of medicine."²⁹ Rudbeck, whose medical genius had been recognized at an early age, however, seemed less impressed by the German visitor and simply wrote the warning: "Ability is begrudged by the nobility."³⁰ Perhaps Kaempfer had told him of his plan to seek employment at the court at Stockholm.

The king of Sweden, following the example of the Duke of Holstein-Gottorp of Schleswig-Holstein, was planning his second delegation to the Shah of Persia, and it is likely that Kaempfer had heard of the project already in Uppsala and hence proceeded to Stockholm to investigate his chances of joining the expedition. Nationalism had not yet swept Europe: the leader of the delegation was again the Dutchman Ludwig Fabritius, a man born in Brazil, who earlier had served as an officer in the Russian army. Since the Swedish court corresponded in German, and this was also the *lingua franca* at the Russian court, it was useful to employ a well-educated German for the task of secretary, and Kaempfer was appointed to this position. No doubt his medical knowledge was considered a bonus on this journey through regions where medical assistance, especially in its European form, would scarcely be available.

The earlier expeditions sent by Frederick III of Holstein-Gottorp in 1633-1639 had resulted in the then-famous travelogue of Adam Olearius (Adam Ölschläger, 1603-1671) a work contained in the library of Kaempfer's school at Lemgo.³¹ In Kaempfer's funeral sermon the pastor spoke of the deceased's early desire to see distant lands, and Kaempfer might well have been inspired by Olearius' account from childhood on.

The delegation travelled from Stockholm via Finland and present-day St. Petersburg to Moscow, where they were received by the eleven-year-old boy later to be known as Peter the Great. Travelling on the rivers Oka and Volga they reached the northern shore of the Caspian Sea at Astrakhan. The crossing of the Caspian to the southern port of Nisabad, however, was fraught with danger. A great storm had the delegation fearing for their lives, but in the end it was only the three German greyhounds destined for the Shah that drowned in the separate small vessel

Leaves of the ginkgo tree, copper plate print as contained in the fifth section of Kaempfer's *Amoenitates exoticae* (p. 813), the *Flora japonica*. The Japanese characters are correctly reproduced and the various pronunciations are explained in the text.

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in which they were accommodated. The agonies of the journey, however, did not dampen Kaempfer's scientific curiosity. Investigating the strange currents of the Caspian, which consisted alternatively of salt and fresh water, he lowered a cup into the sea to take samples, only to discover a strange bitter taste not previously mentioned by any traveller. His companions showed little interest in what Kaempfer considered a most exciting discovery, until finally his friend, the Swedish baron Carsten Klingensjerna, agreed to taste the water and confirmed that it was as bitter as wormwood or bile. Kaempfer concluded that the bitter taste was caused by black naphtha, a volatile petroleum issuing from the floor of the sea, as it could also be seen doing on land. Kaempfer was correct. Today the area is dotted with drilling shafts mining the black, evil-smelling liquid that had caught Kaempfer's attention. Unlike such discoveries today, it brought no profit for Kaempfer at the time, though together with the description of the "eternal fires" of the Baku peninsula, where petroleum of several colours and kinds were issuing from the ground, it later provided material for one of the ten essays making up his doctoral thesis and for his publication *Amoenitates exoticae*.³²

More lucrative was the medical work he did in the Azerbaijan city of Samaxi (also Shemakha), which at the time was the seat of the Median viceroy and which the delegation reached on December 19th, 1683. Just days before their arrival, the town had been shaken by an earthquake strong enough to leave behind crevices in the ground for the visitors to inspect. With the extensive injuries caused by the tremor, it was not surprising that the doctor was besieged by patients on arrival. He earned one hundred *Reichsthaler* and was given a fine white horse of equal value.³³ While it is difficult to estimate today what the amount of one hundred *Reichsthaler* represented, being the equivalent of a good horse, the sum must have been considerable. Yet he could have earned still more. The throngs wishing to see the doctor were so great and so insistent that they did not even permit him a walk outside the city gates. Kaempfer, however, was determined to inspect the mysterious "eternal fires" of the Apseron Peninsula some one hundred kilometres to the east, and, fearing that the delegation might be ordered to depart any day, he escaped from his patients in the dark of the night for a five-day excursion to investigate

this unique natural phenomenon. Travelling without official sanction, he and his small party were arrested in the city of Baku, but managed to escape. At dawn, Kaempfer boldly reconnoitred the city in the clothes of his servant and then continued on his trip to the petroleum springs. He took the time to make notes and sketches and wondered at the brightness the liquid produced in lamps, transported to cities in the gut of sheep. Familiar with Hippocrates' analysis of the environment, he could not fail to notice the effect this had on the physical wellbeing of the inhabitants. "Most of them are of bad health and look pale. Those who are otherwise healthy have at least an eye ailment," he noted.³⁴

Kaempfer's description of the "eternal fires" of the Apseron Peninsula, well illustrated with drawings, was published in his *Amoenitates exoticae* and became the first scholarly exposition of this natural phenomenon. Without embarrassment he describes here how he managed to escape his clamouring patients.³⁵ For him there was no question that priority should be given to research for humanity rather than to dressing the wounds of individuals.

In spite of such priorities, Kaempfer did heal people in foreign lands, and one might well ask how this 17th-century north German doctor who only two years previously had concluded his medical studies and embarked on this journey with little or no practical experience in treating patients, succeeded in healing people of an alien culture without the availability of the all-round drugs and disinfectants used in similar situations today.

A HEALER IN FOREIGN LANDS

Kaempfer worked with interpreters who translated the patient's complaints and then the doctor's instructions. His interpreters, however, were far from perfect, as the following episode illustrates. One month after having left Samaxi, the delegation reached the city of Rasht, twenty-four kilometres south of the Caspian Sea, for a five-day rest. Here a patient with an eye ailment was brought to Kaempfer who sought to heal him with a purgative. The interpreter, however, mistranslated Kaempfer's instructions, and the patient put the powder into his eyes instead of imbibing it. But the patient was healed anyway, Kaempfer noted.³⁶

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Kaempfer's use of a purgative to treat an eye ailment shows his reliance on traditional Hippocratic medicine, in which the correct environment and diet, and with it the correct functioning of the digestive system, were considered fundamental. Preventive medicine, though modern-sounding, was considered important in Kaempfer's time. "If people lived as nature demanded, doctors would be out of work," wrote a fellow doctor in Moscow in Kaempfer's autograph book.³⁷

Yet in the case of the patient with the eye ailment, when directions went amiss and the purgative was put into the eye rather than being imbibed, the patient was healed all the same. How could this happen?

One likely explanation is that the complete trust the patient put in the foreign doctor induced the physical healing process. His long years of university training had produced a man confident of his erudition, who projected this aura of self-assurance to his patients. Part of this process might well have been the doctor's penetrating gaze, for Kaempfer's autograph book has two entries in Persian referring to the power of the eyes.³⁸ Yet any confidence Kaempfer might have had in his medical skills was severely shaken once he exchanged his service to the Danish king for a position as surgeon to the Dutch East India Company, and came to serve where the doctor was needed most: namely, in "the hell of Bandar Abbas."

ON THE WAY TO BANDAR ABBAS

On March 29th, 1684, the delegation of the King of Sweden arrived safely at Isfahan, the residence of the Shah of Persia. The Shah, however, was in no hurry to see the Swedes, or any other of the many delegations from all over the world that were awaiting an audience. The delay gave Kaempfer plenty of time to research the area and to make friends with some of the most learned men residing at the court. Some of his best drawings of buildings date from this period.³⁹ Leave was finally granted to the Swedish delegation at the end of 1685, but Kaempfer had already decided the previous year that he was not going to return to Europe. His correspondence gives insight into the determination and even desperation with which he sought employment that would permit him to travel further East.⁴⁰ Finally such employment was obtained when a surgeon of the Dutch East India Company

died, and Kaempfer was accepted as replacement.⁴¹ Kaempfer, it will be remembered, had received training as a surgeon during his youth, before he had commenced his university studies. He was familiar with the work but after his university training as physician, it was a big step down. Though he obtained an official contract and salary only from August 1686, he considered himself employed from the end of 1684, and was ordered to leave Isfahan on November 21st, 1685, accompanying a caravan transporting money to the Gulf of Hormuz.⁴²

The journey permitted Kaempfer a three-day visit to Persepolis, the fabled ruins of the ancient capital of the Achaemenian kings that had been sacked by Alexander the Great, and in the brief period available to him, he made some of the earliest detailed drawings of the remains and their inscriptions.⁴³ After this detour, he caught up with the caravan at Shiraz, "the city of poets and wine."⁴⁴ He also managed to investigate the use of substances that have become part of modern life, but whose damage to health Kaempfer already perceived at the time.

COFFEE AND NARCOTICS

When, on December 13th, 1685, the caravan stopped for a day of rest on account of heavy rains, Kaempfer visited a public coffeehouse to observe the brewing of coffee. Persia, he noted, had as many coffeehouses as Germany had wine taverns and beer gardens, but in Germany coffee was still mainly known as a medicine. The Dutch East India Company had already imported their first large shipment of coffee beans twenty years earlier, but it was only after 1690 that it became worthwhile to make coffee a regular item of trade. In Germany it was only at the beginning of the 18th century that coffee started to be used as an ordinary beverage, and hence Kaempfer's description of its preparation still had novelty value.

The coffee beans were roasted until they were smoking and nearly black, and then ground with mortar and pestle, "the longer the better." It was the task of day labourers to grind the beans to a fine powder, which they did sitting alongside the road and swinging the heavy stone pestle high above their heads with much toil and sweat. A spoonful of the freshly roasted and ground powder was boiled gently "five times the length of the Lord's Prayer." At that point, two spoonfuls of

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cold water were added to the boiling liquid “to let the oil rise,” and after a further duration of three Lord’s Prayers, the beverage was ready, passed around in small cups and drunk as hot as possible.

Kaempfer noted that coffee had a drying effect and therefore was to be recommended to people suffering from phlegm. He warned, however, that if drunk on a regular basis it would lead to a dry and cold, if not melancholic, state of mind. He made this judgment observing the local “gaunt, black-bearded coffee gluttons” and called this drink, consumed regularly today by one third of the world’s population, “a depressing coal-black beverage of sombre character.”⁴⁵

Kaempfer was somewhat more positive about the effects of herbal intoxicants. He considered their extensive use in Muslim countries to be the result of the prohibition of alcohol, and in Persia cited nicotine, white poppy and cannabis as those most frequently employed. Acknowledging that “we Europeans shudder at the mere names of these plants,” he argued that it was

only “timidity and scruples” that prevented their wider application in the West, and that the Orient, which had much longer experience with these substances, had learned to use them effectively as drugs. He even asserted that “small doses or somewhat larger ones, after habituation, far from injuring a person’s health with any malady, relieve the animal spirits from all darkness, the body from pain and the mind from depression; they very greatly exhilarate.”⁴⁶

This rather positive assessment of narcotics was most likely based on his own experience. At a garden party outside Bandar Abbas where Europeans and Muslims from Bengal were gathered, the latter took lumps of some narcotic instead of the alcohol the Westerners indulged in. Kaempfer was anxious to taste and experience the effect of the substance, and, taking a good mouthful, found that soon he was “suffused and replete with a certain inexplicable joy” the likes of which he had never before experienced. Riding home, he seemed to be “flying with Pegasus through clouds and rainbows,” and the normal dinner at the

The harbour of Bandar Abbas at the Gulf of Hormuz with the city Kaempfer describes as the “location most closely related to hell”. In the background the mountains where the local population and also Kaempfer sought refuge during the heat of summer (*Amoenitates exoticae*, p. 759).



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Dutch trading post was like a meal “with the gods themselves.” Unlike alcohol, there was no hangover the next day, only the remembrance of great joy, though also a strange fear of rushing toward the right side.⁴⁷ Later we see Kaempfer using laudanum, a solution of opium diluted in alcohol, as a medical treatment; but in spite of this obviously pleasurable experience, he does not seem to have continued taking narcotics for recreational purposes. He describes in some detail the preparation of opium and cannabis, and elaborates on the reputation of these plants for bringing pleasure and joy, adding that Europeans are wrong in asserting that only a small dose leads to a horrible death. Yet as a doctor he considers it his duty to warn of addiction and its consequences: human beings resembling “blocks of wood.” Yet he saw no need to describe the evils of addiction, as “medical books are filled with them.” The purpose then of his relatively positive description of the use of narcotics was not to advertise their normal use, but to provide some balance for what he considered the excessively negative treatment of the subject in the medical literature. Addicts were brought to him and he was promised one hundred gold pieces for a cure, but he knew full well that this was impossible.⁴⁸

In contrast to his attempt to lighten the fears of the Western medical profession about the moderate use of opium and cannabis stands his warning about the harm of nicotine, until recently much ignored by a large number of that same profession. Even in the late 17th century Kaempfer noted the “astounding swiftness” with which the “practice of smoking captivated the entire human race.” For him there is no doubt that tobacco must be classified as poison. This was not only indicated by the “vertigo, anxiety, and vomiting” it induces in those unaccustomed to it, but also by the experiments of his contemporary, the Italian Francesco Redi (1626-1697), which showed that a drop of tobacco oil in a wound of a young fowl killed the animal, and was similarly harmful to people. He himself had observed porters smoking leaves through a perforated ox horn dropping like epileptics to the ground, “overflowing with mucus and foam.” Yet, in spite of tobacco's poisonous nature, once the body became accustomed, exhilaration was felt in the brain.

To lessen the harmful effects of nicotine, the Persians purified the smoke with water by using a device known as a hookah, an illustration of which

Kaempfer included in his *Amoenitates exoticae*. The Turks, Chinese and Japanese, like the Europeans, used a pipe. Only “the dark heathen smoke without any device. The leaves are rolled in the shape of a cone whose base is lighted and whose apex is held between the lips and sucked.” Kaempfer noted.⁴⁹ He would no doubt have been surprised to learn that this practice of sucking on the burning leaves without much attempt to reduce their harmful substances spread across the world, and that it took the medical profession some three hundred years to agree on the poisonous nature of tobacco.

THE HELL OF BANDAR ABBAS

When the party finally entered the Dutch residence at Bandar Abbas on December 29th, 1685, they first discovered “the black body of an old assistant from among the servants, the distressing product of this hellish air.”⁵⁰ As someone trained in the importance of good air and water to sustain health, Kaempfer was devastated, describing the city as “the world's most inhospitable, driest, hottest, most poisonous, most unhealthy, most cursed and the location most closely related to hell”⁵¹ He believed that it had “the hottest and most injurious climate in the whole of Asia” not because of its tropical location, but because the area was extremely dry, full of salt and sulphur, hot and often harmful springs and arsenic vapours.⁵²

Bandar Abbas had the very climate that Hippocrates once described as most harmful to the body, so it is not surprising that Kaempfer was convinced that here the doctor's skills were of little use, and that the only way to escape its effects would be to escape the location. When Kaempfer mentions sulphur, he refers to the definition of the alchemists, as sulphur was only defined as a chemical element in 1777 by Antoine Lavoisier. Paracelsus had described it as one of the *tria principia* (three principle substances) together with *sal* (salt) and *mercurius* (mercury), elements detected in the process of burning, in which the ashes were seen as salt, the smoke as mercury, and the flame as sulphur.⁵³ For Kaempfer, the sun, “burning beyond endurance” (*ardet plusquam tolerabilis*),⁵⁴ poisoned the air with sulphur. His reference to arsenic vapours, in turn, is likely to have been guided by Johann Schröder's popular *Pharmacopoea medico-chymica*, 1654, which provided the first authentic

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report of the free substance of arsenic produced by heating its oxide with charcoal.⁵⁵

When Kaempfer had sought employment with the Dutch East India Company, his aim had been to explore the world, and not to risk his own health attempting to treat Dutch merchants gambling their lives in return for monetary profits. His great anger at the Company's insistence that the trading post remain staffed during the deadly summer months, when the locals escaped to mountains, found public expression in his *Amoenitates exoticae*. In a chapter on the harvest of the date palm, he strays from the subject and describes at length the terrible effects of the climate. Comparing the burning sun to the Roman goddess of funerals, Libitina, he continues:

"A Dutch soldier returning around lunch time from the garden of Nabam, which we own a mile away from here, enters Martha's wine tavern. Hardly has he saluted her that, complaining about dizziness, he becomes unconscious and dies before I manage to get there to help him. Some days later a young Englishman, a scribe of a trading company, enters our house after having crossed the region outside the city, and suddenly falls to the floor, dead. The same happens at different times to two coloured porters hardly had they returned from vacation to load the ships. A sailor, thirstily returning from inspection, lifts a tankard to his lips and, drinking, drops down dead. Another one, tired after being in the sun, passes on to eternity in his sleep. A third person breathes his last as he gets off his donkey after having had a cold bath in the above-mentioned garden."

But it was not simply the heat that killed. The water was poisoned too. As water levels sank in the canals in the heat of summer, maggots thrived in the water. Worst of all were the threadworms "which appear in between the muscles of those drinking the water, grow to enormous size and have to be removed from festering wounds."⁵⁶

Kaempfer blames constant sweat for the appearance of what the local surgeons called furuncles, but which, according to his description, appear to be the more violent form of affliction known as carbuncles. "They plague the human body cruelly" he notes. But worst of all was that treatment only increased their number: "I counted more than one hundred on the

very small and sick body of our admiral [Lykochthon], and as I lanced them daily, my experience resembled that which the poets report about Hydra. For within a few days, as if growing under the knife, they increased to three hundred and with their vast numbers mocked any attempt to count them."⁵⁷

That the efforts of the doctor were not totally in vain and that some people recovered from the dangerous fevers of the region can be gleaned from Kaempfer's correspondence describing how he cured the fever attack suffered by an acquaintance, even though the man neglected his instructions and then had a relapse from which he was now recovering after renewed treatment.⁵⁸ The Dutch trading post at Bandar Abbas certainly needed the doctor, but the doctor himself fell sick and feared for his life.

Kaempfer detailed the course of his suffering in a letter to the man that employed him, the head of the Dutch trade in Persia, Justus van den Heuvel, who himself had moved to the more healthy climate of Isfahan. Of interest are Kaempfer's references to the works of Hippocrates and Galen, perhaps designed to impress upon the recipient that he was, by virtue of his extensive training, very different from the surgeons normally employed by the Company. Since the description of his own illness and the remedies suggested provide first-hand information on the kind of medicine Kaempfer practiced, I cite it here at length.

After pleading that Van den Heuvel carefully and compassionately read his letter, Kaempfer continues:

"My condition is such that illness prevents me from fulfilling my duties, and I cannot live up to what Your Magnificence expects from me. There can be no doubt that the poisoned air continually damages my health, life, mind and wits so that since my arrival I have not enjoyed a single hour free from the symptoms of illness. First I suffered for two months from the kind of dropsy known as tympanite.⁵⁹ But it was necessary to hide this from my patients as best as possible, so that they would not lose trust in [the abilities of] their sick doctor, and as I was fully living up to my duties, I finally recovered from the illness. But hardly had I escaped this evil that in early June I fell victim to another, suffering an attack of fever, which we refer to as a malignant, double three-day fever. In an effort to cure it, I analyzed my

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urine, and found that I was suffering from and was dehydrated by hectic fever, and also suffering from a type of acute consumption known as phthisis. This pulmonary disease suddenly got so bad that it virtually constricted my throat and stopped me getting any air, so that even lying down I could barely breathe. Thus I am lying awake during the nights tortured by a thousand anxieties, unable to stop the wanderings of my mind. For if this develops into pneumonia, that is, an inflammation of the lungs where all illnesses of the chest combine, then with this [lack of] strength and in this hot air it means immediate death.

Already earlier I had thought about the fact that Galen sent all those suffering from phthisis to a different climate, but the symptoms of approaching death and the lack of strength whereby the comatose body could come to an end even within the space of a single day, seemed to speak against this. Even in extreme [cases], the most extreme [solution] cannot be ignored, as also according to Hippocrates [any procedure] that provides a glimmer of hope must be given preference over certain death.”

Kaempfer continued to explain that remaining in the unhealthy air of Bandar Abbas was akin to committing suicide, and that he had asked Van den Heuvel's deputy for permission to leave for the cooler climates of the nearby mountainous region. This permission, however, had been refused. Kaempfer argued that he could not look after patients in this condition, and that the two surgeons on Dutch ships in the harbour could take his stead. One of them was asked for an opinion on Kaempfer's illness, and after examining his pulse and urine the surgeon came to the conclusion that Kaempfer would not survive in the heat. Nevertheless, the desired permission was not forthcoming. It was argued that even if he could not attend upon the sick, there was still no reason to leave, and that even if he died, he would be in good company as many good men had come to breathe their last in Bandar Abbas. Kaempfer claims that after much argument he finally was grudgingly given permission to leave, but the gist of his long letter is that he was in fact retrospectively seeking sanction from Van den Heuvel (as head of the Dutch trade in Persia) for his absence from his place of duty, while at the same time

trying to persuade him that, unable to serve in the hell of Bandar Abbas, he should be posted elsewhere as soon as possible.

Kaempfer, it appears, had recovered relatively quickly once he escaped the poisonous climate. He relates to Van den Heuvel in some detail how on the second night an abscess in his chest burst with so much pain and spells of unconsciousness that he was unable even to call his servant—in other words, nobody witnessed the event. When Kaempfer woke up the next day, his condition had improved, and he was able to complete the five-day journey to the mountainous region of Buguun, where he was now recuperating and writing this letter.⁶⁰

Kaempfer later published a description of this trip to the mountains in his work *Amoenitates*, permitting us to follow the course of his journey. On account of the heat, the small party travelled in the dark of night, when only the smell of cultivated plants gave an indication of nearby settlements. Eventually the landscape changed, and green valleys with palm forests and crystal clear water replaced the barren hills. The heat subsided and they started travelling during the day. Though he began his journey crouched in a basket fastened to the side of a camel, by now he was again able to ride a donkey. On the sixth day they reached their destination, the village of Buguun, some seventy-five kilometres north of Banda Abbas in the Kuh-e Bonna mountains. “The location of the village delights the eye with its attractiveness and splendour ... [and] unfamiliar natural scenery.”⁶¹ It was a place where others also sought respite from the heat of the Gulf, and he was soon joined by a young countryman from Holstein, a gunner on one of the ships in the harbour.

In a letter addressed to his brother in November 1687, Kaempfer is explicit with regard to the horrors of the climate, and complains not just about the unbearable summers, but also the winters, where the humidity is so high that a knife becomes covered in rust in the space of one night. He mentions lying unconscious with a high fever and suffering from dropsy, but also mentions some of the advantages of this hardship posting. He writes: “As much as the heat and my duties permit, I find enjoyment every day in the most curious natural phenomena, which have received no attention since no educated person could ever survive in this place, and are left to me as rewards for my pains.”⁶²

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Earlier in his letter Kaempfer had explained that he was employed in the lowly position of surgeon, and the above statement confirms that he considered himself very different from other surgeons in the employ of the Company who were present at Bandar Abbas: they obviously did not qualify as “educated persons.” The expression is inserted in Greek letters, hence nobody without a classical education would be able to decipher this rather unflattering statement.⁶³ In spite of his many complaints about the location, Kaempfer was delighting in the chance to research matters about which other scholars knew nothing. Indeed, the research conducted at Bandar Abbas would later make up a significant part of his doctoral dissertation submitted to Leiden University on his return, and would furnish material for a large section of his *Amoenitates* of 1712, the only volume he managed to publish during his lifetime.

In contrast to his attempt to lighten the fears of the Western medical profession about the moderate use of opium and cannabis stands his warning about the harm of nicotine, until recently much ignored by a large number of that same profession.

Again, while recuperating in the mountains at Buguun, he soon was well enough to join a party of hunters on an excursion of three days and two nights to hunt the famous bezoar goat, in whose intestines the curious bezoar stone was found, as well as to search for the equally mystifying mountain balsam, a liquid oozing out of rocks, different from but somewhat related to the much treasured “mummy” which was under strict government control and hence unobtainable. This was not an easy undertaking, since it involved traversing mountainous regions where bears and tigers roamed, at altitudes so high that even in August there was ice

on the ground. “Very uncomfortable without lighting a fire,” Kaempfer noted. A large part of the way, the party had to walk under difficult conditions, “frequently injuring knees and hands.” To obtain the balsam they had to enter “narrow caves, crawling, with swarms of tiny mosquitoes attacking the eyes, nose and throat, making breathing difficult.”⁶⁴

Kaempfer was prepared to endure considerable difficulties for the sake of research that was impossible elsewhere and that would secure him fame in Europe. He was not prepared to sacrifice his time and health simply for the sake of practicing medicine. A disinclination to spend time and effort on research that would not lead to this goal can also be sensed from his correspondence, when others, often high-ranking, ask him to do research for them.

In November 1687, for instance, Kaempfer received a long request from a fellow company employee, the scholar De Jaeger, now at Batavia, detailing the many plants, their seeds and descriptions, that he would like Kaempfer to supply from the area around Bandar Abbas. De Jaeger had himself lived in Persia, had done extensive botanical research, and was now being asked by prominent scholars in Europe, including the Royal Society in London, to supply further details. Kaempfer stood in De Jaeger’s debt, for only three years previously he had pleaded for De Jaeger to recommend him for employment with the Dutch East India Company.⁶⁵ But Kaempfer did not fulfil de Jaeger’s request. In June of 1688, just before leaving Bandar Abbas, he informed De Jaeger that not only had he been too busy preparing for his departure, but also that, unfortunately, a large swarm of grasshoppers had eaten every single plant.⁶⁶

Kaempfer might well have been fearful that the information he supplied would appear under De Jaeger’s name, and such fears were not altogether unfounded. After his return to Europe, some of his drawings of Persepolis appeared in the *Philosophical Transactions* of the Royal Society of London without giving him credit. Kaempfer had entrusted copies of these drawings to the influential mayor of Amsterdam, Nicolaas Witsen, who had quickly passed them on to a certain Dr. Martin Lister of the Royal Society without, however, mentioning the name of the author. Lister then published Witsen’s letter together with the drawings in the *Philosophical Transactions* of May, 1694, without any reference to Kaempfer.⁶⁷

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INDIA

Kaempfer was finally permitted to leave Bandar Abbas and boarded a vessel bound for India on June 30, 1688. But the country where he had dreamed of following in the footsteps of Alexander the Great disappointed him. One reason might well have been that his visit was limited to trading ports where first the Portuguese and now the Dutch were leaving their imprint, and traditional Indian culture had been much compromised. Though Kaempfer's expectations were not met, the country provided the impetus for further medical research and his work there has furnished us with the only detailed material on Kaempfer's practice as a doctor.

Kaempfer spent six months on the Malabar coast, where, in the city of Quilon, the Dutch governor had for some time been suffering from a debilitating disease. Kaempfer's formal write-up of the case, *Consilium medicum* (medical advice), with his description of the illness (*casus*), diagnosis (*resolutio*), prognosis (*prognosis*) and finally treatment (*curatione*), again provides testimony of his close adherence to the writings of Hippocrates and Galen.⁶⁸

Like these classical authors, he first describes the face of the fifty-two-year-old patient—"full and sallow"—and then proceeds to the symptoms suffered during the past fifteen years. An important part, following Hippocratic tradition, is a detailed analysis of the flow and nature of urine. An analysis of the pulse, breathing, the state of the limbs, sleep patterns, the state of the patient's mind and finally the pains described by the patient follow. When Kaempfer encountered the patient, the illness had reached a crisis point, with agitation, disjointed speech, trembling of the limbs and a fixed stare all suggesting that sudden convulsion and death might soon occur. Apparently the Dutch East India Company did not keep a Western doctor on the Malabar coast, for Kaempfer refers to the "visionless" treatment of the Indian doctors over many years before he proceeds to offer his *resolutio*, his diagnosis, of this "desperate case."⁶⁹

His diagnosis is ulcerated kidneys and severe weight loss (*cachexia*). Kidney disease was a subject well treated in Hippocratic literature, being relatively easy to diagnose through urine analysis, which Kaempfer also engaged in with great care at different times of the day and night. The various aches that can result

from kidney disease are explained in Hippocrates' *Internal Affections*, and these descriptions matched the symptoms of the patient.⁷⁰ Thus Kaempfer was able to explain in detail how kidney disease was causing the many pains tormenting the patient, and concluded that the case was "truly a lesson in the effects of the kidneys." In the first instance he prescribed a very hot concoction of boiled ginger to lessen the inflammation. The condition had led to severe weight loss, exasperated by bad water, bad diet and alcohol.⁷¹

The next section, *prognosis*, starts with the warning that no prognosis of healing could be given unless the patient had trust in the doctor and agreed to observe the strict diet and the long course of medication he ordered. To back up his demands, Kaempfer refers to the "Divine Elder," Hippocrates, and paraphrases the first of the latter's *Aphorisms*: "It is not enough for the physician to do what is necessary; the patient and the attendants must do their parts as well ..."⁷²

Prognosis, both Hippocrates and Galen had warned their students, was dangerous. The physician was advised against an optimistic prognosis in case the patient took a turn for the worse and the doctor was blamed for being wrong. On the other hand, confidence in recovery was considered important, for it related to one of the so-called six non-naturals, the passions of the soul, the state of which affected the body.⁷³ Kaempfer's prognosis is correspondingly vague and long-winded. The severe weight loss, he predicts, could be steadily improved as long as the patient did not practice concealment, no doubt a reference to secret indulgence in alcohol and unsuitable foods. But the long-standing ulcers of the kidneys were indeed a challenge. Kaempfer did not want simply to reduce the symptoms temporarily with oil and wax until death brought final release. Instead he wrote that the doctor is taught that sometimes nature produces miracles, and was only prepared to predict that the attacks and pains would lessen.

As to the treatment, Kaempfer's initial goal was to reduce the pain and clean out the intestines, and the first night he gave the patient a draught including mastic, cinnamon and laudanum. But although he himself criticized the Western doctor's excessive fear of narcotics, he carefully substituted a powder for the solution of opium the next day. He also administered a draught of absinthe (wormwood) salts, and oil of aniseed and juniper. Further he used various oils for

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external treatments, including mustard and camphor. Instead of permitting the patient to drink the local water of the river, he ordered the preparation of boiled barley water with the addition of herbs including china root (*smilax China*), a rhizome used in China since ancient times and, once again, cinnamon. Kaempfer's extensive use of cinnamon is not surprising, for the tree was native to Ceylon and the Malabar coast, and hence cheaply available, while extremely expensive as import in Europe where its anti-bacterial qualities were valued. Barley water was, of course, already well known as treatment of a great variety of illnesses in Hippocratic times.⁷⁴

The patient, the document states, recovered quickly. During a journey out of sight of the doctor, however, he substituted beer for the barley drink, and pork and salt-cured fish for the prescribed diet, and suffered a relapse. The doctor was quickly recalled and re-instituted the prescribed regime.

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Kaempfer continues his *consilium* by discussing the patient's extreme weight loss (*cachexia*), and correct diet as a means to remedy it. Here again he refers the reader to Hippocrates' *Aphorisms*, including 2:38, which states, "with regard to food and drink, it is better to take something slightly less suitable but pleasing than something more suitable but less pleasing."⁷⁵ Perceiving the difficulty of keeping his patient on a strict diet, Kaempfer obviously felt the need to make concessions. The final section of the work explains his treatment in terms of the humoral theory as it applied to this specific case.

With this Latin *consilium*, in the pattern established by Galen and used ever since by university-trained physicians, Kaempfer gave testimony to his extended study of classical medical literature and theory,

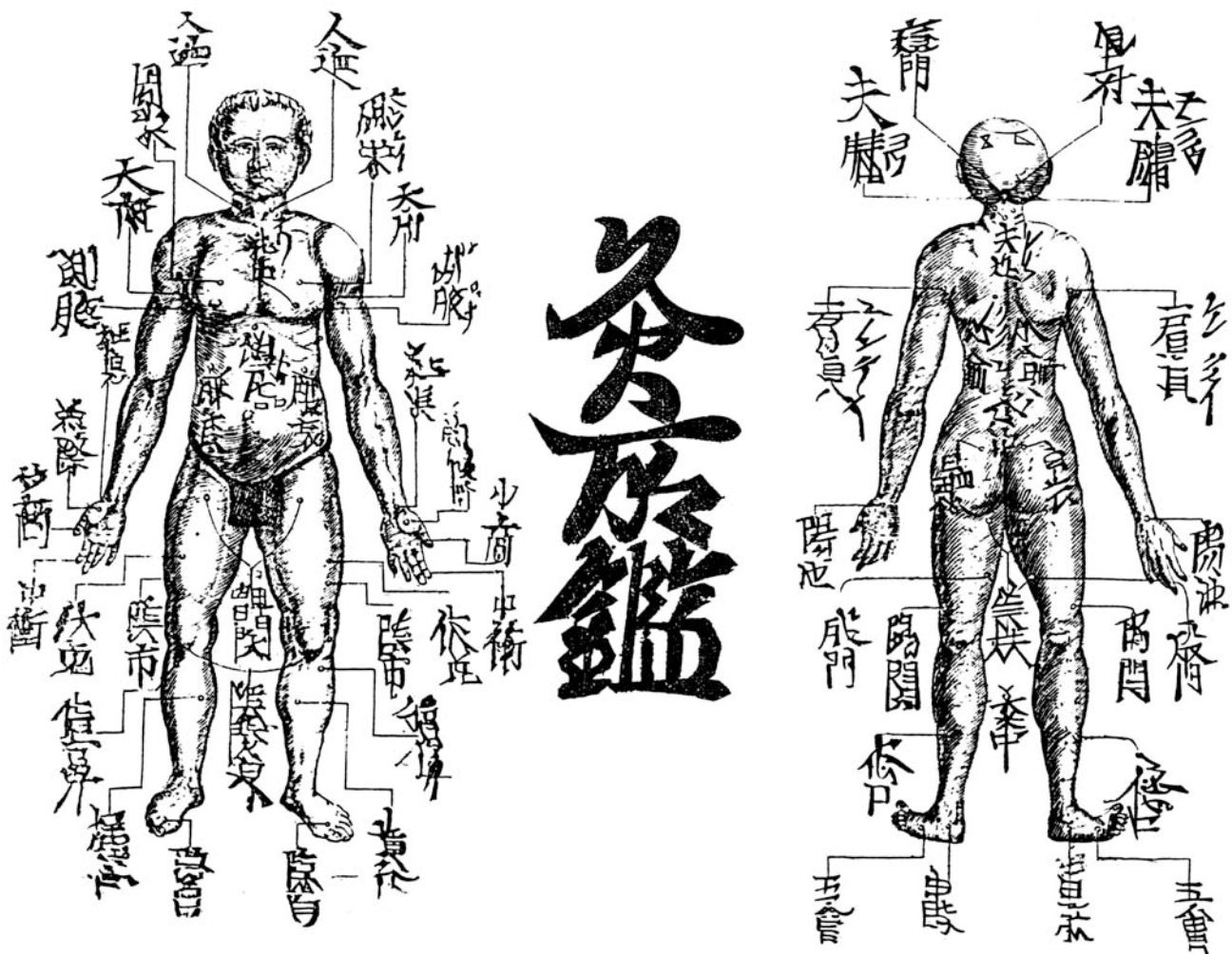
and the benefits that such academic analysis brought to the patient in cases others had failed to cure.⁷⁶ The grateful Dutch governor of the Malabar Coast offered Kaempfer employment as master surgeon, and so did the Dutch commissioner of the Coromandel Coast.⁷⁷ Kaempfer, however, was not satisfied with the post of a mere surgeon in a country that offered no other attractions, and declined.

Nevertheless, before leaving India he produced several more pieces of research, two of which came to form part of his medical thesis submitted to Leiden University as well as appearing in his *Amoenitates exoticae*. In the preamble to these reports he argues, in line with Hippocrates, that each region has its native diseases due to differences in the soil from which the water originates, though he later contradicts himself by showing that one of the diseases he considers endemic to the Malabar coast also exists in Japan.

The first illness, which he calls "Andrum, or Hydrocele," shows itself as an excessive accumulation of fluids in the scrotal sac that surrounds the testes. In Hippocratic fashion, Kaempfer attributed it to the water "and the unwholesome vapours from the wet depression of the land."⁷⁸ The illness is now diagnosed as lymphatic filariasis caused by parasitic worms (helminths). Though described over three hundred years ago by Kaempfer, no effective cure is as yet available. At the time of writing the World Health Organization has assembled an international panel of experts in Tokyo to promote research and development of a drug affordable in the economically depressed regions in which this disease normally occurs.⁷⁹

The second disease Kaempfer describes is mycetoma, which is popularly known as Madura foot or St. Thomas's Bean, because it was frequent among the St. Thomas Christians. In reference to the native pronunciation, Kaempfer calls it "perical" and describes it as "Ulcerous Hypersarcosis of the Feet, or Pedarthrocaces, an Indigenous Disease of Malabar." Kaempfer's essay is the earliest Western description of this disease, which is now recognized as fungal.⁸⁰ He observed the same disease in Ceylon, as well as in Ômura, an area of south-western Kyushu, Japan. In the latter country it was treated with moxa. This inspired Kaempfer to close the essay with yet another citation from Hippocrates: "If pain has located itself in any one place and settled there, and medicines have not been able to drive it out, cauterize the location of the pain,

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Points used for moxa treatment. Kaempfer reproduces illustrations from the work *Kyū sho kagami* [Perfect Pattern of Moxa Points]. *Amoenitates exoticæ*, p. 601.

wherever it may be; cauterize with raw flax.” Kaempfer apparently quotes from memory, because the passage he refers to, *Internal Affections* No. 30, slightly differs.⁸¹

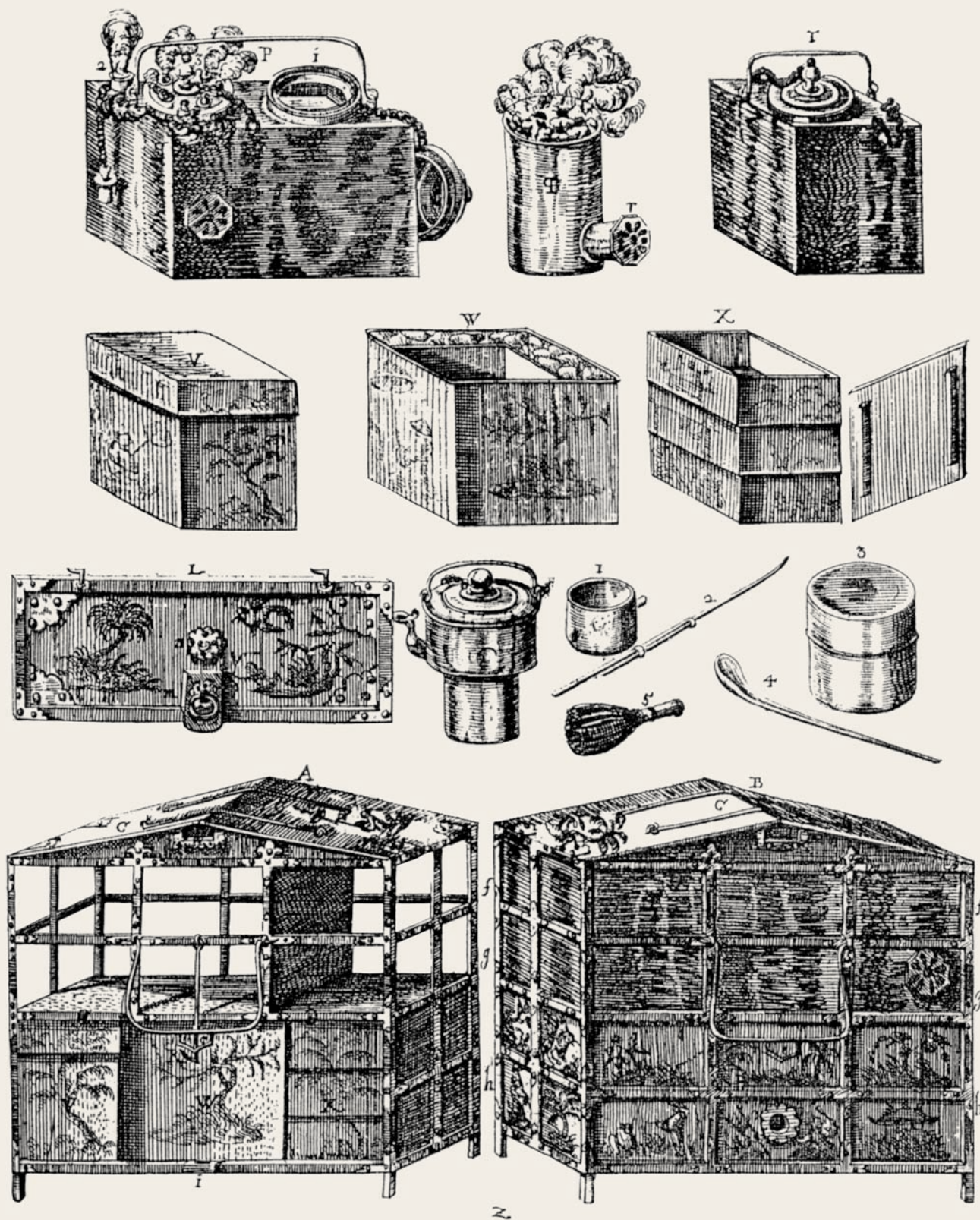
BATAVIA AND BEYOND

The very learned doctor was well-versed in the extensive writings attributed to Hippocrates. Such learning, however, was not able to secure Kaempfer a position at Batavia, the headquarters of the Dutch East India Company in the East. Two medical positions were to be filled at the hospital, but Kaempfer was given neither.⁸² Instead he was sent to perform his duties on an island in the harbour of Batavia, the Onrust, where ships were repaired with much noise. There was no light at night, and not even a table for writing.⁸³ Neither

Herbert de Jaeger, his patron Wybrand Lycchthon, nor his countryman Andreas Cleyer, who had been actively expanding medical facilities at Batavia, could secure him one of the medical positions he desired. Kaempfer blamed this failure on the envy of the chief surgeon: “The man is otherwise not bad, but when it comes to scholarship, he is like the fox who lost his tail and then tries to convince his comrades that this is an advantage. Under such a tutelary deity it is impossible for a man dedicated to matters of higher culture to succeed.” Kaempfer complained to the influential mayor of Amsterdam, Nicolaas Witsen.⁸⁴

The man in charge of medicine at Batavia was a surgeon, lacking the theoretical university education—the fox’s ornamental tail—of which Kaempfer was so proud. No doubt seeking someone with a commitment

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to practical medicine, the chief surgeon considered such university training not a plus but a minus. Kaempfer, in turn, failed to appreciate that the Company was prepared to pay only for the practice of medicine, not for research. In Bandar Abbas he had escaped to the cooler regions of the mountains when the doctor was much needed in the port, permitting him to assemble a major body of research. This had attracted criticism, but Kaempfer apparently did not understand that putting his medical duties second to his research was unacceptable. In the letter to Witsen he states quite frankly that the reason for wanting a post at Batavia was that it was a good location to write up the first part of his journey through Russia to Persia. Kaempfer, it seems, harboured no doubt that a man as well-studied and cultured as Witsen would understand that the nitty-gritty of medical work should take second place to preparing a publication about foreign lands. For Kaempfer, accepting a lowly position as surgeon for the sole purpose of dedicating his energies to the study of foreign cultures was not problematic, and he failed to see why it should be for anyone else.

Kaempfer had the good fortune to encounter someone who assessed his talents correctly. This was Johannes Camphuis, the outgoing Governor-General of the Dutch East India Company at Batavia, well-known as a Japanophile. He recognized in Kaempfer someone “combining extraordinary learning with superior powers of observation” and sent him to Japan to apply his scholarly talents to compiling a work describing the secluded country.⁸⁵

KAEMPFER IN JAPAN

By the time of Kaempfer's arrival, Japan had been acquainted with Western medicine for nearly one hundred and fifty years. The early missionaries had opened hospitals and apprenticed Japanese Christians to serve there. After the missionaries had been expelled, the Japanese sought knowledge of Western medicine from the Dutch. As contact with foreigners was strictly limited, it fell mostly to the interpreters to observe their medical treatments. Ironical for Kaempfer was the fact that the teachings of a mere barber-surgeon, Casper

Schambergen, resident in Japan 1649-1651, had led to the establishment of a whole branch of Japanese medicine, the *Kasparu ryû* (Casper-style).⁸⁶

Kaempfer, too, was assigned a young Japanese to whom he would teach medicine, but the young man later became famous not as doctor but as interpreter. To make communication possible, Kaempfer had first to teach him Dutch, which he did with such thoroughness that the young man—only some years ago identified as the interpreter Imamura Genemon Eisei—surpassed all his colleagues. When the Italian priest Sidotti was caught entering the country illegally to preach Christianity, Imamura was even able to interpret for the priest, since he had studied Latin under Kaempfer.⁸⁷ The purpose of such meticulous language instruction was of course not simply to transmit knowledge, but to receive information in return. Though he had taken the obligatory blood oath not to pass any knowledge about Japan to the foreigners, the grateful young man risked his life to provide his teacher with the information he requested. Also, with regard to other people he was permitted contact with, Kaempfer skilfully bartered his extensive knowledge as physician for information about the secluded country. “For while I served them willingly and without charge in my profession with medicines, and with a little instruction in astronomy and mathematics (while cordially serving them European liqueurs), I questioned them about local matters, nature, and secular and spiritual topics with total freedom, and nobody ever refused to inform me to the best of his knowledge....” Kaempfer later wrote in the introduction to his work on Japan.⁸⁸ Further, he gave free medical treatment to the *otona*, the official responsible for the man-made island in the harbour of Nagasaki on which the Dutch were cloistered. In return, the official permitted Kaempfer's student to stay with him for the whole duration of his two years' stay, and even to accompany him on the annual journey to Edo (present-day Tokyo) to pay respects to the shogun.⁸⁹

Kaempfer described his twenty-four-year-old student as “learned in Japanese and Chinese writing and science.”⁹⁰ Akin to university-trained doctors in Europe who had to familiarize themselves with classical texts, Japanese doctors had to master ancient Chinese Confucian-inspired texts. Like their Western counterparts, they were recognized as being both scholars and doctors (*ju*, lit.: Confucian and doctor). In Japan where merchants ranked low on the social scale,

Japanese tea utensils (*Amoenitates exoticae*, p. 629). The small portable piece of furniture shown from the front and back is known as *daisu*. Kaempfer's text provides a detailed description of the various small boxes and utensils it contains to perform the tea ceremony.

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Kaempfer was recognized as standing above his fellow company employees. His wide scholarship, considered a hindrance in Batavia, was much appreciated here.

Kaempfer's two years' stay in Japan fell during the controversial government of the fifth Tokugawa shogun, Tsunayoshi. As I have shown elsewhere in detail, this ruler was much interested in scholarship, and before acceding as shogun had curiously eyed the Westerners as they were waiting for their audience in the corridors of Edo castle.⁹¹ Two years after becoming shogun, he supplemented the formal audience of the Dutch director with an informal one, at which all accompanying foreigners appeared. Shielded from sight by a bamboo blind, he and his women and closest retainers watched the visitors as they were requested to write their names with ink and pen, move around and interact with each other in usual Western fashion, as well as having them questioned on various topics.

Kaempfer was well aware of these proceedings, the details being recorded annually in the official diary of the trading post, the *dagregisters*. He obviously prepared himself for the event, for he sang a self-composed love-song of five verses and later portrayed himself as dancing with grand gestures. The shogun directed questions on Western medicine to him, and even had him meet and examine two of his doctors. It appears that the shogun appreciated the Western scholar. The first time Kaempfer appeared before the shogun, the audience was unusually long; and on the second visit, the delegation was asked to appear at an unheard of third audience before the shogun, and was even served food from the shogunal kitchens.⁹² Kaempfer must have been satisfied that here he was given the recognition denied him by the Company.

Japan freed Kaempfer from the "yoke of the scalpel" as he called his service to the Company in his position as surgeon.⁹³ In Japan, after the Dutch merchant vessels had left the country with the autumn trade winds, only some seven Westerners remained at the trading post, and with the moderate climate and good sanitary conditions, little medical treatment was required. Since the foreigners' contact with the locals

was strictly limited by the government, only a very few privileged persons could request medical services from the doctor. Kaempfer, in turn, had little chance to investigate local illnesses. In stark contrast to his research in Persia and India, where he gained first-hand information on illnesses about which nothing was known in the West, the medical topics he discusses for Japan, such as acupuncture, moxa and Japanese tea, had been known to European visitors ever since the time of the missionaries.⁹⁴

Though his medical research in Japan lacked originality, Kaempfer had the leisure to collect detailed information on a culture about which scant information had been available in Europe ever since the missionaries had been expelled and the country had closed itself off from the rest of the world. As requested by Camphuis, he wrote up what he learned and observed, producing a voluminous manuscript he called "Today's Japan" (*Heutiges Japan*). Here religion and customs are more carefully described than illnesses and medicines. Hence Kaempfer earned fame less as a doctor, but came to be praised even by the critical Voltaire as an "honest and learned traveller." A 17th century dictionary lists his name with that of Gottfried Wilhelm Leibniz as an authority on Confucianism, while at his *alma mater* of Königsberg (Kaliningrad), Immanuel Kant used his work for his lectures on world geography. Even the American Commodore Matthew C. Perry, endeavouring to "open up" Japan in the middle of the 19th century, carried Kaempfer's description of the country on board, and when, after Perry's success, more information was required, Western journalists used it as a reference work.⁹⁵

Kaempfer might well have been inspired in his youth by the bust of Paracelsus looking down on him on his way to school. But unlike Paracelsus, for whom travel held the promise of discovering new treatments, for Kaempfer medicine was a means to make travel possible. This fact accounted for friction with his employer and much unhappiness during his travels, but it also resulted in the finest work on Japan in the pre-modern period. **RC**

EUROPEAN TRAVELLERS AND THE ASIAN NATURAL WORLD - II

NOTES

- 1 Engelbert Kaempfer, "Medizinische Dissertation über zehn fremdländische Beobachtungen," Hans Hüls and Rohtraut Müller-König, trans. in Hans Hüls and Hans Hoppe, eds., *Engelbert Kaempfer zum 330. Geburtstag, Lippische Studien*, vol. 9, Lemgo, 1982, pp. 31-53; Engelbert Kaempfer, *Exotic Pleasures, Fascicle III: Curious Scientific and Medical Observations*, translated with an introduction and commentary by Robert W. Carrubba, Southern Illinois University Press, 1996; Wolfgang Michel, "Engelbert Kaempfer und die Medizin in Japan" in Detlef Haberland, ed., *Engelbert Kaempfer, Werk und Wirkung*, Boethius-Verlag, Stuttgart, 1993, pp. 249-293.
- 2 For a summary of major events of Kaempfer's life, see Engelbert Kaempfer, *Kaempfer's Japan: Tokugawa Culture Observed*, Beatrice M. Bodart-Bailey, ed., trans., ann., Hawaii University Press, 1999, pp. 1-24; for more details, see B. M. Bodart-Bailey and D. Massarella, eds., *The Furthest Goal: Engelbert Kaempfer's Encounter with Tokugawa Japan*, Japan Library, Folkestone, 1995. In Japanese: B. M. Bodart-Bailey, *Kenperu to Tokugawa Tsunayoshi*, Naka Naoichi, trans., Chūkō shinsho no. 1168, Tokyo, 1994.
- 3 Meier-Lemgo, "Das Stammbuch Engelbert Kaempfers", in *Lippische Mitteilungen*, Vol. 21, pp. 156-157 (henceforth "Stammbuch"). (All English translations are my own).
- 4 Hans Hoppe, "Engelbert Kaempfers Stellung in der Gesellschaft seiner Zeit," *Engelbert Kaempfer zum 330. Geburtstag*, pp. 134, 136-137; Karl Meier-Lemgo, *Engelbert Kaempfer erforscht das seltsame Asien*, Hamburg, 1960, p. 9.
- 5 Letter to Andreas Cleyer, Bandar Abbas, 26th November 1687, in Engelbert Kaempfer, *Briefe 1683-1715*, Detlef Haberland, Wolfgang Michel, Elisabeth Gössmann, eds., Iudium Verlag, Munich, 2001, p. 283. The Latin *puer* indicates a youth under the age of 17.
- 6 "Stammbuch," p. 153.
- 7 "Stammbuch," pp. 148-150.
- 8 "Stammbuch," p. 161. Detlef Haberland (*Von Lemgo nach Japan. Das ungewöhnliche Leben des Engelbert Kaempfer 1651 bis 1716*, Westfalen Verlag, Bielefeld, 1990, p. 23) notes that the University's records show Kaempfer registered from March 1677 in the Faculty of Law. His autograph book, however, shows that he concentrated on the study of medicine. For the great number of disciplines this entailed, see below.
- 9 *Kaempfer's Japan*, p. 27; Engelbert Kaempfer, *Amoenitatum exoticarum politico-physico-medicarum fasciculi 5, quibus continentur variae relationes, observationes & descriptiones rerum Persicarum & ulterioris Asiae, multa attentione, in peregrinationibus per universum Orientem, collectae*, Meyer, Lemgo, 1712, p. 645 (The work is generally referred to by the abbreviated title *Amoenitates exoticae*); *Briefe 1683-1715*, pp. 31, 509.
- 10 Roger French, *Medicine before Science: the Rational and Learned Doctor from the Middle Ages to the Enlightenment*, Cambridge University Press, 2003, p. 19. As the title of this volume implies, the whole work is dedicated to this topic and provides excellent background material on the education Kaempfer would have received.
- 11 French, *Medicine before Science*, pp. 233-234.
- 12 The hierarchical positioning of the two professions is still documented for the 18th century in Germany, and must have been all the more valid in Kaempfer's time. Peter Elmer and Ole Peter Grell, eds., *Health, Disease and Society in Europe, 1500-1800: A Sourcebook*, Manchester University Press, Manchester, New York, 2004, pp. 353-354.
- 13 French, *Medicine before Science*, pp. 20-21.
- 14 French, *Medicine before Science*, p. 83.
- 15 One of the more famous of these was the eminent surgeon Guy de Chauliac (1298-1368), who was both doctor and personal chaplain to the pope. See *Health, Disease and Society in Europe, 1500-1800: A Sourcebook*, pp. 8, 10. See also French, *Medicine before Science*, pp. 78-79, 131.
- 16 "Stammbuch," p. 173.
- 17 Engelbert Kaempfer, British Library manuscript Sloane 3063, folio 21 verso.
- 18 Peter Elmer, ed., *The Healing Arts: Health, Disease and Society in Europe 1500-1800*, The Open University, Manchester, 2004, pp. 6-8.
- 19 French, *Medicine before Science*, pp. 148-151, 205.
- 20 French, *Medicine before Science*, pp. 141-143.
- 21 Hippocrates, *Airs, Waters, Places*, in *Hippocratic Writings*, G.E.R. Lloyd, ed., J. Chadwick et. al. trans., Penguin Classics, reprint 1983, p. 149.
- 22 *Health, Disease and Society in Europe*, pp. 176-177; French, *Medicine before Science*, pp. 176-177.
- 23 Roger French, "Harvey in Holland: Circulation and the Calvinists," in Roger French and Andrew Wear, eds., *The Medical Revolution of the Seventeenth Century*, Cambridge University Press, 1989, pp. 49-50.
- 24 French, *Medicine before Science*, p. 203.
- 25 I thank Dr. C. Björk for guiding me in Kaempfer's footsteps in Uppsala.
- 26 *Amoenitates exoticae*, 3:11 in Engelbert Kaempfer, *Exotic Pleasures, Fascicle III: Curious Scientific and Medical Observations*, pp. 109-110.
- 27 The work on Japanese plants has been reproduced and translated as Engelbert Kaempfer, *Flora japonica (1712)*, Wolfgang Muntzschick, trans. and ann., Franz Steiner Verlag, Wiesbaden, 1983. *Planta Persica*: British Library, manuscript Sloane 2917; *Amoenitates exoticae*, introduction, unnumbered pages; "Stammbuch," p. 163.
- 28 Muntzschick in *Flora japonica*, pp. 13-14.
- 29 "Stammbuch," p. 163. The first volume of Olof Rudbeck's work *Atlantis* was published in 1675 and went into a second printing in 1679. (*Catalogue of the Printed Books in the Library of the Society of Writers*, Edinburgh, 1882, 2:871).
- 30 "Stammbuch," p. 163. Several interpretations are possible. That suggested by Meier-Lemgo has been adopted here.
- 31 Adam Olearius, *Beschreibung der Neuen Orientalischen Reise*, Schleswig, 1647; *Vermehrte Neue Beschreibung der Muscovitischen und Persischen Reyse*, Schleswig, 1656. Karl Meier-Lemgo, *Engelbert Kaempfer (1651-1716) erforscht das seltsame Asien*, Cram, De Gruyter & Co., Hamburg, 1960; Franz Flaskamp, "Engelbert Kemper: Persien, Indien und Japan in frühester deutscher Sicht," in *Archiv für Kulturgeschichte*, Vol. 48, Böhlau Verlag, Cologne, Graz, 1966, p. 85.
- 32 "Medizinische Dissertation über zehn fremdländische Beobachtungen," pp. 36-38; "In mari Caspio, nullae voragine; ejusdem pelagi amarities" and "Okoressa, five Okesra, peninsula Mediae, naturae prodigijs conspicua" in *Amoenitates exoticae, Fasc. II, Relatio I and II*, pp. 253-286. Also Karl Meier-Lemgo, *Die Reisetagebücher Engelbert Kaempfers*, Wiesbaden, Franz Steiner Verlag, 1968, pp. 37-40.
- 33 Kaempfer's letter to his brother Joachim from Bandar Abbas, dated 25th November, 1687, in *Briefe*, pp. 276-277.
- 34 *Amoenitates exoticae*, pp. 262-286. My translation. A German translation of the Latin text can be found in *Reisetagebücher*, pp. 46-57.
- 35 *Amoenitates exoticae*, p. 262.
- 36 Meier-Lemgo (1960), p. 37.
- 37 "Stammbuch," p. 170.
- 38 "Stammbuch," pp. 176-177.
- 39 Many of these have been published and discussed in Hans Hüls, "Auf den Spuren Engelbert Kaempfers im Iran", *Engelbert Kaempfer zum 330. Geburtstag*, pp. 167-182.
- 40 These include letters written on behalf of Fabritius in his capacity as scribe, such as *Briefe*, pp. 180-181, and those written on his own accord, such as those to Justus van den Heuvel, Herbert de Jager, and Dr. B. Vincens, *Briefe*, pp. 182-188, 198-200 respectively.
- 41 *Briefe*, p. 427.

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- 42 *Briefe*, pp. 279, 315-316.
- 43 These were published in *Amoenitates exoticae*, Fasc. II, Relatio IV, V (pp. 297-353).
- 44 British Library manuscript Sloane 2912, folio 33.
- 45 *Ibid.*, folio 51; *Reisetagebücher*, p. 115.
- 46 *Exotic Pleasures*, pp. 180-181.
- 47 *Ibid.*, pp. 194-195.
- 48 *Ibid.*, pp. 185-189.
- 49 *Ibid.*, pp. 181-185.
- 50 *Ibid.*
- 51 Sloane 2912, folio 69 verso.
- 52 *Briefe*, pp. 279-280.
- 53 Axel Helmstädter, Jutta Hermann, Evemarie Wolf, *Leitfaden der Pharmaziegeschichte*, GOVI-Verlag, Eschborn, 2001, pp. 50-51. *Encyclopaedia Britannica*, entry "Sulphur."
- 54 Letter to Christoph Pristaf, Bandar Abbas, 1687-1688, *Briefe*, pp. 295-298.
- 55 *Leitfaden der Pharmaziegeschichte*, pp. 51-52; *Encyclopaedia Britannica*, entry "Arsenic."
- 56 *Amoenitates exoticae*, pp. 720-721. (*Reisetagebücher*, p. 140).
- 57 *Amoenitates exoticae*, p. 722. (*Reisetagebücher*, p. 141).
- 58 Letter to Raphael du Mans, Bandar Abbas, dated 28th January, 1688, *Briefe*, pp. 299-300.
- 59 *hydropis specie quam Tympanites vocant. Briefe*, p. 253, n. 23 has "Hydrops tympanites" as "trommelsuchtähnliche Bauchwassersucht," citing Ludwig August Kraus, *Kritisch-etymologische medicinische Lexikon*, 3rd edition, Göttingen, 1844, p. 1068f. Dropsy is now generally referred to as edema.
- 60 *Briefe*, pp. 253-259 contains both the Latin original and a German translation. My English translation and interpretation differs in places from the German.
- 61 *Amoenitates exoticae*, p. 389 (*Reisetagebücher*, p. 130). For explanations of the locality, see "Medizinische Dissertation," p. 55, nn. 16-19.
- 62 *Briefe*, p. 280.
- 63 *Unter einem schlechtem Titul*, lit.: with a bad title. *Briefe*, p. 279.
- 64 *Amoenitates exoticae*, p. 391 (*Reisetagebücher*, p. 131), "Medizinische Dissertation," p. 41.
- 65 *Briefe*, pp. 185-188.
- 66 *Briefe*, pp. 305-306.
- 67 *Philosophical Transactions*, May 1694, No. 210, pp. 117-118.
- 68 Kaempfer, British Library manuscript Sloane 3063, folios 19-26. I thank the Reverend Joseph L. Cassidy, PhD., New Jersey, for transcribing and translating the Latin text over 15 years ago. My gratitude goes also to Professor Donald Armstrong, M. D., of Cornell University Medical College, for his comments and for passing the manuscript on to Reverend Cassidy. For Hippocrates and Galen on diagnosis, prognosis and treatment, see *The Healing Arts*, p. 9.
- 69 Sloane 3063, folios 19-20.
- 70 *Internal Affections* in *Hippocrates*, Vol. VI, with an English translation by Paul Potter, Harvard University Press, Cambridge, William Heinemann, London, 1988, pp. 119-131 (articles nos. 14-17).
- 71 Sloane 3063, folios 20-22.
- 72 Sloane 3063, folio 21 verso. Translation: *Hippocratic Writings*, p. 206.
- 73 *The Healing Arts*, p. 9.
- 74 *Diseases* III, in *Hippocrates*, Vol. VI, pp. 59-63. Sloane 3060, folios 22-23 verso. A boiled draught of china root and cinnamon was also used by Kaempfer for other treatments. See for instance *Briefe*, p. 438.
- 75 Sloane, 3063, folio 23 verso; *Aphorisms*, 2:38, *Hippocratic Writings*, p. 211.
- 76 See, for instance, the *concilium* of Ugo Benzi (1376-1439), *Health, Disease and Society in Europe, 1500-1800: A Sourcebook*, pp. 5-6; also *The Healing Arts*, pp. 9-10.
- 77 Letter to Pater Raphael of October, 1689, *Briefe*, pp. 318-320.
- 78 *Exotic Pleasures*, p. 73.
- 79 The Helminth Initiative to Enhance Research and Development for New Products, March 23-25, 2006, Tokyo University, Tokyo. I thank Dr C. Behm for this information.
- 80 *Exotic Pleasures*, pp. 77-78; F. E. G. Cox, ed., *The Wellcome Trust Illustrated History of Tropical Diseases*, Wellcome Trust, London, 1996, pp. 335-336.
- 81 *Exotic Pleasures*, pp. 80-81. The translator mistakenly has *Affections* 29, while *Amoenitates exoticae*, p. 564, has *Affections* 30.
- 82 Letter to Andreas Cleyer of 20th October, 1690, *Briefe*, p. 377.
- 83 Letter to Herbert de Jaeger of October, 1689, *Briefe*, pp. 321-322.
- 84 Letter to Nicolaes Witsen, summer 1691, *Briefe*, p. 411.
- 85 Onno Zwier van Haren, *Proeve, op de levens-beschryvingen der nederlandsche doorlugtige mannen...*, Tezswolle, 1772, translated in B. M. Bodart-Bailey, "Writing the History of Japan," in *The Furthest Goal*, p. 19. For more details on Kaempfer's relationship with Camphuis see the above-referenced essay.
- 86 Grant T. Goodman, *Japan and the Dutch 1600-1853*, Curzon, Richmond, 2000, pp. 37-38.
- 87 For details on the career of Imamura, see Paul van der Velde, "The Interpreter Interpreted: Kaempfer's Japanese Collaborator Imamura Genemon Eisei," in *The Furthest Goal*, pp. 44-58 and Katagiri Kazuo, *Oranda tsûji Imamura Genemon Eisei*, Maruzen Library, no. 146, Tokyo, 1995.
- 88 *Kaempfer's Japan*, p. 28.
- 89 *Ibid.*
- 90 *Ibid.*
- 91 B. M. Bodart-Bailey, *The Dog Shogun: The Personality and Policies of Tokugawa Tsunayoshi*, Hawaii University Press, 2006.
- 92 This is discussed in greater detail in my *Kenperu to Tokugawa Tsunayoshi*, pp. 152-178. Also Kaempfer's letter to Anton Parvé, 1961, *Briefe*, p. 122.
- 93 Letter to Nicolaes Witsen of 1691, *Briefe*, p. 415.
- 94 See Michael Cooper, comp. and ann., *They Came to Japan*, pp. 240-241, 247, 198-199, etc.
- 95 B. M. Bodart-Bailey, "Introduction: The Furthest Goal," in *The Furthest Goal*, p. 1.